PREPARED FOR
W.R. GRACE & CO.-CONN AND
U.S. ENVIRONMENTAL
PROTECTION AGENCY

Remedial Investigation Report Operable Unit 3 Study Area

Libby Asbestos Superfund Site, Libby, Montana

NOVEMBER 2016



FINAL REPORT - REVISION 1

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FINAL

Remedial Investigation Report

Operable Unit 3 Study Area
Libby Asbestos Superfund Site, Libby, Montana

Revision 1 - November 2016

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PROJECT MANAGEMENT

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Approvals:

This Remedial Investigation Report is approved for implementation without conditions.

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LIST OF ACRONYMS AND ABBREVIATIONS

ºF	degrees Fahrenheit
amsl	above mean sea level
cc^{-1}	per cubic centimeter
cfs	cubic feet per second
cm^2	square centimeter
f/cc	fibers per cubic centimeter
ft.	feet
gpm	gallons per minute
µm	micrometer
µg/L	micrograms per liter
MFL	million fibers per liter
mL	milliliter
mm	millimeter
mg/kg	milligram per kilogram
mg/L	milligram per liter
Ms/cm^2	million structures per square centimeter
Ms/g	million structures per gram
Ms/g-dw	million structures per gram dry weight
s/cc	structures per cubic centimeter
s/mL	structures per milliliter
s/mm^2	structures per square millimeter
s/g	structures per gram
s/g ww	structures per gram wet weight
%	percent
>	greater than
≥	greater than or equal to
<	less than
≤	less than or equal to

ABS	Activity Based Air Sampling
AOC	Administrative Settlement Agreement and Order on Consent
AHERA	Asbestos Hazard and Emergency Response Act
ARAR	Applicable or Relevant and Appropriate Requirement
ASTM	American Society for Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry
ATV	All-Terrain Vehicle

BERA	Baseline Ecological Risk Assessment
BCS	Biological Condition Score
BHI	Billmayer and Hafferman, Inc.
BMI	Benthic Macroinvertebrate

BNSF	Burlington Northern and Santa Fe
BTAG	Biological Technical Advisory Group
CARB	California Air Resources Board
CB&I	CB&I Federal Services, LLC
CDM Smith	CDM Smith Federal Programs Corporation (CDM Smith)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Chain of Custody
COPC	Constituent of Potential Concern
CSF	CDM Smith Close Support Facility
CSS	Contaminant Screening Study
CWA	Clean Water Act
DO	Dissolved Oxygen
DQA	Data Quality Assessment
DSR	Data Summary Report
e.g.	Exempli gratia
etc.	Et cetera
et al	Et alii
EDD	Electronic Data Deliverable
EDS	Energy Dispersive Spectrometry
ELI	Energy Laboratories, Inc.
EMAP	Environmental Monitoring and Assessment Program
EMSL	EMSL Analytical, Inc.
EPH	Extractable Petroleum Hydrocarbon
EPA	U.S. Environmental Protection Agency (or EPA)
ESATR8	Environmental Services Assistance Team Region 8 Laboratory
FEMA	Federal Emergency Management Agency
FBAS	Fluidized Bed Asbestos Segregator
FOH	Federal Occupational Health Service
FS	Feasibility Study
FSDS	Field Sampling Data Sheet
FSRZ	Fire Suppression Restriction Zone
FSSR	Field Sampling Summary Report
FTL	Field Team Lead
Golder	Golder Associates, Inc.
H&S	Health and Safety
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response (40-Hour)
HDR	HDR Engineering, Inc.
HEAST	Health Effects Assessment Summary Tables
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
HQS	Habitat Quality Score
HSI	Habitat Suitability Index
i.e.	Id est
ID	Sample identification number
ISO	Internal Organization for Standardization

K	Potassium
KDC	Kootenai Development Company
KDID	Kootenai Development Impoundment Dam
LAA	Libby Amphibole Asbestos
LiDAR	Light Detection and Ranging
LRC	Lower Rainy Creek
Ma	Million Years Before Present
MCL	Maximum Contaminant Level
MDEQ	Montana Department of Environmental Quality
MDNRC	Montana Department of Natural Resources and Conservation
MDSP	Dam Safety Program
MRL	Minimal Risk Level
MT	Montana
MWH	MWH Americas, Inc.
Na	Sodium
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NOAA	National Oceanic & Atmospheric Administration
NPL	Nationals Priorities List
NR	Non-Regulated
NRCS	Natural Resources Conservation Service
NVLAP	National Voluntary Laboratory Accreditation Program
OBTF	Open Burn Test Facility
ORP	Oxidation / Reduction Potential
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
OU3	Operable Unit 3
PAH	Polycyclic Aromatic Hydrocarbon
PCB(s)	Polychlorinated Biphenyls
PCM	Phase Contrast Microscopy
PCME	Phase Contrast Microscopy-Equivalent
PE	Performance Evaluation
PERL	Parametrix Environmental Research Laboratory
PFMA	Potential Failure Mode Analysis
Pioneer	Pioneer Technical Services, Inc.
PLM	Polarized Light Microscopy
PLM-Grav	Polarized Light Microscopy, Gravimetric
PLM-VE	Polarized Light Microscopy Visual Area Estimation
PM	Particulate matter
$PM_{2.5}$	PM less than or equal to 2.5 µm
PPE	Personal Protective Equipment
PPRTV	Provisional Peer Reviewed Toxicity Values for Superfund
PVC	Polyvinyl Chloride
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
QATS	Quality Assurance Technical Support
RBC	Risked Based Concentration
RCC	Rainy Creek Igneous Complex

RfC	Reference Concentration
RI	Remedial Investigation
RME	Reasonable Maximum Exposure
ROD	Record of Decision
ROM	Record of Modification
RPM	Remedial Program Manager
SAP	Sampling and Analysis Plan
SAED	Selected Area Electron Diffraction
SC	Specific Conductance
SOP	Standard Operating Procedure
SPF	Sample Preparation Facility
SPP	Soil Preparation Plan
SRM	Standard Reference Material
SRC	SRC, Inc.
SVOC	Semi-Volatile Organic Compounds
TDS	Total Dissolved Solid
TEM	Transmission Electron Microscopy
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
UCL	Upper Confidence Limits
URC	Upper Rainy Creek
USACE	U.S. Army Corps of Engineers
USCS	Unified Soil Classification System
USDA	U.S. Department of Agriculture
USDAFSR1	U.S. Department of Agriculture Forest Service Region 1
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USPHS	U.S. Public Health Service
UV	Ultraviolet Light
VOC	Volatile Organic Compounds
VW	Vermiculite Waste
WVB	Whitlock-Vibert box
XRD	X-ray diffraction

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1 INTRODUCTION

This report summarizes the results and conclusions of remedial investigation (RI) activities performed through September 2015 at the Operable Unit 3 (OU3) Study Area within the Libby Asbestos Superfund Site (Libby Site), located near the town of Libby, Montana (MT). These data were used to evaluate possible human and ecological risks posed by the OU3 Study Area, and also will be used to support evaluation of remedial alternatives in a future Feasibility Study (FS). The location of the OU3 Study Area is shown on **Figure 1-1**.

The OU3 Study Area encompasses a former vermiculite mine, historically known as Vermiculite Mountain, and the areas adjoining the mine (shown on **Figure 1-1**). The former vermiculite mine began limited operations in the 1920s and was operated on a larger scale by W.R. Grace (currently known as W.R. Grace & Co.-Conn and referred to herein as Grace) from approximately 1963 to 1990. Vermiculite from the mine contains amphibole-type asbestos, referred to as Libby Amphibole Asbestos (LAA).

Inhalation exposure to asbestos has been found to increase the risk of cancer and non-cancer effects in humans (Agency for Toxic Substances and Disease Registry [ATSDR], 2001a). As a result, the Libby Site, including the OU3 Study Area, is of concern to the U.S. Environmental Protection Agency (EPA) because historical mining, milling, and activities ancillary to mining and milling (e.g., subsequent handling and transport of mined material) caused releases of LAA to the environment. Although the mine has ceased operations, and milling and processing of vermiculite no longer occurs, the EPA was concerned that historic or potential continuing releases of LAA from mine-related materials were a potential source of ongoing exposure and risk to current and future residents, forest workers, trespassers, and possible recreational users within the publicly owned forested areas. Based on these concerns, the EPA listed the Libby Site on the National Priorities List (NPL) in October 2002. **Figure 1-2** depicts the operable units (OUs) within the Libby Site, with the OU3 Study Area highlighted. The operable units are described in **Section 1.3.2**.

Kootenai Development Company (KDC), a subsidiary of Grace, owns the mine and land surrounding the mine (the property boundary within the OU3 Study Area is shown on **Figure 1-1** and is referred to herein as the Former Mine Area). The EPA entered into an Administrative Settlement Agreement and Order on Consent (AOC) with respondents Grace and KDC in 2007 (EPA, 2007a; Docket No.CERCLA-08-2007-0012). Under the terms of the AOC, Grace, the EPA, and KDC jointly performed the RI at the OU3 Study Area.

Numerous Libby Site and OU3 Study Area EPA-approved documents were utilized in the development of this report including, but not limited to: Sampling and Analysis Plan/Quality Assurance Project Plans (SAP/QAPP), Data Summary Reports (DSR), Field Sampling Summary Reports (FSSR), and Risk Assessments. The specific document titles are referenced when applicable throughout the remainder of this document and are listed in **Section 10.0**.

1.1 PURPOSE OF REMEDIAL INVESTIGATION

The purpose of the OU3 Study Area RI activities has been to:

1. characterize the nature and extent of potential impacts within the OU3 Study Area resulting from historical mining, milling, and activities ancillary to mining and milling,
2. describe the fate and transport of these potential impacts,

3. provide information relevant to the assessment of human and ecological risks, and
4. obtain data to support the evaluation of remedial alternatives in the FS.

This RI report presents and interprets the data generated from RI activities that were conducted at the OU3 Study Area between September 2007 and September 2015. **Appendix A** provides a compilation of the pre 2007 data collected within the OU3 Study Area, however, the data will not be utilized in evaluations moving forward in this report because the data collection objectives differed from the data collected post 2007 as part of the OU3 Study Area RI. Refer to **Section 1.3.3** for a discussion on the pre 2007 data sample collection. Investigation-specific SAPs and FSSRs, which describe the implementation of the SAPs, field quality control procedures, and the results of field and laboratory audits, have been submitted for a majority of the RI activities and are referenced in this report. A presentation of sampling investigation details by sampling phase/event is presented **Section 4.0**.

1.2 REPORT ORGANIZATION

This report generally follows the outline suggested in *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA, Interim Final* (EPA, 1988a) and consists of nine sections. Each of the sections is described below.

Section 1.0 **Introduction** – Describes the OU3 Study Area background, including regulatory framework, purpose/objectives of the RI Report, and organization of this document.

Section 2.0 **Physical Characteristics** – Describes the physical characteristics of the OU3 Study Area and surrounding areas, including: physiography, location and access, topography, demography and land use, climatic and meteorological information, geologic conditions, soils, hydrogeology, surface water hydrology, groundwater and surface water geochemistry evaluation, ecological setting, and potential sources of LAA-bearing material and other non-asbestos constituents that may be elevated as a result of historical mining-related activities.

Section 3.0 **Data Collection and Management** – Provides an overview of sampling activities, the OU3 Study Area database, excluded datasets, analytical methods, and Quality Assurance/Quality Control (QA/QC) measures.

Section 4.0 **Summary of Study Area Investigations** – Summarizes the specific studies and resulting data that are being used to characterize the OU3 Study Area and to support risk assessments and the FS.

Section 5.0 **Nature and Extent of Contamination** – Describes the type (nature) and distribution (extent) of contamination within individual media that may be associated with the OU3 Study Area.

Section 6.0 **Contaminant Fate and Transport** – Evaluates the fate/persistence of contaminants in the environment and describes the routes of potential contaminant migration in the affected environmental media, contaminant persistence in the migration pathway, and if evidence of migration is currently observed.

Section 7.0 **Risk Assessment for LAA and Non-Asbestos Constituents** – Summarizes the findings of the Baseline Ecological Risk Assessments *(BERAs*) and the Human Health Risk

Assessments (*HHRAs*), for both LAA and non-asbestos constituents (CDM Smith Federal Programs Corporation [CDM Smith], 2014a; CDM Smith, 2014b; EPA, 2014a; EPA, 2015a).

Section 8.0 Potential Data Gaps - Presents potential data gaps identified during review of the RI data presented in this report. The need to fill any of the potential data gaps will be further evaluated as part of the OU3 Study Area FS.

Section 9.0 Summary and Conclusions – Summarizes the LAA and non-asbestos data from the preceding sections and presents preliminary conclusions based on results of the investigations completed to date and the BERA and the HHRA documents for LAA and non-asbestos constituents.

Section 10.0 References – Lists the reference documents cited in this RI Report.

All tables and figures cited in the text are provided at the end of the report. Appendices are provided electronically.

1.3 OPERABLE UNIT 3 STUDY AREA BACKGROUND

1.3.1 Vermiculite Mining, Milling, and Processing

Numerous hard rock mines have operated in the Libby, Montana area since the 1880s. Prospectors first located vermiculite deposits in the early 1900s on Rainy Creek, northeast of Libby. Edward Alley, a local rancher, was a prospector who explored the old gold mining tunnels and digs in the area (CDM Smith, 2014a). In 1919, Alley purchased the Rainy Creek claims and started the vermiculite mining operation called the Zonolite Company. Alley experimented with the vermiculite and discovered that it had good insulating qualities. Over time, vermiculite became a product used in insulation, feed additives, fertilizer/soil amendments, construction materials, absorbents, and packing materials. Many people used vermiculite products for insulation in their houses and soil additives in their gardens.

Operations at the mine included blast and drag-line mining and milling of ore (CDM Smith, 2014a). Before the construction of an on-site mill, ore was transported by skip and trucked to Libby for processing. Until 1936, the Zonolite Company operated a small-scale drying and screening plant in the town of Libby. In 1936, the first on-site mill for vermiculite ore was constructed by the Universal Insulation Company at the base of Vermiculite Mountain (Boettcher, 1963). Over the next 20 years, (dry) mill capacity and efficiency were increased and then in 1954 wet milling was added and operated concurrently with dry milling in 1954. In 1973, a state-of-the-art new wet mill (floatation method) was constructed. From 1974 until mine closure in 1990, the entire milling operation used wet processes (Grace, 1988). Water for use in the on-site wet mill was obtained directly from Rainy Creek. The Mill Pond served as a collection reservoir, from which water was pumped uphill to the mill. During dry periods, when flow in Rainy Creek was insufficient to supply the needs of the mill, makeup water was pumped almost three miles up Rainy Creek from a pump station on the Kootenai River. Beginning in the 1970s, seepage water and fine tailings from the milling process were collected behind the tailings impoundment dam (Kootenai Development Impoundment Dam [KDID]). The Former Mine Area features, including the former mill area, KDID, and mine-production created ponds, waste rock piles, and tailings piles, are shown on **Figure 1-3**. Historical photographs of the Former Mine Area and mill site are shown on **Figure 1-4.**

Based on available documents, after milling, concentrated vermiculite was transported from the mill site down the northwest facing hill slope along a tramway to a loading area positioned on the south hill slope above Rainy Creek. The material was then transferred from the loading area into haul trucks for off-site delivery. In the 1950s, a storage and loading station was built on the Kootenai River, along with a conveyor belt that crossed the Kootenai River to facilitate distribution by the Great Northern Railway, the predecessor railroad to Burlington Northern and Santa Fe (BNSF) Railway (OU6). After 1970, vermiculite screening was conducted at the storage and loading station, now referred to as the former Screening Plant (OU2). The former Screening Plant, which was located on the east side of the Kootenai River, and the rail loading facility (OU4) on the west side of the Kootenai River, were utilized until 1990.

After the milling and screening process, vermiculite was either trucked to processing facilities in Libby, or loaded onto rail cars for transportation to plants throughout the United States. At the processing plants, the ore was expanded or "exfoliated" by rapid heating, then exported to market by truck or rail. Historic maps show the location of the "Zonolite Company" processing operation at the edge of the Stimson Lumber Mill (OU5), near present day Libby City Hall. In the early 1950s, the Zonolite Company processing plant was taken off-line and demolished and another processing plant, known today as the former Export Plant (OU1), was utilized from the early 1960s to approximately 1992. This processing plant was located near downtown Libby near the intersection of the Kootenai River and Highway 37.

In 1963, Grace purchased the mine and associated processing facilities and operated them until 1990. In 1972, Grace applied for, and received, an operating permit under the Metal Mine Reclamation Act and mined areas were reclaimed as they were mined out. Over the course of Grace's operation in Libby, invoices indicate shipment of nearly 10 billion pounds of vermiculite from Libby to processing centers and other locations (CDM Smith, 2014a).

After operations ceased in 1990, major reclamation began and included demolition of existing facilities, land re-contouring, and re-vegetation of disturbed areas. As of the date of this report, the remaining 125 bonded acres within the mine permit boundary include 65 acres of coarse tailings, 45 acres encompassing a minor landslide that exposed an old landfill of mine-related material, and 15 acres encompassing the previously excavated and mined ore body and some riprap borrow areas (CDM Smith, 2014a).

Vermiculite from the mine contained varying concentrations of LAA. Historical mining, milling, and processing operations, as well as bulk transfer of mining-related materials and tailings to locations in the Kootenai Valley, were found to have released LAA into the environment.

1.3.2 Regulatory History

Asbestos is a hazardous substance as designated by 40 Code of Federal Regulations (CFR) Section 302.4 of the National Oil and Hazardous Substances Pollution Contingency Plan. In November 1999, the EPA responded to requests from the State of Montana and Lincoln County Health Board to investigate the potential exposure to asbestos related to the former mine operations and vermiculite processing. The EPA Response Team inspected the former mine and processing facilities, interviewed local officials and community members, interviewed a pulmonologist in Spokane, Washington, and collected a set of initial samples. The initial investigation revealed the following:

- There were a large number of current and historic cases of asbestos-related diseases in Libby, MT.

- There was a likelihood that significant amounts of asbestos-containing vermiculite still remained in and around Libby, MT.

A more detailed summary of initial Libby Site evaluation can be found in the EPA Action Memorandum dated May 23, 2000, *Request for a Time Critical Removal Action Approval and Exemption from the 12-month, $2-million Statutory Limit at the Libby Asbestos Site- Export Plant and Screening Plant former Processing Areas, Libby, Lincoln County, Montana* (EPA, 2000a).

These findings led the EPA to initiate a larger scale rapid investigation in December 1999 to meet the following goals (CDM Smith, 2014a):

- Obtain information on airborne asbestos levels in Libby in order to judge whether time-critical intervention was needed to protect public health.
- Obtain data on asbestos levels in potential in-town source areas (at the former Export Plant and Screening Plant), and identify the most appropriate analytical methods to screen and quantify asbestos in source materials.

Under Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; also known as Superfund), the EPA has the authority to complete both removal and remedial actions. To date, removals have been conducted using removal action authority to facilitate the timely removal of the most contaminated areas in the Libby Superfund Site. The initial time-critical actions began at the processing areas in May 2000 (EPA, 2000a). As additional areas requiring removal were identified, amendments to the initial EPA Action Memorandum (EPA, 2000a) were approved for extending the 12-month statutory limit and increasing the fund ceiling and are briefly summarized below:

- **July 20, 2001 –** Amendment for continued removal actions at the former Export Plant and Screening Plant, and expanding the scope of removal actions to include Rainy Creek Road, Libby High School, Libby Middle School, Plummer Elementary, and two private properties (EPA, 2001).
- **May 2, 2002 –** Amendment for expanding the scope of removal actions to address residential/commercial properties in OU4 (EPA, 2002a).
- **May 15, 2006 –** Amendment for removal actions at additional properties in OU4 (EPA, 2006a).
- **June 27, 2006 –** Amendment for expanding the scope of removal actions to include Troy, Montana (OU7) (EPA, 2006b).
- **September 24, 2008 –** Amendment for expanding the scope of removal actions to include specific creeks in Libby and Troy, MT (EPA, 2008a).
- **June 17, 2009 –** Amendment for additional residential/commercial removal actions in Libby and Troy, MT (EPA, 2009a).
- **August 13, 2009 –** Amendment to expand the removal actions to include the Cabinet View Country Club Golf Course (EPA, 2009b).
- **March 14, 2012 –** Amendment to request and document approval for changes to removal action and removal protocols described in the original Action Memorandum and previous Amendments, and to outline a new neighborhood clean-up approach (EPA, 2012a).
- **August 28, 2012 –** Amendment to address the removal of LAA-containing vermiculite waste in the Rainy Creek floodplain near the mine (EPA, 2012b).

In October 2002, the Libby Site was listed on the EPA's Superfund NPL and the project was transitioned from the EPA's Removal Program to the Remedial Program. In 2009, the EPA declared a Public Health Emergency in Libby which allowed for federal health care assistance for persons with asbestos-related disease.

To facilitate a multi-phase approach to remediation of the Libby Site, eight separate operable units have been established. In 2016, as part of the Libby Site Record of Decision (ROD), the EPA established formal NPL boundaries for all OUs except OU3 (EPA, 2016). The OUs are described below and shown on **Figure 1-2**.

- **OU1 –** The former Export Plant is defined geographically by the property boundary of the parcel of land that included the former Export Plant and is situated on the south side of the Kootenai River, just north of the downtown area of the City of Libby, Montana. The property is bounded by the Kootenai River on the north, Montana Highway 37 on the east, the BNSF railroad thoroughfare on the south, and State of Montana property on the west.
- **OU2 –** Includes areas impacted by contamination released from the former Screening Plant. These areas include the former Screening Plant, the Flyway property, the Highway 37 right-of-way adjacent to the former Screening Plant and/or Rainy Creek Road, and privately-owned properties.
- **OU3 –** Is defined in the 2007 AOC as the property in and around the Zonolite Mine owned by W.R. Grace or Grace-owned subsidiaries (excluding OU2) and any area (including any structure, soil, air, water, sediment or receptor) impacted by the release and subsequent migration of hazardous substances and/or pollutants or contaminants from such property, including, but not limited to, the mine property, the Kootenai River and sediments therein, Rainy Creek, Rainy Creek Road and areas in which tree bark is contaminated with such hazardous substances and/or pollutants and contaminants.
- **OU4 –** Is defined as residential, commercial, industrial (not associated with former Grace operations), and public properties, including schools and parks in and around the City of Libby, or those that have received material from Grace.
- **OU5 –** Is defined geographically by the parcel of land that included the former Stimson Lumber Company. OU5 is bounded by the high bank of Libby Creek to the east, the BNSF railroad to the north, and properties within OU4 to the south and west. This operable unit is currently occupied by various vacant structures/buildings as well as multiple operating businesses (lumber processing, log storage, excavation contractor, etc.). Within the boundary of OU5 is the Libby Groundwater Superfund Site, which is not associated with the Libby Site.
- **OU6 –** Owned and operated by the BNSF railroad, OU6 is defined geographically by the BNSF property boundaries from the eastern boundary of OU4 to the western boundary of OU7 and extent of contamination associated with the Libby and Troy rail yards.
- **OU7 –** Includes all residential, commercial, and public properties in and around the town of Troy, MT, approximately 20 miles west of downtown Libby.
- **OU8 –** United States and Montana State Highway rights-of-way and secondary state route rights-of-way within the boundaries of OU4 and OU7.

1.3.3 Previous Investigations of the OU3 Study Area

Prior to beginning Phase I of the RI sampling effort in 2007, only limited data existed on the nature of source materials at the Former Mine Area and on the identity and levels of mining, processing, and mined material disposal related to potential releases from the mine to surrounding areas in the OU3 Study Area (EPA, 2007b). A summary of data that were collected prior to the 2007 RI sampling efforts was presented in the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b) and is provided below by media type (only very limited data regarding sampling procedures, test methods, and detection levels were provided in the report, which is reflected in the summary provided below). Detailed information on test methods, sampling location, etc. for the media presented below are contained in the Libby2 Database, which is not maintained by Grace.

Soils and Mine Wastes. As part of site characterization associated with the EPA's initial response activities at the Libby Site, the EPA collected soil samples that were analyzed for asbestos by Polarized Light Microscopy (PLM) using visual area estimation in accordance with the Site-specific PLM method (i.e., standard operating procedure SRC-LIBBY-03, referred to as "PLM-VE") or the National Institute for Occupational Safety and Health [NIOSH] Method 9002. For PLM-VE, results for LAA are reported in terms of mass percent using semi-quantitative "bins" as follows (refer to **Section 3.0** for a complete discussion on PLM-VE analysis):

- Bin A (non-detect; ND) – LAA is not observed
- Bin B1 (trace) – LAA is present, but at levels below the 0.2% reference standard
- Bin B2 (<1%) – LAA is present at levels at or above the 0.2% reference standard, but below the 1% reference standard
- Bin C (≥1%) – LAA is present at levels at or above the 1% reference standard (quantitative estimates of the LAA mass percent are provided)

For NIOSH 9002, results are reported in terms of tremolite/actinolite[1] as either non-detect (ND), less than 1% (<1%), or a percent estimate (when concentrations were estimated at or above 1%). The following data were reported:

- 92 soil samples along Rainy Creek Road (26 samples were non-detect), 47 samples were <1%, 19 samples with detected concentrations ranging from 2% to 8%),
- four samples along a forest service road (all samples were non-detect),
- 61 samples along the right-of-way for Highway 37 (10 samples were non-detect, 37 samples had trace levels, and 14 samples were <1%),
- 15 samples in Carney Creek Logging Area (three samples were non-detect, 11 samples were < 1%, and one sample reported a concentration of 1%), and
- five samples at a U.S. Forest Service (USFS) logging site above the Amphitheater (all samples were <1%).

There were no pre 2007 non-asbestos constituent data for soil and mine wastes. Sample locations and sample data collected prior to 2007 are provided in **Appendix A** (tables and figures from EPA, 2007b).

[1] Tremolite/actinolite are part of the solid solution series that may comprise LAA. See Section 1.5 and Appendix B-1 for discussion of LAA mineral characteristics.

Surface Waters and Sediments. Grace provided the EPA historic information they collected on surface water quality from 1991 through 1994 (refer to **Appendix A** Water Quality Monitoring Data Reports). Review of these data indicates the following general conclusions: surface water is typically pH neutral and total dissolved solids content are normally less than 500 mg/L. Additionally, the EPA collected surface water and sediment samples from Rainy Creek and the tailings impoundment from 2001 through 2003. Fifteen surface water samples[2] were analyzed for LAA by transmission electron microscopy (TEM) using EPA Method 100.2 and three samples detected LAA fibers longer than (>) 10 micrometers (μm); detected concentrations were 7.459 million fibers per liter (MFL) in "Rainy Creek catch basin (Lower reach)", 0.658 MFL in the "stream above the lower tailings pond", and 1.317 MFL from the "main discharge from lower tailings pond". Additionally, two surface water locations, identified only as upper and lower ponds of Rainy Creek, were analyzed for inorganic constituents, total petroleum hydrocarbons, organochlorine pesticides, polychlorinated biphenyls (PCB), and volatile organic compounds (VOCs). Neither of the two samples contained detectable concentrations of metals, total petroleum hydrocarbons, organochlorine pesticides, selected PCB arochlors, or volatile hydrocarbons. Three sediment samples were analyzed for asbestos by PLM in accordance with NIOSH 9002; one sample collected from the upper tailings pond reported tremolite-actinolite concentrations of 2% and the other two were both non-detect. There was no pre 2007 non-asbestos constituent data for sediment. Sample locations and sample data collected prior to 2007 are provided in **Appendix A.**

Groundwater. Groundwater wells had been installed at the mine and historical sampling records refer to various potable water samples that may have been collected from groundwater wells. In addition, a "new well" was drilled in 1986 to a depth of 405 feet (ft.). This well appears to have been a potable water well. One sample was collected shortly after installation, with results reportedly showing no analytes above applicable drinking water standards for the analyzed constituents: arsenic, barium, cadmium, chromium, lead, manganese, mercury, selenium, and silver. Available historic well locations are presented on **Figure A-4.**

Tree Bark. Ward *et al.* (2006) reportedly collected tree bark samples from six locations in and around Libby in November 2004. Three of these locations were in forested locations within the OU3 Study Area. The tree bark samples were ashed in a muffle furnace, suspended in filtered deionized water, filtered, and sonicated before being prepared for TEM analysis. Identification and measurement of fibers was conducted in accordance with counting methods similar to those specified in the Asbestos Hazardous Emergency Response Act of 1986 (AHERA, 1986; EPA, 2007b) which were utilized to standardize the analytical counting within the laboratories. For the purposes of reporting analytical results, it was assumed that the surface area of each sample was 2 square centimeter (cm^2). Tree bark surface loading results for amphibole ranged from 14 million to 260 million fibers per cm^2. Sample locations and sample data collected prior to 2007 are provided in **Appendix A.**

Air. Before 2007, the EPA had collected numerous personal and stationary air monitoring samples for analysis of asbestos as part of clean-up activities within the OU3 Study Area. Personal air monitoring data were collected for all clean-up workers to ensure that exposures were not above Occupational Safety and Health Administration (OSHA) permissible exposure

[2] The surface water sample concentrations were originally reported in the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b) as structures per milliliter (s/mL) in the tables and fibers per milliliter (f/mL) in the text. For this report, these results were converted to million fibers per liter (MFL) for comparability with later RI studies and for consistency with the National Primary Drinking Water Regulation (NPDWR) Maximum Contaminant Level (MCL) for asbestos.

levels and to determine the appropriate level of personal protective equipment (PPE) needed during clean-up activities. A total of 185 personal air samples were collected and analyzed by TEM; results ranged from 0.00195 to 6.66 structures per cubic centimeter (s/cc). Stationary air monitoring samples were also collected for the Libby Site and most samples within the OU3 Study Area were collected along roadways within the Former Mine Area, along Rainy Creek road, and along Highway 37. A total of 351 stationary air samples were collected and analyzed by TEM; results ranged from:

- 0.00110 to 0.00227 s/cc at the Former Mine Area
- 0.000426 to 0.222 s/cc along Rainy Creek road
- ND along Highway 37

Sample locations for these air samples were not provided in the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b). However, sample data collected prior to 2007 are provided in **Appendix A.**

Biota. No samples of biota from the OU3 Study Area were analyzed for asbestos or other mining-related contaminants before RI sampling efforts began in 2007. However, EPA's Environmental Monitoring and Assessment Program (EMAP) collected aquatic community data at a station on the Kootenai River about one mile downstream of the confluence with Rainy Creek in August of 2002 (EPA, 2014a). These data are provided in **Appendix A**.

Available data collected prior to 2007 are provided in **Appendix A**; however, the data will not be utilized in evaluations moving forward in this report because the data collection objectives differed from the data collected post 2007. The post 2007 data were collected under one of the QAPPs developed as part of the OU3 Study Area RI per the AOC, whereas the pre 2007 data were collected to support emergency response efforts.

1.4 OPERABLE UNIT 3 STUDY AREA BOUNDARY

The OU3 Study Area includes the property in, and adjacent to, the Former Mine Area, and the geographic areas surrounding the mine that may have been impacted by releases and subsequent migration of hazardous substances and/or pollutants or contaminants from the mine. In addition to the Former Mine Area, former mill area, KDID, mine-production created ponds, waste rock piles, and tailings piles, the other geographic areas within the OU3 Study Area include Rainy Creek, Carney Creek, Fleetwood Creek, the Kootenai River, and Rainy Creek Road. The former vermiculite mine is located approximately 6.5 miles east of the town of Libby, Montana. **Figure 1-5** shows land ownership of the OU3 Study Area and surrounding parcels. KDC, a subsidiary of Grace, owns approximately 3,600 acres of land that includes the Former Mine Area and the surrounding area to a distance of approximately 1 mile radially from the center of the Former Mine Area designated on **Figure 1-3.** Refer to **Section 4.6.1** for a discussion on how the center of the Former Mine Area was designated. The mining-disturbed area of the mine property is approximately 1,100 acres. Land surrounding the KDC property within the OU3 Study Area is mainly within the Kootenai National Forest, which is managed by the USFS (approximately 22,000 acres). Approximately 640 acres of land parcels are owned by the State of Montana, 170 acres of land parcels are owned by the US Corp of Engineers, 2,600 acres of land parcels are owned by Plum Creek Timberlands LP for commercial logging. Approximately 690 acres of land parcels are private (primarily residential) properties near the southern border of the OU3 Study Area and are included as part of OU4. The OU3 Study Area encompasses approximately 32,000 acres,

which includes the above acreage values (excluding properties designated as OU4), and the Kootenai River.

Figures 1-1, **1-2**, and **1-3** show the locations of the mine and the current OU3 Study Area boundary, primary geographic features, and Former Mine Area features. The EPA established this preliminary study area boundary for the purpose of planning and developing the scope of the RI. The OU3 boundary for purposes of the FS and remedy implementation is currently under development.

1.5 LIBBY AMPHIBOLE ASBESTOS CHARACTERISTICS

Asbestos is the primary contaminant associated with releases from mining activities in the OU3 Study Area. The vermiculite ore body in the OU3 Study Area contains naturally occurring amphibole asbestos that is comprised of a range of mineral types and morphologies. Historically, the form of asbestos that is present in the vermiculite ore body was classified as tremolite/actinolite (McDonald *et al.,* 1986; Amandus and Wheeler, 1987a and 1987b). More recently, the U.S. Geological Survey (USGS) performed electron probe micro-analysis and X-ray diffraction (XRD) analysis of 30 samples obtained from asbestos veins at the mine (Meeker *et al.,* 2003). Using mineralogical naming rules recommended by Leake *et al.,* 1997, the results indicate that the asbestos at the Libby Asbestos Site includes a number of related amphibole types. The most common forms are winchite and richterite, with lower levels of tremolite, magnesio-riebeckite, edenite, and magnesio- arfvedsonite. Although Meeker *et al.,* 2003 did not report the presence of actinolite, the authors did note that, depending on the valence state of iron and data reduction methods utilized by other analytical laboratories, some minerals may also be classified as actinolite. The mixture of asbestos present in the OU3 Study Area and in the Libby Site are referred to herein as LAA, but **Appendix B-1** provides a more thorough review of the distinguishing characteristics of amphiboles from the vermiculite ore body that was mined by Grace. For consistency with other Libby Site documents, this document does not attempt to distinguish LAA fibers from the mine from other types of asbestos. USGS has defined LAA as structures having an amphibole selected area electron diffraction (SAED) pattern and an elemental composition similar to the range of fiber types observed in ores from the Libby Mine (Meeker *et al.,* 2003), but the term LAA is not limited to those fibers.

Defining characteristics of the LAA that originated from the Vermiculite Mountain ore body are discussed in **Appendix B-1**. This document incorporates comprehensive data relating to amphibole fibers without regard to whether those fibers originated at the Rainy Creek Complex that was mined by Grace. **Appendix B-1** summarizes analytical approaches that have been used to distinguish LAA originating at the mine ore body from other LAA. The reader should be aware that the term LAA may not be consistently used in discussions about the Libby Site, including this document. As shown in **Appendix B-1**, sodium and potassium at certain concentrations were found in all vermiculite ore body samples that were collected from the mine. Samples collected from other locations that were not impacted by the mine did not contain sodium and potassium within these ranges. **Appendix B-2** provides a copy of the OU3 Study Area project database, which includes information on the sodium and potassium presence, as well as the dimensions (length, width) and mineral classifications, of all LAA structures recorded for the OU3 Study Area samples collected from 2007 through 2015 as part of the RI.

CERCLA lists asbestos as a hazardous substance. EPA considers LAA at the Libby Site a hazardous substance under CERCLA. Refer to **Section 2.6.2** for a discussion of the OU3 Study Area geologic conditions and formation of LAA.

2 PHYSICAL CHARACTERISTICS

2.1 INTRODUCTION

This section describes the physical characteristics of the OU3 Study Area and surrounding areas. Summaries are presented for: (1) physiography and topography, (2) location and access, (3) demography and land use, (4) climate and meteorological information, (5) geologic conditions, (6) hydrogeology, (7) surface water hydrology, (8) groundwater and surface water geochemistry evaluation, (9) ecological setting, and (10) potential sources of LAA containing material and other non-asbestos constituents that may be elevated as a result of historical mining activities.

A Light Detection and Ranging (LiDAR) survey of the site was conducted in 2011 and the spatial information collected from that survey has been used in a variety of ways to support various technical analyses for the OU3 Study Area. A second survey was conducted in 2015 and the survey data will be utilized to perform analysis for: identifying areas in which surface mass wasting or accumulation has occurred in the last four years and an interpretation of the mechanisms that are causing possible mass movement (e.g., erosion, slope instability). This analysis will be provided under separate cover.

2.2 PHYSIOGRAPHY AND TOPOGRAPHY

The OU3 Study Area encompasses approximately 32,000 acres, including the Former Mine Area (historically known as Vermiculite Mountain) and areas near the mine that were potentially impacted by releases from mining activities. Vermiculite Mountain, which was the source of the mined vermiculite ore, lies at the extreme southern end of the Purcell Mountains, in the Northern Rocky Mountains physiographic region. The Former Mine Area is located within the KDC property boundary, which area contains approximately 3,600 acres of which approximately 1,100 acres were disturbed by historic mining activities (refer to **Figures 1-2** and **1-5**).

The Former Mine Area is situated approximately 2.5 miles to the northeast of the confluence of the Kootenai River and Rainy Creek. The mine area is generally hilly and dissected by a number of drainages. Elevations in the OU3 Study Area range from a low of 2,080 ft. above mean sea level (amsl) at the mouth of Rainy Creek to a high of 6,040 ft. amsl at Blue Mountain, about 5 miles north-northeast of the Former Mine Area. The highest point on the mine-disturbed area is 4,204 ft. amsl, at the present location of the OU3 Study Area weather station. A topographic map showing the location of the OU3 Study Area weather station, Blue Mountain, Vermiculite Mountain, and an overview of the OU3 Study Area is shown in **Figure 2-1**.

The areas surrounding and including the OU3 Study Area are characterized by distinct mountain ranges and intervening valleys that were formed and altered by the late Pleistocene Cordilleran ice sheet, a continental glacier that moved from Canada to the southwest over the Libby area (Langer, 2010). Many of the drainages in the Former Mine Area do not have the typical U-shaped bottoms from glaciation, but are V-shaped, suggesting the streams in the area are actively down-cutting into the glacial deposits, which have been shown to contain LAA eroded from Vermiculite Mountain during Pleistocene glaciation (Langer, 2010). Rainy Creek, in the vicinity of the Former Mine Area, however, exhibits the classic U-shape caused by glacial retreat.

Numerous perennial and ephemeral streams drain the Former Mine Area and ultimately discharge as tributaries to the Kootenai River. Drainage patterns are generally dendritic to the Kootenai

River, with no obvious structural control. In most places, the drainages are steep and rugged and the streams have very steep gradients. Rainy Creek is the primary drainage channel in the Former Mine Area and flows into the KDID area from the north. Fleetwood Creek is a tributary drainage that flows into Rainy Creek upstream of the KDID from the east and around the coarse tailing pile north of the mine. Carney Creek flows along the south perimeter of the mine area and enters Rainy Creek downstream of the KDID.

In 1972, Grace began construction on the KDID starter dam and associated tailings impoundment in the former channel of Rainy Creek. The purpose of the KDID was to store fine tailings slurry that was produced by the vermiculite wet mill process. The homogeneous embankment dam was raised in several phases between 1973 and 1980 as tailings were continuously deposited. From the Former Mine Area, Rainy Creek flows southwest approximately 2 miles to the Kootenai River, a major tributary to the Columbia River system (refer to **Figure 1-3** for Former Mine Area features).

The area is moderately to thickly vegetated (refer to **Section 2.10.1**), with hill/mountain slopes typically between 20 degrees to 35 degrees, with some areas of steeper and flatter slopes within the Rainy, Fleetwood, and Carney Creek basins. A coarse tailings pile (also referenced as “old mill tailing”), a by-product of the mill processing of vermiculite, is located to the north of Vermiculite Mountain and the former main mining operations. Piles of un-processed overburden and fragmented rock material, referred to as waste rock piles, are located to the south and southwest of the main mining operations. These areas of coarse tailings and waste rock piles are sparsely vegetated or un-vegetated, except in areas where re-vegetation has recently occurred, and are positioned along the hill slopes and drainages around the Former Mine Area perimeter with existing ground surface grades of 10 degrees to 40 degrees (refer to **Figure 1-3)**.

The ore body is expressed as an outcrop dome that is rimmed with Precambrian Belt Supergroup meta-sedimentary rocks. The rim is from 400 ft. to 900 ft. above the top of the mine. These geologic features are discussed in greater detail in **Section 2.6**. The dome is drained by Fleetwood Creek around the north perimeter of the mine and by Carney Creek around the south perimeter. These creeks are tributaries to Rainy Creek, a larger stream that heads at an elevation of approximately 5,000 ft. amsl on the slope of Blue Mountain (refer to **Figures 1-3** and **2-1**).

2.3 LOCATION AND ACCESS

The Former Mine Area permitted area occupies portions of Sections 15, 21, 22, 23, 26 and 27 of Township 31 North, Range 30 West, Montana Principal Meridian (refer to **Figure 2-1**). **Figure 2-1** shows portions of the USGS 1:100,000 Vermiculite Mountain, Alexander Mountain, Swede Mountain, Pony Peak, Banfield Mountain, and Ural Creek topographic quadrangle maps. The Former Mine Area can be reached from downtown Libby by traveling along the north bank of the Kootenai River for 5 miles north-east on Highway 37 and taking Rainy Creek Road for 2 miles north, to the Mill Pond. The pavement ends at Mill Pond, at which point there are several forest and mining roads that can be used to access the Former Mine Area.

Highway 37 is open year-round, but Rainy Creek Road is generally inaccessible due to snow from late fall through early spring. A locked gate and warning signage at the bottom of Rainy Creek Road are used to prevent unauthorized access to the Former Mine Area.

Property undisturbed by mining activity within the KDC property can be accessed by gated, locked forest and logging roads with warning signage which intersects Highway 37 (for areas north,

south, and east of the mine) or gated county roads (for areas generally west of the mine). The forest roads within the OU3 Study Area are not currently maintained by the USFS. Many of the logging roads are narrow, steep, and require the use of high-clearance, four-wheel-drive vehicles.

2.4 DEMOGRAPHY AND LAND USE

The area surrounding the OU3 Study Area is sparsely populated and the largest nearby population center is the town of Libby, Montana, which is located approximately 6.5 miles to the south-southwest of the Former Mine Area. Libby has a population of less than 3,000; 12,000 live within a ten-mile radius of the town (U.S. Census, 2010). The 2010 Census counted 2,628 residents in Libby, with the largest group of individuals being between 45 and 54 years old. **Table 2-1** illustrates the age, gender, and racial distributions of the population in Libby.

In the past, Libby's economy was largely supported by natural resources extraction industries, such as logging and mining. Over time, mining operations and log mills have closed and tourism now is playing an increasing role in the local economy of Libby. Of the 2,628 residents: 2,232 residents were above the age of 16 and 1,125 were employed. Of the employed residents, 76 were in the forestry, agriculture, or mining industries; 235 persons were in arts, entertainment, recreation, accommodation, and food services; 333 were in education, health, and social services; and the remainder were in other industries. **Table 2-2** summarizes the employment distribution by the various economic sectors in Libby.

The land surrounding the Former Mine Area is managed for multiple uses by the USFS and by timber companies for logging. Timber harvesting, fire fuels management, and other activities authorized in the Kootenai National Forest Plan are not presently occurring in the OU3 Study Area because of the concern of disturbing potential LAA impacted media. The area is used by the public for camping, hunting and other recreational activities, and firewood gathering. The mining operations in the OU3 Study Area ceased in 1990 and access to mined property is restricted by signs and locked gates, but trespassers may occasionally enter on foot.

2.5 CLIMATIC AND METEOROLOGICAL INFORMATION

In 2007, a weather station was installed and has been collecting data at the top of the Former Mine Area at an elevation of 4,244 ft. amsl (refer to **Figure 2-1** for OU3 weather station location). The wind speed data collected from this station were utilized for producing a wind rose for the OU3 Study Area (refer to **Figure 2-1**). The predominant wind direction measured at the OU3 Study Area weather station is from the southwest blowing towards the northeast, although it is likely that mountain topography influences local wind direction.

For the purposes of this RI report, the USFS Libby 1 NE Ranger Station data for temperature and precipitation were utilized because it is the closest monitoring station to the Former Mine Area having long-term temperature and precipitation data (i.e., 1981 to present). The USFS Libby 1 NE ranger station is approximately 4 miles downstream from where Rainy Creek meets the Kootenai River, at an elevation of 2,100 ft. amsl (refer to **Figure 2-1** for USFS Libby 1 NE Ranger station location). Climate data for the USFS Libby 1 NE Ranger Station for the period of 1981 through 2010 published online by the National Oceanic & Atmospheric Administration (NOAA, 2014) indicates that the average daytime winter temperature is 28.3 degrees Fahrenheit (°F) and the average daily minimum temperature in winter is 21.6 °F. In summer, the average daytime temperature at the Libby ranger station is 65.8 °F, with daytime highs averaging 84.7 °F. Average annual precipitation for the 1981 through 2010 period was 18.40 inches at the 1NE Libby

Ranger Station. August and September are typically the driest months, and November, December, and January are typically the wettest months of the year when precipitation occurs primarily in the form of snow. **Table 2-3** presents the 1981 through 2010 monthly and annual averages for temperature and precipitation at the 1NE Libby Ranger Station weather monitoring station.

2.6 GEOLOGIC CONDITIONS

In the Former Mine Area, metasedimentary rocks of the Belt Supergroup are exposed at the surface, except in areas covered with late Pleistocene glacial till, Recent alluvium, or where an igneous intrusive body (Rainy Creek Igneous Complex or RCC) is exposed (Weekes, 1981). The formation of vermiculite and asbestiform amphiboles within Vermiculite Mountain is believed to be the result of hydrothermal alteration of augite within the RCC by high-temperature silica-rich solutions. Geologic and geomorphic processes unrelated to mining and milling of vermiculite ore from Vermiculite Mountain have eroded and re-deposited naturally occurring amphibole asbestos in soils throughout the area. The regional and OU3 Study Area geologic conditions are presented in further detail below.

2.6.1 Regional Geology and Soils

The mountains surrounding the Kootenai Valley generally comprise folded, faulted, and metamorphosed blocks of Precambrian sedimentary rocks and minor basaltic intrusions. Primary rock types are meta-sedimentary argillites, quartzites, and marbles (Ferreira *et al.*, 1992). Vermiculite Mountain lies at the extreme south end of the Purcell Mountains which extend over 200 miles northward into British Columbia. The portion of the Purcell Mountains within northwest Montana is characterized by north-northwest trending folds in rocks of the Precambrian Belt Supergroup (Belt Supergroup). A Supergroup is made up of many lithostratigraphic units, also known as groups, which are generally divided into individual formations. Vermiculite Mountain is positioned in a region where Belt Supergroup strata consisting of fine-grained argilite, carbonate, and quartzite meta-sedimentary bedrock are folded in a series of broad northwest trending anticline and syncline structures subjected to Pleistocene faulting and regional uplift (Weekes, 1981; Langer *et al.*, 2010). Regional high-angle normal faults tend to parallel the north-northwest trending folds and often control the narrow linear valleys representing fault-bounded structural troughs (refer to **Figure 2-2** for regional geology and geologic structures). The regional uplift resulted in long-term continued erosion and stream down-cutting, which established the existing drainage systems. Additionally, intermittent active displacements of the regional faults have continued at a few locations in western Montana.

Geologic and geomorphic processes unrelated to mining and milling of vermiculite ore from Vermiculite Mountain have eroded and re-deposited naturally occurring amphibole asbestos in soils within the Kootenai Valley. During the Pleistocene, glacial advances scoured what is now Vermiculite Mountain and deposited sediments in the Rainy Creek delta of a glacial-created lake named Lake Kootenai which no longer exists. The Kootenai Valley was located beneath the glacial Lake Kootenai, which was a result of glacial advances from the most recent Pinedale glacial advance more than 16,000 years ago (Langer *et al.,* 2010). When the glaciers receded, Lake Kootenai gradually drained, resulting in erosion of the Rainy Creek delta and re-deposition of glacial sediments down the entire Kootenai River drainage below the elevation of 2,450 ft. amsl (Locke and Smith 2004; and Smith, 2006). Glacial Lake Kootenai drained around 11,000 years ago (Ehlers and Gibbard, 1996) and the Kootenai River occupies its present channel. The presence of naturally occurring amphibole asbestos in alluvial sediment layers has been

documented at locations throughout the Kootenai Valley (Adams *et al.,* 2010). For example, Adams *et al.,* 2010 collected four samples with measured levels of LAA taken from various locations in the Kootenai Valley: two samples from the clay pit southeast of the town of Libby collected from deep lacustrine deposits, one sample from the sand pit north of town collected from lake bottom sediments, and one sample taken from a field within town was collected from alluvial cobble pebble gravel. The USGS (Adams *et al.,* 2010) also reported the presence of multiple layers of glacial sediments containing naturally occurring amphibole material from Vermiculite Mountain in active gravel quarries near Libby and that some soils from a sample area within the valley contained a range of 0.004% to 0.047% LAA (by mass) (CDM Smith, 2014b).

The sequence of events that occurred as Pleistocene glaciation waned and ice receded to the north included deposition of lacustrine and glacial outwash sediments sourced from multiple locations, including the area of Vermiculite Mountain, as well as locations to the south, southeast, and north of the Kootenai Valley (Langer *et al.,* 2010). Amphibole asbestos eroded by glaciation was deposited as glacial outwash in the vicinity of Rainy Creek and as lacustrine sediments in nearby areas of glacial Lake Kootenai. Additionally, some of this sediment was dispersed more broadly in downstream locations during erosion and re-deposition associated with changing lake levels as the ice receded and temporarily re-advanced. Much of the glacial outwash and lacustrine sediments observed in the Kootenai Valley were derived from locations other than Vermiculite Mountain. For example, sediment sources in the Libby area other than Vermiculite Mountain include Pipe Creek and Quartz Creek north of Libby, as well as sources south and southeast of Libby. In the Troy area, drainages to the south of Troy fed the glacial lakes that eventually coalesced to form glacial Lake Kootenai, and much of the lacustrine sediments and glacial outwash sediments in the Troy area were likely derived from these sources to the south (CDM Smith, 2014b).

Some material containing amphibole asbestos likely was eroded from Vermiculite Mountain during Pleistocene glaciation and was subsequently deposited over a broad area through deposition of glacial outwash and lacustrine sediments. Sediment samples from glacial deposits analyzed by Langer *et al.,* 2010 show that Pleistocene glaciation likely resulted in amphibole asbestos from Vermiculite Mountain being deposited in lacustrine sediments in glacial Lake Kootenai and re-deposited during glacial re-advancements. Two thin, discrete lake bottom (lacustrine sediment) deposits have been determined to contain LAA-bearing sediments but these lake bottom layers are covered in many places with more than 30 meters of other fine-grained sediments that do not contain LAA from Vermiculite Mountain (Langer *et al.,* 2010). The distribution of lacustrine sediment layers that potentially contain LAA from Vermiculite Mountain was described in Langer *et al.,* 2010. Ongoing erosion of the lacustrine sediment exposures, as well as disturbance of sediments by human activity, likely resulted in additional dispersal of glacial deposits that potentially contain amphibole asbestos (CDM Smith, 2014b).

In some locations in the Kootenai Valley, residual soils have formed in lacustrine sediments, glacial till, and loess have been influenced by volcanic ash. The sediments and till are largely derived from the pre-Cambrian sedimentary rocks. Much of the soil within the Libby and Troy communities has been modified by residential construction, industrial operations, and residential activities. These modifications include soil disturbance during construction, road building, railroad operations including grading, gardening, incorporating vermiculite into the soil, and other activities (CDM Smith, 2014b).

The remnant lacustrine sediment terraces that surround Libby generally have a fine-silty textured surficial layer and are underlain by silt loam and clay loam texture sediments (U.S. Department of Agriculture [USDA], 1995). The primary soil type in the town of Libby is National Resource

Conservation Service (NRCS) type 103 – "Andic Dystrochrepts, loamy-skeletal, mixed, frigid" (USDA, 1995). The fine-textured surficial layers have developed directly from loess, or from mixtures of loess and glacial deposited materials, including lacustrine sediments. The loess in the Kootenai Valley has generally been influenced by volcanic ash depositions. The soil has developed in alluvial deposits and has a surficial layer of gravelly silt loam. This soil is underlain by stratified alluvial deposits of sand, silt, and gravel (USDA, 1995).

X-ray diffraction (XRD) analyses by the USGS of shallow, subsurface soil from more than 10 sites in the Libby area show that the soils are composed of major (>20%) quartz, minor (5% to 20%) muscovite (or illite) and albitic feldspar; and trace <5% orthoclase, clinoclore, non-fibrous amphibole (likely magnesio-hornblende), calcite, amorphous material (probably organic), and possible pyrite and hematite. Other minerals are likely present at levels below 0.5% and are generally not detectable by routine XRD analysis. These mineral components represent the average components for the area and likely vary to some extent depending on local conditions. Surficial soil contains the above components with the addition of more organic material (Van Gosen *et al.,* 2002).

The naturally occurring soil movement discussed above, including soil movement during glacial advances and subsequent non-glacial erosion, re-deposited large amounts of material containing amphibole asbestos that were eroded from Vermiculite Mountain and other areas during Pleistocene glaciation and this material was subsequently deposited over a broad area through deposition of glacial outwash and lacustrine sediments. In an effort to characterize the naturally occurring LAA concentrations in soils collected from around the Libby Site, thought to be representative of background conditions, the EPA prepared the *Final Background Soil Summary Report Libby Asbestos Superfund Site, Montana* (CDM Smith, 2014b). This report also summarizes the results of previous background conditions investigations the EPA has conducted at the Libby Site.

One of the sources of human exposure to LAA at the Libby Site is from outdoor soil containing LAA, especially under circumstances when the soil is being actively disturbed. Measurement of LAA levels released to air during a source disturbance activity is referred to as activity-based air sampling (ABS). The EPA has performed extensive ABS studies at the Libby Site, seeking to characterize airborne levels of LAA that occur in association with soil disturbance activities. In some cases, these studies have detected LAA fibers in ABS air samples collected from locations where the soil is not expected to have mine-related contamination (EPA, 2010a). This raises the possibility there is some "non-zero" background level of LAA in the Kootenai Valley soils and parent materials from which the present soils have developed that is not attributable to anthropogenic (due to human activity) releases from vermiculite mining and processing activities (CDM Smith, 2014b). For the purposes of this discussion, the term "background" is used to refer to soils that are not expected to have been affected by anthropogenic releases from vermiculite mining and processing activities.

Based on the summary report, the following conclusions about LAA background levels in soils from the Libby Site were made:

- LAA structures have been consistently detected in background soils within the Kootenai Valley that are not thought to be affected by anthropogenic releases from vermiculite mining and processing activities. While background soil concentrations are variable, in general, the average total LAA concentration in background soil is about 5E+05 structures per gram (s/g), which is estimated to be approximately 0.014% LAA by mass. However, absolute estimates of soil concentrations have

the potential to be biased high due to the use of the rock flour preparation technique (CDM Smith, 2014b).

- The asbestos structures originating from the Vermiculite Mountain ore body contain detectable levels of both sodium and potassium, whereas other potential sources of LAA may not (CDM Smith, 2014b). These detectable levels of sodium and potassium are a signature of the LAA originating from the ore body. These results indicate that a portion of the LAA structures observed at the Libby Site likely do not originate from the Vermiculite Mountain ore body (Meeker *et al.,* 2003; Gunter and Sanchez, 2009). Outside the Kootenai Valley (i.e., Eureka, Helena, Whitefish), LAA structures observed in soil all lack sodium and potassium and are reported as actinolite or tremolite.
- The concentration of LAA in background soils (<0.02% by mass) is well below the detection limit of traditional PLM methods (e.g., PLM-VE), but may be detectable with fluidized bed asbestos segregator (FBAS) preparation (using the rock flour preparation technique) and analysis by TEM (Januch *et al.,* 2013). Analysis of soil following FBAS preparation appears to be a more sensitive metric of LAA detection in soil than either ABS or field visible vermiculite observations; the FBAS preparation method has not yet been validated, but has been externally reviewed.

Taken together, these results support the conclusion there is a non-zero level of LAA in soils within the Kootenai Valley that is not attributable to vermiculite mining and processing activities at the Libby Site (CDM Smith, 2014b). Further, these results support the data reported by other researchers, including Gunter and Sanchez (2009), Adams *et al.,* 2010, and Langer *et al.,* 2010, indicating that low-level detections of amphibole fibers in background soils within the Kootenai Valley originated from normal geologic and geomorphic processes unrelated to mining and milling of vermiculite ore from Vermiculite Mountain.

2.6.2 OU3 Study Area Geologic Conditions

The OU3 Study Area is located in a region of the Belt Supergroup of northwestern Montana that has been intruded by an alkaline-ultramafic (biotite pyroxenite) body. The Belt Supergroup near the Former Mine Area consists of five formations: Libby, Striped Peak, Wallace, Ravalli, and Prichard Formations. The Libby, Wallace, and Prichard Formations are presented on **Figure 2-2** and are included as part of the Belt Supergroup Series on **Figure 2-3**. In the Former Mine Area the Wallace formation of the Belt Supergroup is exposed at the surface, except in areas covered with late Pleistocene glacial till, or where the RCC, which comprises the upper portion of the biotite pyroxenite intrusion, is exposed (Weekes, 1981). The mined vermiculite ore body is part of the RCC and is enclosed on the surface by the middle units of the Wallace formation (Boettcher, 1963). **Table 2-4** provides the generalized stratigraphy of the OU3 Study Area.

Hydrothermal alteration of the biotite pyroxenite intrusion produced the large, high-quality vermiculite ore body. The vermiculite content of the ore varies considerably, ranging from 30% to 84% (EPA, 2007b). Fibrous and asbestiform amphiboles are present in association with the vermiculite ore. Significant portions of the fibrous amphiboles are located along cross-cutting veins and dikes and in the altered pyroxenite wall rock adjacent to them. The alteration zones, dikes, and veins that range in width from a few millimeters (mm) to meters in thickness are found throughout the ore body. Amphibole content in the alteration zones of the ore body is estimated to range between 50% to 75% (EPA, 2007b). Additional alteration minerals include calcite, K-feldspar, vermiculite, talc, titanite, limonite, pyrite, quartz, and albanite. The USGS performed electron probe micro-analysis and XRD analysis of 30 samples obtained from the exposed

asbestos veins to identify compositional changes across the veins (Meeker *et al.,* 2003). Results indicate that a variety of seven amphiboles exist at the Former Mine Area, including winchite, richterite, tremolite, actinolite, and magnesioriebeckite. Results also conclude that amphiboles within the alkaline RCC are sodium and potassium rich. The EPA refers to this mixture of amphibole minerals as LAA (EPA, 2007b).

The RCC is in the form of a dome rimmed with Precambrian Belt Supergroup formation limestone and quartzite. The RCC is roughly circular in plan view, topographically dome-shaped, and slightly more than 2.5 miles in diameter. The RCC is the largest igneous intrusive body in the area and the only ultramafic intrusion (high in iron and magnesium content) in northwest Montana (Boettcher, 1966a). The rim is from 400 to 900 ft. above the top of the mine. The RCC represents a complex succession of intrusions of igneous rocks into the metasedimentary rocks of the Belt Supergroup. The RCC is described as the upper portion of a hydrothermally altered alkalic igneous complex composed primarily of magnetite pyroxenite and biotitite (Boettcher, 1967). The original ultramafic body is an intrusion into the Precambrian Belt Supergroup of northwestern Montana, likely deposited during the early Cretaceous Period (Langer *et al.,* 2010). This intrusion is concentrically zoned with biotitite / biotite pyroxenite in the center and this center is surrounded by a zone of vermiculite pyroxenite, which is the source of the vermiculite mined from the RCC. The vermiculite pyroxenite zone is in turn surrounded by a zone of magnetite pyroxenite. An irregularly shaped body of syenite intrudes into the southwest portion of the pyroxenite pluton. The altered pyroxenite also is associated with numerous syenite dikes that cut the pyroxenites. The syenite intrusion in turn caused alteration of the pyroxenite resulting in the formation of amphiboles. The formation of vermiculite and asbestiform amphiboles in the RCC is believed to be the result of the hydrothermal alteration of augite by high-temperature silica-rich solutions (Pardee *et al.,* 1929; Boettcher, 1967; Van Gosen *et al.,* 2002; Meeker *et al.,* 2003). Generally, the Vermiculite Mountain amphiboles, which are collocated with the vermiculite, occur as either vein-fillings or replacement of the primary pyroxene of the RCC. Fleetwood and Carney creeks have cut down into the less-resistant magnetitie pyroxenite unit, carving arcuate drainage canyons around the north and south flanks of the intrusion. **Figure 2-3** presents the OU3 Study Area geology map.

Four major fault structures and one syncline are mapped and presented on the OU3 Study Area geologic map as shown in **Figure 2-3**. A northwest trending fault and fold structure appears to be truncated by the RCC, and a second normal fault is mapped with a more east-west orientation to the north of the mine area. No evidence of current active faulting at or near the Former Mine Area has been observed based on the geomorphic features.

Numerous studies of the unusual geological characteristics of the RCC have been conducted, among these:

- Boettcher (1963, 1966a, 1966b, 1967) and Weekes (1981) reported on the geology and petrology of the RCC.
- The mineralogy of the asbestiform amphiboles specific to the RCC was the subject of papers by Gunter *et al.,* 2003, Meeker *et al.,* 2003 and Gunter and Sanchez (2006).
- Gunter and Sanchez (2009) reported on *Amphibole forensics: Using the composition of amphiboles to determine their source*.
- Zinner (1982) installed numerous borings at the mine site and produced a master's thesis on the geohydrology of the RCC.

2.6.3 OU3 Study Area Reconnaissance Survey and Test Pit Geologic Investigation

In 2014, test pit investigations were performed in the vicinity of the KDID and field reconnaissance was performed along the primary drainages to Lower Rainy Creek (LRC). The purpose of the test pit investigation was to evaluate subsurface conditions in the vicinity of the KDID. The purpose of the field reconnaissance was to visually inspect and document the distribution of materials in the primary drainages to LRC. In addition, the field reconnaissance identified soil and rock types, and geologic features in order to develop a geologic base map for the area (refer to **Figure 2-3**). Information regarding the test pit investigations and the reconnaissance survey, including all associated field documentation, is provided in the *Test Pit LAA Results and Creek Reconnaissance Report* (MWH, 2016a). Findings from this investigation are summarized below and in **Section 5.0**.

The geologic materials encountered or observed in the investigation consisted of both natural and displaced materials. These materials, which are illustrated on **Figure 2-3**, include the following:

Natural Geologic Materials Observed:

- pyroxenite bedrock
- glacial (e.g., till, moraine, outwash, and lacustrine)
- alluvium (channel, over-bank, or flood plain)
- colluvium
- buried topsoil

Tailings Materials:

- coarse tailings
- fine tailings

Fill Materials:

- fill materials encountered in the valley bottom between the KDID and the Mill Pond
- road fill including materials placed or reworked for the purpose of constructing access roads
- waste rock piles

Materials Observed Along the Rainy Creek and Carney Creek: During the reconnaissance survey and test pit investigation, glacial till deposits were observed along the lower portion of the valley slopes and along Rainy Creek. The main part of the Rainy Creek valley bottom is underlain by recent alluvium and also glacial-fluvial deposits, with some over-bank or flood plain deposits, along low-lying areas, sub-parallel to the margins of the creek. There are also some areas covered by alluvial fan and/or debris flow deposits, as well as fill materials.

The material surrounding Carney Creek and LRC is predominantly composed of similar alluvial and glacial type deposits as those observed in the test pit investigation program. Light to dark, greenish-gray, fine to coarse sand and silty-sand with gravel of varying lithologies and with visible mica flakes were observed in the creek bed at different locations along lower Carney Creek and over the length of LRC. In addition, based on field observations, LRC appears to be down-cutting into underlying glacial material. Naturally occurring LAA within the glacial deposits would be expected to contribute to LAA in surface water along this stretch of Rainy Creek.

Vermiculite materials also were observed in discrete piles, embankment fills at the Mill Pond and East Tub Gulch ponds, general fill materials (particularly downgradient of the KDID), within pipe backfill and road fill, and in overbank and alluvial deposits along the majority of LRC. All of these vermiculite materials (which may be collocated with LAA-bearing materials), in addition to the naturally occurring materials within the basin, would be expected to have the potential to contribute LAA to surface water.

2.6.4 Unconsolidated and Consolidated Deposits

At the Former Mine Area, where Wallace Formation bedrock and the RCC is not exposed at the surface, it is mantled with late Pleistocene glacial drift, which is heavily consolidated, and/or alluvium and colluvium, which are partially consolidated to unconsolidated, of reworked glacial drift and rock fragments or clasts derived from erosion of local bedrock. In the Pleistocene (2.58 million years before present [Ma] to 0.0117 Ma), extensive glacial action widened and deepened the valleys, including the Rainy Creek valley. The Kootenai River was dammed by a glacier and Glacial Lake Kootenai was formed, which reached a surface elevation of approximately 2,450 ft. amsl, and would have extended up the Rainy Creek drainage approximately 1 to 1.5 miles (MWH Americas Inc. [MWH], 2014a). Numerous episodes of glacier advance and retreat resulted in significant accumulations of glacial till, moraines, outwash, terraces, and glacial lacustrine deposits in the Rainy Creek valley. The unconsolidated deposits typically are very thin on side slopes and thickest in drainage bottoms. It is possible that large amounts of material containing amphibole asbestos were eroded from Vermiculite Mountain during Pleistocene glaciation and this material was subsequently deposited over a broad area, including the Former Mine Area, through deposition of glacial outwash and lacustrine sediments (refer to **Section 2.6.1**).

2.6.5 Soils Developed on the RCC Pluton

According to the *Soil Survey of Kootenai National Forest Area, Montana and Idaho* (USFS and Natural Resources Conservation Service [NRCS], 1995), soils on portions of the RCC pluton that have not been disturbed and removed by mining, are classified as Andic Dystric Eutrochepts developed on loess deposited silt and very fine sand, windblown from glacial outwash and mixed with volcanic ash, over micaceous substrates derived from pyroxenite. This soil is typically light colored, with little clay accumulation in the subsoil. Slopes range from 15% to 35%, with a dendritic drainage pattern. The soil forms at elevations ranging from 2,000 ft. amsl to 5,000 ft. amsl.

For timber management, the soil is classified as having a moderate erosion hazard and high relative productivity. The USDA texture is sand, and the Unified Soil Classification System (USCS) classification is poorly graded sand (SP). The soil is non-plastic. For road construction and maintenance, the soil is classified as having no limitations on excavation, but with cutbank raveling and tread erosion limitations, and a severe sediment hazard rating on roads due to a high content of loose silt and sand. The surficial layer of the soil has moderate erosion susceptibility; the lower layer has severe erosion susceptibility.

2.6.6 Soils Developed on Slopes that Surround the RCC Pluton

Soils on most slopes that face inward toward the basin occupied by the RCC pluton are predominantly Andic Cryochepts developed on glaciated mountain slopes and morainal deposits on a substrate of Wallace Formation metasedimentary rocks (USFS and NRCS, 1995). These soils are typically light-colored, with little clay accumulation in the subsoil. Slopes range from 15%

to 35%, with a dendritic drainage pattern. The soil forms at elevations ranging from 3,000 ft. amsl.to 5,400 ft. amsl.

For timber management, the soil is classified as having a moderate sediment hazard and high relative productivity. The USDA texture classification is very gravelly sandy loam, and the USCS classification is silty sand (SM). The soil is non-plastic. For road construction and maintenance, the soil is classified as having no limitations on excavation, but with cut bank sloughing and tread erosion limitations and a moderate sediment hazard rating on roads. The surficial layer and lower layer of the soil have moderate erosion susceptibility.

2.6.7 Soils in Areas Outside the Rainy Creek Basin

Soil types outside the Rainy Creek basin are predominantly Andic Dystrochrepts and Andic Cryochrepts developed on late Pleistocene (Wisconsinan-age) glacial till deposited by the Cordilleran ice sheet (refer to **Section 2.6.1**). Because the majority of the area soils are developed in similar parent material (glacial till consisting primarily of Belt Supergroup Formation erosional products), local soil type is dependent on aspect, slope gradient, precipitation, temperature, and other factors. Detailed and comprehensive information on soils in the region are contained in the *Soil Survey of Kootenai National Forest Area, Montana and Idaho* (USFS and NRCS, 1995).

2.7 HYDROGEOLOGY

A conceptual hydrogeological interpretation was developed for this report based on available piezometer and well information, surface water flow measurements, geology in the Former Mine Area, and available references. This section of the report provides a brief overview of the hydrogeologic conditions in the area.

2.7.1 Groundwater Measurement

Groundwater wells and piezometers have been installed at the site for different purposes, such as for mine water supply or for groundwater or phreatic surface monitoring. A reconnaissance effort was conducted in the fall of 2007 (during the RI Phase I sampling program) to identify groundwater well locations within the OU3 Study Area. Ten wells were identified within the Former Mine Area. Wells A, C, D, E and H were selected for rehabilitation and redeveloped as part of the 2008 RI Phase II efforts. These wells also were sampled as part of the RI Phase II Part B sampling program discussed in **Section 4.0**. Well locations are shown on **Figure 2-4a**.

Information on the ten identified wells from historical well installation logs, well development records, and field reconnaissance of the wells is summarized in **Table 2-5**. Construction records, which appear to coincide with six of the wells, have been identified and information from the records is included in **Table 2-5**, along with depth to water measurements both before and after re-development. Well B was not rehabilitated in 2008 due to an obstruction in the well. During the 2014 KDID investigation program (discussed in **Section 4.9.2)** the obstruction in Well B was identified as a pump located in the 10-inch steel casing. Also during the 2014 KDID investigation program, six of the wells were located in the field and depth to bottom and depth-to-water measurements were obtained for each. These depth-to-water measurements are provided in **Table 2-5**.

Twelve embankment piezometers were installed during the construction of the KDID. The KDID consists of a starter dam with a maximum height of 50 ft. that was later raised between 1973 and

1980 in a series of five phases using the downstream construction method (in which the centerline progresses downstream with additional raises), reaching a maximum structural height of 135 ft. Six of the piezometers (P and P1 through P5) were installed across the dam crest in approximately 1976 at the completion of the Phase 3 raise (Morrison-Maierle, 1981). The piezometers were extended vertically with riser pipes to the current elevation as part of the Phase 4 and Phase 5 raises, and currently the piezometer surface completions are positioned just upstream of the existing embankment crest. Three additional piezometers were installed in the central downstream slope (PM1 through PM3) and three in the left downstream slope (PM4 through PM6) of the KDID. Although construction details are not available, these piezometers are believed to have been installed as a result of the recommendation made in the Harding and Lawson report, *Geotechnical Evaluation W.R. Grace Dam* (Harding Lawson Associates, 1992), which recommended the installation of new piezometers in the KDID to evaluate the phreatic surface. A single piezometer (A8) was also installed at the toe of the dam as part of the investigation program. An additional monitoring standpipe (A-12) was installed above KDID Drains 10 and 11 in 2012 to monitor observed possible artesian conditions above the drains (Billmayer and Hafferman, Inc. [BHI], 2012).

A summary of information from historical records and more recent piezometer surveys is shown in **Table 2-6** and piezometer locations are presented on **Figure 2-4a**. Groundwater measurements from these piezometers have been recorded on a monthly basis since 2008 (BHI, 2010) as part of the Routine Owner's Inspection for the KDID. These measurements were utilized to evaluate vertical and horizontal groundwater gradients and flow characteristics in and near the KDID, and were used to further develop the hydrogeologic model of the Former Mine Area in the *Kootenai Development Impoundment Dam (KDID) Getotechnical and Hydrogeological Investigation Report* (MWH, 2015a).

In 2014, 21 polyvinyl chloride (PVC) standpipe piezometers were installed and substantial geotechnical data were collected at and around the KDID as part of the 2014 KDID investigation program (refer to **Section 4.9.2**). The standpipe piezometers were completed in sonic drill holes, with a maximum of two nested piezometers per drill hole. The piezometers were completed and isolated in each of four lithological units (i.e., embankment fill, alluvium, glacial materials, and bedrock) using bentonite and cement grout seals. Piezometers were installed so that groundwater piezometric surface elevations can be measured independently in each lithological unit without hydraulic connection between units. These data will be utilized to evaluate vertical and horizontal groundwater gradients and flow characteristics in and near the KDID, and will be used to further develop the hydrogeologic model of the Former Mine Area. A summary of the PVC standpipe piezometers is presented in **Table 2-7** and their locations are provided on **Figure 2-4a**. Detailed information on the KDID investigation program, including associated field documentation, is provided in the *Kootenai Development Impoundment Dam (KDID) Geotechnical and Hydrogeological Investigation Report* (MWH, 2015a).

2.7.2 Groundwater Flow

At the Former Mine Area, several of the geologic units described in **Section 2.6** have been identified as potentially water-bearing (Zinner, 1982). These include the pyroxenite bedrock units, coarser-grained facies of the glacial deposits, and the alluvial and glacial-fluvial deposits. The upper zone of bedrock in the Former Mine Area is generally dominated by vermiculite pyroxenite and is water-bearing (Zinner, 1982). According to Zinner (1982), the upper 100-200 ft. of the vermiculite pyroxenite is as porous and permeable as sand or sandstone aquifer with an estimated permeability of approximately 1.2×10^{-4} centimeters per second (cm/s), or 0.34 ft. per day (ft./day). Groundwater flow regimes in the water-bearing vermiculite pyroxenite bedrock are

complex and likely structurally controlled by relatively impervious syenite dikes, shears, alteration zones, weathering, fracturing, and rock mineralogy. Where the vermiculite pyroxenite is near the surface, which is the typical condition at the Former Mine Area, a significant portion of the precipitation and surface runoff likely infiltrates through the unsaturated zone in these areas and recharges the bedrock aquifer.

The alluvium and glacial materials represent a water-bearing unit along both Rainy and Fleetwood Creeks and form the foundation of the KDID and the tailings impoundment. These deposits have laterally-discontinuous beds, but as a unit, are continuous under the tailing impoundment and are likely hydraulically connected to the creeks and ponded water bodies in the area. In addition to stream base flows, groundwater potentially flows from the surrounding valley slopes through the glacial outwash material and upper fractured bedrock into the alluvial and glacial deposits along the valley bottom.

To support further understanding of groundwater conditions at the Former Mine Area, measurements of groundwater elevations were collected in 2014 and 2015 at the 21 PVC standpipe piezometers located in the vicinity of the KDID as well as from the limited number of wells located throughout the mine site (refer to **Section 2.7.1**). Groundwater measurements from piezometers screened in bedrock in the KDID foundation as well as several wells at the mine site interpreted to be screened in the pyroxenite bedrock (Wells D, E, and F) were used to prepare a bedrock groundwater potentiometric surface map, which is included on **Figure 2-4a.** The potentiometric surface of the bedrock aquifer displayed in **Figure 2-4a** has an approximate flow direction toward the Rainy Creek Valley, with a gradient of approximately 0.3 ft. per foot (ft./ft.) to the northwest. Groundwater elevation measurements that were collected from piezometers that were screened in non-bedrock (refer to **Table 2-7** for piezometer screen information) were utilized to create a shallow groundwater potentiometric surface map, which is included on **Figure 2-4b**. As shown on **Figure 2-4b**, the groundwater potentiometric surface appears to mimic the general topographic contours within the Rainy Creek Valley, with a gradient of approximately 0.3 ft./ft. to the northwest.

Groundwater data from other water-bearing zones were evaluated in the *Kootenai Development Impoundment Dam (KDID) Geotechnical and Hydrogeological Investigation Report* (MWH, 2015a). As discussed in the report, vertical gradients were calculated in the vicinity of the KDID based on differences in groundwater elevations for nested piezometers within individual borings measured on November 4, 2014. Vertical gradients are defined as the ratio of the difference in piezometric head to the difference in elevation of the piezometers. The results show that on November 4, 2014, gradients were generally downward from the alluvium into the glacial soils and from the alluvium across the glacial soils into bedrock. There was one location (BH-07) that showed a slight upward gradient from the bedrock into the glacial soils.

A non-asbestos groundwater and surface water geochemistry evaluation was completed using Piper and Stiff diagrams for the available surface water and groundwater sample data. This evaluation is presented below in **Section 2.9**.

2.7.3 Groundwater Classification

The Water Quality Act is the primary basis for water quality protection in the state of Montana. The Act provides authority for groundwater standards (Administrative Rules of Montana - ARM 17.30.1001 through 17.30.1045). Groundwater is placed in four classification categories (I through IV) based on its specific conductance (SC) value, which is an index of the amount of dissolved solids in the water. Specific conductance values measured during 2015 in on-site

groundwater wells were evaluated (refer to **Section 2.9** for evaluation details) to assess the groundwater classification. The groundwater within the OU3 Study Area is classified as Class I based on an average SC value of 360 micromhos per centimeter (µmhos/cm) measured in groundwater beneath the Former Mine Area. Per ARM 17.30.1006, Class I groundwater have a natural SC less than or equal to 1,000 µmhos/cm at 25ºC. Class I groundwater is suitable for the following beneficial uses with little or no treatment:

- public and private water supplies;
- culinary and food processing purposes;
- irrigation;
- drinking water for livestock and wildlife; and
- commercial and industrial purposes.

Except as provided in ARM 17.30.1005(2), a person may not cause a violation of the following specific water quality standards in Class I groundwater:

- the human health standards for groundwater listed in DEQ-7;
- for concentrations of parameters for which human health standards are not listed in DEQ-7, no increase of a parameter to a level that renders the waters harmful, detrimental, or injurious to the beneficial uses listed for Class I water. The department may use any pertinent credible information to determine these levels; and
- no increase of a parameter that causes a violation of the non-degradation provisions of 75-5-303, MCA.

ARM 17.30.1006 also provides the specific standards for Class II, III, and IV groundwater. These ARM standards are available on the Montana Administrative Rules Services website: http://www.mtrules.org/gateway/Subchapterhome.asp?scn=17%2E30.10.

2.7.4 Seeps

As presented above in **Section 2.7.2**, the upper zone of bedrock in the Former Mine Area is generally dominated by vermiculite pyroxenite and is water-bearing, but highly permeable, similar to the overlying alluvium (Zinner, 1982). Geologic and structural features in the water-bearing vermiculite pyroxenite bedrock (presented in **Section 2.7.2**) result in zones of variable groundwater potentiometric surface elevations. Zones with high elevation groundwater potentiometric surfaces likely contribute to the observed seeps that emerge seasonally in the valley bottom and on the valley slopes (Zinner, 1982).

Numerous diffuse seeps have been observed within the Former Mine Area that flow at different times of the year. Additionally, small seeps were observed issuing from the valley bottom in a location now covered by the KDID (Harding, Miller, Lawson & Associates, 1971). The source of the seep water likely is snowmelt and precipitation that infiltrates the bedrock highlands surrounding the Rainy Creek basin, and flows basin-ward through the permeable zones discussed above. In the Carney Creek drainage, seeps occur in and around the waste rock piles in multiple locations. Mapped seeps are presented on **Figure 2-4a**.

2.8 SURFACE WATER HYDROLOGY

2.8.1 Streams and Rivers

The Former Mine Area is located within the Rainy Creek watershed, an area of approximately 17.8 square miles. **Figure 2-5a** shows the Rainy Creek watershed, the main surface water features within the boundary, and the relationship of the surface water features to mined features. In addition, **Figure 2-5a** shows the Water-Use Classifications for the primary streams and associated tributaries within the Rainy Creek Watershed (see ARM 17.30.609 for further clarification on Water-Use Classifications provided in EPA, 2015b).

Rivers and creeks in the OU3 Study Area have been classified under one of three classification standards based on their beneficial use, namely A-1, B-1, and C-1 (see ARM 17.30.609). Creeks within the Rainy Creek drainage above the Former Mined Area directly below the KDID but above the Mill Pond (near Well C) are classified as "A-1". Fleetwood Creek and its tributaries, the tributaries to LRC, Carney Creek, and the Kootenai River are classified as "B-1". Lower Rainy Creek (LRC) from just above the Mill Pond to the Kootenai River outlet is classified as "C-1". These three classes and their respective beneficial uses are as follows:

- **Classification A-1 (ARM 17.30.622):** Maintained suitable for drinking, culinary, and food processing purposes after conventional treatment for removal of naturally present impurities; bathing, swimming and recreation; and growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.
- **Classification B-1 (ARM 17.30.623):** Maintained suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.
- **Classification C-1 (ARM 17.30.626):** Maintained suitable for bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.

The differences between the three classifications can be found within some of the specific parameters where A-1 standards are more stringent than B-1 and C-1 standards, and B-1 standards are more stringent than C-1 standards. Classification standards have been adopted to establish maximum allowable changes in surface water quality and to establish a basis for limiting the discharge of pollutants. These ARM standards are available on the Montana Administrative Rules Services website: http://www.mtrules.org/gateway/Subchapterhome.asp?scn=17.30.6. Some of the standards must be maintained as set forth in the standards given in Montana Department of Environmental Quality (MDEQ) Circular DEQ-7 (MDEQ, 2012) and others are set in the ARM itself. Some of the specific parameters contained in the standards include E-coli bacteria, dissolved oxygen (DO), pH, turbidity, temperature, suspended solids, true color, and other parameters (e.g., radionuclides).

Additionally, **Figure 2-5b** presents the Federal Emergency Management Agency (FEMA) floodplain map for Lincoln County Montana. Since the 1970s FEMA has been creating, storing, and updating flood hazard maps for National Flood Insurance Program communities across the United States. Flood Insurance Rate Maps are the primary tool for state and local governments to mitigate the effects of flooding in their communities. To prepare the Flood Maps that illustrate the extent of flood hazard in a flood prone community, FEMA generally conducts engineering

studies referred to as Flood Insurance Studies. Using the information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas on Flood Maps. Special Flood Hazard Areas are subject to inundation by a flood that has a 1-percent or greater chance of being equaled or exceeded during any given year. This type of flood commonly is referred to as the 100-year flood or base flood. A 100-year flood is not a flood that occurs every 100 years; rather the 100-year flood has a 26 percent chance of occurring during a 30-year period. The 100-year flood is a regulatory standard used by Federal agencies and most states, to administer floodplain management programs. The 100-year flood is used by the National Flood Insurance Program as the basis for insurance requirements nationwide.

As presented on **Figure 2-5b**, other than along the Kootenai River and the mouth of Rainy Creek, the OU3 Study Area is within "Zone X", which is described as areas determined to be outside the 500-year floodplain. The Kootenai River and the mouth of Rainy Creek are described as "Zone A", which are areas that are subject to inundation by the one percent annual chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no base flood evaluations or flood depths are shown.

Not all of the OU3 Study Area falls within the Rainy Creek watershed. However, the primary surface water bodies in the Former Mine Area are located within the Rainy Creek watershed and are described below.

Rainy Creek. Rainy Creek originates between Blue Mountain and the north fork of Jackson Creek at an elevation of about 5,000 ft. amsl, and descends to an elevation of approximately 2,080 ft. amsl, where it flows into the Kootenai River (Zinner, 1982) (refer to **Figure 2-6** for flow directions). Rainy Creek is perennial and supports a variety of fish and aquatic invertebrates. The average gradient for Rainy Creek is about 12% (Parker and Hudson, 1992) and the banks are well vegetated (MWH, 2007). The KDID was constructed on Rainy Creek west of Vermiculite Mountain. For the purposes of this report, reaches of Rainy Creek above the impoundment are referred to as Upper Rainy Creek (URC), and reaches below the impoundment are referred to as Lower Rainy Creek (LRC). LRC is isolated from upstream migration of fish from the Kootenai River by a hanging culvert and is usually (except in times of high water overflow) isolated from downstream migration of fish from URC by the tailings impoundment. Consequently, it is most likely that the fish population in LRC is largely self-sustaining (EPA, 2014a).

Fleetwood Creek. Fleetwood Creek originates from mountains on the east side of the Former Mine Area at an elevation of approximately 4,200 ft. amsl, flowing westward along the north edge of the Former Mine Area to the tailings impoundment at an elevation of approximately 2,800 ft. amsl, where it is a tributary to Rainy Creek (refer to **Figure 2-6** for flow directions). The average stream gradient for Fleetwood Creek is about 11% (Parker and Hudson, 1992). Fleetwood Creek is approximately 4 to 5 miles in length, is perennial, and provides habitat for fish and aquatic invertebrates in the reach above the Former Mine Area. The portion of Fleetwood Creek that flows through the coarse tailings area is a reach of approximately 0.5 miles, and is devoid of vegetation and habitat. A small ponded area at the edge of the coarse tailings area was identified along Fleetwood Creek during reconnaissance surveys by the EPA in 2007 and is referred to as Fleetwood Pond.

Carney Creek. Carney Creek originates from the mountains on the southeast side of the Former Mine Area at an elevation of approximately 4,400 ft. amsl, flowing westward along the south edge of the Former Mine Area before joining Rainy Creek approximately 3,000 ft. below the tailings impoundment at an elevation of approximately 2,700 ft. amsl (refer to **Figure 2-6** for flow directions). Carney Creek is approximately 2 to 3 miles in length, is perennial, and provides fish

and invertebrate habitat along the south side of the Former Mine Area. Carney Creek flows through Carney Pond, which was formed when mined materials were deposited in the drainage blocking and altering the flow of the creek. The pond is vegetated on both sides and appears to support aquatic invertebrates and amphibians and is frequented by moose. Several small seeps are reported along Carney Creek (Zinner, 1982) and were identified during reconnaissance surveys by the EPA in 2007 and MWH in 2014 (refer to **Figure 2-4a**).

Kootenai River. The Kootenai River flows from southeast to northwest along the south side of the OU3 Study Area (refer to **Figure 2-6** for flow directions). Fleetwood Creek and Carney Creek flow into Rainy Creek, which is a tributary of the Kootenai River. Rainy Creek flows into the Kootenai River at approximately the southwestern corner of the OU3 Study Area (refer to **Figure 1-2**). Flows in the Kootenai River are controlled by the Libby Dam, which was constructed in the late 1960s through the early 1970s as part of the Columbia River development for flood control, power generation, and recreation. Lake Koocanusa is the result of the Libby Dam construction and borders the western edge of the OU3 Study Area (refer to **Figure 1-2**). Daily water outflow records show lowest flows typically occur in March and October at approximately 4,000 cubic ft. per second (cfs) and maximum flows occur in late May/early June at about 26,000 cfs.

The State of Montana's *Final Water Quality Integrated Report* (MDEQ, 2014) provides the federal Clean Water Act (CWA) Section 303(d) listing of water quality limited (i.e., "impaired") or threatened water bodies and reports on the condition of the water bodies under the state's jurisdiction [Section 305(b)]. According to this report (MDEQ, 2014), the Upper Kootenai River, from the Libby Dam to where the Yaak River enters the Kootenai River (approximately six miles north of Troy), is considered "Impaired Waters" due to impacts from hydrostructure flow regulation/modification from upstream impoundments and water temperatures both of which impair the river's designated use to support aquatic life (https://iaspub.epa.gov/waters10/attains_waterbody.control?p_au_id=MT76D001_010&p_cycle=2014&p_state=MT&p_report_type=). Other designated uses including agricultural, primary contact recreation, and a source of drinking water are considered "Good". The report recommends that a Total Maximum Daily Load (TMDL) study is needed to determine how to address these impairments; however, its priority is listed as low on the above referenced website. These impairments are not associated with OU3 or any of the creeks within the OU3 Study Area. Since the probable source of the impairment is listed as the upstream hydrostructure, the TMDL study likely will focus on altering operations or impacts of the hydrostructure. Impacts to remedial actions at OU3 are unlikely, but will not be known until the TMDL study is complete.

Although long-term stream flow records do not exist for the three on-site creeks discussed above, annual stream flow measurements have been collected since 2008 during the freeze-free part of the year, typically March through November. In August 2008, Parshall flumes were permanently installed in two stations along Rainy Creek (LRC-06 and LRC-02), and one station along Carney Creek (CC-02). The locations of the stations are presented on **Figure 2-6**. The flume sizes at these three stations were selected based on the snowmelt runoff flows observed during spring 2008. Twelve-inch Parshall flumes were installed at stations LRC-06 and LRC-02 and a 9-inch flume was installed at station CC-02. A stilling well was attached to each of the flumes to house a pressure transducer for flow rate measurement and recording by an ISCO® Model 6712 portable sampler/data logger. The 2008 through 2015 spring and fall seasonal minimum flow in gallons per minute (gpm), average flow in gpm, maximum flow in gpm, and number of recorded flow measurements are presented in **Table 2-8** and annual discharge graphs are presented in **Figure 2-6.** These data indicate that the highest flows occur during the months of April through

June. A detailed analysis of site hydrology will be presented in the forthcoming Hydrology Report, which will be issued by MWH in 2016.

2.8.2 Ponds

There are four major mine-related ponds within the Former Mine Area that were sampled as part of the RI activities and are summarized below and on **Table 2-9**. There also are several small (less than one acre in size) minor ponds located within the Former Mine Area. These smaller ponds were not sampled as part of the RI and thus are not detailed further below. The major pond locations are presented on **Figure 2-6** and described below. The depth and volume for each of these ponds is not currently known and should be investigated prior to remedial design.

Carney Pond. Carney Pond is located in the Carney Creek drainage, on the south flank of the RCC intrusion and covers approximately two acres. A smaller pond is located on Carney Creek northwest of Carney Pond that is approximately 0.5 acres in size. Carney Pond was formed when the largest of the waste rock piles filled the drainage channel and dammed the creek.

Fleetwood Pond. Fleetwood Pond is on the northeast flank of the coarse tailings pile and was formed when coarse tailings filled the bottom of the original Fleetwood Creek drainage channel, impounding water flow from small upstream seeps and springs. Fleetwood Pond is less than an acre in area and dries up in late summer based on observations made in 2007 and 2008.

Tailings Impoundment. The purpose of the KDID was to store fine tailings slurry produced by the vermiculite wet mill process. The homogeneous embankment dam was raised in several phases between 1973 and 1980 as tailings were continuously deposited. Today the height of the KDID is about 135 ft. measured from the downstream toe to the dam crest. The tailings impoundment occupies approximately 70 acres and receives inflow from both Rainy Creek and Fleetwood Creek. Most of the flow that enters Rainy Creek below the KDID discharges from the underdrain system. The KDID underdrain system is a series of 8-inch to 14-inch steel, corrugated metal and unreinforced concrete pipes that are aligned upstream to downstream and located near the contact between the KDID foundation and embankment material. The underdrain system starts at the starter dam footprint and outlets as a series of drain pipes at the toe of the KDID embankment. A relatively small portion of the flow passes through the KDID in the principal concrete box culvert and chute located on the left abutment.

Mill Pond. The Mill Pond is located about one-half mile downstream of the KDID. The pond is retained by an earthen berm across the channel of Rainy Creek. There is no record of when the Mill Pond was constructed, but it was used to supply re-use water for the milling operation at the mine. The impounded area of Mill Pond is approximately six acres.

2.9 GROUNDWATER AND SURFACE WATER GEOCHEMISTRY EVALUATION

A groundwater and surface water geochemistry evaluation was performed as part of this report in an effort to evaluate potential groundwater, surface water, and seep water interactions within the Former Mine Area. Specific non-asbestos water analytical data are discussed in detail in **Sections 5.1.2** and **5.1.3**. The available non-asbestos water chemistry data (for surface water and groundwater samples) were evaluated using Piper and Stiff diagrams for data from sampling events in 2007, 2008, 2009, and 2015. The Piper diagram is included on **Figure 2-7**. The surface

water and groundwater sample locations utilized for this evaluation and the Stiff diagrams are presented on **Figures 2-8** and **2-9**; the Stiff diagrams are shown in time series in **Appendix C.**

Evaluation of groundwater, surface water, and seep water chemistry data suggest that there is one primary water type and a possible secondary water type at the Former Mine Area. The Piper diagram shown in **Figure 2-7** represents the sample concentrations for each location. The cation composition of the samples (lower left component of the Piper diagram) shows the waters are dominated by calcium (up to approximately 75%) to mixed calcium/magnesium (approximately 40% each). The cations form a continual gradation; however, the anion composition of the samples (lower right component of the Piper diagram) suggests that one sample location, Well E, is an exception with respect to water typing. Bicarbonate (represented as HCO_3+CO_3) makes up 75% or more of the anion composition of the samples from all of the locations, with the exception of Well E. The anion composition of Well E is mixed bicarbonate/sulfate (SO_4) (approximately 50% and 35%, respectively).

The two water types are as follows:

Primary Water Type. Mixed, calcium-magnesium-bicarbonate: relatively high calcium (>40%) and bicarbonate (>80%) with moderate to high magnesium (20% – 40%), low sodium/potassium (<25%), sulfate (<20%) and chloride (<25%). Total Dissolved Solids (TDS) concentrations ranged from 117 milligrams per liter (mg/L) for a sample collected at the Tailing Pond to 864 mg/L for a sample collected at one of the seeps near Carney Creek (CCS-16) and the average concentration was 452 mg/L. TDS represents the total amount of mobile charged ions dissolved in a given volume of water. The TDS concentrations were calculated by summing the major cation and major anion concentration for each location.

Secondary Water Type (Well E). Mixed, calcium-magnesium-bicarbonate-sulfate: high calcium and magnesium (approximately 50% and 45%, respectively), high bicarbonate (50%) and moderate sulfate (approximately 35%). Sodium/potassium and chloride concentrations were less than 15%. The samples from Well E had TDS values that ranged from 511 mg/L to 524 mg/L.

The similarities in the surface water, groundwater, and toe drain water suggest the system is well-connected. The lack of variability in the concentrations of the cations and anions at the Former Mine Area is likely due to the area draining what is essentially a mono-mineralic geologic formation in terms of the range of potential water-rock interactions. As is discussed in **Section 2.6,** the principal bedrock geology, as expressed at the surface, is dominated by the mineral biotite with minor pyrite, followed by vermiculite-pyroxenite (the focus of mineral extraction) and surrounded by a zone of magnetite pyroxenite. In terms of overall geochemical reactivity, the biotite and minor pyrite have the greatest potential to react with groundwater, while the vermiculite could participate in cation-exchange reactions depending on the chemical composition of recharge to groundwater. Most of the calcium and bicarbonate, as depicted by the shape of the Stiff diagrams, implies that the basin rim forming Wallace Formation, which contains calcareous argillite, likely strongly influences the chemistry of ground and surface water observed at the Former Mine Area. As noted, pyrite does occur in the biotite zone and limited oxidation of the pyrite could potentially explain increased sulfate concentrations observed at Well E, which is located in the Former Mine Area. There are no background groundwater data available for comparison to the data from the wells on the Former Mine Area; therefore, the direct influence of the mine on the groundwater concentrations is not currently quantifiable.

The Stiff diagrams shown on **Figures 2-8** and **2-9** correlate well with the Piper diagrams, supporting the conclusion that there is generally one primary water type throughout the Former

Mine Area, with Well E being an exception. In general, the Stiff diagrams have the same shape and are dominated by calcium-bicarbonate. The sizes of the Stiff diagrams are representative of TDS concentrations and it appears samples collected upstream of the KDID (**Figure 2-8**) have lower TDS concentrations than samples collected at or downstream of the KDID. **Figure 2-9** details the KDID area; samples collected from deeper screen intervals of the dual-screened boreholes (BH-01A-1, BH-05A-1, and BH-07A-1) have higher TDS concentrations than in samples from their respective shallow screens. Excluding Well E, there are no major distinguishing characteristics when comparing the Stiff diagrams for creeks, seeps, toe drains, ponds, and the groundwater wells. The creeks generally have lower cation/anion concentrations than the seeps and the ponds at the tailings impoundment; Fleetwood Pond is the exception in that it had the lowest cation/anion concentrations. The Stiff diagrams for the groundwater wells show variable cation/anion concentrations and the concentrations with respect to location at the Former Mine Area are compared below.

In plotting the Stiff diagrams on the Former Mine Area map in **Figures 2-8** and **2-9**, the following was observed:

- Well E is located in the center of the Former Mine Area. Pyrite has been observed in the mined ore body and limited oxidation of pyrite is likely causing the comparatively high sulfate concentration observed in this well.
- Well E also has higher concentrations of potassium than other groundwater locations, which could be associated with release of potassium from biotite as driven by neutralization of the limited acidity generated by pyrite oxidation.
- The samples collected from URC generally have the lowest TDS, which is expected given the limited amount of water-rock interaction that would occur at such a location.
- Surface water samples collected in toe drains, creeks, and seeps down-gradient of the Former Mine Area (e.g., Carney Creek area, toe drains, and LRC) have increased TDS and anion/cation concentrations when compared to samples collected up-gradient (URC) and reflect the influence of groundwater inflow from both the mine area and the other side of the drainage basin.
- Water samples collected at the toe drains have higher cation/anion concentrations than water collected from the tailings impoundment. The toe drain Stiff diagrams more closely resemble the Well C diagram suggesting the toe drain water quality is a mixture of the tailings water and inflowing groundwater.

The 2007, 2008, and 2015 Stiff diagrams (compared in **Appendix C**) are the same general shape for sample events for each sample location as no major changes in major cation and anion concentrations occurred. In general, the samples collected in June 2008 had lower TDS concentrations than the October sampling events (area of the Stiff diagram is indicative of TDS concentration). The increase in TDS concentrations is likely due to a general decrease in runoff from the spring to the fall sampling events and increases in evapo-concentration. The observed late-season increase in TDS likely reflects normal annual climatic variability. The October 2007 sample event generally had a higher TDS concentration than the October 2008 sampling event (when a location was sampled during both events); however, the increase in TDS was not significant enough to imply a change in groundwater contributions or that a different geochemical process occurred. Stiff diagrams for samples from the tailings pond (TP) and Mill Pond (MP) detail higher TDS concentrations in 2015 when compared to 2007 and 2008.

2.10 ECOLOGICAL SETTING

This section briefly discusses the biological resources in and around the OU3 Study Area. Much of the text is taken from the *Final Asbestos BERA* (EPA, 2014a) and the *Final Non-Asbestos BERA* (CDM Smith, 2013c), which present detailed analysis of the OU3 Study Area ecology.

2.10.1 TERRESTRIAL HABITATS AND TREE SPECIES

The Former Mine Area is disturbed by past mining activity and some areas remain sparsely or non-vegetated. Outside the Former Mine Area, most of the OU3 Study Area is forested, with only 4% of the land being classified as non-vegetated (U.S. Department of Agriculture Forest Service Region 1 [USDAFSR1], 2008). Data for the Kootenai National Forest indicate Douglas fir forest type is the most common, covering nearly 35% of the National Forest land area within the OU3 Study Area. Next in abundance are the Lodgepole pine forest and Spruce-Fir forest types at 17% each, and the Western Larch forest type at 11%. Other tree species reported in the area are the Black Cottonwood (*Populus trichocarpa*), Quaking Aspen (*Populus tremuloides*), Western Paper Birch (*Betula papyrifera var. occidentalis*) and Pacific Yew (*Taxus brevifolia*) (USDAFSR1, 2008).

A vegetative-cover map based on remote sensing data was developed by the Wildlife Spatial Analysis Lab at the University of Montana in Missoula (Fisher *et al.,* 1998). Based on this mapping, the vegetative cover around the Former Mine Area is predominantly Douglas fir, Lodgepole pine, and mixed mesic forest as presented on **Figure 2-10**.

2.10.2 WETLANDS DELINEATION

Wetlands are defined in the Federal Clean Water Act (CWA) 1972 regulations (40 CFR Part 232.2(r)) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas”. The extent, type, quality / functionality, and presumed jurisdictional status of wetlands and other waters (including open water, perennial streams, and intermittent and ephemeral streams) in the Wetland Evaluation Area, within the OU3 Study Area at the Libby Site, where potential remedial activities may occur, must be accurately evaluated and characterized (refer to **Figure 2-11**) as part of the FS. Disturbance of these types of areas is regulated under the CWA because of their influence on water quality of navigable waters. The presence of these features, therefore, may alter the screening of remedial options in the FS.

Typically, Section 404 of the CWA (implemented jointly by the U.S. Army Corps of Engineers [USACE] and EPA) requires that anyone interested in depositing dredged or fill material into waters of the United States, including wetlands, must receive authorization, either through issuance of an individual permit, or pursuant to a general permit. As indicated in the EPA publication, *Considering Wetlands at CERCLA Sites* (EPA, 1994a), the Section 404 program operates independently of the CERCLA program:

> “CERCLA Section 121(e) provides that no Federal, State, or local permit shall be required for the portion of any removal or remediation action conducted entirely on-site, where such remedial action is selected and carried out in compliance with Section 121. This does not remove the requirement to meet (or waive) the substantive provisions of permitting

> regulations that are an applicable or relevant and appropriate requirement (ARAR) at the site." (EPA, 1992)

Additionally, for CERCLA sites, the EPA approaches wetland protection within the framework of the Executive Order for Protection of Wetlands (E.O. 11990), which specifies avoidance of long- and short-term adverse impacts associated with the destruction or modification of wetlands and avoidance of direct or indirect support of construction in wetlands whenever there is a practicable alternative. E.O. 11990 addresses all wetlands, and is not restricted to jurisdictional wetlands only. USACE and the EPA will coordinate to determine which agency will take the lead in reviewing and coordinating substantive permitting efforts. If wetlands are found within the Wetland Evaluation Area, impacts from potential remedial activities on these areas must be assessed in full as part of the FS process.

An internal preliminary wetlands desktop study was performed to assess the potential extent of jurisdictional wetlands within the Wetland Evaluation Area as shown on **Figure 2-11**. It is likely that many of the wetlands and permanent waterways within the OU3 Study Area Wetland Evaluation Area would be considered jurisdictional based on their connection with Rainy Creek and, ultimately, the Kootenai River. This follows from the EPA and USACE (2007) position that agencies will assert jurisdiction over "relatively permanent non-navigable tributaries of traditional navigable waters and wetlands with a continuous surface connection with such tributaries." Intermittent tributaries may or may not be considered jurisdictional. According to the EPA and USACE (2007), tributaries of traditional navigable waters that have continuous flow at least seasonally (typically three months) are considered jurisdictional. Tributaries that are not relatively permanent may also be considered jurisdictional if they "significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters." Swales, erosional features, and ditches are typically not considered jurisdictional (EPA and USACE, 2007). However, in 2015, after the internal preliminary desktop review was completed, USACE and the EPA published a Clean Water Rule clarifying the scope of the definition of "waters of the United States" to include certain tributaries and "adjacent waters" (USACE and EPA, 2015). The Clean Water Rule has been stayed by judicial decision while the Rule is undergoing judicial review. EPA and the Corps are, as a formal matter, currently relying on the 2007 guidance; however, it is likely that, even if the 2015 Rule does not survive judicial review, the science underlying it will be applied by EPA and the Corps in determining what waters are jurisdictional. The appropriate methodology for evaluating jurisdictional status of water bodies will be reviewed prior to study implementation.

Information from an intensive field survey, including the USACE three parameter criteria test (i.e., vegetation, soils, hydrology) and wetland delineation, evaluation of wetland condition, delineation of stream OHWM, and stream assessment, can be used to identify and confirm the location, and condition of wetlands and other waters that may be considered jurisdictional waters and can, therefore, be addressed in a manner consistent with Section 404 of the CWA and E.O. 11990. The evaluation occurred in the spring of 2016 and included mapping and assessment of wetlands and other waters in accordance with the *SAP/QAPP Wetland Delineation, Revision 0* (MWH, 2015b). Detailed information on the 2016 Wetland Delineation field sampling effort, including all associated field documentation, will be provided by MWH in a forthcoming Wetlands Delineation Report.

During the FS process, potential impacts to jurisdictional areas and other wetlands will be calculated and, if required, possible compensatory mitigation measures will be evaluated. The USACE Omaha District Office, in collaboration with the EPA and state and local agencies, will make the final determination of whether features are jurisdictional (i.e., jurisdictional determination) or protected under E.O. 11990, and, if it is determined that impacts would occur to

protected features, whether proposed mitigation measures are required and adequate. Information that investigators gather about wetland and stream condition will be used at that time to determine appropriate mitigation levels if wetland and/or water features are impacted.

2.10.3 AQUATIC SPECIES

Two separate evaluations were conducted for aquatic species populations occurring in the OU3 Study Area as parts of the *Final Asbestos BERA* (EPA, 2014a) and the *Final Non-Asbestos BERA* (CDM Smith, 2013c). The aquatic species populations were evaluated by scrutinizing two separate areas, the Rainy Creek Watershed and the Kootenai River. These population evaluations are summarized below.

Rainy Creek Watershed. Within the Rainy Creek watershed, there are streams and ponds that provide habitat for a range of aquatic species including fish, invertebrates, and amphibians. Species identified during site-specific ecological population surveys performed as part of the OU3 Study Area RI are summarized in **Tables D-1** through **D-3** of **Appendix D**. In brief, fish surveys performed in the OU3 Study Area streams indicate that the most common species of fish are westslope cutthroat trout (*Oncorhynchus clarkii lewisi*), rainbow trout (*Oncorhynchus mykiss*), and "cutbow" trout (a rainbow/cutthroat hybrid). Brook trout (*Salvelinus fontinalis*) were not observed in the OU3 Study Area, but were observed in nearby reference streams. Aquatic invertebrate community surveys in the OU3 Study Area indicate that the most common types of aquatic invertebrates observed include mayflies, stoneflies, caddisflies, true flies, and beetle larvae. The most common amphibian species observed are the northern tree frog (*Pseudacris regilla*), Columbia spotted frog (*Rana luteiventris*), and western toad (*Bufo boreas*).

Kootenai River. No site-specific studies of aquatic species in the Kootenai River have been performed as part of the OU3 Study Area RI. However, EPA's EMAP has collected aquatic community data at a station on the Kootenai River about one mile downstream of the confluence with Rainy Creek. This location was sampled in August 2002. Forty-four species of aquatic invertebrates were observed, including oligocheates, insects (diptera, ephemeroptera, trichoptera and hemiptera), cnidaria (hydra), mollusks, and nematodes (which are listed on **Table D-4** of **Appendix D**). Eleven species of fish were observed; along with several species of salmonids (i.e., rainbow trout, sockeye salmon, cutthroat trout, and bull trout) and several species forage fish (i.e., dace, shiner, sculpin).

Water use class designations and the extent of the Rainy Creek Watershed are presented on **Figure 2-5a**.

2.10.4 TERRESTRIAL SPECIES

The forested area of the OU3 Study Area is suitable habitat for a wide range of terrestrial species, including mammals, birds, and reptiles. In order to identify wildlife species likely to occur in the OU3 Study Area, information available from the MNHP was utilized as part of the *Final Asbestos BERA* (EPA, 2014a) and the *Final Non-Asbestos BERA* (CDM Smith, 2013c). First, species known to occur within Lincoln County, Montana, were identified using the MNHP Animal Tracker webpage (http://nhp.nris.mt.gov/Tracker/). Next, the MNHP and MFWP Animal Field Guide (http://fieldguide.mt.gov/) were consulted to evaluate if a particular species was observed in the vicinity of the OU3 Study Area. Species not identified within the vicinity of the OU3 Study Area, and those not expected to occur at the OU3 Study Area based on a consideration of available habitat, were removed. The species that remained are listed in **Tables D-2**, **D-3**, **D-6**, **D-7**, and **D-8** of **Appendix D**, along with information on general habitat requirements, habitat type for

foraging and nesting, feeding guild, typical food, migration and hibernation, longevity, home range, and size. The year of the oldest, the most recent recorded sighting, and the number of individuals identified are also indicated. The species identified as residing all, or part of the year, within the OU3 Study Area include 29 invertebrates (26 terrestrial and three aquatic), seven amphibians, seven reptiles, 175 birds, and 48 mammals (refer to **Tables D-2**, **D-3**, **D-6**, **D-7**, and **D-8** of **Appendix D**).

2.10.5 FEDERAL AND STATE SPECIES OF SPECIAL CONCERN

As part of the *Final Asbestos BERA* (EPA, 2014a) and the *Final Non-Asbestos BERA* (CDM Smith, 2013c) the federal and state species of special concern were classified. **Table D-9** of **Appendix D** lists the animal and plant species federally protected under the Endangered Species Act and likely to occur in the Kootenai National Forest (USFWS, 2014). **Table D-10** of **Appendix D** lists species currently listed by the Montana Natural Heritage Program (MNHP) as being of concern to the state that occur in the general area of the OU3 Study Area (MNHP, 2014). Based on an evaluation of habitat requirements, the following listed species are considered the most likely to occur in the OU3 Study Area:

Federal:

- Bull Trout (*Salvelinus confluentus*)
- White Sturgeon (*Acipenser transmontanus*) (Kootenai River only)
- Grizzly Bear (*Ursus arctos horribilis*)
- Canada Lynx (*Lynx canadensis*)

State:

- Coeur d'Alene Salamander (*Plethodon idahoensis*)
- Boreal Toad, Green; also known as Western Toad (*Bufo boreas*)
- Flammulated Owl (*Otus flammeolus*)
- Northern Goshawk (*Accipiter gentilis*)
- Bull Trout (*Salvelinus confluentus*)
- Torrent Sculpin (*Cottus rhotheus*)
- Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*)
- Canada Lynx (*Lynx canadensis*)

The Kootenai River is designated critical habitat for the bull trout, and the north-central portion of the OU3 Study Area contains designated critical habitat for the Canada lynx (EPA, 2014a).

2.11 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) is a schematic summary of what is known about the nature of source materials at a site, the pathways by which contaminants may migrate through the environment, and the scenarios by which receptors may be exposed to site-related contaminants. The OU3 Study Area CSMs developed by EPA are depicted graphically in the following figures:

- **Figure 2-12** depicts the CSM for human inhalation exposures to LAA and is an adaptation of the CSM developed for the *Final LAA HHRA* (EPA, 2015a). The adapted CSM is presented for human exposure to LAA specific to the OU3 Study Area and is discussed below and in **Section 7.2.2**.

- **Figure 2-13** depicts the CSM for ecological receptors to LAA.
- **Figure 2-14** depicts the CSM for human exposure to non-asbestos contaminants.
- **Figure 2-15** depicts the CSM for exposure of ecological receptors to non-asbestos contaminants.

The following sections provide a summary of the main elements of the CSM.

2.11.1 Sources of LAA and Non-Asbestos Containing Materials

This section includes a discussion of known and potential sources of LAA and non-asbestos containing material related to one of the following:

- naturally occurring materials and processes,
- mine site and past mining, milling, processing, and disposal activities within the OU3 Study Area, and
- processing, transportation, and disposal activities originating outside of the OU3 Study Area.

2.11.1.1 Sources from Naturally Occurring Materials and Processes

An extensive background study has not been conducted at the OU3 Study Area to evaluate the degree to which natural occurrences of LAA and non-asbestos constituents may contribute to observations of those constituents in the OU3 Study Area. However, for completeness, a brief description of naturally occurring potential sources is provided.

LAA. The following are considered potential sources of LAA that are naturally occurring, and considered to be present regardless of the historical mining operations.

- The ore body in Vermiculite Mountain is expressed as a roughly circular outcrop rimmed with Precambrian Belt Formation meta-sedimentary rocks. The formation of vermiculite and asbestiform amphiboles in the Libby mine ore body is believed to be the result of the hydrothermal alteration of augite by high-temperature silica-rich solutions (Pardee *et al.*, 1929; Boettcher, 1967; Van Gosen *et al.,* 2002; Meeker *et al.,* 2003). The primary source of LAA within the Former Mine Area is the zone of vermiculite pyroxenite, the ore body. The asbestos structures originating from the Vermiculite Mountain ore body contain detectable levels of both sodium and potassium, whereas other potential sources of LAA may not (CDM Smith, 2014b). These detectable levels of sodium and potassium are a signature of the LAA originating from the ore body. Naturally occurring wind and water erosion of areas of unmined exposed bedrock containing potassium and sodium signature amphiboles is considered a potential source of LAA.
- Glacial deposits at the Former Mine Area and Libby Site contain amphibole asbestos eroded from Vermiculite Mountain during Pleistocene glaciation. In addition, surface water flows of the creeks within the OU3 Study Area are actively down-cutting into the glacial deposits. As such, the natural water erosion of the glacial deposits is considered a potential source of LAA to the creeks.

Non-asbestos Constituents. Natural weathering, both mechanical and chemical, of the vermiculite ore body will generate soils that will reflect the chemical composition of the parent

rock. Therefore, a reasonable expectation is that the elements associated with primary- and secondary-mineral phases contained in the RCC (refer to **Section 2.6.2**) will also be concentrated in the weathering profile of soils and sediments derived from the bedrock and potentially in water that contacts the soils, sediments, and rock. Primary minerals are formed during the original crystallization of the parent rock and secondary minerals are formed by the weathering of primary minerals. Based on review of the mineralogy of the RCC described in Weeks (1981) and Frank and Edmond (2001), the following list provides potential mineral sources for elements that have the possibility of naturally occurring elevated concentrations in the OU3 Study Area:

Element	Potential Mineral Source
Aluminum	Aluminosilicate minerals
Arsenic	Pyrite
Barium	Barite
Beryllium	Quartz, biotite
Chromium	Chromite, pyrite, biotite
Cobalt	Pyrite, biotite
Copper	Pyrite, copper sulfide, biotite
Fluoride	Fluorapatite, biotite
Iron	All minerals
Lead	Pyrite
Manganese	Biotite, pyrite, Mn-oxide
Nickel	Ni sulfide, biotite, pyrite
Phosphorus, Total	Fluorapatite
Thallium	Pyrite, biotite
Vanadium	Pyroxene minerals

It should be noted that the descriptions available of the mineralogy associated with the ore body and surrounding geology at the Former Mine Area, pyrite is the most likely primary mineral phase that could contain arsenic as a trace constituent. While pyrite occurs in the ore body, the abundance is generally low. In the context of acid base accounting, as an overall descriptor of geochemical properties of the rock, there is an abundance of neutralizing mineral phases as compared to acid producing minerals. This means that while pyrite exposed to atmospheric conditions will oxidize and release iron, sulfate, and trace elements (such as arsenic), the preponderance of neutralizing minerals will maintain pH such that the iron will precipitate as iron oxyhydroxides and will probably sorb arsenic, significantly limiting the mobility of arsenic.

2.11.1.2 Sources from Past Mining, Milling, Processing, and Disposal Activities

Sources of LAA and non-asbestos constituents associated with the former mine site and past mining, milling, processing, and disposal activities within the OU3 Study Area are discussed herein. Former Mine Area features are presented on **Figure 1-3**.

As discussed in **Section 1.3**, there is a long history of mine-related activities within the OU3 Study Area. These activities were a likely source of LAA and potential non-asbestos constituents in the OU3 Study Area.

The potential sources of LAA and non-asbestos constituents at the mine site, and resulting from mining activities are summarized below by material, location, or activity.

Mine Benches. Exposed rock on the mine benches remains at the upper elevations of the Former Mine Area and consists mainly of vermiculite ore that remains unmined. The vermiculite ore

contains veins of LAA of varying thickness. These exposed veins are subjected to weathering, which could result in releases of LAA in the Former Mine Area. In addition, weathering of bedrock could also release the non-asbestos constituents.

Waste Rock. During mining efforts, the rock overlying and adjacent to the ore body was removed. This rock was hauled in trucks and deposited off the south flank of the dome-shaped pluton. The waste rock piles are made up of a mixed mass of the different overburden rock types (i.e., syenite, unaltered biotite, quartz, and other non-vermiculite materials). The slopes of the waste rock piles vary between 10 degrees to 40 degrees. The largest of the waste rock piles dammed Carney Creek on the southwest portion of the property and created Carney Pond. Erosion of waste rock is a potential source of both LAA and non-asbestos constituents.

Mine Roads. Mined materials have been used to construct roads within and around the active mining areas of the Former Mine Area (EPA, 2007c). Road fill materials are a potential source of both LAA and non-asbestos constituents. In addition, past use of the application of oil on mine roads as a dust control measure was reported (EPA, 2007b).

Coarse Tailings. The coarse tailings are located in the northwestern and western portions of the Former Mine Area (refer to **Figure 1-3**). Coarse non-vermiculite materials, typically sand-size and larger, were screened out at the mill located on the mine property and were deposited on the coarse tailings pile on the north flank of the mine. Prior to full conversion to the wet-mill process in 1974, coarse tailings were hauled and deposited by truck. Coarse tailings are a potential source of both LAA and non-asbestos constituents.

Tailings Impoundment. The tailings impoundment was constructed to contain fine tailings from the Former Mine Area. Fine tailings are generally sand-size and finer particles that passed through screens at the former mill located on the mine property (refer to **Figure 1-3**). The tailings were processed through thickeners and deposited as slurry to the fine tailings impoundment. Before construction of the KDID, fine tailings were deposited directly into Rainy Creek. The thickness of the fine tailings in the tailings impoundment varies between approximately 30 ft. and 90 ft. Under most conditions, the tailings impoundment drains through a system of embankment underdrains and toe drains directly into LRC, but may also discharge to LRC via an overflow channel during high flow events (Parker and Hudson, 1992). The tailings impoundment is a potential source of both LAA and non-asbestos constituents.

Amphitheater Area and Other Vermiculite Materials. The results of a field investigation conducted in October 2011 indicated that Rainy Creek flowed through an area containing vermiculite waste (VW) located below the area referred to as the Amphitheater, which is located to the southwest of the Mill Pond. The VW area was a potential source of LAA to LRC prior to removal efforts. Removal efforts to mitigate the potential source were implemented in the fall of 2012 and summer of 2013, during which more than 15,500 cubic yards of VW was removed. This removal effort is described in further detail in **Section 4.5.2**. In addition, vermiculite materials were also observed in discrete piles, embankment fills, and general fill materials, may have been collocated with LAA-bearing materials (MWH, 2015). All of these materials are potential sources of both LAA and non-asbestos constituents.

Transportation. The movement and transportation of materials containing LAA from mining activities is considered a potential source to areas and surface waters near and adjacent to transport routes. Prior to the construction of an on-site mill in 1936, ore was transported by skip and trucked to Libby by Montana Highway 37 for processing at facilities in the town of Libby (Boettcher, 1963), where transportation may have resulted in LAA releases to areas along the

route (e.g., Rainy Creek, Kootenai River). The original on-site dry mill was constructed in 1936 east of the mined area (refer to **Figure 1-3**), and based on available documents, processed vermiculite material was transported from the mill site down the northwest facing hill slope along a tramway to a loading area positioned on the south hill slope above Rainy Creek. The material was then transferred from the loading area into haul trucks for delivery off-site.

Vermiculite Processing. The vermiculite processing within the Former Mine Area included both dry and wet mill milling conducted at the site as described in **Section 1.3**. The mill operations conducted in the Former Mill Area (refer to **Figure 1-3**) was the primary source of aerial deposition of LAA. Air dispersion modeling was conducted using the EPA's American Meteorological Society/EPA Regulatory Model (AERMOD) modeling system to estimate the footprint of aerial deposition of LAA resulting from former mining operations in the OU3 Study Area. The results of the modeling and analysis are presented in *Libby Operable Unit 3: Dispersion Modeling and Analysis* (Reax Engineering, 2015) and discussed in **Section 5.0**. In addition, some chemicals used at the mine site in the processing of vermiculite ore might also be present in waste materials on the Former Mine Area. Various reagents were used to facilitate the separation of higher quality ores from lesser quality ores. The reagents reported included #2 diesel fuel, Armeen T (tallow alkyl amine), fluorosilicic acid, and lesser quantities of flocculants, defoamers, frothers, and other reagents.

Land Disturbance. Surface water run-off from the Former Mine Area and other areas of the OU3 Study Area impacted by releases from historical mining activities has the potential to mobilize LAA and non-asbestos constituents and is thus a potential source. Water that contacts exposed hillsides, waste rock piles, and mine tailings has the potential to mobilize (by eroding or leaching) non-asbestos constituents such as metals and metalloids. As a result, these metals/metalloids can become concentrated in depositional areas (e.g., in sediments), or dissolved or suspended in surface water or groundwater at concentrations that are toxic or otherwise detrimental to the environment. Weathering of exposed rock that contains an abundance of sulfide materials (such as pyrite) can result in acidic (low pH) discharges. As discussed in **Section 2.9**, minor pyrite is present in the principal bedrock geology, as expressed at the surface, and may react with groundwater and surface water. However, the Stiff diagrams shown on **Figures 2-8** and **2-9** show the water is dominated by calcium bicarbonate, which would have a neutralizing effect on water pH, and there is limited to no sulfate present in the water indicating that low pH drainage is not impacting surface and groundwater at the site.

As discussed above, erosion of the source rock, waste rock piles, tailings, and stockpiled materials has likely caused transport of LAA-bearing materials and deposition of sediment in surface water bodies near the Former Mine Area. However, as discussed in (MWH, 2016a), it is apparent that migration of sediments in creeks within the Former Mine Area largely occurs during higher flow events. In order for sediments impacted by releases from mining activities to flow from the Former Mine Area to the Kootenai River, the material would have to be transported during periodic high flow events approximately 2.5 miles down LRC. Transport of LAA-bearing materials would also likely have been further hampered by the presence of low energy pools and possible wetland areas along LRC.

Landfarming. Landfarming activities conducted within the Former Mine Area are considered a potential source of non-asbestos constituents. As part of the mine closure, the underground diesel storage tanks at the Former Mine Site were removed in 1991 (MWH, 2013a). During removal, sampling of soil within the vicinity of Tanks 1, 2, 3, 4 and 9 indicated elevated levels of total petroleum hydrocarbons (TPH). With permission from the Montana Department of Health and Environmental Sciences, now MDEQ, Grace excavated and landfarmed up to 800 cubic yards

(cy) on a concrete foundation pad (200 x 300 ft.) on Vermiculite Mountain. Soil sampling conducted in 2013 at the landfarm indicated the presence of petroleum hydrocarbons, although when ranges were compared against their respective Montana Tier 1 Risk Based Screening Levels for Petroleum Releases (MDEQ, 2009), only C11-C22 aromatics slightly exceeded its screening level of 400 mg/kg at a concentration of 424 mg/kg (MWH, 2013a). Sampling information is presented in **Section 4.5.3** and the location of the landfarm is shown in **Figure 2-16**.

Historical Landfill. A minor landslide in the waste rock pile to the southwest of the former mill exposed a historical landfill, which was identified during the initial reclamation efforts in the mid-1990s (**Figure 2-16**). This landfill is considered a former source location. Based on the available records, the landfill contained primarily construction debris from the demolition of the mill (W.R. Grace, 1986). Cleanup efforts of the landfill occurred in 1995 and 1996.

2.11.1.3 Sources Originating Outside of the OU3 Study Area

Several potential sources of LAA have originated outside of the OU3 Study Area and it should be noted that it is not possible to distinguish between LAA associated with the Former Mine and LAA associated with other OUs. These other potential sources include remediation soils brought from OU1, OU2, OU4, and OU7 into the OU3 Study Area (refer to **Figure 2-17**), possible wind-dispersed dust from OU2, and possible source areas (OU1, OU2, and OU4) contributing to the presence of LAA within the Kootenai River (e.g., government application of LAA-containing riprap along the Kootenai River, historical spills of vermiculite ore and/or concentrate from areas now designated as part of other OUs such as OU2 and OU4).

Since 2000, approximately 1.1 million cubic yards of LAA-contaminated soils have been brought into the OU3 Study Area as part of Libby Site remedial efforts in OUs 1, 2, 4, and 7 (Cirian, 2016), such as soils removed from residences in the town of Libby that are designated as OU4. These soils were stockpiled in the Former Mine Area in the location shown on **Figure 2-17,** and the majority was beneficially re-used to reclaim and revegetate areas disturbed by mining activities in the OU3 Study Area. However, not all of the soils could be used for beneficial purposes because some of the soil transported during the beginning of the program was intermixed with PPE and other cleanup debris. These soils were placed in a separate area at the top of the mine.

The former Screening Plant (OU2), which was located adjacent to the mouth of LRC and the East side of the Kootenai River, was used initially for transfer of materials and ultimately for screening of vermiculite beginning in the 1950s. Given the prevailing wind direction is toward the northeast in the area, the facility was likely a contributor to airborne dust that may have been released to the southern portion of the OU3 Study Area. Estimated asbestos emission rates for the former Screening Plant were 0.0149 pounds per hour (lb/hr), which is more than 200 times lower than the emission rates for the dry mill, which were estimated to range from 4.08 to 20.48 lb/hr (CDM Smith, 2015a).

There are numerous potential sources of LAA to the Kootenai River from areas outside of the OU3 Study Area. Although it is not possible to quantify the portion or percentage of LAA contribution to the Kootenai River from each of these sources, considering the LAA source material quantities handled in these areas throughout the years of operation, it is reasonable to assume that the amount of LAA material from these areas that entered the Kootenai River may not be inconsequential. Each of these areas, including a brief summary of the investigations, sampling results, and removal actions, are summarized below.

OU1 – Former Export Plant. LAA-bearing materials were managed for at least 30 years on the former Export Plant (OU1) property, which covered roughly 17 acres and was located immediately adjacent to the south side of the Kootenai River in the city of Libby. Mine records indicate that over 350,000 tons of vermiculite concentrate were managed at the former Export Plant in the four-year period between 1945 to 1949 (i.e., approximately 13% of the time during which vermiculite concentrate was handled at this location).

As described in the OU1 RI Report (CDM Smith, 2009a), between 1999 and 2006 numerous sampling investigations occurred within OU1 to characterize the extent of LAA material. During visual inspections, vermiculite was observed throughout OU1, including in numerous areas along the entire length of the riverbank. Soil sampling detected concentrations of LAA from ND to ≥1% in surface and subsurface soil samples obtained within OU1. These data prompted EPA to execute a number of soil removal actions within OU1 along the bank of the Kootenai River and in the area where the Export Plant was located. Although not addressed in the OU1 RI Report (CDM Smith, 2009a), historical operations and activities within OU1 (stockpiling, staging, distributing vermiculite and vermiculite concentrate, and moving materials around for fill, etc.) are likely to have contributed to LAA impacts to the Kootenai River via vermiculite concentrate washing/blowing directly into the Kootenai River.

OU2 – Former Screening Plant and Surrounding Properties. The former Screening Plant (OU2), which was approximately 21 acres in size and located on the east side of the Kootenai River, was where LAA concentrate was size-sorted and transported by a conveyor bridge system across the river to the rail load-out system on the other side of the river adjacent to the Burlington Northern Rail Lines (CDM Smith, 2009b). Mine records indicate that in the period between 1975 and 1990 over 6,600,000 tons of vermiculite concentrate were managed in the former Screening Plant area. In addition, in 1979, two freight cars derailed at the former Screening Plant and crushed the rail loading facility which caused the conveyor bridge (used to transport vermiculite material across the Kootenai River) to collapse into the Kootenai River (Missoulian, 1979; Western News, 1979). Because the conveyor belt was covered by a roof but open on the sides, the vermiculite material on the conveyor belt at the time of collapse would have spilled into the Kootenai River (refer to **Figure 2-18**). In addition to the conveyor collapse, spillage from the open sided conveyor system into the Kootenai River was likely during normal operations (i.e., excessive material on the conveyor falling into the river through the open sides, and wind blowing the material from the conveyor belt into the river).

As described in the OU2 RI Report (CDM Smith, 2009b), between 1999 and 2006 numerous sampling investigations occurred within OU2 to characterize the extent of LAA material. Vermiculite was observed throughout OU2 including in areas along the riverbank. Soil sampling detected concentrations of LAA from ND to ≥1% in surface and subsurface soil samples. These data prompted EPA to execute a number of soil removal actions within OU2. Although not addressed in the OU2 RI Report (CDM Smith, 2009b), historical operations within OU2 (stockpiling, staging, conveying materials on a conveyor across the Kootenai, etc.) and the conveyer bridge collapse are likely to have contributed to LAA impacts to the Kootenai River via vermiculite concentrate washing/blowing/being dumped directly into the Kootenai River.

OU4 – Residential, Commercial, Industrial and Public Properties: Based on investigations and evaluations conducted as part of the OU4 RI, some of the properties adjacent to the Kootenai River required response actions due to LAA impacts which are detailed in the OU4 RI Report (CDM Smith, 2014a). The Kootenai Bluffs Subdivision (referred to herein as the Bluffs) is one such area which is located on the west side of the Kootenai River along the riverbank, directly across the river from the former Screening Plant (OU2). The conveyer bridge system ran between

the Screening Plant and the Bluffs. The Bluffs served as a conveyor unloading station where vermiculite concentrate was loaded onto trucks or railroad cars for distribution. Based on the results of visual inspections and surface and subsurface soil sampling (CDM Smith, 2014a), the EPA initiated a removal action in this area. Although not addressed in the OU4 RI Report (CDM Smith, 2014a), it is reasonable to assume that some LAA material from the Bluffs area, likely through airborne dust, may have contributed LAA material to the Kootenai River.

Additionally, four creeks, all tributaries of the Kootenai River, required removal actions due to placement of LAA-impacted riprap. These removal actions were performed by the United States Army Corps of Engineers (USACE), Lincoln County, the City of Libby, and/or private landowners to control erosion. Removal actions in response to the investigation findings in Flower Creek, Granite Creek, Pipe Creek, and Libby Creek were completed under the Emergency and Rapid Response Services Contract, and included the removal of LAA-contaminated soil and riprap material from along the creek embankments as directed in the addendums to the Response Action Work Plan for the creeks (CDM Smith, 2008a,b; CDM Smith, 2009c,d). A total of 2,600 cubic yards of contaminated soil and riprap material was removed from Flower Creek; 3,370 cubic yards of contaminated soil and riprap material was removed from Granite Creek; 357 cubic yards of contaminated soil and 20 truckloads of contaminated riprap material were removed from Pipe Creek; and 499 cubic yards of contaminated soil and 95 truckloads of contaminated riprap material were removed from Libby Creek. Although not addressed in the OU4 RI Report (CDM Smith, 2014a), it is reasonable to assume that LAA-contaminated soil and riprap material from along the creek embankments, some of which was noted as containing 100% asbestos, from these tributaries within OU4 likely contributed LAA material to the Kootenai River (EPA, 2008a).

2.11.2 Possible Migration Pathways

Air Transport. It is possible that constituents in dust, ash, soil, or mine waste may become suspended in air and transported from source areas via physical disturbance (e.g., wind, fire, human disturbance). Once airborne, contaminants may move with the air and then settle and become deposited onto the surface of vegetation, soils, and/or structures downwind. However, evidence shows that fibers tend to stay in the media rather than travel in the air in the absence of physical disturbance (Ward *et al.*, 2009; EPA, 2012i).

Surface Transport. Constituents may be carried in surface water runoff (e.g., from rain or snowmelt) from the mine, or other areas where dust, ash, soil, rock, or mine waste contains LAA and become deposited in soils or sediments at downstream locations.

Transport by Humans. Humans could transport materials impacted by releases from mining activities during collection of firewood and other materials at the OU3 Study Area.

2.11.3 Receptors and Populations of Concern

A range of different human receptors could potentially be exposed to contaminants in the OU3 Study Area, including:

- **Trespasser in the Former Mine Area** – This population includes older children and adults who trespass on the area of the OU3 Study Area that has been disturbed by past mining activities. The types of activities performed may include hiking, hunting, and all-terrain vehicle (ATV) riding within the Former Mine Area.

- **Recreational visitors along streams and ponds** – This receptor population includes adults and older children who hike, fish, wade/swim or explore streams and ponds in portions of the OU3 Study Area outside the Former Mine Area.
- **Recreational visitors in the forested area** – This receptor population includes older children and adults who engage in activities in the forested area in the OU3 Study Area outside the Former Mine Area, such as camping, hiking, dirt bike riding, ATV riding, hunting, etc.
- **Wood cutters in the forested area** – This receptor population includes adult area residents who engage in sawing, hauling, and stacking wood for personal use, as well as adult workers who are employed in commercial logging operations in the OU3 Study Area. This scenario would also include potential exposures to woodstove ash generated from firewood collected from the OU3 Study Area.
- **USFS workers and firefighters in the forested area** - This receptor population includes adult workers who engage in routine USFS activities (e.g., tree stand examination, thinning vegetation, and trail maintenance) and firefighters who may respond to forest fires in the forested area of the OU3 Study Area.

Residential receptors are not included as potential receptors in the OU3 Study Area. This is because any properties geographically within OU3 (primarily located along the southern border of the OU3 Study Area) that are currently residential have been evaluated as part of OU4.

Ecological receptors can be grouped as follows:

- Aquatic receptors (fish, benthic invertebrates, aquatic plants, and amphibians)
- Terrestrial plants and soil invertebrates
- Birds and mammals
- Reptiles

2.11.4 Exposure Pathways of Concern

The exposure pathways of concern for LAA are depicted on **Figures 2-12** and **2-13**. Of the exposure routes, inhalation exposure of LAA to terrestrial receptors is considered to be of greatest concern. To the extent that ingestion contact exposures may occur at the site (e.g., ingestion of LAA in drinking water or food), the added risk to human health from ingestion is expected to be negligible compared to the risk from inhalation (EPA, 2015a).

The exposure pathways of concern for non-asbestos constituents are depicted on **Figures 2-14** and **2-15**, and include ingestion, inhalation, and direct (dermal) contact.

3 DATA COLLECTION AND MANAGEMENT

3.1 INTRODUCTION

Multiple RI sampling phases/events have occurred in the OU3 Study Area from 2007 to 2015, and additional events are planned. This section presents the:

- sampling overview for both LAA and non-asbestos samples,
- database used for compilation and reporting of the OU3 Study Area sample data,
- data that have been excluded from this RI report,
- analyses that were run on the collected media samples, and
- QA/QC measures that were undertaken in the field and in the laboratory to provide useable data.

A discussion of analyses performed, grouped chronologically and by sample media type, is presented in **Section 4.0**. A discussion of analytical results is presented in **Section 5.0**.

3.2 SAMPLING OVERVIEW

Over the eight-year period of RI activity phases/events in the OU3 Study Area completed to date, more than 2,200 field samples have been collected and analyzed for asbestos and more than 300 field samples have been collected and analyzed for non-asbestos constituents for different media or receptor types including:

- surface water,
- groundwater,
- sediment,
- soil and mine waste from the Former Mine Area,
- forest soil, duff material, ash, and tree bark from forested areas,
- air (outdoor ambient/perimeter air and ABS air samples), and
- fish and mammal tissue analysis.

In addition, several ecological community evaluations (fish, benthic invertebrates, amphibians, and small mammals) and site-specific toxicity tests have been conducted. Sample totals per media are presented on **Table 4-1**. Samples of surface water, groundwater, sediment, soil, mine waste, and forest soil were collected during one or more RI events for analysis of both LAA and non-asbestos constituents. Samples collected from tree bark and duff material from forested areas, ash, outdoor ambient/perimeter air, and activity-based air samples (ABS) were analyzed for LAA only. Further detail on sample phases/events design and collection details are presented in **Section 4.0**. Samples results (i.e., the nature and extent) are discussed in detail in **Section 5.0** by media type and analytical result (LAA or non-asbestos).

3.3 OU3 STUDY AREA DATABASE

Application. The master OU3 Study Area project database is a Microsoft Access® relational database that has been developed specifically for the OU3 Study Area. Due to the management of the Libby Superfund Site, the nature of LAA analysis and other data reporting requirements, the database has been developed iteratively, expanding in its capabilities (and complexity) as

project-specific needs have evolved. In addition to providing new functionality, as needed, enhancements have been made to accommodate user needs and to incorporate various automated QA/QC procedures to improve data integrity.

Because data continues to be generated as a result of ongoing sampling and analysis in the OU3 Study Area, the project database is dynamic. New sample analysis and results records are added and records are corrected, as appropriate. As a result, any database-generated queries, tables, figures, maps, and reports provide only a "snapshot" of the database on the day the output was created. **Appendix B-2** provides a snapshot of the project database as of November 30, 2016. This snapshot was used to prepare the data summaries included in this report. **Appendix E** provides detailed data summary tables created from the OU3 Study Area project database snapshot.

Administration and Security. EPA's contractor, CDM Smith, controls day-to-day operation of the OU3 Study Area project database, including physical and network security, access rights, and data backup. The OU3 Study Area project database is kept on the CDM Smith server in Denver, Colorado. Incremental backups of the CDM Smith server are performed daily Monday through Friday, and a full backup is performed each Saturday. Access to the server is restricted to approved-CDM Smith personnel only.

Data Entry Processes. The OU3 Study Area project database has a variety of built-in QC functions that improve accuracy of data entry and help maintain data integrity. For example, field data entry forms utilize drop-down menus whenever possible. Drop-down menus allow the data-entry personnel to select from a set of standard inputs. The use of drop-down menus prevents duplication and transcription errors and limits the number of available selections (e.g., valid media types). In addition, the project data allows a unique sample identification number (ID) to only be entered once, thus ensuring that duplicate records cannot be created.

The analytical laboratories are required to transmit results using Libby-specific electronic data deliverable (EDD) spreadsheets. Each EDD contains a variety of built-in QC functions that improve the accuracy of data entry and help maintain data integrity. For example, data entry forms utilize drop-down menus whenever possible to standardize data inputs and prevent transcription errors. In addition, many data input cells are coded to highlight omissions, apparent inconsistencies, or unexpected values so that data entry personnel can check and correct any errors before submittal of the EDD. These spreadsheets also perform automatic computations of analytical sensitivity, dilution factors, and concentration, to help reduce analyst calculation errors.

The transmitted EDDs are uploaded directly into the OU3 Study Area project database using upload queries in Microsoft Access® designed specifically for each type of EDD, which avoids potential errors related to manual entry of the results. Each upload query performs several integrity checks to confirm that records are consistent and complete prior to uploading the analytical data. If issues are identified, the analytical EDD will not be uploaded until they are rectified.

Additionally, there are two data sets that were included as part of this report (OU4 Nature and Extent Study [EPA, 2013b] and Nature and Extent Forest Study [EPA, 2015f]) that do not reside in the Libby OU3 Study Area project database but instead reside in the Scribe database. The Scribe database maintains all OU4 sample data collected from 1999 to present, and analytical data collected since January 2010 (CDM Smith, 2014a). Scribe is a software tool developed by the EPA Environmental Response Team to assist in the process of managing environmental data.

3.4 EXCLUDED DATASETS

In some cases, results in the database have been deemed rejected as a result of validation performed by CB&I Federal Services, LLC (CB&I), EPA's Quality Assurance Technical Support (QATS) contractor, using the Libby Site specific standard operating procedures (SOPs) for data validation. These samples have been excluded from the data summaries in this report. A detailed list of the rejected samples is included in **Appendix E.** Data validation SOPs referenced in this report are provided in **Appendix F**.

Additionally, data collected prior to 2007 will not be utilized in evaluations moving forward in this report because the data collection objectives differed from the data collected post 2007. The post 2007 data were collected under one of the QAPP's developed as part of the OU3 Study Area RI per the AOC, whereas the pre 2007 data were collected to support emergency response efforts. Pre 2007 data are provided in **Appendix A**.

3.5 ANALYTICAL METHODS

Samples of surface water, groundwater, sediment, soil, mine waste, and soil were collected during one or more RI events for analysis of both LAA and non-asbestos constituents. Samples of tree bark and duff material from forested areas, ash, outdoor ambient/perimeter air, and activity-based air samples were analyzed for LAA only. The LAA and non-asbestos analytical methods are discussed below.

3.5.1 Asbestos Analytical Methods

The EPA has employed modifications to commercial asbestos test methods for various sample media collected in the OU3 Study Area, as discussed in this section. When necessary, the analytical methods were incorporated into project-specific SOPs. The analytical methods shown on **Table 3-1** were used to analyze the OU3 Study Area LAA samples and are discussed below:

PLM. The PLM method capitalizes on the fact that light passing through a translucent mineral will interact with the internal crystal structure of the mineral grains, and the transmitted light (that which passes through the particle) tends to be polarized, having a higher intensity in some orientations than in others. Because this effect depends on the composition and/or structure of the particle, each mineral has a unique effect on light passing through it. Thus, based on the optical properties of the particle (e.g., refractive index, birefringence, color), it is possible to identify the mineral. The determination of asbestos or non-asbestos is based both on the extinction angle (for monoclinic amphiboles) and on the particle morphology.

PLM is not applicable to samples that may contain many fine fibers below the resolution of the light microscope (e.g., air samples). For this reason, PLM is only applied to bulk samples of soil where many of the asbestos structures present can be expected to be fairly large.

At the Libby Site, there are two different PLM methods that are utilized to analyze soil and other bulk materials, NIOSH Method 9002 and the Libby-specific PLM methods. Only the Libby-specific PLM methods were utilized to analyze soil samples from the OU3 Study Area, as described below.

Libby-Specific PLM (including PLM visual area estimation [VE] and PLM gravimetric [Grav]). In early 2002, at the onset of the OU4 RI contaminant screening study (CSS), the EPA

determined that existing soil analytical methods, such as NIOSH Method 9002, were inadequate for measuring concentrations of LAA below 1%. Based on early ABS studies, the EPA determined that asbestos concentrations of potential health concern may be released to air from soils with low-levels (<1%) of asbestos contamination. For these reasons, the EPA has researched, developed, and evaluated other methods for the characterization of relatively low levels of asbestos in soil. EPA was also concerned about the cost and turnaround time of other methods, given the need to screen the thousands of soil samples planned to be collected under the CSS.

To address these issues, EPA, with assistance from the USGS and SRC, designed and implemented a soil performance evaluation (PE) study. The objectives of the PE study were to:

- Develop PE test materials of known, verified LAA concentrations in soil that could be used to test the efficacy of soil analytical methods.
- Use the PE test materials to evaluate multiple commercially available analytical methods and technologies to determine their suitability for detecting and measuring LAA in soil at various concentrations and under conditions similar to those found at the Libby Site.
- Based upon these results, develop and refine project-specific test methods to detect low concentrations of LAA in soil.
- Based upon the results, develop a set of acceptance criteria for the PE test materials.
- Use PE test materials as a QC tool for testing the performance of analytical laboratories.

The PE study was conducted in several test phases, with the majority of the work conducted in 2002. The details of the phased approach are described in the *Quality Assurance Project Plan, Performance Evaluation Study for Analytical Methods in Soil, Part B, Revision 1* (EPA, 2003). Soil samples for analysis by the Libby-specific PLM methods are first processed in accordance with SOP ISSI-LIBBY-01[3]. In brief, each soil sample is dried and sieved through a ¼-inch screen. Particles retained on the screen (if any) are referred to as the "coarse" fraction. Particles passing through the screen are referred to as the "fine" fraction, and this fraction is ground by passing it through a plate grinder. The resulting material is referred to as the "fine-ground" fraction. The fine- ground fraction is split into four equal aliquots; one aliquot is submitted for analysis and the remaining three aliquots are archived.

The coarse fractions are examined in accordance with SOP SRC-LIBBY-01, referred to as "PLM-Grav". SOP SRC-LIBBY-01, *Qualitative Estimation of Asbestos in Coarse Soil by Visual Examination Using Stereomicroscopy and Polarized Light Microscopy (PLM)*, was developed in 2002 and contains elements from NIOSH Method 9002 and EPA 600/R-93/116. PLM-Grav is used as a screening tool to examine the coarse soil fraction for evidence of asbestos mineral content using stereomicroscopy with confirmation of asbestos by PLM. The method is used on soil and other soil-like media (e.g., sediment) to quantify the types of asbestos fibers, including amphiboles (like those characteristic of the Libby Site) and chrysotile. The method sensitivity can be affected by the homogeneity of the sample, the accuracy of the weight measurements obtained at the laboratory, and the effectiveness of the sample reduction and filtering procedures.

[3] This soil preparation SOP was superseded by SOP 16-ASB-06.00 on July 2, 2014. The current revision of this soil preparation procedure is SOP 6-ASB-06.02.

The fine ground aliquots are examined using visual area estimation in accordance with SOP SRC-LIBBY-03, referred to as "PLM-VE". SRC-LIBBY-03, *Analysis of Asbestos Fibers in Soil by PLM*, was developed in 2003 and is based on NIOSH Method 9002, EPA 600/R-93/116, and California Air Resources Board (CARB) Method 435. PLM-VE is a semi-quantitative method that utilizes LAA-specific reference materials to allow assignment of fine-ground samples into one of four reporting "bins" as follows:

- Bin A (ND): non-detect
- Bin B1 (Trace): detected at levels lower than the 0.2% (by mass) LAA reference material
- Bin B2 (<1%): detected at levels lower than the 1% (by mass) LAA reference material but ≥0.2% LAA reference material
- Bin C: LAA detected at levels ≥1% LAA reference material; results are reported to the nearest whole percent

The details of the PE study are summarized in a separate PE study report titled: *Performance Evaluation of Laboratory Methods for the Analysis of Asbestos in Soil at the Libby, Montana Superfund Site* (EPA, 2008b).

TEM. The TEM methods are more complex than PLM and require the use of a more sophisticated analytical instrument that may operate at higher magnification (i.e., 20,000x) and hence, may detect structures much smaller than can be been seen by other methods. TEM methods can be used for air, dust, water, and solid media (e.g., soil, duff, tree bark, tissue).

When a sample is analyzed by TEM, the analyst records the size (length, width) and structure type (e.g., fiber, bundle) of each individual asbestos structure that is observed. This structure attribute information can be used to determine the number of total and phase contrast microscopy-equivalent (PCME) structures observed in the TEM analysis. Total LAA includes all structures with a length ≥0.5 µm and an aspect ratio (length:width) of ≥3:1. PCME is important for the purposes of HHRA because available toxicity values are based on studies utilizing phase contrast microscopy (PCM) data. In the PCM method (NIOSH Method 7400; NIOSH, 1994), a structure is counted as a PCM fiber if it has a length of 5 µm or longer and an aspect ratio of at least 3:1. Although there is no thickness rule specified in the PCM method, particles thinner than 0.25 µm are not usually detectable by PCM. For the Libby Site, the TEM counting rules for PCME structures are: length >5 µm, width ≥0.25 µm, aspect ratio ≥3:1. Note that the PCME counting rule for width does not include an upper width cut-off of three µm, per EPA (2008b), because particles wider than three µm are counted by the PCM method (NIOSH, 1994). Thus, to ensure comparability between the exposure concentrations and the toxicity values, no upper width restriction is applied.

The TEM analyst also records the mineral type of each individual asbestos structure that is observed. Mineral type is determined by energy dispersive spectrometry (EDS) and SAED:

- EDS is a method that takes advantage of the fact that an atom that is excited by absorbing a high energy electron will tend to re-emit the absorbed energy at a wavelength that is characteristic of the absorbing atom. Thus, when a particle is examined under a TEM equipped with EDS, it is possible to obtain data on the atomic composition of each particle being examined. This allows the examiner to distinguish organic particles from mineral particles, and also allows the examiner to distinguish between different types of mineral particles.

- SAED is a method based on the fact that crystalline structures diffract electrons to form a diffraction pattern that is characteristic of the underlying crystal structure. Thus, when a particle is examined under a TEM equipped with SAED, it is possible to obtain a diffraction pattern that can be used to confirm the mineral type (e.g., tremolite, actinolite, chrysotile) and may be useful in classifying the nature of the mineral (e.g., asbestiform, non-asbestiform).

There are many different standard methods that have been developed for TEM. These methods differ mainly in the recording rules that are utilized by the TEM analyst in reporting observed asbestos structures. At the Libby Site, the most commonly used recording rules are those specified by Asbestos Hazard and Emergency Response Act (AHERA), American Society for Testing and Materials (ASTM) International D-5755, Internal Organization for Standardization (ISO) 10312:1995(E), and EPA 100.2. However, for the OU3 Study Area samples, these common industry analytical methods have been modified. For a discussion on the recording rules, refer to Section 2.0 of the *Libby Asbestos Superfund Site Residential and Commercial Properties Operable Unit 4, Libby, Montana, Remedial Investigation Report* (CDM Smith, 2014a). Some samples have been analyzed multiple times by TEM. In these cases, the TEM results have been pooled in accordance with *Technical Memo 11* (EPA, 2007c).

The two recording rules used for samples collected from the OU3 Study Area are ISO 10312:1995(E) and EPA Method 100.2. Each method is discussed in more detail below.

TEM ISO. The ISO 10312:1995(E) method, *Ambient air – Determination of Asbestos fibers – Direct-transfer Transmission Electron Microscopy Method*, was issued in 1995 (ISO, 1995). This TEM method is used in determining the concentration of asbestos structures in both indoor and outdoor environments with appropriately loaded filters. TEM ISO structure recording rules differ from other TEM analysis methods (e.g., AHERA) in that there is a fairly complex set of rules for counting fibers that occur in complex structures (e.g., matrices, clusters), requiring enumeration of individual fibers when the fibers can be clearly distinguished, and counting the complex particles as a unit when the individual fibers cannot be clearly resolved. A limitation of this method in analyzing samples at Libby is that the method does not discriminate between asbestos and non-asbestiform amphiboles. ISO 10312 recognizes this (Section 1:1): "The method cannot discriminate between individual fibers of the asbestos and non-asbestos (meaning non-asbestiform) analogues of the same amphibole mineral". This means that the analysis counts include asbestos fibers, cleavage fragments, and other non-asbestiform particles in the asbestos count (provided the dimensional and EDS requirements are met). Such structures, including non-asbestiform fibers, are recorded for the Libby Site as "Total LAA" structures. "Total LAA" includes both asbestos and non-asbestiform analogues of the same amphiboles and often includes structures with widths and lengths outside the range that can be detected by PCM (total includes all structures with a length ≥0.5 µm and an aspect ratio of ≥3:1). When considering the risk associated with the presence of LAA, "PCME LAA" counts are utilized.

Under TEM ISO recording rules, a fiber is defined as "an elongated particle which has parallel or stepped sides, an aspect ratio ≥5:1, and a minimum length of 0.5 µm". At the Libby Site, EPA has varied the aspect ratio rule over time (e.g., Libby laboratory modification #LB-000016 and #LB-000016A). However, for samples collected in support of the OU3 Study Area, TEM analyses have employed an aspect ratio rule of ≥3:1, as recommended in EPA's Asbestos Framework (2008) "to mimic the size fraction of fibers that would be detected if the sample were being run under PCM". The laboratories have also followed EPA's other Libby-specific laboratory modifications for the identification and counting of asbestos fibers and QC requirements (e.g., #LB-000029, #LB-000066, #LB-000067, #LB-000085).

At the Libby Site, TEM ISO is typically used as the principal recording method for investigative samples (e.g., ABS, ambient air monitoring). Although ISO 10312:1995(E) is written as an analytical method for air filters that are directly prepared, at the Libby Site and at the direction of EPA, this method has also been utilized to specify the desired recording rules for air samples that have been prepared indirectly (per SOP EPA-LIBBY-08 and detailed below) and for the TEM analysis of other non-air media, such as dust, tree bark, duff, ash, soil, water, and tissue.

In SAPs involving the collection and analysis of air samples from ABS, EPA specified that if an air filter sample is deemed to be unevenly loaded or overloaded (particulate coverage of greater than 25% on the filter) then the air filter will be prepared indirectly (usually with ashing) in accordance with Libby Asbestos Site-specific procedures, such as those set forth in SOP EPA-LIBBY-08, *Indirect Preparation of Air and Dust Samples for Analysis by TEM*, as modified by Libby-specific laboratory modification #LB-000091. In some instances, EPA also has specified that an air sample will be prepared indirectly if there is loose material in the cowl of the air cassette. In accordance with SOP EPA-LIBBY-08, the ashed residue from the original filter is suspended in water and sonicated. An aliquot of this water is applied to a second filter, which is then used to prepare a set of TEM grids. To account for the amount of dilution inherent in indirectly prepared samples, EPA incorporates a dilution factor or F-factor (which is used to calculate the achieved analytical sensitivity) in reported air concentrations from such samples. Application of these indirect preparation techniques has the potential to change the nature of any asbestos fibers that may have been present on original filter, because the sonication step can dissociate fibers present in complex structures as well as break or split fibers into smaller particles. Indirect preparation techniques have also been developed by the EPA Region 8 for use at the Libby Site on media, such as duff and tree bark.

As discussed in the *Final LAA HHRA* (EPA, 2015a), EPA has developed an adjustment factor to account for the effect of indirect preparation on reported LAA air concentrations. The adjustment factor is based upon EPA Site-specific studies that observed a 2-4 factor increase in reported PCME LAA air concentrations for indirectly prepared filters as compared to direct preparation. For the purposes of calculating exposure point calculations (EPCs) for determining risk, an indirect preparation adjustment factor of 2.5 was used by EPA to account for the probable bias in air concentration estimates resulting from the use of an indirect preparation method. Additional information on the development of this adjustment factor can be found in Appendix D of the *Final LAA HHRA.*

EPA 100.2. *Determination of Asbestos Structures over 10 μm in Length in Drinking Water,* (EPA, 1994b) is a method for the preparation and analysis of water samples by TEM. This method is derived from EPA 100.1, *Analytical Method for Determination of Asbestos in Water*. The principal difference between the recording rules specified in these methods is that EPA Method 100.1 records all asbestos structures, whereas EPA Method 100.2 records only those asbestos structures that are longer than 10 µm, which is the basis for asbestos fibers regulated by the maximum contaminant level for asbestos in drinking water. However, identification and measurement of all asbestos fibers (both greater and less than 10 µm) may be required. In such cases, EPA Method 100.2 specifies a modified filter membrane size to prevent the loss of small fibers during filtering. In general, the structure recording rules for both methods are similar to those utilized by TEM ISO in that higher order structures (e.g., matrices, clusters) are disaggregated to enumerate individual fibers when they can be clearly distinguished.

In accordance with the method, if the collected water is not filtered within 48 hours, samples undergo special preparation methods to address bacterial and algal growth that may influence

the reporting of structures in the TEM analysis. In brief, sample preparation includes an ozonation/ultraviolet light (UV) treatment and sonication step, which is designed to oxidize organic matter present in the water or on the walls of the bottle, thus destroying any material that might cause clumping and binding of asbestos structures. Beginning in July of 2010 (per Libby laboratory modification #LB-000020a), all water samples were prepared using the ozonation/UV treatment regardless of the elapsed time between sample collection and filtration.

3.5.2 Non-asbestos Analytical Methods

EPA-approved non-asbestos sample test methods were utilized for various sample media collected at in the OU3 Study Area. When necessary, the analytical methods were incorporated into project-specific SOPs. The analytical methods used to analyze samples of various media in the OU3 Study Area for non-asbestos constituents are presented in **Table 3-2**.

3.6 QUALITY ASSURANCE / QUALITY CONTROL

The purpose of this section is to describe the QA and QC procedures that have been established to govern the collection and analysis of samples in the OU3 Study Area to confirm that the reported data are valid and useable. Refer to the *Libby Asbestos Superfund Site Operable Unit 3 Data Summary Report: 2007 to 2014 – Revision 3* (referred to herein as *DSR*; CDM Smith, 2016) for a summary of results for a variety of different types of QA/QC samples that have been collected across the various sampling programs and within the laboratory that provide information on the accuracy, precision, and reliability of reported results.

3.6.1 Field Quality Assurance Activities

General. Field QA activities include processes and procedures that have been designed to confirm that field samples are collected and documented properly, and that any issues/deficiencies associated with field data collection or sample processing are quickly identified and rectified. Detailed information on field QA activities can be found in the investigation-specific SAP/QAPPs. These SAP/QAPPs are developed by the EPA technical support contractors and implemented by Grace field contractors. The following bullets summarize the components of the field QA program implemented in the OU3 Study Area.

- **Field Team Roles/Responsibilities** – There are a variety of field personnel involved in the sampling investigations for the OU3 Study Area and each individual has assigned roles and responsibilities. The field team leader (FTL) oversees sample collection activities to ensure that governing documents are implemented appropriately. The field QA manager is responsible for ensuring that field efforts are conducted in accordance with appropriate QA guidelines.
- **Field Team Training** - Individuals involved in the collection, packaging, and shipment of samples must have appropriate training, including OSHA 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) and relevant 8-hour refreshers, respiratory protection, and asbestos awareness training.
- **Orientation** – Field personnel are required to attend an orientation session with the field Health and Safety (H&S) manager, as well as an orientation session on sample collection techniques.
- **Investigation-Specific Documentation** - Field personnel are required to review and understand applicable governing documents associated with the sampling

investigation, including the SAP/QAPP, associated SOPs, and the applicable Health and Safety Plan (HASP).

- **Readiness Reviews** - Meetings are conducted prior to beginning field sampling activities to discuss and clarify the objectives, equipment and training needs, field SOPs, QC samples, and H&S requirements for each investigation.
- **Field Documentation Review** – Field documentation is completed by field staff using investigation-specific field forms. These field forms provide a standardized method of documenting sample information generated in the field. Field documentation is reviewed on a regular basis to ensure the accuracy of the recorded sample information.
- **Equipment Maintenance/Calibration** – Field equipment is maintained in accordance with manufacturer specifications and the OU3 Study Area-specific SOPs. For air samples, each air sampling pump is calibrated to the desired flow rate using a primary calibration standard prior to sample collection.
- **Equipment Decontamination** – Field equipment used in sample collection is decontaminated in accordance with the OU3 Study Area-specific SOPs. Any disposable equipment or other investigation-derived waste (IDW) is handled in conformance with SOP requirements.
- **Sample Custody/Tracking** - Samples collected in the OU3 Study Area are tracked and managed in accordance with the OU3 Study Area-specific SOPs for sample custody and tracking using appropriate chain of custody (COC) forms.
- **Field QC Samples** - A variety of different types of field QC samples have been collected as part of the investigations conducted in the OU3 Study Area. These QC samples provide information on potential contamination arising from sample collection methods as well as information on result precision.
- **Modification Documentation** – Major deviations to the SAP/QAPP that modify the sampling approach and associated guidance documents are recorded on a field record of modification (ROM) form. These ROMs are reviewed and approved by the EPA remedial project manager (RPM).

Field Oversight. Because field sampling activities in the OU3 Study Area are performed by Grace contractors, an important component of the field QA program is field oversight. From 2007 to 2009, field oversight was provided by EPA's contractor, CDM Smith. Starting in 2010, field oversight has been performed by EPA's contractor, HDR Engineering, Inc. (HDR). Prior to initiating oversight activities, CDM Smith and/or HDR staff associated with the oversight activities reviewed governing investigation-specific documents and prepared blank audit checklists to be completed during the field oversight activities. Details on field oversight findings can be found in the *DSR* (CDM Smith, 2016).

3.6.2 Soil Preparation Laboratory Quality Assurance Activities

General. Until 2012, soil and sediment samples collected from the OU3 Study Area were sent to the CDM Smith Close Support Facility (CSF) in Denver, Colorado for preparation prior to analysis by the Libby-specific PLM methods. The *CSF Soil Preparation Plan* (CDM Smith, 2004) served as the guidance document for activities at the CSF. Beginning in 2012, soil/sediment samples collected from the OU3 Study Area were sent to the Sample Preparation Facility (SPF) in Troy, Montana for preparation prior to analysis by the Libby-specific PLM methods. The *SPF Soil Sample Preparation Work Plan* presented in Appendix F of the *Troy Asbestos Property Evaluation Work Plan* (Tetra Tech, EM Inc., 2007) serves as the guidance document for activities at the CSF. The purpose of the soil preparation plans (SPPs) is to provide standard guidance on preparation

methods to ensure that these procedures and resulting measurements were scientifically sound and of acceptable and documented quality. The following bullets summarize components of the QA procedures at the preparation laboratories.

- **Personnel Training** – Individuals involved in the processing of samples are required to have read and understood the SPP, associated SOPs, as well as the facility HASP. In addition, personnel must have appropriate training, including OSHA 40-hour HAZWOPER and relevant 8-hour refresher updates.
- **Documentation Review** – Sample preparation documentation is completed by preparation laboratory staff using Libby-specific forms. These forms provide a standardized method of documenting sample preparation information generated. This documentation is reviewed on a regular basis to ensure the accuracy of the recorded preparation information.
- **Equipment Maintenance/Calibration** – Weight scales, ventilation hoods, and drying ovens used in sample preparation are maintained and calibrated in accordance with manufacturer specifications. In addition, the plate grinder is calibrated daily, to verify proper particle size and demonstrate that samples are not being over-processed.
- **Equipment Decontamination** – Sample preparation equipment is decontaminated in accordance with Libby-specific preparation SOPs (ISSI-LIBBY-01 and 16-ASB-06.02) between each sample.
- **CSF Contamination Monitoring** – The preparation laboratory performs regular laboratory contamination monitoring to evaluate worker safety, ensure laboratory cleanliness, and help assess the potential for laboratory cross-contamination of samples submitted to the facility.
- **Sample Custody/Tracking** - Samples collected processed at the preparation laboratory are tracked and managed in accordance with COC requirements specified in the SPP.
- **Preparation QC Samples** - A variety of different types of preparation QC samples have been included in the preparation of sample collected as part of the investigations conducted in the OU3 Study Area. These QC samples provide information on potential laboratory contamination arising from sample preparation methods as well as information on result precision.
- **Modification Documentation** – Major deviations from the Libby-specific preparation SOP are recorded on a ROM form. These ROMs are reviewed and approved by the EPA RPM (or their designee).

3.6.3 Soil Preparation Laboratory Audits

The EPA QATS contractor, CB&I, performed audits of the CDM Smith CSF and the Troy SPF. Specific activities that were audited included the general laboratory facility, laboratory organization and personnel, general housekeeping, sample receipt and storage, sample preparation procedures, measurements and documentation, sample shipping procedures, and QA/QC procedures. Details on soil preparation laboratory audit results can be found in the *DSR* (CDM Smith, 2016).

3.6.4 Analytical Laboratory Quality Assurance Activities

General. Laboratories selected for analysis of samples for asbestos are part of the Libby analytical laboratory team. These laboratories have demonstrated experience and expertise in analysis of LAA in environmental media, and are part of an ongoing Libby-specific QA program designed to ensure accuracy of analytical and consistency of reported analytical results between laboratories. These laboratories are audited by the EPA QATS contractor and the National Institute of Standards and Technology (NIST)/National Voluntary Laboratory Accreditation Program (NVLAP) on a regular basis.

Laboratory QA activities include processes and procedures that have been designed to ensure that data generated by an analytical laboratory are of high quality and that any problems in sample preparation or analysis that may occur are quickly identified and rectified. The following bullets summarize the laboratory QA procedures that are required of each laboratory that analyzes samples from in the OU3 Study Area.

- **Laboratory QA Management Plan** - Each laboratory has developed a laboratory-specific QA Management Plan that provides a detailed description of the procedures and policies that are in place at their laboratory to ensure laboratory quality.
- **Certifications** - Analytical laboratories are subject to national, local, and project-specific certifications and requirements. Each laboratory is accredited by the NIST/NVLAP for the analysis of airborne asbestos by TEM and/or analysis of bulk asbestos by PLM. This includes the analysis of NIST/NVLAP standard reference materials (SRMs), or other verified quantitative standards, and successful participation in two proficiency rounds per year each of bulk asbestos by PLM and airborne asbestos by TEM supplied by NIST/NVLAP.
- **Team Training/Mentoring Program** - Laboratories are required to participate in a training/mentoring program to ensure laboratories can demonstrate the ability to perform reliable analyses at the Libby Site. The training process includes a review of morphological, optical, chemical, and electron diffraction characteristics of LAA using the Libby Site-specific reference materials, as well as training on project-specific analytical methodology, documentation, and administrative procedures used on the Libby Site.
- **Technical Discussions/Conferences** - Laboratories participate in regular technical discussions with the EPA and their contractors, as well as attend professional/technical conferences. These discussions enable the laboratory and technical team members to have an ongoing exchange of information regarding analytical and technical aspects of the project.
- **Analyst Training** - TEM and PLM analysts are required to undergo method-specific training and must understand the application of standard laboratory procedures and methodologies, including the Libby-specific analytical methods. Analysts must familiarize themselves with the Libby-specific method deviations, project-specific documents, and visual references.
- **Data Reporting** - Standardized bench sheets and data entry spreadsheets have been developed specifically for the Libby project to ensure consistency between laboratories in the presentation and submittal of analytical data. Analysts are trained in the project-specific reporting requirements and data reporting tools utilized in transmitting results.

- **Laboratory QC Samples** - A variety of different types of laboratory QC analyses have been collected as part of the investigations conducted in the OU3 Study Area. These QC analyses provide information on potential laboratory contamination arising from laboratory preparation and analysis methods as well as information on result accuracy and precision.
- **Laboratory Contamination Monitoring** – Each analytical laboratory performs regular laboratory contamination monitoring to evaluate worker safety and ensure laboratory cleanliness in compliance with their SOPs and certification requirements.
- **Modification Documentation** - Changes or revisions needed to improve or document specifics about analytical methods or laboratory procedures are documented using a ROM form. These ROMs are reviewed and approved by the EPA RPM (or their designee).

3.6.5 Analytical Laboratory Audits

Each laboratory conducts internal audits of their specific operations on an annual basis using appropriate checklists in accordance with their laboratory-specific QA Management Plan. As noted above, the laboratories that are part of the Libby analytical laboratory team are also audited by EPA's QATS contractor on a regular basis to specifically evaluate adherence to Libby-specific analytical requirements. The OU3 Study Area audits are used by the EPA to verify samples analyzed by their contract facilities are being processed in accordance with the EPA requirements. Each OU3 Study Area audit involves a review of the general elements of preparation, OU3 Study Area support, and report generation, which are modified as needed to fit the type of audit being performed. Details on analytical laboratory audit results can be found in the *DSR* (CDM Smith, 2016).

3.6.6 QC Results

There are a variety of field QC samples, preparation laboratory QC samples, and analytical laboratory QC analyses included as part of the sampling investigations performed in the OU3 Study Area. A detailed review and discussion of the results for QC samples and analyses is provided in the annual QA/QC summary reports for the OU3 Study Area prepared by EPA's QATS contractor. These reports are provided in **Appendix G,** summarized below, and detailed in the *DSR* (CDM Smith, 2016). The summaries below relate to data collected since 2007.

3.6.6.1 Field Quality Control Samples

The types of field QC samples collected as part of RI sampling activities for the OU3 Study Area after 2007 were specified in the in the investigation specific SAP/QAPPs and differ by media type, as follows:

- **Lot Blanks** – collected for air samples only. Since 2007, more than 20 air filter lot blanks have been analyzed by TEM and no asbestos structures were observed in any of the lot blanks analyzed. Based on lot blank results, the air filters used during the field sample collection did not contain asbestos.
- **Field Blanks** – collected for air and water samples. Since 2007, more than 100 field blanks have been collected and analyzed by TEM. LAA was not detected in any of the air field blanks. LAA was detected in three of the water field blanks; field samples collected on the same day as these field blanks were FB-qualified in the database. Based on the low number of detections (as compared to the number of

samples collected), the contamination of air samples and water samples as a consequence of field collection and analysis methods is not of concern.

- **Field Duplicates/Splits (air, water, duff material, tree bark)** – Since 2007, more than 100 field duplicate/splits have been collected for air, water, tree bark, and duff material and analyzed by TEM.. Because field duplicate/split samples are expected to have variability that is random and may be either small or large, there is no quantitative requirement for the unanimity of field duplicates/splits, instead results provide information on the magnitude of this variability and its effect on data interpretation. The TEM results of the field sample and the field duplicate/split are compared using the two Poisson rates method for comparison (Nelson, 1982). An evaluation of field duplicates/splits suggests that the TEM results for air samples is reproducible. Due to the inherent heterogeneity within the media, it is difficult to determine, the reproducibility of water, tree bark, and duff TEM results (even within a small sampling scale). Concentrations were usually within a factor of about 2 to 3 for water samples and within a factor of about 10 for tree bark and duff samples.
- **Field Duplicates/Splits (sediment, soil, soil-like media)** – Since 2007, more than 40 field duplicates for sediment, soil and soil-like media were collected and analyzed by PLM. The PLM-VE results for the original and field duplicate/split samples are compared to determine if both samples report results for the same semi-quantitative "bin". Overall concordance was generally good, with 100% concordance for PLM-Grav and about 80% concordance for PLM-VE. When PLM-VE field duplicate results were discordant, results were only weakly discordant (i.e., within one bin of each other).
- **Equipment Rinsates** – collected for groundwater samples only. Since 2007, 13 equipment rinsate samples were collected and analyzed by TEM. In 2008, total LAA was detected in one equipment rinsate; the field samples collected on the same day as the contaminated equipment rinsate sample were FB-qualified in the database. In 2015, total LAA was detected in all the collected equipment rinsates. As a consequence, groundwater results from the affected investigation were blank-adjusted to account for the possibility of cross-contamination in the field using the contaminated equipment (see Section 5.2.3 for more information).

3.6.6.2 Preparation Laboratory Quality Control Samples

The preparation laboratory QC samples are used to confirm that the preparation techniques utilized to process soil-like samples did not introduce potential laboratory contamination and to evaluate variability associated with preparation techniques. The types of preparation laboratory QC samples that were evaluated as part of the RI are:

- **Preparation Blanks** (including both grinding blanks and drying blanks) – Since 2007, more than 70 preparation blanks were analyzed by PLM-VE. All blank samples were non-detect for LAA indicating that the drying and grinding preparation procedures utilized with the preparation facilities did not introduce LAA into samples.
- **Preparation Duplicates** – Since 2007, more than 40 preparation duplicates were prepared by the preparation facilities and analyzed by PLM. Comparison of the preparation duplicates results with the paired field sample results aids to evaluate the variability that may occur during sample preparations and analysis. Most (~76%) of the preparation duplicates were ranked as concordant. When results were discordant, they were only weakly discordant (i.e., within one bin). These results suggest that the PLM-VE results are generally reproducible and reliable, and are not greatly influenced by

differences in laboratory preparation and analysis techniques. A total of 20 preparation duplicates pairs have been analyzed by PLM-Grav; the concordance rate was 100%.

3.6.6.3 Analytical Laboratory Quality Control Samples

The laboratory QC requirements for TEM analyses at the Libby Site are patterned after the requirements set forth by NVLAP, and include:

- **Laboratory Blanks** – Since 2007, more than 175 TEM laboratory blank analyses have been performed. No asbestos structures were observed in any laboratory blank sample. These results indicate that the filter preparation and analysis procedures utilized within the analytical laboratories likely did not introduce asbestos.
- **Re-preparation Analysis** – Since 2007, more than 50 re-preparation TEM analyses have been performed. Re-preparation analyses are compared to the original analysis using the two Poisson rates ratio method for statistical comparison recommended by Nelson (1982). Most (91%) of the re-preparation analyses performed were not statistically different from each other. These results show that LAA concentrations in air, tree bark, and duff reported in the OU3 Study Area investigations have acceptable reproducibility and that TEM analytical precision is not likely to be impacted by filter preparation methods. The reproducibility of water samples was ranked as poor historically, which highlights the inherent difficulties in sampling this medium. However, the reproducibility of water results has improved over time.
- **Recount Analyses** (i.e., recount same, recount different, and verified analyses) – Since 2007, more than 80 recount TEM analyses have been performed and more than 850 grid openings and 1,500 structure pairs have been re-examined. Recount analyses were compared with the original analysis on a grid opening-by-grid opening and structure-by-structure basis. Grid opening concordance is evaluated based on a comparison of total structure count. Structure concordance is evaluated based on a comparison of the assigned mineral classification and recorded structure dimensions. The total structure counts matched for approximately 93% of all grid openings, which ranks as acceptable concordance (per Libby laboratory modification #LB-000029). When the same structure was observed and recorded, there was 100% agreement on the assigned mineral class and good agreement (94% for length; 99% for width) on the recorded structure dimensions. These results indicate that there is good result reproducibility between TEM analysts within the same laboratory.
- **Inter-laboratory Analyses** – Since 2007, more than 50 inter-laboratory TEM analyses have been performed. More than 400 grid openings and 1,000 structure pairs have been re-examined as part of inter-laboratory analyses. Inter-laboratory analyses are recount analysis types in which grid openings are re-examined by a different laboratory than who performed the original analysis. Inter-laboratory analyses are compared in the same way as recount samples (described above). The total structure counts matched for only about 70% of all grid openings, which ranks as poor concordance (per Libby laboratory modification #LB-000029). When the same structure was observed and recorded, there was ~96% agreement on the assigned mineral class for paired structures, which is ranked as acceptable (per Libby laboratory modification #LB-000029). When mineral class differences were noted, it was usually related to differences in classification of “close call” non-asbestos material [NAM] (e.g., pyroxene). Although there was good agreement

(~98%) between laboratories on the recorded structure width, several discrepancies in recorded structure length were noted, and overall concordance was deemed acceptable at only (~83%). TEM inter-laboratory analyses indicate that differences between structure identification and recording procedures between the TEM laboratories are still evident. Explanations for the observed discordances included possible false negative results due to analyst error and/or misinterpretation, chemical variability among structures, and tears in the film replicate causing relocation of fibers.

Three types of laboratory-based QC analyses are performed for PLM-VE and include:

- **Laboratory Duplicates** (both self-checks and cross-checks) – Since 2007, more than 70 PLM-VE laboratory duplicate analyses have been performed. Comparison of the laboratory duplicate results with the paired original field sample results aids to evaluate the variability that may arise during the PLM analysis. Similar to preparation duplicates, laboratory duplicates are ranked as concordant if both the original sample results and the laboratory duplicate results display the same semi-quantitative classification. Nearly all (94%) of laboratory duplicates were ranked as concordant, with four analyses (6%) ranked as weakly discordant (i.e., within one bin of each other). These results indicate that the PLM-VE results are generally reproducible and reliable and are not greatly influenced by differences in analysis techniques within a PLM laboratory.
- **Inter-laboratory Analyses** – Since 2007, more than 30 PLM-VE inter-laboratory analyses have been performed. In general, the reproducibility of results between PLM-VE laboratories was poor for OU3 Study Area samples, with 33% ranked as weakly discordant and about 5% ranked as strongly discordant, which ranks as acceptable (per Libby laboratory modification #LB-000073). Inter-laboratory analyses concordance has improved over time suggesting that the actions taken to reduce between-laboratory differences that were previously noted have resulted in PLM-VE data that are more reproducible and reliable.
- **Performance Evaluation (PE) Standard Analyses** - Libby-specific PE standards for soil have been created for use at the Libby Site. These PE standards were created by spiking soil with known quantities of LAA obtained from the former mine. More than 75 PE standard analyses have been performed by the PLM laboratories that support OU3. About 62% of all PE standard analyses were concordant with the expected bin classification (as determined from the nominal LAA level in the PE standard). When results were discordant, they were usually weakly discordant; however, there were two strong discordances noted for the highest PE standard, with reported results being biased low. These results demonstrate that PLM-VE results are generally accurate but there are inherent uncertainties associated with reported binned results.

3.6.7 Data Verification and Validation

3.6.7.1 Data Verification

A data verification review was performed for data collected as part of the OU3 Study Area RI from 2007 through 2015. The goal of the data verification was to identify and correct data reporting errors.

A verification of the field sampling data sheet (FSDS) information was performed for samples of all media types (collected through 2015) in basic accordance with SOP EPA LIBBY-11 (Revision 0). FSDS verification was performed for 100% of samples on a weekly basis when field documentation forms were submitted during each investigation. Documentation errors and omissions were noted during these reviews. Every issue identified was resolved by field personnel and the necessary corrections have been made to the project database.

A verification of the surface water, groundwater, ambient air, ABS air, ash, tree bark, and duff sample results analyzed by TEM in basic accordance with the ISO Method 10312:1995(E) (ISO, 1995) was performed in accordance with SOP EPA-LIBBY-09 (Revision 2). A verification of the sediment, soil, and mine waste sample results analyzed by the Libby-specific PLM-VE and PLM-Grav methods was performed in accordance with SOP-EPA-LIBBY-10 (Revision 0). This verification effort was based on the Libby OU3 project database and the final laboratory reports as provided by the analytical laboratories. The frequency of each verification per investigation event and media type are presented in Table 1 of the *Libby Asbestos Superfund Site Operable Unit 3 Data Verification Report: 2007 to 2015* is included in **Appendix G**.

Any discrepancies identified during data verification were ranked as either critical or non-critical. Critical issues are those that have the potential to influence the reported result interpretations and/or concentrations. Most of the issues identified during the data verification process were non-critical and the frequency of critical errors was generally low. Identified discrepancies were submitted to the field teams and/or analytical laboratories for rectification and the necessary changes were incorporated into the OU3 Study Area database. The complete *Libby Asbestos Superfund Site Operable Unit 3 Data Verification Report: 2007 to 2015* is included in **Appendix G**.

3.6.7.2 Data Validation

Unlike data verification, where the goal is to identify and correct data reporting errors, the goal of data validation is to evaluate overall data quality and to assign data qualifiers, as appropriate, to alert data users to potential data quality issues within the subset of the data evaluated. A detailed review and discussion of the data validation results is provided in the annual QA/QC summary reports for the OU3 Study Area (see **Appendix G**). The validation results are summarized below.

Non-asbestos. For the Phase I and Phase II investigations (2007-2009), the non-asbestos data validation was performed by EPA subcontractor, TLI Solutions, Inc. A summary of the non-asbestos data validation is provided in **Appendix G**. In brief, inorganic, organic, and/or radiochemistry data for a total of 651 water and soil-like media samples in 29 sample delivery groups were reviewed by TLI. Over 3,400 analyses were assigned a data qualifier. The majority of these qualifiers (~98%) were assigned to denote estimated results (J-qualified) and non-detects (U-qualified); less than 2% of the qualified data were R-qualified (rejected) by the data validator. Any results that were R-qualified (rejected) by the data validator were excluded from use as the data are not reliable.

In 2015, EPA's QATS contractor, CB&I, validated 154 water analyses for inorganics, chloride/sulfate, and alkalinity methods. A summary of this validation effort is provided in **Appendix G**. Qualifiers were applied to 54 of the 154 analyses validated. All qualified samples were related to the metals and chloride/sulfate methods, with a lack of serial dilutions performed being the main cause for qualification. All of the assigned qualifiers were to denote estimated results (J-qualified) and non-detects (U-qualified); no results were R-qualified (rejected) by the data validator.

The OU3 Study Area database includes all assigned data validation qualifiers for non-asbestos constituents.

Asbestos. CB&I also performs a formal data validation on approximately 5% of the asbestos laboratory jobs each year. Samples for validation were selected randomly, choosing samples that were representative across each laboratory, analysis method, and medium. Since 2007, more than 2,000 analyses have been validated and very few asbestos data were qualified.

The OU3 Study Area database includes all assigned data validation qualifiers for asbestos results.

4 SUMMARY OF STUDY AREA INVESTIGATIONS

4.1 INTRODUCTION

This section presents a summary of the RI data-collection activities performed between September 2007 and September 2015. To date, the RI has been performed in a phased approach as summarized below. Each phase of data collection was performed in accordance with phase-specific SAPs and QAPPs developed and/or approved by the EPA.

Phase I of the RI was performed in the fall of 2007. The primary goal of the Phase I investigation was to obtain preliminary data on the levels and spatial distribution of LAA and non-asbestos constituents that potentially could have been released to the environment in the past as a result of the mining and milling activities that took place at the Former Mine Area.

Phase II of the RI was performed in the spring, summer, and fall of 2008. Phase II was comprised of three parts, as follows: Part A focused on the collection of data on the levels of LAA and non-asbestos constituents in surface water and sediment, as well as the OU3 Study Area-specific toxicity testing of surface water using rainbow trout. Part B focused on the collection of data on LAA levels in ambient air samples collected near the Former Mine Area, and on the collection of data on LAA and non-asbestos constituents in groundwater. Part C primarily focused on the collection of aquatic habitat and community data and the OU3 Study Area-specific toxicity tests to support the ecological risk assessment at the OU3 Study Area. This phase also included the collection of data on the levels of LAA and non-asbestos constituents in surface water and sediment at selected reference stations.

Phase III of the RI was performed in the spring, summer, and fall of 2009. Phase III included the collection of activity-based air samples during simulated recreational visitor activities in the forested area, as well as the collection of a variety of ecological community and habitat metrics in support of the ecological risk assessment.

Phase IV of the RI was performed in 2010 and 2011. Phase IV was comprised of two parts: Part A of the Phase IV SAP was performed in the summer and fall of 2010. Part A focused on the collection of additional activity-based air samples during simulated recreational visitor, wood harvesting, forest management, and firefighting activities to support the HHRA. Part B of the Phase IV SAP was performed in the spring, summer, and early fall of 2011. Part B focused on the collection of additional data on LAA levels in surface water to support the ecological risk assessment. Data collection efforts also included sampling to better characterize the habitat suitability of the OU3 Study Area streams for fish.

Phase V of the RI was performed in 2012 and 2013. Part A of this sampling program included the collection of LAA levels in surface water, sediment, and activity-based air samples during simulated recreational visitor activities on the Kootenai River. Part B of this sampling program included a series of ecological studies to support the ecological risk assessment, included an amphibian toxicity test, an amphibian field assessment, two in-stream caged fish toxicity studies addressing eyed egg and juvenile life stages, a resident fish lesion study, and a fish tissue LAA burden assessment. The eyed-egg toxicity study was repeated in 2013 due to loss of specimens from field cages (EPA, 2013a).

Additional RI activities were performed in 2012, 2013, 2014, and 2015 that were not incorporated under any of the RI phases described above. These activities included: simulated open burning of duff material, wood-burning stove ash removal, VW removal action in the amphitheater area, wildfire monitoring and activity-based air sample collection, commercial logging activity-based air sample collection, nature and extent activity-based air sampling, nature and extent surface water and sediment sampling, nature and extent tree bark and duff sampling, low-intensity prescribed understory burn ABS, slash pile burn ABS, trespasser ABS, surface water and groundwater sampling, geotechnical and hydrogeological investigations, and the OU3 Study Area reconnaissance surveys to better understand the surficial geology and geomorphology of the LRC drainage area.

FSSRs were developed for sampling phases/events conducted prior to 2014 and provide a summary of sampling activities, locations, and sampling methods employed. Sampling results for OU3 Study Area investigations are detailed in the *DSR* (CDM Smith, 2016). Additionally, each of the key references associated with each sampling phase/event is provided in **Sections 4.2** through **4.14** discussions below.

The following **Sections 4.2** through **4.14** describe the sampling design of each sampling phase/event by media type. **Table 4-1** outlines the number of samples for various media collected by sampling phase/event. The station identification numbers (ID), station descriptions, sampling phase/event, and analyses conducted are provided on **Table 4-2.** The following sections summarize the sampling programs for each environmental medium sampled, the habitat and community evaluations, and the OU3 Study Area-specific toxicity tests conducted for the RI from September 2007 through September 2015.

4.2 SURFACE WATER INVESTIGATIONS

Surface water samples were collected in the OU3 Study Area as part of the Phase I, Phase II (Part A), Phase II (Part C), Phase IV (Part B), Phase V (Part A and Part B), OU4 Nature and Extent Study, 2013 *In situ* Surface Water, and 2015 Spring Water Sampling programs. Surface water samples were analyzed for a broad suite of analytes, including LAA and non-asbestos constituents. The following section summarizes the surface water sampling objective(s) and design of each sampling program conducted between 2007 and 2015. **Table 4-1** outlines the number of samples collected for surface water by sampling phase/event. **Table 4-2** provides the surface water sampling locations by station ID, description, sampling phase/event, and analyses conducted. Surface water sample locations that were analyzed for LAA and non–asbestos constituent are presented on **Figures 4-1a** and **4-1b** respectively. Detailed results for LAA and for non-asbestos constituents detected in surface water samples collected throughout the OU3 Study Area are provided and discussed in **Section 5.0**.

4.2.1 Phase I (2007) –Sampling Activities

The objective of the Phase I sampling program was to collect surface water data to obtain a preliminary characterization of the nature and extent of surface water potentially impacted by releases from historical mining, milling, and activities ancillary to mining and milling (e.g., subsequent handling and transport of mined material). In addition, the Phase I sampling program also conducted a visual survey to identify and sample springs and seeps emanating from waste rock areas.

Twenty-four (24) total surface water samples were collected at the following surface water areas:

- The tailings impoundment and toe drains;
- Mill Pond;
- Rainy Creek, Fleetwood Creek, and Carney Creek upstream of mine-disturbed areas;
- Fleetwood Creek and Carney Creek downstream of mine-disturbed areas;
- LRC below the Mill Pond and below Carney Creek; and
- Seeps and springs on or near the Former Mine Area.

The 24 surface water samples were analyzed for LAA, metals/metalloids, petroleum/hydrocarbons, and anions. In addition, a broad suite of analyses were performed for samples collected at two locations: the tailings impoundment toe drain (TP- TOE1) and LRC downstream of the confluence with Carney Creek (LRC-2). These locations were selected because they have the best potential of characterizing releases from the mine. The additional analyses at these two locations included PCBs, pesticides, herbicides, gross alpha/gross beta, VOCs, semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), and cyanide. The following water quality parameters were measured using field-portable instruments at the time of sample collection: temperature, pH, SC, DO, oxidation/reduction potential (ORP), and turbidity. Stream flow also was measured at the time of sample collection using a portable field meter.

Table 4-1 outlines the number of surface water samples collected in Phase I. **Table 4-2** provides the surface water sampling locations by station ID, station description, and analyses conducted for surface water samples collected in Phase I. Surface water sample locations that were analyzed for LAA and non–asbestos constituents are presented on **Figures 4-1a** and **4-1b,** respectively.

Samples were collected in accordance with the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b).

After the surface water samples were collected in the field, the samples for LAA analysis were hand-delivered to the EMSL Mobile Laboratory in Libby (which was staffed by EMSL Analytical, Inc. [EMSL[4]]) for filtration. Subsequent to this study, the lab contracting vehicles changed and labs were no longer directly subcontracted by Grace. No treatment of the water was performed prior to the filtration; however, most samples were filtered within 48 hours. The resulting filters were analyzed for total LAA by TEM. Filters were prepared and analyzed using EPA Method 100.2 (EPA, 1994b), with modified counting procedures as described in Libby Laboratory Modification #LB-000020.

Analyses of non-asbestos constituents in surface water were performed by Energy Laboratories, Inc. (ELI) in Billings, Montana.

Detailed information on the Phase I field sampling effort, including all associated field documentation, is provided in the *Phase I FSSR* (MWH, 2007) and the results are summarized in **Section 5.0** of this report.

[4] EMSL Libby closed in 2014.

4.2.2 Phase II, Part A (Spring-Fall 2008) – Sampling Activities

Data from the Phase I sampling program provided information on the concentrations of LAA and other non-asbestos constituents in surface water for a single sampling event performed during October 2007. Because concentrations of analytes in surface water may vary over time, especially in cases where there are large fluctuations in flow (e.g., during spring runoff), the objective of the Phase II Part A sampling program was to collect additional data to characterize the temporal and spatial patterns of LAA and non-asbestos constituents in surface water. A total of 209 surface water samples were collected and analyzed for LAA and 56 surface water samples were collected and analyzed for non-asbestos constituents as described below.

The Phase II Part A sampling program consisted of two monitoring efforts, one for the Rainy Creek watershed and one for the Kootenai River. The Rainy Creek watershed monitoring effort was split into five elements as follows:

Element 1 Seasonal Monitoring. The purpose of this element was to measure stream flow and concentrations of LAA and non-asbestos constituents in surface water at the stations sampled in Phase I to characterize constituent concentrations during spring and summer flow conditions. Element 1 surface water samples were collected at 30 locations. Two rounds of sampling were completed, one in June 2008 and one in September 2008. All surface water samples were analyzed for LAA, metals/metalloids, petroleum hydrocarbons, and anions. In addition, a broad suite of analyses were performed for samples collected at the tailings impoundment toe drain (TP-TOE1) and LRC downstream of the confluence with Carney Creek (LRC-2). As noted previously, these locations were selected because they appeared to have the best potential of characterizing potential releases from the mine. The additional analyses at those two locations included PCBs, pesticides, herbicides, gross alpha/gross beta, VOCs, SVOCs, and cyanide. The following water quality parameters were measured using field-portable instruments at the time of sample collection: temperature, pH, SC, DO, ORP, and turbidity. Stream flow was also measured at the time of sample collection using a portable field meter.

Element 2 Spring Runoff Monitoring. The purpose of this element was to monitor stream flow and LAA concentrations in surface water at selected stations within the Rainy Creek watershed during the rising and falling limbs of the spring snowmelt-runoff hydrograph. Surface water samples were collected weekly at 12 stations (13 when water was flowing through the Tailings Pond spillway) beginning at the onset of rising stream flows in response to snowmelt, continuing through the spring high-flow season, and ending after the seasonal peak in flow was observed on Rainy Creek (from early April through mid-June 2008). All surface water samples were analyzed for LAA. Stream flow also was measured at the time of sample collection.

Element 3 Summer and Fall Monitoring. The purpose of this element was to provide ongoing information on LAA concentrations and stream flow rates downstream of LAA sources within the Rainy Creek watershed. Two LRC stations were sampled as part of Element 3, the station below Carney Creek (LRC-2) and the station near its discharge to the Kootenai River (LRC-6). Surface water samples were collected every two weeks at each station, beginning in mid-June and ending in mid-August 2008. All surface water samples were analyzed for LAA. Stream flow also was measured at the time of sample collection using a portable field meter.

Element 4 Continuous Precipitation and Flow Monitoring. The purpose of this element was to collect continuous precipitation and stream flow data. To accomplish this, a rain gauge was placed at the meteorological station on the Former Mine Area and Parshall flumes were installed at LRC-2, LRC-6, and CC-2.

Element 5 Collection of Surface Water for Toxicity Testing. The purpose of this element was to collect OU3 Study Area surface water for use in the OU3 Study Area-specific toxicity tests.

In addition to the Phase II Part A sampling program, samples also were collected at nine surface water locations in the Kootenai River. These locations were selected to provide surface water LAA concentrations upstream and downstream of Rainy Creek and to include river locations with the greatest potential for elevated LAA concentrations due to transport via Rainy Creek. Although the planned study included sampling during both high flow and low flow conditions, samples were only collected under low flow conditions due to safety concerns for sampling personnel during high flow. Surface water samples were analyzed for LAA.

Table 4-1 outlines the number of surface water samples collected in Phase II. **Table 4-2** provides the surface water sampling locations by station ID, station description, and analyses conducted for surface water samples collected in Phase II. Surface water sample locations that were analyzed for LAA and non–asbestos constituents are presented on **Figures 4-1a** and **4-1b,** respectively.

Samples were collected in accordance with the *Phase II Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site Part A: Surface Water and Sediment* (EPA, 2008c).

After surface water samples were collected, as described above, in the field, the samples for LAA analysis were hand-delivered to the EMSL laboratory in Libby, Montana Mobile laboratory for filtration. No treatment of the water was performed prior to the filtration; however, most samples were filtered within 48 hours. The resulting filters were then sent to EMSL in Libby, Montana and Beltsville for analysis of total LAA by TEM. Filters were prepared (water was filtered) and analyzed according to the ISO method 10312:1995(E) (ISO, 1995) counting protocols, with all applicable Libby Site-specific laboratory modifications. Analyses of non-asbestos constituents in surface water were performed by ELI.

Detailed information on the Phase II Part A field sampling effort, including all associated field documentation, is provided in the *Phase II FSSR* (MWH, 2009) and the results are summarized in **Section 5.0** of this report.

4.2.3 Phase II, Part C (Fall 2008) – Sampling Activities

The objective of the Phase II Part C sampling program was the collection of aquatic habitat and community data and collection of surface water to support the OU3 Study Area-specific aquatic toxicity tests needed to support the ecological risk assessment in the OU3 Study Area. In addition, this sampling program also included the collection of surface water samples for aquatic bioassays at two selected aquatic reference stations, Noisy Creek (NSY-R1) and a tributary to Bobtail Creek (BTT-R1).

Two surface water samples were collected, one from each aquatic reference station, in October 2008. All surface water samples were analyzed for LAA, metals/metalloids, pesticides, herbicides, and SVOCs. At the time of sample collection, temperature, pH, SC, DO, ORP, turbidity, and stream flow also were measured in the field.

Table 4-1 outlines the number of surface water samples collected in Phase II Part C. **Table 4-2** provides the surface water sampling locations by station ID, station description, and analyses conducted for surface water samples collected in Phase II Part C. Surface water sample locations

that were analyzed for LAA and non–asbestos constituents are presented on **Figures 4-1a** and **4-1b,** respectively.

Samples were collected in accordance with the *Phase II Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site Part C: Ecological Data* (EPA, 2008d).

After water samples were collected in the field, the samples for LAA analysis were hand-delivered to the EMSL Mobile Laboratory in Libby for filtration. No treatment of the water was performed prior to the filtration however; most samples were filtered within 48 hours. The resulting filters were then sent to EMSL in Libby, Montana for analysis of total LAA by TEM. Filters were prepared and analyzed in accordance with ISO 10312:1995(E) (ISO, 1995) counting protocols, with all applicable Libby Site-specific laboratory modifications. Analyses of non-asbestos constituents in surface water were performed by ELI.

Detailed information on the Phase II Part C field sampling effort, including all associated field documentation, is provided in the *Final Data Report for the Autumn 2008 Aquatic Data Collection Program* (Parametrix, 2009a). Methods and results of the aquatic toxicity bioassays are summarized in the *Toxicity of Asbestos in Waters from the Libby Superfund Site Operable Unit 3 (OU3) to Rainbow Trout (Oncorhynchus mykiss)* (Parametrix, 2009b) and also are summarized in **Section 5.0** of this report.

4.2.4 Phase IV, Part B (2011) – Sampling Activities

The objective of Phase IV Part B focused on the collection of additional OU3 Study Area surface water data needed to support the ecological risk assessment. Data collection efforts included sampling and analysis of the OU3 Study Area surface waters to characterize temporal LAA concentrations, as well as efforts to better characterize the habitat suitability of the OU3 Study Area streams for fish. Because surface water samples collected as part of the Phase I and Phase II sampling investigations may have been influenced by fibers clumping and adhering to sample container walls, LAA concentration values observed in these samples were deemed uncertain. A second objective of the Phase IV Part B sampling program was to collect additional surface water data to better characterize temporal LAA concentrations in surface water at the OU3 Study Area using ozonation/ UV light treatment prior to filtration to address potential fiber clumping/wall adherence issues (EPA, 2011a).

The Phase IV Part B sampling program consisted of regular monitoring of LAA concentrations in surface water at a subset of the previously established sampling locations. This included locations where Parshall flumes had been placed, including two stations in Rainy Creek (LRC-2 and LRC-6) and one station in Carney Creek (CC-2), and at the tailings impoundment (TP). These stations were selected because LRC is the chief reach of concern for fish, and these stations are downstream of potential primary sources of LAA, including the tailings disposal area (LRC-2), sediments deposited along LRC (LRC-6), and seeps and ponds (CC-2). Station TP (in the tailings impoundment) was selected because it is representative of waters to which amphibians may be exposed. In order to characterize the levels of LAA in surface water as a function of flow, time (season), and location; weekly sampling was conducted from mid-April (prior to the onset of rising stream flows in response to snowmelt) to July 2011 at each station, followed by bi-weekly sampling after spring flows decreased through the end of September 2011. Eighty-two total samples were collected for LAA analysis, 10 of which were collected using a syringe and then immediately filtered through a syringe filter disk in the field. Only free fibers (i.e., fibers not associated with organic material clumps) were counted.

Whenever grab samples of surface water were collected, the in-stream temperature, pH, SC, DO, ORP, and turbidity also were measured using portable field meters. In addition, continuous flow monitoring was performed at LRC-2, LRC-6, and CC-2.

Table 4-1 outlines the number of surface water samples collected in Phase IV Part B. **Table 4-2** provides the surface water sampling locations by station ID, station description, and analyses conducted for surface water samples collected in Phase IV Part B. Surface water sample locations that were analyzed for LAA are presented on **Figure 4-1a**.

Samples were collected in accordance with the *Phase IV Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site Part B: 2011 Surface Water Study* (EPA, 2011a).

After water samples were collected in the field, the samples for LAA analysis were hand-delivered to the EMSL Mobile Laboratory in Libby for treatment (ozonation/UV light) and sonication in accordance with the procedures in EPA Method 100.1 prior to filtration. The resulting filters then were analyzed at the EMSL in Libby or Hygeia for analysis of total LAA by TEM in accordance with the ISO 10312:1995(E) (ISO, 1995) counting protocols, with all applicable Libby Site-specific laboratory modifications.

Detailed information on the Phase IV Part B field sampling effort, including all associated field documentation, is provided in the *Phase IV Part B FSSR* (MWH, 2013b) and the results are summarized in **Section 5.0** of this report.

4.2.5 Phase V, Part A (2012) – Sampling Activities

The objective of Phase V Part A sampling was the characterization of the potential nature and extent of LAA in surface water in the Kootenai River downstream of the confluence with Rainy Creek to address limitations identified with the existing data. As specified in the SAP/QAPP (EPA, 2012c), previous surface water data were collected during low flow conditions (no data were available under high flow conditions) and the collected water samples were not treated with ozone or UV light prior to filtration, which may have caused the LAA fibers to clump and adhere to the walls of the sample containers. In addition, previous Kootenai River water collection efforts only included a limited number of sampling locations. The overall objective of this investigation was to provide information to better characterize levels of LAA in the Kootenai River under both high flow and low flow conditions and to provide data that can be used to evaluate if concentrations of LAA in surface water in the Kootenai River downstream of the confluence with Rainy Creek are above a level of human health concern.

Relative loading from Rainy Creek to the Kootenai River is dependent upon numerous factors. As shown in previous studies, LAA concentrations in Rainy Creek tend to be higher in the spring when flow is highest (EPA, 2012c). The timeframe for the Phase V Part A sampling events spanned seasonal high flow conditions (i.e., spring run-off) from Rainy Creek to the Kootenai River so as to capture peak loading to the Kootenai River. Because Rainy Creek is potentially one of the sources of LAA to the Kootenai River, surface water grab samples were collected both upstream and downstream of the confluence with Rainy Creek to characterize the potential effect of Rainy Creek on the river. Surface water grab samples were collected from stations UKR-0, KR-1, KR-4, KR-5, and LRC-6 over an eight week period from late April 2012 through mid-June 2012, at a frequency of one sample per week. In order to evaluate low flow conditions, one surface water grab sample also was collected from each of these locations in mid-September 2012**.**

In addition to the samples listed above, five locations (KR-14, KR-15, KR-16, UKR-1, and UKR-3) were sampled once in late May 2012 and once in September 2012 during high and low flow periods. Surface water grab samples were collected from the bank at all locations. Additionally, at locations KR-14 and KR-16, river-transect surface water samples (four samples at equally-spaced intervals across the river) were collected using a flat-bottom powerboat on the same day that the grab samples were collected from the bank. A total of 72 surface water samples were collected and analyzed for LAA.

Table 4-1 outlines the number of surface water samples collected in Phase V Part A. **Table 4-2** provides the surface water sampling locations by station ID, station description, and analyses conducted for surface water samples collected in Phase V Part A. Surface water sample locations that were analyzed for LAA are presented on **Figure 4-1a**.

Samples were collected in accordance with the *Sampling and Analysis Plan / Quality Assurance Project Plan for Operable Unit 3, Libby Asbestos Superfund Site Phase V, Part A: Kootenai River Surface Water, Sediment, and Activity-based Sampling* (EPA, 2012c).

After the water samples were collected in the field, the samples were hand-delivered to the EMSL laboratory in Libby for filtration and analysis. Prior to filtration, all samples underwent ozonation/UV treatment and sonication in accordance with the techniques in EPA Method 100.2 (EPA, 1994b), as modified by Libby Laboratory Modification LB-000020A.

Resulting filters from high-flow samples were used to prepare grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E). These grids were initially examined by rapid turn-around analysis (TAT) by TEM in accordance with the procedures described in the OU3 Study Area-specific method modification (TEM_WATER_Mod1). In brief, grids were examined by TEM in accordance with the counting rules specified in ISO 10312:1995(E), but the analyst was not required to report structure-specific attributes for each countable structure observed. Rather, the analyst was only required to report the total number of countable LAA structures for each grid opening examined, which was then used to estimate the total LAA water concentration.

Originally, the intent was to utilize the results of the rapid turnaround time TEM analyses to identify the three-week time period when concentrations of LAA in the Kootenai River were the highest. Then, all samples collected within this three-week time period were to be analyzed by the "standard" TEM method and other samples outside of this three-week time period would be archived for possible future analysis. However, based on a preliminary evaluation of the rapid turnaround time results, the EPA decided that, with the exception of a subset of samples from locations LRC-6 and UKR-0, all samples would undergo standard TEM analysis. For locations LRC-6 and UKR-0, samples from the last three rounds of sampling during high flow conditions were archived.

During the "standard" TEM analyses, the prepared grids were examined by TEM in accordance with the procedures described in ISO 10312. Filters were analyzed in accordance with the ISO 10312:1995(E) (ISO, 1995) counting protocols, with all applicable Libby Site-specific laboratory modifications. Phase V, Part A surface water samples were not analyzed for non-asbestos constituents.

Continuous flow measurements were collected using ISCO® automated flow recorders installed at LRC-6, LRC-2 and CC-2. The data collected at LRC-6 was monitored to certify that the surface water samples were representative of high flow conditions within Rainy Creek.

Measurement of water quality parameters (e.g., pH, SC, etc.) and stream flow were not performed at Phase V, Part A surface water sample locations as stated in the SAP/QAPP (EPA, 2012c). Detailed sampling information, including all associated field documentation, is provided in the *Phase V Remedial Investigation FSSR* (MWH, 2013c) and the results are summarized in **Section 5.0** of this report.

4.2.6 Phase V, Part B (2012) – Study Activities

The objective of Phase V Part B 2012 was to conduct *in situ* eyed-egg toxicity test ecological studies in LRC and reference locations, which are located outside of the OU3 Study Area boundary, (refer to **Section 4.10.5** below for sample location details). The study was performed in May and June 2012. As part of this study, pore water samples from inside gravel buried Whitlock-Vibert box (WVB) chambers were collected (Pore Water [In]) to characterize LAA concentrations and evaluate whether exposure of the trout eggs or newly hatched fry to LAA in LRC presented an unacceptable ecological risk. In addition to the egg chamber pore water samples, a limited number of gravel pore water (Pore Water [Out]) external to the WVB and co-located overlying surface water in the WVB deployment location were collected. These two types of additional water samples were collected to evaluate the relationship between LAA concentrations in the WVB chamber, the gravel pore water immediately external to the WVB, and the overlying surface water. A total of 47 pore water samples were collected and analyzed for LAA.

Also as part of the Phase V, Part B 2012 studies, a juvenile trout toxicity test was performed during the same time period as the eyed egg study. Juvenile trout were maintained in secured, floating cages in the same locations as egg study within LRC and in reference streams. Surface water samples were collected to characterize LAA exposure concentrations within the cages to be utilized in the *Final Asbestos BERA* (EPA, 2014a).

Additionally, an Amphibian Field Study was conducted as part of the Phase V, Part B ecological studies SAP. Surface water samples in the OU3 Study Area ponds were collected as part of this study weekly once egg masses were estimated to be present starting on May 24, 2012 and ending on August 31, 2012. Surface water samples also were collected once each at study initiation and conclusion at each offsite reference pond. Water samples were submitted for analysis of LAA by TEM analysis method ISO 10312. See **Section 4.11.6** for sample location descriptions and further details on this study.

A total of 109 surface water samples were collected and analyzed for LAA as part of the juvenile trout toxicity and amphibian field study.

Samples were collected in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan Operable Unit 3, Libby Asbestos Superfund Site Phase V Part B: 2012 Ecological Investigations* (EPA, 2012d).

Table 4-1 outlines the number of surface water samples collected in Phase V Part B. **Table 4-2** provides the surface water sampling locations by station ID, station description, and analyses conducted for surface water samples collected in Phase V Part B. Surface water sample locations that were analyzed for LAA are presented on **Figure 4-1a**.

Detailed information on the Phase IV Part B field sampling effort, including all associated field documentation, is provided in the Golder Associates (Golder) *Data Report: 2012 In Situ Westslope*

Cutthroat Trout Toxicity Studies, Operable Unit 3; the *Data Report: 2012 Field Collection, Examination and Pathology of Amphibian Species* (Golder, 2013a; Golder, 2014a), and in **Section 5.0** of this report.

4.2.7 OU4 Nature and Extent Study in Surface Water and Sediment (2012) – Sampling Activities

Surface water and sediment samples (discussed below in **Section 4.4.6**) were collected in the spring and fall of 2012 as part of the OU4 RI to characterize the nature and extent of potential LAA contamination in surface water and sediment outside of the Rainy Creek Watershed. Sampling was conducted in the Kootenai River and its tributaries to evaluate the potential ecological and human health risks. This investigation was separated into two sampling efforts in an attempt to collect surface water data that were representative of both high flow (spring, May 2012) and low flow (fall; September 2012) conditions.

Only the Kootenai River surface water data collected as part of this activity are summarized in this report. The samples collected in the Kootenai River tributaries are not discussed. A total of six surface water samples were collected from the Kootenai River and analyzed for LAA.

Table 4-1 outlines the number of surface water samples collected in the OU4 Nature and Extent Study in Surface Water. **Table 4-2** provides the surface water sampling locations by station ID, station description, and analyses conducted for surface water samples collected in the OU4 Nature and Extent Study in Surface Water. Surface water sample locations that were analyzed for LAA are presented on **Figure 4-1a**.

Samples were collected in accordance with the *Surface Water and Sediment Sampling and Analysis Plan/Quality Assurance Project Plan* (EPA, 2012e).

All water samples were prepared for asbestos analysis in basic accordance with the techniques in EPA Method 100.2, as modified by Libby Laboratory Modification$_1$ LB-000020A. The resulting filters then were analyzed for total LAA by TEM analysis method ISO 10312, in accordance with the ISO 10312:1995(E) (ISO, 1995) counting protocols, with all applicable Libby Site-specific laboratory modifications.

Detailed information on the OU4 Nature and Extent Study in Surface Water field sampling effort, including all associated field documentation, is provided in the *Data Summary Report Nature and Extent of LA Contamination in Surface Water and Sediment* (EPA, 2013b) and the results are summarized in **Section 5.0** of this report.

4.2.8 Phase VB-2013 (2013), In-Situ Surface Water - Sampling Activities

The results from the 2012 eyed-egg study discussed above in **Section 4.2.6** were presented and evaluated in two technical memoranda (SRC, 2013; Golder, 2013a). However, interpretation of the study results was limited largely due to the number of organisms that went missing primarily as a result of WVB modification problems that lead to hatched alevin escape as well as ingress of predatory organisms.

Accordingly, the OU3 Study Area Biological Technical Advisory Group (BTAG) decided that it was necessary to repeat the in-stream eyed egg fish study in 2013, modifying the WVB structure to prevent ingress and egress from the chamber as well as increasing the monitoring frequency of the chambers. Samples of *in situ* surface water and pore water were collected twice weekly in

LRC and once weekly in reference creeks. A total of 38 pore water and 40 surface water samples were collected and analyzed for LAA.

Table 4-1 outlines the number of surface water samples collected in Phase VB-2013. **Table 4-2** provides the surface water sampling locations by station ID, station description, and analyses conducted for surface water samples collected in Phase VB-2013. Surface water sample locations that were analyzed for LAA are presented on **Figure 4-1a**.

The modifications were documented and sampling was collected according to the *Sampling and Analysis Plan/Quality Assurance Project Plan Addendum: Phase V, Part B: Ecological Investigations, Operable Unit 3, Libby Asbestos Superfund Site 2013 Repeat of In Stream Eyed Egg Study (Revision 0)* (EPA, 2013a).

Detailed information on the 2013 *In Situ* field sampling effort, including all associated field documentation, is provided in the *In Situ Westslope Cutthroat Trout Toxicity Study. Operable Unit 3, Libby Asbestos Superfund Site, Montana* (Golder, 2014b). The results are summarized in **Section 5.0** of this report.

4.2.9 ISCO Flows Measurements (2008-2015)

In August 2008, Parshall flumes were permanently installed in two concrete stations along Rainy Creek (LRC-06 and LRC-02), and one concrete station along Carney Creek (CC-02). The flume sizes at these three stations were selected based on the snowmelt runoff flows observed during spring 2008. Twelve-inch Parshall flumes were installed at stations LRC-06 and LRC-02, and a 9-inch flume was installed at station CC-02. A stilling well was attached to each of the flumes to house a pressure transducer for flow rate measurement and recording by an ISCO® Model 6712 portable sampler/data logger. Annual stream flow measurements have been collected since 2008 during the freeze-free part of the year, typically March through November. The raw flow data is uploaded to the Libby OU3 eRoom site bi-monthly (https://team.cdm.com/eRoom/mt/LibbyOU3/0_cfaf). **Table 2-8** presents the ISCO® station discharge rates and **Figure 2-6** graphically presents the ISCO® station locations and discharge rates in gpm versus month of the year for 2008 through 2015.

4.2.10 Surface Water and Groundwater Sampling (2015) – Sampling Activities

The 2015 Surface Water and Groundwater Sampling program consisted of the collection of samples from select surface water, groundwater (refer to **Section 4.3.3**), and toe drain water locations in the vicinity of the KDID. The objective of this program was to collect surface water samples to provide additional data to be utilized to more accurately evaluate, and better characterize, what source areas are contributing to LAA concentrations in LRC. Samples were collected for both LAA and non-asbestos general chemistry and metals constituents. These additional data were used to better understand how the KDID influences LAA concentrations in LRC by developing a more accurate hydrogeologic conceptual model. The data also will be used in the future in the development of remedial alternatives during the FS process to select alternatives that adequately address applicable OU3 Study Area water quality concerns. A total of 167 surface water samples were collected and analyzed for LAA and 28 surface water samples were collected and analyzed for non-asbestos constituents.

Table 4-1 outlines the number of surface water samples collected in the 2015 surface water and groundwater sampling program. **Table 4-2** provides the surface water sampling locations by station identification number (ID), station description, and analyses conducted for surface water

samples collected in the 2015 surface water and groundwater sampling program. Surface water sample locations that were analyzed for LAA and non–asbestos constituent are presented on **Figures 4-1a** and **4-1b** respectively.

Samples were collected in accordance with the *Sampling and Analysis Plan / Quality Assurance Project Plan for Surface Water and Groundwater Sampling* (MWH, 2015c).

For water samples being analyzed for LAA, after the water samples were collected in the field they were shipped to the EMSL laboratory in New Jersey. The EPA prepared grids were examined by TEM analysis method ISO 10312. Filters were analyzed in accordance with the ISO 10312:1995(E) (ISO, 1995) counting protocols, with all applicable Libby Site-specific laboratory modifications.

The water samples that were analyzed for non-asbestos general chemistry and metals were also shipped to the EMSL laboratory in New Jersey. General chemistry analytes included the major cations and anions. Total calcium, magnesium, sodium, and potassium were prepared using the appropriate methods and versions of the SW3005, SW3010, and SW3015 series methods, and analyzed using test method SW6010B. Method SW601B was selected over method EPA 200.7 to be consistent with the 2007 and 2008 surface water sampling events. Total chloride and sulfate were prepared and analyzed using test method E300.0 and alkalinity, bicarbonate, and carbonate were prepared and analyzed using test Method A2320 B.

Detailed information on the 2015 Surface Water and Groundwater Sampling, including all associated field documentation, is provided in the *2015 FSSR* (MWH, 2016b) and the results are summarized in **Section 5.0** of this report.

4.3 GROUNDWATER INVESTIGATIONS

A reconnaissance was completed in 2007 as Part of Phase I to locate and examine existing groundwater wells located within the Former Mine Area. **Table 2-5** presents the groundwater well construction details for those wells identified during the 2007 reconnaissance effort. Additionally, groundwater samples were collected in the OU3 Study Area as part of the Phase II Part B sampling program. Three rounds of groundwater sampling were performed in the summer and fall of 2008 and the spring of 2009. A more current groundwater sampling event was conducted in the spring of 2015. Groundwater samples were analyzed for a broad suite of analytes, including LAA and non-asbestos constituents. The following sections summarize the groundwater sampling efforts. **Table 4-1** outlines the number samples collected for groundwater by sampling phase/event. **Table 4-2** provides the groundwater sampling locations by station ID, description, sampling phase/event, and analyses conducted. Groundwater sample locations that were analyzed for LAA and non–asbestos constituent are presented on **Figure 4-2**. Detailed results for LAA and for non-asbestos constituents detected in groundwater samples collected throughout the OU3 Study Area are provided and discussed in **Section 5.0**.

4.3.1 Phase I (2007) – Groundwater Well Reconnaissance – Investigation Activities

A reconnaissance effort was conducted in the fall of 2007 (during the Phase I sampling program) to identify groundwater well locations within the Former Mine Area. A total of ten wells were identified within the vicinity of the OU3 Study Area. Wells A, C, D, E and H were selected for rehabilitated and redeveloped as part of the 2008 Phase II efforts. These wells were sampled as part of the Phase II Part B sampling program discussed below.

The reconnaissance effort was conducted in accordance with the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b).

4.3.2 Phase II Part B (2008 / 2009) – Sampling Activities

As part of Phase II Part B, groundwater samples were collected from wells A, D, and E in each of three sampling events, July 2008, September 2008, and June 2009. Groundwater samples were collected from Well C in September 2008 and June 2009, and from Well H in July 2008 and June 2009. No samples were collected from Well H in September 2008 (Round 2) because the well was dry. Fourteen groundwater samples were analyzed for LAA, and 13 groundwater samples were analyzed for metals/metalloids, petroleum hydrocarbons, anions, gross alpha/gross beta, and cyanide. If the total extractable petroleum hydrocarbon (EPH) concentration was above 300 micrograms per liter (µg/L), samples also were analyzed for specific EPH analytes (e.g., C9-C18 aliphatics, C19-C36 aliphatics, and C11-C22 aromatics) and PAHs. At the time of sample collection, field measurements of water quality parameters temperature, pH, SC, DO, ORP, and turbidity also were measured using portable field meters.

Table 4-1 outlines the number of groundwater samples collected in Phase II Part B. **Table 4-2** provides the groundwater sampling locations by station ID, station description, and analyses conducted for surface water samples collected in the Phase II Part B. Groundwater sample locations that were analyzed for LAA and non–asbestos constituent are presented on **Figure 4-2**.

Samples were collected in accordance with the *Phase II Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site Part B: Ambient Air and Groundwater* (EPA, 2008e).

After groundwater samples were collected in the field, the samples for LAA analysis were hand-delivered to the EMSL Mobile Laboratory in Libby for filtration (Note: No treatment of the water was performed prior to the filtration). The resulting filters were analyzed by EMSL at Libby, Montana for total LAA by TEM. Filters were prepared and analyzed in accordance with ISO 10312:1995(E) (ISO, 1995) counting protocols, with all applicable Libby Site-specific laboratory modifications.

Analyses of non-asbestos constituents in groundwater were performed by ELI.

Detailed information on the Phase II Part B field sampling effort conducted in 2008, including all associated field documentation, is provided in the *Phase II FSSR* (MWH, 2009) and the results are summarized in **Section 5.0** of this report.

4.3.3 Surface Water and Groundwater Sampling (2015) – Sampling Activities

The 2015 groundwater sampling program consisted of the collection of samples from select surface water (refer to **Section 4.2.10**), groundwater, and toe drain water locations (in the vicinity of the KDID), to more accurately evaluate, and better characterize, what source areas are contributing to LAA concentrations in LRC. Samples were collected for both LAA (20 samples) and non-asbestos (10 samples) general chemistry constituents at locations Well C, BH-01A-1, BH-01A-2, BH-03A-1, BH-05A-1, BH-05A-2, BH-07A-1, BH-07A-2, BH-07B-1, and BH-09-1. Locations BH-01B-1, BH-01B-2, BH-03B-2, and BH-05B-1 were dry when sampling was attempted. These additional data were used to better understand how the KDID influences LAA concentrations in LRC by developing a more accurate hydrogeologic conceptual model. The data

also will be used in the future in the development of remedial alternatives during the FS process to select alternatives that adequately address applicable OU3 Study Area water quality concerns.

Table 4-1 outlines the number of groundwater samples collected in the 2015 Surface Water and Groundwater Sampling program. **Table 4-2** provides the groundwater sampling locations by station ID, station description, and analyses conducted for surface water samples collected in the 2015 Surface Water and Groundwater Sampling program. Groundwater sample locations that were analyzed for LAA and non–asbestos constituent are presented on **Figure 4-2**.

Samples were collected in accordance with the *Sampling and Analysis Plan / Quality Assurance Project Plan for Surface Water and Groundwater Sampling* (MWH, 2015c). Refer to **Section 4.2.10** for analysis details.

Detailed information on the 2015 Surface Water and Groundwater Sampling, including all associated field documentation, is provided in the *2015 FSSR* (MWH, 2016b) and the results are summarized in **Section 5.0** of this report.

4.4 SEDIMENT INVESTIGATIONS

Sediment samples were collected in the OU3 Study Area as part of the Phase I, Phase II (Part A and Part C), Phase V (Part A and Part B), and the OU4 Nature and Extent Study sampling programs. Sediment samples were analyzed for a broad suite of analytes, including LAA and non-asbestos constituents. The following sections summarize the sediment sampling activities. **Table 4-1** outlines the number samples collected for sediment by sampling phase/event. **Table 4-2** provides the sediment sampling locations by station ID, description, sampling phase/event, and analyses conducted. Sediment sample locations that were analyzed for LAA and non–asbestos constituent are presented on **Figures 4-3a** and **4-3b** respectively. Detailed results for LAA and for non-asbestos constituents detected in sediment samples collected throughout the OU3 Study Area are provided and discussed in **Section 5.0**.

4.4.1 Phase I (2007) – Sampling Activities

The objective of the Phase I sediment sampling program was to collect data to obtain a preliminary characterization of the nature and extent of sediment potentially impacted by releases from historical mining, milling, and activities ancillary to mining and milling (e.g., subsequent handling and transport of mined material).Twenty-four (24) sediment samples were co-located with the surface water samples discussed above in **Section 4.2.1**. Each grab sample was collected from within a three-foot-square area and consisted of finer grained materials less than ¼ inch, and were from ground surface to a depth of six inches. The 24 samples were analyzed for LAA, metals/metalloids, petroleum hydrocarbons, and anions. A broad suite of additional analyses, including PCBs, pesticides, herbicides, VOCs, SVOCs, and PAHs, were performed for sediment samples collected from TP-TOE2 and LRC-2. These locations were selected because they appeared to have the best potential of characterizing possible releases from the mine.

Table 4-1 outlines the number of sediment samples collected in Phase I. **Table 4-2** provides the sediment sampling locations by station ID, station description, and analyses conducted for sediment samples collected in Phase I. Sediment sample locations that were analyzed for LAA and non–asbestos constituent are presented on **Figures 4-3a** and **4-3b** respectively.

Samples were collected in accordance with the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b).

After sediment samples were collected in the field, the samples for LAA analysis were sent to the CDM Smith CSF in Denver, Colorado for preparation. One aliquot of the fine ground material and one aliquot of the coarse fraction material were then shipped to EMSL at Libby, Montana for analysis of LAA by PLM.

Analyses of non-asbestos constituents in sediment were performed by ELI. Detailed information on the Phase I field sampling effort, including all associated field documentation, is provided in the *Phase I FSSR* (MWH, 2007) and the results are summarized in **Section 5.0** of this report.

4.4.2 Phase II, Part A (Spring / Summer 2008) – Sampling Activities

Data from the Phase I sampling program provided information on the concentrations of LAA and other non-asbestos constituents in sediment for a single sampling event (conducted in the fall of 2007). Because concentrations of analytes in sediment could vary over time, the objective of the Phase II Part A sampling program was to collect additional sediment data in the spring and summer of 2008 to characterize potential temporal and spatial patterns of OU3 Study Area-related analytes in sediment. A total of 116 sediment samples were collected and analyzed for LAA and 108 sediment samples were collected and analyzed for non-asbestos constituents.

Sediment sampling in the Rainy Creek watershed was conducted under "Element 1" of the Phase II Part A sampling program. The purpose of this element was to measure analytes in sediment at the stations sampled in Phase I to characterize levels during spring and summer flow conditions. This program differed from Phase I in that the tailings impoundment and each of the ponds (the Mill Pond and the ponds on Carney Creek and Fleetwood Creek) were sampled by collecting a composite of grab samples rather than a single composite sample. One composite sediment sample was collected from each sampling location and consisted of a composite of five grab samples collected from low-energy depositional portions of the stream channel that were submerged at the time of sampling from ground surface to a depth of four inches. These sample locations were focused mainly in areas that are typically or usually inundated with water, since these areas are most likely to serve as habitat for aquatic receptors. At the ponds (the Mill Pond and the ponds on Carney and Fleetwood Creeks), a total of five sediment grab samples were collected from each pond, including three samples from around the margins of the pond (at least three ft. from the edge) and two samples from near the center of the pond.

Two rounds of sampling were completed, one in June/July 2008 and one in September 2008. All sediment samples were analyzed for LAA, metals/metalloids, petroleum hydrocarbons, anions, and total organic carbon (TOC). Sediments from LRC (LRC-1 to LRC-6) and the tailings impoundment toe drain (TP-TOE2) were analyzed for PCBs to assess the potential impacts of oil used for dust control along the adjacent road. Sediment collected from TP-TOE2 and LRC-2 was also analyzed for VOCs, SVOCs, and cyanide.

The Phase II Part A sampling program also collected sediment samples in the Kootenai River. The samples were collected from low-energy depositional portions of the Kootenai River bank that was submerged beneath about one foot of water. In brief, the following samples were collected:

- Two grab samples from depositional areas located along the north bank of the Kootenai River upstream of the mouth of Rainy Creek.

- Two grab samples from depositional areas located along the north bank of the Kootenai River, within a distance of 0.5-mile downstream from the mouth of Rainy Creek.
- Two locations from the large gravel bar located in the center of the river about 0.5-mile downstream from the mouth of Rainy Creek. One location was on the highest portion on the gravel bar; the other location was at the downstream point of the gravel bar.

All Kootenai River sediment samples were analyzed for LAA.

Table 4-1 outlines the number of sediment samples collected in Phase II Part A. **Table 4-2** provides the sediment sampling locations by station ID, station description, and analyses conducted for sediment samples collected in Phase II Part A. Sediment sample locations that were analyzed for LAA and non–asbestos constituent are presented on **Figures 4-3a** and **4-3b** respectively.

Samples were collected in accordance with the *Phase II Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site Part A: Surface Water and Sediment* (EPA, 2008c).

After sediment samples were collected in the field, the samples for LAA analysis were sent to the CDM Smith CSF in Denver, Colorado for preparation. After preparation, samples were sent to EMSL at Westmont, New Jersey and Hygeia for analysis of LAA by PLM-VE (and polarized light microscopy, gravimetric [PLM-Grav], if a coarse fraction was present).

Analyses of non-asbestos constituents in sediment were performed by ELI.

Detailed sampling information, including all associated field documentation, is provided in the *Phase II FSSR* (MWH, 2009) and the results are summarized in **Section 5.0** of this report.

4.4.3 Phase II, Part C (fall 2008) – Sampling Activities

The Phase II Part C sampling program included the collection of samples at two of the three candidate aquatic reference stations, Noisy Creek (NSY-R1) and a tributary to Bobtail Creek (BTT-R1). In addition, sediment samples also were collected from a subset of stations in Rainy Creek (URC-1A, URC-2, LRC-2, LRC-3, LRC-5, and TP-TOE2), Fleetwood Creek (FC-2), and Carney Creek (CC-2) concurrently with the collection of the aquatic community surveys.

Twelve (12) total sediment samples were collected from each station in October 2008. All sediment samples were analyzed for LAA, metals/metalloids, TOC, pH, and total solids.

Table 4-1 outlines the number of sediment samples collected in Phase II Part C. **Table 4-2** provides the sediment sampling locations by station ID, station description, and analyses conducted for sediment samples collected in Phase II Part C. Sediment sample locations that were analyzed for LAA and non–asbestos constituent are presented on **Figures 4-3a** and **4-3b** respectively.

Samples were collected in accordance with the *Phase II Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site Part C: Ecological Data* (EPA, 2008b).

Detailed sampling information, including all associated field documentation, is provided in the *Final Data Report for the Autumn 2008 Aquatic Data Collection Program* (Parametrix, 2009a) and the results are summarized in **Section 5.0** of this report.

4.4.4 Phase V, Part A (2012) – Sampling Activities

The Phase V Part A investigation focused on characterizing the potential nature and extent of LAA in sediment at locations frequented by recreational visitors along the Kootenai River and Lake Koocanusa. Sediment samples were collected from two locations (KR-20, KR-21) in depositional areas of Kootenai River banks and sand bars. Samples were collected in September 2012, under low flow conditions when the most sediment was exposed. Each sediment sampling location was selected because it was representative of areas frequently used by recreational visitors. For location KR-20, which was also sampled as part of a recreational ABS effort (refer to **Section 4.8.3**), sediment sampling was performed prior to the start of each ABS event. Sediment samples also were collected from two locations along the banks of Lake Koocanusa, including the McGillivray Campground (LK-1) and the Lake Koocanusa Marina (LK-2).

Four (4) composite sediment samples comprised of 30 individual sampling points that were approximately equidistant from each other and representative of each recreational area were collected and analyzed for LAA. This sampling method accounts for spatial variability in LAA concentrations and provides an average estimate of the LAA concentration across the exposed area. Although observable / visible vermiculite notes were made at the time of sediment sample collection, these notes were inadvertently not completed by the field members collecting the samples in accordance with the visible vermiculite SOP identified in the governing SAP/QAPP (SOP CDM Smith-LIBBY-06); therefore, these notes are not presented in this report, but are available in the field log notes.

Table 4-1 outlines the number of sediment samples collected in Phase V Part A. **Table 4-2** provides the sediment sampling locations by station ID, station description, and analyses conducted for sediment samples collected in Phase V Part A. Sediment sample locations that were analyzed for LAA are presented on **Figure 4-3a**

Samples were collected in accordance with the *Sampling and Analysis Plan / Quality Assurance Project Plan for Operable Unit 3, Libby Asbestos Superfund Site Phase V, Part A: Kootenai River Surface Water, Sediment, and Activity-based Sampling* (EPA, 2012c).

Sediment samples were analyzed for LAA and were sent to the SPF located in Troy for processing in accordance with SOP ISSI-LIBBY-01. The fine ground aliquots for each sediment sample were analyzed by the EMSL laboratory in Libby using the Libby-specific PLM-VE method (SOP SRC-LIBBY-03). There were no coarse fractions for any of the sediment samples from this study.

Detailed sampling information, including all associated field documentation, is provided in the *Phase V Remedial Investigation FSSR* (MWH, 2013c) and the results are summarized in **Section 5.0** of this report.

4.4.5 Phase V, Part B (2012) – Sampling Activities

The Phase V Part B investigation focused on providing sediment data to support an amphibian metamorphic bioassay conducted for the OU3 Study Area. The goal of the amphibian laboratory toxicity test was to determine whether exposure of amphibians to sediment containing LAA would result in adverse effects on survival, growth, or metamorphosis. Amphibians may be exposed to

LAA in the aquatic environment both in water and sediment. This investigation focused on the evaluation of LAA exposures in sediment because previous attempts at surface water toxicity tests have shown that it is very difficult to maintain exposure conditions for LAA in surface water.

Sediment samples were collected from Carney Creek and Tailings Pond to determine which location had the highest LAA concentration to be used in the amphibian toxicity bioassay. Fifty four (54) total sediment samples were collected and analyzed for LAA and 12 sediment samples were collected and analyzed for metals, acid volatile sulfide, nitrogen compounds, diesel/gasoline range organics, and hydrocarbons.

Table 4-1 outlines the number of sediment samples collected in Phase V Part B. **Table 4-2** provides the sediment sampling locations by station ID, station description, and analyses conducted for sediment samples collected in Phase V Part B. Sediment sample locations that were analyzed for LAA and non–asbestos constituent are presented on **Figures 4-3a** and **4-3b** respectively.

Sediment was sampled in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan Operable Unit 3, Libby Asbestos Superfund Site Phase V Part B: 2012 Ecological Investigations* (EPA, 2012d). The sampling design for this investigation is detailed below in **Section 4.10.5**.

Results of this study are summarized in the *Amphibian Complete Metamorphosis Exposure Study, Libby Asbestos Superfund Site Phase V-B SAP, OU-3 Study Report* (Fort Environmental Laboratories, Inc., 2013) and in **Section 5.0** of this report.

4.4.6 OU4 Nature and Extent Study in Surface Water and Sediment (2012) – Sampling Activities

Surface water (discussed above in **Section 4.2.7**) and sediment samples were collected in the spring and fall of 2012 as part of the OU4 RI to characterize the nature and extent of potential LAA contamination in surface water and sediment outside of the Rainy Creek Watershed. Sampling was conducted in the Kootenai River and its tributaries.

Only the Kootenai River sediment data collected as part of this activity are summarized in this report. The samples collected in the Kootenai River tributaries are not discussed. Surficial sediment samples were collected at 12 locations from the Kootenai River, with each sample consisting of a composite of five grab samples. The samples were collected from low-energy depositional portions of the stream channel that were inundated by water at the time of sampling. The five grab samples were collected over an area that was within 100 ft. upstream or 100 ft. downstream of the specified station. A total of 12 sediment samples were collected and analyzed for LAA.

Table 4-1 outlines the number of sediment samples collected in the OU4 Nature and Extent Study. **Table 4-2** provides the sediment sampling locations by station ID, station description, and analyses conducted for sediment samples collected in the OU4 Nature and Extent Study. Sediment sample locations that were analyzed for LAA are presented on **Figure 4-3a**.

Samples were collected in accordance with the *Surface Water and Sediment Sampling and Analysis Plan/Quality Assurance Project Plan* (EPA, 2012e).

Sediment samples were sent to the SPF located in Troy for processing in accordance with SOP ISSI-LIBBY-01. Sediment samples were then sent to EMSL-Libby, EMSL-Cinnaminson, EMSL-Beltsville or EMSL-Denver for preparation and analysis for LAA. The fine ground and coarse fraction (if present) aliquots for each sediment sample were analyzed using the Libby-specific PLM-VE and PLM-Grav methods, respectively.

Detailed information on the OU4 Nature and Extent Study field sampling effort, including all associated field documentation, is provided in the *Data Summary Report Nature and Extent of LA Contamination in Surface Water and Sediment* (EPA, 2013b) and the results are summarized in **Section 5.0** of this report.

4.5 SOIL / MINE WASTE FROM THE MINED AREA INVESTIGATIONS

Sampling of soil/mine waste from the Former Mine Area was completed in October 2007 as part of the Phase I sampling program. These samples were analyzed for a broad suite of analytes, including LAA and non-asbestos constituents. Additionally, soil was sampled as part of the Amphitheater Removal Effort, geotechnical investigation, creek reconnaissance, and trespasser activity-based sampling. The following sections summarize these field sampling efforts. **Table 4-1** outlines the number of samples collected for soil/mine waste by sampling phase/event. **Table 4-2** provides the soil/mine waste sampling locations by station ID, description, sampling phase/event, and analyses conducted. Soil/mine waste sample locations that were analyzed for LAA and non–asbestos constituents are presented on **Figures 4-4a** and **4-4b,** respectively. Detailed results for LAA and for non-asbestos constituents detected in soil/mine waste samples collected throughout the OU3 Study Area are provided and discussed in **Section 5.0**.

4.5.1 Phase I (2007) – Sampling Activities

The objective of the Phase I soil/mine waste sampling activities was to collect samples from representative types of waste materials and soils in the Former Mine Area in order to identify analytes associated with mined materials and develop a list of source areas of potential concern. Thirty-eight (38) total mine waste samples were collected from:

- waste rock from various piles,
- surface soil,
- coarse tailings disposal area,
- tailings impoundment,
- outcrops, and
- materials used for construction of unpaved sections of Rainy Creek Road.

Each sample collected from the impounded tailings (MS-4 and MS-5) and the coarse tailings area (MS-6 to MS-9) was collected as an 8-point transect composite collected from the top 12 inches of material. All other samples were collected as surface (0-6 inches) grab samples. All 38 samples were analyzed for LAA and metals/metalloids. Waste rock, tailings, soil from the mill area located on the Former Mine Area, and roadway materials also were analyzed for petroleum hydrocarbons. The three samples of Rainy Creek Road base materials were analyzed for PCBs (based upon reports that oil had been used in the past to control dust on mine roads and PCB oils were present at the mine in the past). Samples collected from the fine tailings impoundment were analyzed for a broader suite of analytes, including pesticides, VOCs, SVOCs, PAHs, and cyanide, as well as PCBs, petroleum hydrocarbons, and anions.

Table 4-1 outlines the number of mine waste samples collected in Phase I. **Table 4-2** provides the mine waste sampling locations by station ID, station description, and analyses conducted for mine waste samples collected in Phase I. Mine waste sample locations that were analyzed for LAA and non–asbestos constituents are presented on **Figures 4-4a** and **4-4b,** respectively.

Samples were collected in accordance with the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b).

After soil samples were collected in the field, the samples for LAA analysis were sent to the CDM Smith CSF in Denver, Colorado for preparation. After preparation, samples were sent to EMSL at Libby, Montana and Westmont, New Jersey for analysis of LAA by PLM-VE (and PLM-Grav, if a coarse fraction was present).

Analyses of non-asbestos constituents in soil were performed by ELI.

Detailed information on the Phase I field sampling effort, including all associated field documentation, is provided in the *Phase I FSSR* (MWH, 2007) and the results are summarized in **Section 5.0** of this report.

4.5.2 Amphitheater Removal Effort (2012-2013) – Sampling Activities

The EPA entered into a second AOC with Grace and KDC in 2012 (EPA, 2012f; Docket No. CERCLA-08-2012-0004). Under the terms of this AOC, Grace performed a removal action at the OU3 Study Area, known as the Amphitheater Removal Effort.

The results of a field investigation conducted in October 2011 indicated that Rainy Creek flowed through an area containing VW located below the area referred to as the Amphitheater, which is located to the southwest of the Mill Pond. The VW was originally removed in 1994, as part of mine reclamation, from the Carney Creek sediment pond, which is located to the southeast of the Mill Pond. The material had been spread over the Amphitheater area as a soil substitute and re-seeded in 1995 (MDST, 1995). This area was a potential source of elevated LAA levels detected in LRC. To eliminate or mitigate this potential source of LAA to LRC, the LAA containing material was excavated and transported to the disposal area at the top of the former mine. This is the same area where LAA-bearing soil removed as part of the remediation of OU4, the town of Libby (refer to **Figure 2-17**), is placed before the soils are beneficially used for cover and vegetation management of the Former Mine Area. The removal action was performed in two phases of work, fall of 2012 and summer of 2013. Soil samples were collected as described below to support the removal efforts. The VW removal area and the VW disposal areas are presented on **Figure 4-4a**.

4.5.2.1 Summary of Sampling Activities

Existing OU3 Study Area Data. Prior to removal efforts, three characterization samples of the VW were collected from the affected area in October 2011 to establish the percentage of LAA in the waste material. The samples were analyzed by EMSL Laboratories in Libby, Montana by NIOSH PLM Method 9002, Issue 2. Further investigation of the nature, extent and thickness of the VW was performed in July 2012. A tire-mounted backhoe was used to excavate 19 test pits across the affected area. Two types of material were found in the test pits: a coarse-grained greenish black material (primarily located north of Rainy Creek), and a fine, powdery bronze-colored material, which was most prevalent south of Rainy Creek. Waste thickness ranged from

less than one inch near the margins to more than 5 ft. in berms and piles on the area south of Rainy Creek.

2012 Vermiculite Waste Removal Activities. Removal of the VW material was started in 2012 for six of 15 pre-defined zones. Once the VW material removal was complete for a zone, a 30-point composite characterization sample was collected from ground surface to one inch in depth (six composite samples in total) and submitted for LAA analysis.

2013 Vermiculite Waste Removal Activities. Removal of the VW material was completed in 2013 for the remaining nine of 15 pre-defined zones. Once the VW material removal was complete for a zone, a 30-point composite characterization sample was collected from ground surface to one inch in depth (nine composite samples in total) and submitted for LAA analysis.

Fifteen (15) total 30-point composite characterization soil samples were collected from ground surface to one inch in depth between the 2012 and 2013 activities, and submitted for LAA analysis. These samples were collected to confirm the removal action was complete.

Table 4-1 outlines the number of soil samples collected in the Amphitheater Removal Effort. **Table 4-2** provides the soil sampling locations by station ID, station description, and analyses conducted for soil samples collected in the Amphitheater Removal Effort. Soil sample locations that were analyzed for LAA (sample IDs that begin with "VW") are presented on **Figure 4-4a**.

Samples were collected in accordance with the *Work Plan for Removal of Asbestos-Containing Vermiculite Waste Near the "Amphitheater" at Libby Asbestos Superfund Site OU3 Part B; Sampling and Analysis Plan / Quality Assurance Project Plan* (MWH, 2012).

Samples were delivered to the SPF in Troy, Montana. Once the samples were prepared by the SPF, they were delivered to EMSL in Libby, Montana for analysis of LAA by PLM-VE (and PLM-Grav, if a coarse fraction was present).

Detailed information on the VW removal effort including all associated field documentation, is provided in the *Summary Report for Removal of Asbestos-Containing Vermiculite Waste Near the Amphitheater* (MWH, 2013d) and the results are summarized in **Section 5.0** of this report.

4.5.3 Land Farm Soil Analysis (2013) - Sampling Activities

The objective of the landfarm soil analysis event was to collect grab soil samples from the four corners and center of each of the two separate landfarm sections. Refer to **Section 2.11.1.2** for a discussion of the land farm background. These samples were collected under MDEQ Corrective Action ID 27-13196, Release 1729, Work Plan 7108 at the direction of the MDEQ.

Ten total grab soil samples were collected from approximately 1.5 ft. below ground surface (bgs), one sample from each location for a total of five grab samples per land farm section. The sampling events occurred in June 2013 and July 2013.

The soil samples were analyzed by ELI out of Billings, MT for:

- Resource Conservation and Recovery Act (RCRA) metals arsenic (As), barium (Ba), cadmium (Cd), chromium (Cr), lead (Pb) selenium (Se), and silver (Ag), using EPA method E6010.20

- RCRA metal mercury (Hg), using EPA method SW7471A.
- Volatile Petroleum Hydrocarbons (VPH), using EPA Methods SW5035 and MA-VPH,
- EPH, using EPA Methods SW8015M and SW3550B and SW3550A.
- Volatile Organic Compounds (VOCs), using EPA Method 8260B

The land farm soil sample area is presented on **Figure 2-16**.

Soil samples from the land farm were collected and analyzed for non-asbestos constituents in accordance with the *Additional Corrective Action Required for Landfarm Soil Analysis from the Former Zonolite Export Plant, 100 Highway 37, Libby, Lincoln County, Montana; Facility ID 27-13196, Release 1729, Work Plan 7108* (MDEQ, 2013).

Soil sample results indicated the presence of petroleum hydrocarbons, although when ranges were compared against their respective Montana Tier 1 Risk Based Screening Levels for Petroleum Releases (MDEQ, 2009), only C11-C22 aromatics slightly exceeded its screening level of 400 mg/kg at a concentration of 424 mg/kg (MWH, 2013a).

Detailed information on the landfarm sampling effort and results are provided in the *Corrective Action Summary Report for the Landfarm Soil Analysis for the Former Zonolite Export Plant, 100 Highway 37, Libby, Lincoln County, Montana; DEQ Facility ID 27-13196, Release 1729, Work Plan 7108* (MWH, 2013a). These soil samples were not collected under the 2007 AOC for the OU3 Study Area RI/FS or under an approved EPA SAP/QAPP and therefore the results will not be carried forward through the remainder of this report.

4.5.4 Geotechnical Test Pit Evaluation (2014) – Sampling Activities

The objective of the test pit sampling effort was to collect additional field data to establish the geotechnical and engineering characteristics, and LAA content of the soils, mined materials, and weathered bedrock along possible creek diversion locations and in the proposed borrow source areas associated with potential water management scenarios for the OU3 Study Area.

Excavation of 27 test pits was completed at locations surrounding and within the KDID and tailings impoundment materials, along potential creek diversions and, within potential construction borrow source areas. Test pits were excavated using an excavator to depths of up to 15 ft. bgs. All test pits were logged by a field geologist to identify and characterize soil type according to the USCS and describe the materials encountered according to interpretations of the type and nature of the deposit. Detailed field logging of the subsurface materials, stratigraphy and encountered obstructions (e.g., tree roots, buried pipes, etc.), as well as observations concerning groundwater infiltration were recorded on field logs during the excavation process. Eighty one (81) grab soil samples were collected for LAA analysis from varying pit depths based upon soil types. If multiple soil types existed within a single pit a single grab sample was collected from each soil type. Composite soil samples of varying volumes were collected for geotechnical analysis (discussed in **Section 4.9.1**). Volumes were based upon geotechnical testing requirements.

Table 4-1 outlines the number of soil samples collected in the Geotechnical Test Pit Evaluation. **Table 4-2** provides the soil sampling locations by station ID, station description, and analyses conducted for soil samples collected in the Geotechnical Test Pit Evaluation. Soil sample locations that were analyzed for LAA are presented on **Figure 4-4a**.

Soil samples from the test pits were collected and analyzed for LAA in accordance with the *Work Plan for Geotechnical Characterization in Support of Creek Diversions at Libby Superfund Site OU3 Revision 2* (MWH, 2014a) (refer to **Section 4.9.1** for additional geotechnical sample information).

LAA soil samples were collected and delivered to the SPF in Troy, Montana. Once the samples were prepared by the SPF, they were delivered to EMSL in Libby, Montana for analysis of LAA by PLM-VE (and PLM-Grav, if a coarse fraction was present).

Detailed information on the Geotechnical Test Pit effort including all associated field documentation, is provided in the *Kootenai Development Impoundment Dam (KDID) Geotechnical and Hydrogeological Investigation Report* which is included as part of this report (MWH, 2015a) and the LAA results are summarized in **Section 5.0** of this report.

4.5.5 Reconnaissance Surveys (2014) – Sampling Activities

Reconnaissance surveys were performed in the OU3 Study Area in June, October, and November 2014. The purpose of this work was to gather additional geological and LAA concentration information in soil and bedrock units to help characterize the stratigraphy, geotechnical engineering parameters, and conditions. The June effort was implemented simultaneously with the geotechnical test pit investigation program as described above and in **Section 4.5.4.** The overall focus of the reconnaissance was LRC, Fleetwood Creek, Carney Creek, Tub Gulch, and in the general vicinity of the KDID, spillway, and potential creek diversion features.

Exclusive to the June survey, four grab soil samples were collected at depths ranging from six to eighteen inches at four locations designated as PT184, PT-185, PT-190, and PT-198 on **Figure 4-4a.**

Table 4-1 outlines the number of soil samples collected in the Reconnaissance Surveys. **Table 4-2** provides the soil sampling locations by station ID, station description, and analyses conducted for soil samples collected in the Reconnaissance Surveys. Soil sample locations that were analyzed for LAA are presented on **Figure 4-4a**.

Reconnaissance activities were conducted in accordance with the *Work Plan for Geotechnical Characterization in Support of Creek Diversions at Libby Superfund Site OU3 Revision 2* (MWH, 2014a). Soil samples were collected during the June effort only and delivered to the SPF in Troy, Montana. Once the samples were prepared by the SPF, they were delivered to EMSL in Libby, Montana for analysis of LAA by PLM-VE (and PLM-Grav, if a coarse fraction was present). The results of the LAA samples are summarized in **Section 5.0** of this report.

Detailed information on the Geotechnical Test Pit effort including all associated field documentation, is provided in the *Test Pit LAA Results and Creek Reconnaissance Report* (MWH, 2016a), and the results are summarized in **Section 5.0** of this report.

4.5.6 Trespasser Activity Based Sampling (2015) – Sampling Activities

The objective of the trespasser activity-based sampling investigation was to assess concentrations of LAA in activity-based air samples during source material disturbance activities in the Former Mine Area. Two trespassing ABS activities were completed (discussed below in **Section 4.8.12**) and road material samples (soil) were collected along the unpaved roads travelled by the ATV riders during the ABS activities. These soil samples were collected because

there were limited or no data available on the nature and extent of LAA in road materials on the Former Mine Area. Thirty seven (37) total grab soil samples were collected along three different ATV routes every 0.25 of a mile within the roadway from a depth of surface to six inches.

Table 4-1 outlines the number of soil samples collected in the Trespasser Activity Based Sampling Program. **Table 4-2** provides the soil sampling locations by station ID, station description, and analyses conducted for soil samples collected in the Trespasser Activity Based Sampling Program. Soil sample locations that were analyzed for LAA are presented on **Figure 4-4a**.

Samples were collected in accordance with the *Sampling and Analysis Plan / Quality Assurance Project Plan: Operable Unit 3 Study Area, Libby Asbestos Superfund Site Trespasser Activity-Based Sampling* (EPA, 2015c).

Soil samples were delivered to the SPF in Troy, Montana. Once the samples were prepared by the SPF, they were delivered to EMSL in Libby, Montana for analysis of LAA by PLM-VE (and PLM-Grav, if a coarse fraction was present).

Detailed information on the Trespasser Activity Based Sampling, including all associated field documentation, is provided in the *2015 FSSR* (MWH, 2016b) and the results are summarized in **Section 5.0** of this report.

4.6 FOREST SOIL, DUFF MATERIAL, TREE BARK, AND ASH FROM THE FORESTED AREAS

The Phase I sampling program included the collection of forest soil, duff material (i.e., leaf litter, pine needles, organic debris), and tree bark from the forested area surrounding the mine. The samples were collected in October 2007 and analyzed for LAA. In the fall of 2011, a subset of the forest soil samples collected during Phase I was subsequently analyzed for metals/metalloids. Additional sampling events were conducted between 2012 and 2015, which included the collection of soil, duff, ash, and tree bark. **Table 4-1** outlines the number samples collected for forest soil, duff material, tree bark, and ash by sampling phase/event. **Table 4-2** provides the forest soil, duff material, tree bark, and ash sampling locations by station ID, description, sampling phase/event, and analyses conducted. Forest soil, duff material, tree bark, and ash sample locations that were analyzed for LAA are presented on **Figure 4-5a**. Forest soil samples that were analyzed for non-asbestos constituents are presented on **Figure 4-4b**. Detailed results for LAA and for non-asbestos constituents (limited forest soil samples only) detected in forest soil, duff material, tree bark, and ash samples collected throughout the OU3 Study Area are provided and discussed in **Section 5.0**.

4.6.1 Phase I (2007) – Sampling Activities

The objective of the Phase I forest sampling effort was to establish the potential extent and spatial pattern of releases of airborne LAA from the mine operations that could become entrained into the surrounding environment. To facilitate an analysis of a spatial-pattern from a selected point source, samples were collected along a number of transects that radiated away from the center point of the Former Mine Area (presented as Mine Center on **Figures 1-3** and **4-5a**), with more and longer transects on the predominant downwind direction (northeast), under the assumption that LAA from the point source (the mine) would be higher in these areas. At each location one Douglas fir tree (at least 8 inches in diameter) was selected for tree bark analysis. Preference

was given to trees having rough bark since it was expected that rough bark would tend to capture and retain airborne LAA fibers on the bark surface more efficiently. For each tree, a tree bark sample was collected at a height of about four to five ft. above ground from the side of the tree facing the Former Mine Area using a 2-inch diameter hole saw. Samples were not collected from other locations on the tree. In addition, for about 10% of the selected trees, an increment boring device was used to collect a core sample for tree-ring analysis to establish the tree age. At each location, one 5-point composite soil sample was collected from ground surface to a depth of two inches and approximately equally spaced sub-locations around the perimeter of a circle with a radius of about five ft., centered on the tree that was selected for bark analysis. At each soil collection sub-location, the duff material that was overlying the surface soil also was collected to determine if this organic debris layer contained LAA fibers.

A total of 74 tree bark, 12 tree core, 74 forest soil, and 73 duff material samples were collected and analyzed for LAA. **Table 4-1** outlines the number of tree bark, tree core, forest soil, and duff material samples collected in Phase I. **Table 4-2** provides the tree bark, tree core, forest soil, and duff material sampling locations by station ID, station description, and analyses conducted for tree bark, tree core, forest soil, and duff material samples collected in Phase I. Tree bark, tree core, forest soil, and duff material sample locations that were analyzed for LAA are presented on **Figure 4-5a**.

Samples were collected in accordance with the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b).

The tree bark and duff material samples were sent to EMSL in Libby, Montana, Westmont, New Jersey, and Beltsville, Maryland for preparation and analysis for LAA in accordance with EPA SOP TREE-LIBBY-OU3 and EPA SOP DUFF MATERIAL-LIBBY-OU3, respectively. In brief, the samples were dried, reduced to ash, weighed, and hand-mixed. The total mass of each sample was prepared. An aliquot of the resulting ash was treated with acid, suspended in water, and filtered onto a 47mm mixed cellulose ester filter with 0.4-µm pore size. This filter was prepared and analyzed by TEM in accordance with ISO 10312:1995(E) (ISO 1995) and with all applicable EPA Libby Site-specific laboratory modifications. Soil samples collected in the field for LAA analysis were sent to the CDM Smith CSF in Denver, Colorado for preparation. After preparation, samples were sent to EMSL in Libby, Montana for analysis of LAA by PLM-VE (and PLM-Grav, if a coarse fraction was present).

Cores were sent to the Tree-Ring Laboratory at the University of Arizona for the estimation of tree age. The twelve trees selected for this analysis ranged in age from 29 to 100 years old (average age was 69 years). The oldest trees sampled were in SL15 (about 5 miles from the Former Mine Area center, 30 degrees counter clock-wise from the approximate primary downwind direction). A comparison of the tree diameter measured in the field relative to the tree age (as determined by the age cores) was made. Based on these comparisons, the age of coniferous trees in this area cannot be accurately predicted utilizing measured tree diameter only (CDM Smith, 2016).

In the fall of 2011, the EPA determined that a subset of the forest soil samples collected as part of the Phase I investigation should be subsequently analyzed for metals/metalloids. The purpose of this effort was to provide site-specific data on metal concentrations in soils that were thought to be representative of reference conditions (i.e., not impacted by releases from mining activities) based on geographic distance from the mine. A total of 12 samples were selected for metals analysis. Soil samples were selected by the EPA from the furthest two sampling locations from

the distal ends of each of six transects, three downwind transects, and three cross-wind/upwind transects. All samples were analyzed for metals/metalloids by ELI.

Table 4-1 outlines the number forest soil samples collected for non-asbestos constituents in Phase I. **Table 4-2** provides the forest soil sampling locations by station ID, station description, and analyses conducted for forest non-asbestos constituent soil samples collected in Phase I. Forest soil sample locations that were analyzed for non-asbestos constituents are presented on **Figure 4-4b**.

Detailed information on the EPA directed Phase I field sampling effort, including all associated field documentation, is provided in the *Phase I FSSR* (MWH, 2007) and the results are summarized in **Section 5.0** of this report.

4.6.2 Phase IV, Part A (2010) – Sampling Activities

The Phase IV Part A sampling program focused on the collection of ABS data in an attempt to evaluate potential LAA exposures to recreational visitors along the OU3 Study Area streams and ponds, residential wood harvesters, USFS workers, and fire fighters in the forested area (under staged fire-fighting conditions). In addition, the Phase IV Part A SAP included a plan for the collection of tree bark samples from each of two slash piles prior to the simulated wildfire ABS activities that were to be performed at the slash piles. Four samples were collected and analyzed for LAA to establish the levels of LAA in each pile (utilizing tree bark sample results) prior to burning. A total of eight tree bark samples were collected from each slash pile, and two samples from each pile were analyzed for LAA the remaining samples were archived. As stated in the *DSR* (CDM Smith, 2016), it was subsequently determined that the simulated wildfire ABS activities would not be performed at the slash piles.

Table 4-1 outlines the number tree bark samples collected in Phase IV Part A. **Table 4-2** provides the tree bark sampling locations by station ID, station description, and analyses conducted for tree bark collected in Phase IV Part A. Tree bark sample locations that were analyzed for LAA are presented on **Figure 4-5a**.

4.6.3 Commercial Logging (2012) – Sampling Activities

The objective of the 2012 Commercial Logging investigation was to collect air samples during commercial logging activities to provide site-specific data on potential exposures to LAA for workers involved in commercial logging activities in the forest near the mine site. LAA concentrations at actual logging locations further from the mine site were expected to be significantly less than those at the simulation site, and thus pose a lower risk. As part of this samples of tree bark and duff material within the study area also were collected and analyzed for LAA. The site selected was in the area with the highest -measured concentrations of LAA in bark and duff material. Sampling efforts were conducted in September 2012.

A total of five (5) tree bark and five (5) duff samples were collected from locations that were considered spatially representative of the study area. For tree bark, each sample was a composite consisting of five cores, collected by cutting a circle of bark with a hole saw, from five different trees. For duff material, each sample was a five multi-point composite collected near each of the trees selected for tree bark sampling.

Table 4-1 outlines the number tree bark and duff material samples collected in the 2012 Commercial Logging Program. **Table 4-2** provides the tree bark and duff material sampling

locations by station ID, station description, and analyses conducted for tree bark and duff material collected in the 2012 Commercial Logging Program. Tree bark and duff material sample locations that were analyzed for LAA are presented on **Figure 4-5a**.

Samples were collected in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan Operable Unit 3, Libby Asbestos Superfund Site 2012 Commercial Logging Activity-Based Sampling* (EPA, 2012g).

All tree bark and duff material samples were collected and sent to EMSL laboratory in Cinnaminson, New Jersey for preparation and analysis for LAA in accordance with SOP TREE-LIBBY-OU3 and SOP DUFF MATERIAL-LIBBY-OU3, respectively. In brief, samples were dried, ashed, weighed, and hand-mixed.

Samples of bark and duff material were first ashed at high temperature to remove organic matter. A portion of the ashed residue was suspended in acid to dissolve non-asbestos mineral salts, and then diluted in water for filtration through a filter. Filters were prepared in triplicate for each tree bark and duff material sample, with each filter being prepared using a new aliquot of ash and analyzed in parallel. One analysis was performed in 2012 and two additional replicate analyses were performed in 2013 for each tree bark and duff sample. Filters were analyzed for LAA using TEM in accordance with ISO 10312:1995(E) (ISO 1995) with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2012 Commercial Logging field sampling effort, including all associated field documentation, is provided in the *2012 Phase V Remedial Investigation FSSR* (MWH, 2013c) and the results are summarized in **Section 5.0** of this report.

4.6.4 Nature and Extent Forest (2012) – Sampling Activities

The objective of the 2012 Nature and Extent Forest study was to collect data on LAA concentrations in tree bark and duff material that can be used to evaluate the nature and extent of LAA levels in the forested areas outside of the OU3 Study Area. A total of 51 locations were sampled from within a two-mile buffer extending beyond the NPL boundary. Sampling locations were placed in areas accessible by USFS roads with adequate tree cover. To the extent possible, the precise sampling locations were placed in open areas that were not likely to have been substantially shielded from airborne deposition of asbestos by local features.

Tree bark and duff samples were collected at each of the 51 locations. Tree bark composite samples were collected using a hole saw and chisel. One sample from three different trees was collected and composited into a single sample. Additionally, one duff composite sample was collected near each of the three trees sampled for tree bark.

Table 4-1 outlines the number tree bark and duff material samples collected in the 2012 Nature and Extent Forest Program. **Table 4-2** provides the tree bark and duff material sampling locations by station ID, station description, and analyses conducted for tree bark and duff material collected in the 2012 Nature and Extent Forest Program. Tree bark and duff material sample locations that were analyzed for LAA are presented on **Figure 4-5a**.

Samples were collected in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan: Nature and Extent of LA Contamination in the Forest* (EPA, 2012h).

Tree bark and duff samples were sent to EMSL-Libby, EMSL-Cinnaminson, Hygeia, or RESI for preparation and analysis for LAA in accordance with SOP EPA-LIBBY-2012-12. Samples were dried, ashed, weighed, and hand-mixed. Samples of bark and duff were first ashed at high temperature to remove organic matter. A portion of the ashed residue was suspended in acid to dissolve non-asbestos mineral salts, and then diluted in water for filtration through a filter. All tree bark and duff filters were analyzed for LAA using TEM in basic accordance with ISO 10312:1995(E) (ISO 1995) with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2012 Nature and Extent Forest field sampling effort, including all associated field documentation, is provided in the *Data Summary Report: Nature and Extent of LA Contamination in the Forest* (EPA, 2013c) and the results are summarized in **Section 5.0** of this report.

4.6.5 Simulated Open Burning of Duff Material (2012) – Sampling Activities

The objective of the Simulated Open Burning of Duff Material investigation was to provide data on LAA concentrations in air that firefighters could potentially be exposed to in the event of a forest fire, assuming that LAA may potentially be released into the air, via smoke, during the burning of duff and tree bark. A series of laboratory-scale experiments were performed at the EPA's Open Burn Test Facility (OBTF), located at the EPA facilities in Research Triangle Park, NC (EPA, 2012i). These experiments involved collecting measurements of LAA in smoke released from the burning of LAA-impacted duff collected from a location approximately one mile downwind of the Former Mine Area in a series of controlled burns in the OBTF. The experiments were performed with the intent to simulate the temperatures and other conditions of a wildfire as much as possible in a laboratory setting.

The burning occurred in an enclosed shed (also known as a "Burn Chamber" or "Burn Hut"). There were two distinct experimental conditions: 1) a "High Temperature" condition intended to simulate the rapid combustion that occurs during a wildfire; and 2) a "Low Temperature" condition intended to simulate the smoldering combustion that occurs after the initial fire associated with a wildfire that has subsided. For the High Temperature tests, the Burn Chamber consisted of a grate with an up-fired propane burner to provide continuous high temperatures to a supply of duff that was replenished periodically. For the "Low Temperature" tests, the Burn Chamber consisted of a grate with a small propane torch (a different burner than the one used in the High Temperature tests) to sustain the burning of a pile of duff that was periodically replenished.

Duff material was fed by gravity into the Burn Chamber and was replenished during the burn by the addition of new duff material through a feed chute. Air was provided by a fan that blew measured quantities of air into the Burn Hut. Smoke from the burning material traveled through an exhaust flue where measurements were collected for combustion gases (O_2, CO, CO_2), total filterable particulate matter (PM), PM less than or equal to 2.5 µm ($PM_{2.5}$), and LAA fibers (airborne, residual ash, and wipe samples from the walls of the OBTF). It should be noted that at the time of the investigation no validated sampling methods were available for measurement of LAA from combustion sources (EPA, 2012i). Methods existed for measurement of asbestos in ambient air, and methods existed for measurement of PM in stack gases. Therefore, to quantify the LAA fibers in the smoke from the exhaust duct, multiple hybrids of ambient asbestos methods coupled with stack PM measurement methods were adapted and used so that acceptable samples could be acquired and analyzed in spite of the lack of validated sampling methods (EPA, 2012i). LAA in burn chamber smoke was sampled using two different techniques: 1) the Mixed Cellulose Ester (MCE) Filter Method (the standard for ambient measurement of asbestos); and 2) the Impinger Method (a variant on stack sampling methods). For details pertaining to the MCE

and Impinger methods refer to the *Investigation for Operable Unit 3 Libby Asbestos Superfund Site; Quality Assurance Project Plan; Estimation of Asbestos Levels in Smoke Using a Burn Chamber* (EPA, 2011b).

Before it was placed in the Burn Chamber, the duff starting material was analyzed for LAA as well as characterized as fuel using proximate and ultimate analyses (EPA, 2012i). These measurements were combined with measurements of the mass of duff material burned and various flow rates through the OBTF to generate an estimate of emission factors of fibers per PM (LAA fibers per mass of duff material burned divided by $PM_{2.5}$ in terms of mass emitted per mass of duff burned).

Table 4-1 outlines the number of duff material, smoke, and ash samples collected in the Simulated Open Burning of Duff Material Program. **Table 4-2** provides the duff material, smoke, and ash sample information by station ID, station description, and analyses conducted for duff material and ash collected in the Simulated Open Burning of Duff Material.

Samples were collected in accordance with the *Investigation for Operable Unit 3 Libby Asbestos Superfund Site; Quality Assurance Project Plan; Estimation of Asbestos Levels in Smoke Using a Burn Chamber* (EPA, 2011b).

All MCE filters, collected water samples from impinger sampling, and ash were shipped to EMSL Analytical for estimation of LAA by TEM.

Detailed information on the 2012 Simulated Open Burning of Duff Material Program, including all associated documentation, is provided in the *Emissions of Amphibole Asbestos from the Simulated Open Burning of Duff from Libby, MT* (EPA, 2012i) and the results are summarized in **Section 5.0** of this report.

4.6.6 Wood-burning Stove Ash Removal (2012) – Sampling Activities

The objective of the Wood-burning Stove Ash Removal investigation was to evaluate the potential exposures to individuals from exposure to LAA in air while removing ash from a wood-burning stove. The tasks performed as part of this investigation included the burning of locally-collected wood in a wood-burning stove and the collection of personal air samples under an ABS sampling scenario of a person emptying the ash from the stove. Ash was removed using a long-handled metal shovel and placed into a metal ash bucket. A soft-bristled brush was then used to sweep up and gather any additional ash material from the stove. Tree bark and ash samples were collected prior to the stove-emptying activity to provide information on LAA concentrations in materials selected for the burn. Perimeter air monitoring also was conducted during the wood burning and stove emptying events to verify that ABS activities did not result in releases to air outside of the ABS area.

Firewood was collected from dead trees at three locations at varying distances from the Former Mine Area: near the Former Mine Area (approximately one mile downwind of the Former Mine Area), near Flower Creek (approximately two miles south of Libby and nine miles upwind of the Former Mine Area), and near Bear Creek (approximately 10 miles south of Libby and outside the current NPL boundary)[5]. Prior to burning the firewood, a hole saw and chisel were used to collect five circular bark cores from each of the firewood samples, and were composited into a single

[5] Although the locations evaluated near Flower Creek and near Bear Creek are not within the OU3 Study Area, they are retained in this RI for the purposes of comparison to the location near the Former Mine Area.

sample for analysis of LAA by TEM. The collected firewood from each location was then burned in a separate woodstove for six hours (tree bark was not removed prior to burning). One sample of ash material was collected from each of the three separate stoves prior to performing three separate ABS events.

Table 4-1 outlines the number tree bark and ash samples collected in the 2012 Wood-burning Stove Ash Removal. **Table 4-2** provides the tree bark and ash sampling locations by station ID, station description, and analyses conducted for tree bark and ash collected in the 2012 Wood-burning Stove Ash Removal. Firewood collection locations are presented on **Figure 4-5b**.

Samples were collected in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan: Wood-Burning Stove Ash Removal Activity Based Sampling, Libby Asbestos Site, Operable Unit 4, Libby, Montana. Revision 0* (CDM Smith, 2012).

A total of nine tree bark samples were collected (one tree bark sample from three ABS events and three tree collection locations) and then prepared and analyzed in basic accordance with the procedures specified in SOP EPA-LIBBY-2012-12, *Sampling and Analysis of Tree Bark for Asbestos*. In brief, each sample was dried and ashed, and the resulting ash residue was acidified, suspended in water, and filtered. Three replicate filters were created for each tree bark sample using equal aliquots of the ash residue. Each replicate filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E) with all applicable Libby Site-specific laboratory modifications.

A total of nine ash samples were collected (one ash sample from three ABS events and three tree collection locations) and then prepared and analyzed using procedures similar to those specified in SOP EPA-LIBBY-2012-11, *Sampling and Analysis of Duff for Asbestos*. In brief, an aliquot of the ash material was acidified, suspended in water, and filtered. Three replicate filters were created for each ash sample using additional aliquots of the ash residue. Each filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E) with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2012 Wood-burning Stove Ash Removal sampling effort, including associated field documentation, can be found in the *Data Summary Report: Wood-burning Stove Ash Removal Activity-Based Sampling* (CDM Smith, 2013a). The results of the investigation are summarized in **Section 5.0** of this report.

4.6.7 Souse Gulch (2013) – Sampling Activities

At the request of the USACE, the U.S. Public Health Service (USPHS) and the Federal Occupational Health Service (FOH) conducted environmental duff material/bark sampling and analysis and activity based air sampling in May 2013 near the USACE Libby Dam based on USACE plans to renovate areas of the Souse Gulch Campgrounds. Renovations will include excavation of soils, disturbance of forest vegetation (including timber, duff material, and brush), and removal of several trees. The USACE is concerned that workers may be exposed to elevated levels of LAA when conducting these activities. To clarify potential exposure from cutting down trees and disturbing soils, the USACE tasked FOH with collecting representative core bark and duff material samples from trees and soils within the areas of the proposed renovations. In a similar study conducted in August 2012, NIOSH found no exposure resulting from ABS sampling during the numerous forest management activities including fire line construction (USDHHS, 2014). In addition, the USACE is responsible for keeping roadways and driving trails in and around the Souse Gulch Campgrounds and Libby Dam areas clean. After each winter,

sand used to coat the roadways for safer driving after ice and snow storms and other debris that collects on the roadways, including pine needles, are removed using three types of street sweepers. FOH was tasked to collect tree bark, duff material samples, and personal air samples on workers driving the street sweepers and workers driving water trucks used to wet/dampen sand and debris prior to being picked up/swept by the street sweepers. The purpose of the collection of these samples was to determine potential exposures and not to utilize the data in conjunction with the ABS samples collected during the same investigation (USACE, 2013). The personal air samples are discussed in **Section 4.8.6**.

Tree bark and duff material samples were collected within USACE property in the Souse Gulch Campgrounds. Six trees were tagged with red flagging tape by the USACE that met the sampling criteria. Bark core samples were collected only from the side of the tree facing toward the mine (northwest). Duff material samples were collected on the ground below these trees from the same side. A total of six (6) tree bark samples and six (6) duff material samples were collected with one each of tree bark and duff material samples being duplicates for QA/QC purposes.

Table 4-1 outlines the number tree bark and duff material samples collected in the 2013 Souse Gulch Program. **Table 4-2** provides the tree bark and duff material sampling locations by station ID, station description, and analyses conducted for tree bark and duff material collected in the 2013 Souse Gulch Program. Tree bark and duff material sample locations that were analyzed for LAA are presented on **Figure 4-5a**.

All samples were shipped to Reservoirs Environmental under chain-of-custody protocols as described in the SOP. Samples were prepared and analyzed by TEM by Reservoirs Environmental as described in the SOP following ISO TEM Method 10312. Tree bark and duff material were collected and analyzed in accordance with the SOP provided by the USACE, *Asbestos Tree Bark and Duff Material Sampling and Analysis Plan Libby Dam Libby, Montana Dated April 2013*. Samples were analyzed by Reservoirs Environmental Inc. located in Denver, Colorado. Reservoirs Environmental is accredited by the NVLAP for LAA analysis by TEM/PLM.

Detailed information on the 2013 Souse Gulch sampling effort, including all sampling methodology and associated field documentation, is provided in the *Environmental Duff Material/Bark Sampling & Analysis with Activity Based Air Sampling Investigation* (USACE, 2013) and the results are summarized in **Section 5.0** of this report.

4.6.8 Souse Gulch Wildfire Monitoring (2013) – Sampling Activities

The objective of the Souse Gulch Wildfire Monitoring was to measure LAA concentrations in air during a natural wildfire in the OU3 Study Area in order to estimate potential exposure of LAA from wildfires in the OU3 Study Area. Trial burn experiments in wood stoves (Ward *et al.,* 2009) and in test burn chambers (EPA, 2012i) reported that the majority of LAA fibers are retained in the ash when wood and duff materials are burned under experimental conditions. Therefore, a secondary goal of this study was to measure LAA concentrations in ash following a wildfire in the OU3 Study Area that may be used to provide information on the potential for subsequent exposures to human or ecological receptors.

In the event of a natural wildfire in the OU3 Study Area, the plan (EPA, 2015d) included collecting opportunistic air samples, both at stationary monitors throughout the Libby community and near the wildfire (to evaluate exposures to firefighters). To date, air samples have only been collected during one natural wildfire event. In late July 2013, a small (1.5 acre) wildfire occurred in the Souse Gulch day-use recreation area on Lake Koocanusa behind Libby Dam (approximately 2.5

miles southeast from the mine). During this fire, air samples were collected to provide data on LAA exposures of responding firefighters (both to the ground crews and the aircraft support pilot) and downwind LAA concentrations in air during the fire (discussed below in **Section 4.8.7**).

In addition, ash material was collected from the burn area and placed into a 5-gallon bucket. Detailed information on the ash sample collection and analysis are provided on the field modification approval form LFM-OU3-01 (EPA, 2015d). In brief, the Troy SPF utilized a riffle splitter to remove three ash samples for TEM analysis from the bucket. Each ash sample was analyzed by TEM in triplicate.

Table 4-1 outlines the number ash samples collected in the 2013 Souse Gulch Wildfire Monitoring. **Table 4-2** provides the ash sample location by station ID, station description, and analyses conducted for ash collected in the 2013 Souse Gulch Wildfire Monitoring. The ash sample location that was analyzed for LAA is presented on **Figure 4-5a**.

Samples were collected in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan, Operable Unit 3, Libby Asbestos Superfund Site, Wildfire Contingency Monitoring Plan, Revision 3* (EPA, 2015d)

Detailed information on the Souse Gulch sampling can be found in the *DSR* (CDM Smith, 2016). The results of the Souse Gulch wildfire sampling are summarized in **Section 5.0** of this report.

4.6.9 Commercial Logging (2014) – Sampling Activities

The objective of the 2014 Commercial Logging investigation was to evaluate the potential exposures to commercial logging workers in areas with lower LAA concentrations in tree bark and duff material. As part of this investigation, ABS air samples were collected during commercial logging activities in an area of the OU3 Study Area known to have lower LAA concentrations in tree bark and duff material than the commercial logging area evaluated in 2012, and these tree bark and duff material samples were analyzed for LAA. Sampling efforts were conducted in August and September of 2014.

Prior to initiation of ABS activities, samples of tree bark and duff material within the study area were collected and analyzed for LAA. A total of five (5) tree bark and five (5) duff material samples were collected from locations that were spatially representative of the study area. Each tree bark sample was a composite consisting of five cores, collected by cutting a circle of bark with a hole saw, from five different trees. Tree bark samples were collected in accordance with Libby Site-specific SOP EPA-LIBBY-2012-12. For duff material, each sample was a five-point composite collected from a five foot radius surrounding the tree that was selected for bark sampling. Samples of duff material were collected in accordance with Libby Site-specific SOP EPA-LIBBY-2012-11, with modifications as specified in the governing QAPP. In brief, at each specified sampling location, fresh or partially decayed organic debris (e.g., twigs, leaves, pine needles) was collected by hand from the soil surface, taking care that the top layer of soil beneath the organic debris was not included in the duff material sample.

Table 4-1 outlines the number tree bark and duff material samples collected in the 2014 Commercial Logging Program. **Table 4-2** provides the tree bark and duff material sampling locations by station ID, station description, and analyses conducted for tree bark and duff material collected in the 2014 Commercial Logging Program. Tree bark and duff material sample locations that were analyzed for LAA are presented on **Figure 4-5a**.

Samples were collected in accordance with the *Quality Assurance Project Plan: Commercial Logging Activity-Based Sampling Libby Asbestos Superfund Site Revision 0* (USACE, 2014a).

Duff material samples were prepared and analyzed in accordance with the procedures specified in SOP EPA-LIBBY-2012-11, *Sampling and Analysis of Duff Material for Asbestos*. In brief, at the analytical laboratory, each sample was dried, ashed, and an aliquot of the resulting ash residue was acidified, suspended in water, and filtered. The resulting filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E) with all applicable Libby Site-specific laboratory modifications. Remaining ash material was archived for possible future analysis.

All tree bark samples were sent for preparation and analysis for LAA in accordance with SOP EPA-LIBBY-2012-12, *Sampling and Analysis of Tree Bark for Asbestos*, with the following modification: only an aliquot of the resulting ash residue (rather than the total mass) was filtered. In brief, each sample was dried and ashed, and an aliquot of the resulting ash residue was acidified, suspended in water, and filtered. The filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E) with all applicable Libby Site-specific laboratory modifications. Remaining ash material was archived for possible future analysis.

Detailed information on the 2014 Commercial Logging field sampling effort, including associated field documentation, can be found in the *2014 Commercial Logging Activity-based Sampling* (EPA, 2015e). The results of the investigation are summarized in **Section 5.0** of this report.

4.6.10 Nature and Extent Forest ABS (2014) – Sampling Activities

The objective of the 2014 Nature and Extent Forest investigation was to measure LAA concentrations in outdoor ABS air samples from locations along the NPL boundary in an effort to estimate potential exposures and risks to populations that may be exposed to LAA in these forested areas. These risk estimates were used by the EPA to inform decisions on the boundaries of the nature and extent of LAA impact in the forest. Following ABS air sample collection, one 30-point soil sample was collected from each of the ten (10) sampling locations. However, soil samples only were collected during the first of the three sampling events scheduled for each sampling location. All soil samples collected for this study were archived for potential future analysis as directed by the EPA.

Visible Vermiculite Estimation. Visual estimation of the amount of vermiculite in each of the 30 aliquot sub-locations was performed in accordance with Libby Site-specific SOP CDM Smith-LIBBY-06, *Semi-Quantitative Visual Estimation of Vermiculite in Soils* with project modifications detailed in the QAPP prepared for Nature and Extent – Forest Activity-Based Sampling (USACE, 2014b).

Soil Moisture Measurement. Prior to conducting ABS activities, soil moisture was measured in the field using a portable soil moisture meter from a minimum of 10 locations along the fire line excavated for the ABS sampling between 0 and 3 inches below ground surface.

Table 4-1 outlines the number forest soil samples collected in the 2014 Nature and Extent Forest ABS Program. These samples are archived and have not been analyzed therefore they are not included on **Table 4-2** or **Figure 4-6**.

Samples were collected in accordance with the *Quality Assurance Project Plan: Nature and Extent – Forest Activity-Based Sampling Libby Asbestos Superfund Site Revision 1* (USACE, 2014b).

Detailed information on the 2014 Nature and Extent field sampling effort, including all associated field documentation can be found in the *Nature and Extent Forest Activity-based Sampling* (EPA, 2015f). The results of the investigation are summarized in **Section 5.0** of this report.

4.6.11 Slash Pile Burn (2015) – Sampling Activities

The objective of the Slash Pile Burn investigation, which was performed in May 2015, was to provide sufficient data on LAA concentrations in air to allow the EPA to complete an exposure assessment for forest workers conducting slash pile burning activities in the forest near the mine. Slash piles are the accumulation and piling up of limbs, tops, and miscellaneous residue left by logging and various forest management activities, such as thinning, pruning and timber harvesting, which occur in forested areas of the OU3 Study Area. The EPA used the exposure assessment to evaluate potential risks to forest workers. The risk assessment will be used to support decisions about whether or not response actions are needed to protect forest workers from unacceptable risks during a slash pile burn. While there have been several ABS studies conducted at the OU3 Study Area to assess potential exposures under a variety of exposure conditions, there were no prior ABS data to evaluate exposures during the burning of slash piles.

The study performed a controlled prescribed slash pile burn and collected samples to measure LAA concentrations in the air that resulted from the fire. The constructed slash pile was approximately six ft. high and 15 ft. wide. Prior to the burn, tree bark, duff material, and forest soil samples were collected to represent the materials included in the slash pile. Three (3) tree bark samples were collected within the slash pile burn activity area and consisted of three-core composite samples that were collected from intact bark from trees selected for the slash burn pile. Five (5) duff samples were collected from within the selected area for the slash pile burn activities and consisted of five point composites. Three (3) pre-burn and three (3) post-burn forest soil samples were collected within the slash pile burn activity area from a depth of zero to six inches below ground surface and consisted of 30-point composite samples. Finally, one (1) ash sample was collected from the burn area prior to conducting mop-up activities to provide measured data on LAA levels in the ash following the burn. The ash sample was collected within the slash pile burn activity area from a depth of zero to one inches below ground surface and consisted of a 30-point composite.

Forest Soil composite samples were collected pre-burn and post-burn and were prepared in accordance with 16-ASB-06.02 at the SPF in Troy, MT. Samples were scrutinized for organic matter to avoid igniting during the drying process. One aliquot of the fine-ground sample was analyzed for asbestos by PLM-VE in accordance with SOP SRC-LIBBY-03, as modified by the most recent version of Libby laboratory modification LB-000073. If there was a coarse fraction of the sample, it was analyzed for asbestos by PLM-Grav in accordance with SOP SRCLIBBY-01.

Tree bark samples were prepared and analyzed in accordance with the procedures specified in SOP EPA-LIBBY-2012-12, with the following project modifications: only one 0.25-gram aliquot of the resulting ash residue (rather than the total mass) was filtered. In brief, the three cores for each sample were combined, dried, and ashed, and an aliquot of the resulting ash residue was acidified, suspended in water, and filtered. The resulting filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E). Any remaining ash material was archived for possible future analysis.

Duff material samples were prepared and analyzed in accordance with the procedures specified in SOP EPA-LIBBY-2012-11. Each sample was dried and ashed, and an aliquot of the resulting ash residue was acidified, suspended in water, and filtered. The resulting filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E). Any remaining ash material was archived for possible future analysis.

Ash samples were prepared and analyzed in accordance with the procedures specified in SOP EPA-LIBBY-2012-11. An aliquot of the ash material was acidified, suspended in water, and filtered. A total of three replicate filters were created and analyzed for each ash sample using additional aliquots of the ash residue. Each filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E) with all applicable Libby Site-specific laboratory modifications.

Table 4-1 outlines the number forest soil, tree bark, duff material, and ash samples collected in the Slash Pile Burn Program. **Table 4-2** provides the forest soil, tree bark, duff material, and ash sampling locations by station ID, station description, and analyses conducted for forest soil, tree bark, duff material, and ash collected in the Slash Pile Burn Program. Forest soil, tree bark, duff material, and ash sample locations are presented on **Figure 4-5a**.

Samples were collected in accordance with the *Slash Pile Burn Activity Based Sampling Rev. 0 Quality Assurance Project Plan* (USACE, 20015a).

Prior to analysis, all forest soil samples were prepared at the SPF in Troy, MT. Each sample was split into two approximately equal portions: 1- archive; 2-PLM aliquot. The archive aliquot was stored in accordance with SOP 16-ASB-06.02. The PLM aliquot was prepared using SOP 16-ASB-06.02. In brief, the PLM aliquot was sieved into coarse (> ¼ -inch) and fine fractions. The fine fraction was ground to reduce particles to a diameter of 250-µm or less; this fine-ground portion was then split into four aliquots. One aliquot of the fine-ground sample was analyzed for asbestos by PLM-VE in accordance with SOP SRC-LIBBY-03, as modified by the most recent version of Libby laboratory modification LB-000073. If there was a coarse fraction of the sample, it was analyzed for asbestos by PLM-Grav in accordance with SOP SRCLIBBY- 01.

Detailed information on the 2015 slash pile burn investigation sampling effort, including all associated field documentation, is provided in the *2015 FSSR* (MWH, 2016b). The results of the investigation are summarized in **Section 5.0** of this report.

4.6.12 Low-Intensity Prescribed Understory Burn (2015) – Sampling Activities

The objective of the Low-Intensity Prescribed Understory Burn investigation, which was performed in May and June 2015, was to provide additional data on LAA concentrations in air to allow the EPA to complete an exposure assessment for firefighters during the initial attack on a low-intensity, small scale wildfire in the forest near the Former Mine Area. The EPA used the exposure assessment to evaluate potential risks to responding firefighters. The risk assessment will be included in the RI/FS process for decision-making and alternatives analysis for the OU3 Study Area and will be used to support future decisions about whether or not response actions are needed to protect firefighters from unacceptable risks during a low intensity, small-scale fire.

The study performed a small-scale, low-intensity controlled prescribed understory burn and collected samples to measure LAA concentrations in the air that result from the fire and associated firefighter disturbance activities. The understory is defined as the shrubs and plants growing beneath the main canopy of a forest. An area approximately 0.1 acres in size and triangular in

shape was constructed for the understory burn activities. Prior to the burn, soil, duff material, and tree bark samples were collected to represent the materials burned. Four (4) tree bark samples were collected within the understory burn activity area and consisted of two-core composite samples from two trees and one core sample from a third tree. Five (5) duff samples were collected from within the selected area for the slash pile burn activities and consisted of five point composites. Three (3) pre-burn and three (3) post-burn forest soil samples were collected within the slash pile burn activity area from a depth of zero to six inches below ground surface and consisted of 30-point composite samples. Finally, one (1) ash sample was collected from the burn area prior to conducting mop-up activities to provide measured data on LAA levels in the ash following the burn. The ash sample was collected within the understory burn activity area from a depth of zero to one inches below ground surface and consisted of a 30-point composite.

Soil, tree bark, duff material, and ash sample collection and analysis methods for the understory burn were the same as described above in **Section 4.6.11** with the exception of the bark sample collection locations. The bark samples collected as part of the low-intensity controlled prescribed understory burn were collected from a location on the tree approximately two ft. from the ground surface.

Table 4-1 outlines the number forest soil, tree bark, duff material, and ash samples collected in the Understory Burn Program. **Table 4-2** provides the forest soil, tree bark, duff material, and ash sampling locations by station ID, station description, and analyses conducted for forest soil, tree bark, duff material, and ash collected in the Understory Burn Program. Forest soil, tree bark, duff material, and ash sample locations are presented on **Figure 4-5a**.

Samples were collected in accordance with the *Low-Intensity Prescribed Understory Burn Activity -Based Sampling Rev. 0 Quality Assurance Project Plan* (USACE, 2015b).

Detailed information on the 2015 understory burn investigation field sampling effort, including all associated field documentation, is provided in the *2015 FSSR* (MWH, 2016b). The results of the investigation are summarized in **Section 5.0** of this report.

4.6.13 Canoe Gulch and Alexander Ridge Wildfire Monitoring (2015) – Sampling Activities

In August of 2015, several small-scale wildfires occurred within the OU3 Study Area that were extinguished before air monitoring could be initiated. However, samples of soil and duff were collected to evaluate post-fire LAA concentrations following two of the natural wildfires that occurred within the OU3 Study Area. . The two wildfires that occurred within the OU3 Study Area were the Canoe Gulch Fire (Libby Superfund Fire #12 [LSF-12]) and the Alexander Ridge Fire (LSF-13). Following fire-fighting activities, USFS personnel cleaned fire-fighting equipment near the forest fires within the OU3 Study Area and designated these equipment cleaning areas as “decontamination areas” (refer to **Figure 4-5b** identifying fire locations and equipment “decontamination areas”). Soil samples were collected from the decontamination areas, areas near the decontamination areas considered un-impacted, an access road, and a burn area. Duff material samples were collected from the fire sites, the personnel and equipment decontamination areas, and areas near the decontamination areas that were considered un-impacted. Ash was not collected as part of this sampling activity because it was washed out of the burn area by firefighting water application and rain. Air monitoring also did not occur during these wildfires because the fires were extinguished before air monitoring could be conducted. A description of sample collection is presented below.

A total of two soil samples and two duff samples were collected from the Canoe Gulch (LSF-12) area:

- One 30-point composite soil sample and one duff material sample from the equipment decontamination area.
- One 30-point composite soil sample and one duff material sample from the undisturbed equipment decontamination area.

A total of seven soil samples and four duff samples were collected from the Alexander Ridge (LSF-13) area:

- One 30-point composite soil sample and one duff material sample from the fire site.
- One 30-point composite soil sample from the equipment decontamination area.
- One 30-point composite soil sample and one duff material sample from the undisturbed equipment decontamination area.
- One 30-point composite soil sample and one duff material sample from the personnel decontamination area.
- One 30-point composite soil sample and one duff material sample from the undisturbed personnel decontamination area.
- One 30-point composite soil sample from the disturbed road area 1.
- One 30-point composite soil sample from the disturbed road area 2.

Table 4-1 outlines the samples collected in the 2015 Wildfire Monitoring. **Table 4-2** provides the sample locations by station ID, station description, and analyses conducted for samples collected in the 2015 Wildfire Monitoring. Forest soil and duff material sample locations are presented on **Figure 4-5b**.

Details regarding the collection of samples following these two wildfires are documented in field ROMs OU3-LFM-03 and OU3-LFM-04 for the *Sampling and Analysis Plan/Quality Assurance Project Plan, Operable Unit 3, Libby Asbestos Superfund Site, Wildfire Contingency Monitoring Plan, Revision 3* (EPA, 2015d).

All soils samples were sent to the SPF for preparation and to EMSL for analysis of LAA by PLM-VE and PLM-Grav. Duff material was analyzed for LAA by TEM.

Detailed information on the wildfire monitoring sampling can be found in the *DSR* (CDM Smith, 2016). The results of the wildfire monitoring sampling are summarized in **Section 5.0** of this report.

4.7 AMBIENT / PERIMETER AIR INVESTIGATIONS

Air monitoring under ambient conditions in the OU3 Study Area was completed as part of the Phase I and Phase II Part B sampling programs. The objective of the Phase I and Phase IIB ambient air sampling programs was to assess fiber releases from the Former Mine Area to adjacent downwind areas under current site conditions. Two rounds of monitoring were performed, the first occurred in the fall of 2007 and the second in the summer/fall of 2008. Perimeter air was also collected in 2015 during the slash pile burn and the prescribed understory burn. Perimeter air samples were collected at varying distances from a predetermined location to monitor for potential releases of LAA to downwind locations as a result of the burn study activities. **Table 4-1** outlines the number samples collected for ambient/perimeter air by sampling phase/event. **Table 4-2** provides the ambient/perimeter air sampling locations by station ID,

description, sampling phase/event, and analyses conducted. Ambient/perimeter air sample locations that were analyzed for LAA are presented on **Figures 4-7a** and **4-7b** respectively. Detailed results for LAA detected in ambient/perimeter air samples collected throughout the OU3 Study Area are provided and discussed in **Section 5.0**.

4.7.1 Phase I (2007) – Sampling Activities

The objective of the Phase I ambient air sampling program was to collect data to obtain a preliminary characterization of the nature and extent of potential impacts resulting from historical mining, milling, and activities ancillary to mining and milling (e.g., subsequent handling and transport of mined material). Eight (8) stationary air monitors were placed in two roughly concentric semi-circles around the mine area to evaluate LAA concentrations in ambient air. Station locations were placed north, northeast, east, generally downwind, and generally upwind of the Former Mine Area. The semi-circle was placed close to the boundary of the disturbed mine area (air station locations A-4, A-5, A-6, and A-8), and the semi-circle was close to the perimeter of the property owned by Grace (air station locations A-1, A-2, A-3, and A-7). Four (4) ambient air samples were collected, one every five days for each of the eight stations, for a total of 32 samples collected over a 20-day period per station. Sample were collected at a height of approximately six ft. above ground level using low-flow (2 liters per minute [l/min]) stationary air monitors. The design air volume to be sampled during each five-day period was 14,400 liters, however due to pump faults and flow-rate variance, the actual volumes sampled during each period ranged from 9,987 liters to 14,402 liters. Sample results from the Phase I program were initially intended to be screening level but were later combined with results from other ambient air samples for the Libby Site to support the risk assessment calculations (EPA, 2007b).

Table 4-1 outlines the number of ambient air samples collected in Phase I. **Table 4-2** provides the ambient air sampling locations by station ID, station description, and analyses conducted for ambient air collected in Phase I. Ambient Air sample locations and the OU3 wind rose are presented on **Figure 4-7a**.

Samples were collected in accordance with the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b). The ambient air filters were sent to EMSL laboratory for analysis of LAA by TEM. Filters were prepared directly and analyzed in accordance with ISO 10312:1995(E) with all applicable Libby Site-specific laboratory modifications.

Detailed information on the Phase I field sampling effort, including all associated field documentation, is provided in the *Phase I FSSR* (MWH, 2007) and the results are summarized in **Section 5.0** of this report.

4.7.2 Phase II, Part B (2008) – Sampling Activities

None of the Phase I ambient air samples contained detectable levels of LAA. Refer to the *DSR* (CDM Smith, 2016). However, the data were not considered to be sufficient because they were collected during a time of frequent rain (so the potential for release may have been reduced) and because the sampling period only spanned a time period of 20 days. Thus, additional ambient air data were collected as part of the Phase II Part B sampling program.

A total of eight (8) stationary ambient air monitors were established around the perimeter of the Former Mine Area. Stations A-4, A-5, A-6 and A-8 were placed at the same locations as were sampled in Phase I, while stations A-9 to A-12 were new stations. As indicated, three stations

were located to the north and one was located to the east of the Former Mine Area, since available meteorological data indicate that the predominant wind direction is to the northeast. Stations A-1, A-2, and A-3 were not utilized as sample locations for Phase II. Three stations were located along the southern perimeter to capture releases that could occur during wind reversals. Sixty-five (65) total samples were collected during eight bi-weekly sampling periods. Each sampling period was five days (120 hours) with a low flow pump rate of 2 l/min; the design air volume to be sampled during each five-day sampling period was 14,400 liters. Due to flow-rate variance the actual volumes sampled during each period ranged from 55,680 liters to 14,663 liters, averaging 13,639 liters.

Table 4-1 outlines the number of ambient air samples collected in Phase II Part B. **Table 4-2** provides the ambient air sampling locations by station ID, station description, and analyses conducted for ambient air collected in Phase II Part B. Ambient Air sample locations and the OU3 windrose are presented on **Figure 4-a7**.

Samples were collected in accordance with the *Phase II Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site Part B: Ambient Air and Groundwater* (EPA, 2008e). The ambient air filters were sent to EMSL laboratory for analysis of LAA by TEM. Filters were prepared directly and analyzed in accordance with ISO 10312:1995(E) with all applicable Libby Site-specific laboratory modifications.

Detailed information on the Phase II Part B field sampling effort, including all associated field documentation, is provided in the *Phase II FSSR* (MWH, 2009) and the results are summarized in **Section 5.0** of this report.

4.7.3 Wood-burning Stove Ash Removal (2012) – Sampling Activities

The objective of the Wood-burning Stove Ash Removal investigation is presented in **Section 4.6.6**. The tasks performed as part of this investigation included the burning of wood in a wood-burning stove and the collection of personal air samples under an ABS sampling scenario of a person emptying the ash from the interior of the stove. Perimeter air monitoring also was conducted during the wood burning and stove emptying events to verify that ABS activities did not result in releases to air outside of the ABS area. Details on the firewood collected for this investigation are presented in **Section 4.6.6** and **Figure 4-5b** and details on the ABS collected for this investigation are presented in **Section 4.8.5**.

Perimeter air samples were collected from a stationary air monitor placed at the perimeter of the investigation area in a downwind direction from the woodstove to monitor any potential releases. Two perimeter air samples were collected for each ABS event. One perimeter air sample had a sample duration that encompassed the entire two days of an individual ABS event (i.e., the duration of the burning, cooling, and ABS activities). The other perimeter air sample was collected only during the six hour burning time period for rapid turnaround analysis to monitor potential releases from the woodstoves during the burning activity. The six hour perimeter air samples were collected at a flow rate of 5 l/min, while the two day perimeter air samples were collected at a flow rate of 2.5 l/min. A total of three two day perimeter air samples and three six hour perimeter air samples were collected and analyzed by TEM.

Table 4-1 outlines the number of perimeter air samples collected in the Wood-burning Stove Ash Removal. **Table 4-2** provides the perimeter air sampling locations by station ID, station description, and analyses conducted for perimeter air collected in the Wood-burning Stove Ash Removal Program.

Samples were collected in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan: Wood-Burning Stove Ash Removal Activity Based Sampling, Libby Asbestos Site, Operable Unit 4, Libby, Montana. Revision 0* (CDM Smith, 2012).

Each perimeter air filter was prepared for analysis by using direct preparation methods. The filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E) with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2012 Wood-burning Stove Ash Removal sampling effort, including associated field documentation, can be found in the *Data Summary Report: Wood-burning Stove Ash Removal Activity-Based Sampling* (CDM Smith, 2013a). The results of the investigation are summarized in **Section 5.0** of this report.

4.7.4 Souse Gulch Wildfire Monitoring (2013) - Sampling Activities

The objective of the 2013 Souse Gulch Wildfire Monitoring was to collect opportunistic perimeter air samples during a natural wildfire that occurred in the OU3 Study Area. Sample pumps were set to collect at 2 l/min. 24-hour samples were collected from each of three stationary air monitors and 4-hour samples were collected from a mobile monitor placed downwind of the fire for the duration of the wildfire event. The mobile station was used to represent an area downwind of the fire. The actual location selected for the mobile sampler depended upon the ease of access for the truck hauling the sample equipment and safety concerns for sampling personnel (e.g., conditions of the fire). The monitor was placed on a tripod in the back of the truck. During sample collection, the coordinates of the monitor were recorded, as well as the wind direction and speed. This information was used with data on the fire location to establish the distance and direction of the monitor relative to the fire. Samples also were collected from inside air-support craft and near ground-based firefighters responding to the wildfire in the OU3 Study Area (refer to **Section 4.8.7**). Samples were analyzed by TEM under low magnification. Ash samples from the burn area also were collected following the fire (refer to **Section 4.6.8**).

Two perimeter samples were collected, prepared directly, and analyzed for LAA by TEM.

Table 4-1 outlines the number of perimeter air samples collected in the 2013 Souse Gulch Wildfire Monitoring sampling. **Table 4-2** provides the perimeter air sampling locations by station ID, station description, and analyses conducted for perimeter air collected in the 2013 Souse Gulch Wildfire Monitoring. Ambient air sample locations are presented on **Figure 4-7b.**

All sampling was conducted in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan, Operable Unit 3, Libby Asbestos Superfund Site, Wildfire Contingency Monitoring Plan, Revision 33* (EPA, 2015d). The ABS air filters were sent to the EMSL laboratories for analysis of LAA by TEM. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), and, with all applicable Libby Site-specific laboratory modifications, and the results are summarized in **Section 5.0** of this report.

4.7.5 Slash Pile Burn (2015) - Sampling Activities

The study design was to perform a controlled prescribed slash pile burn and to collect samples to measure LAA concentrations in the air that result from the fire. Perimeter air samples were collected before, during, and after the burn to measure LAA concentrations in air at varying

distances in close proximity to the burn area to provide information on the potential for offsite migration of LAA. Refer to **Section 4.6.11** above for details on the goal of this EPA study.

Because wind directions varied during the slash pile burn activities, 12 air monitoring stations were placed around the burn area for perimeter air sampling collection before, during, and after (for two days) the burn. The stations were placed approximately 50,100, and 200 ft. away from the edge of the fire line nearest to the burn area. Four sampling stations for each distance interval were positioned at approximately each compass direction (i.e., north, south, east, and west). Each monitoring location had a high volume pump and a low volume pump.

Perimeter air samples were collected for approximately three hours at only the four perimeter air monitors 50 feet from the edge of the fire line before the burn event (after the creation of the slash pile, fire line, and fuel breaks).

During the slash pile burn, perimeter air samples were collected at the 12 perimeter monitoring stations starting when the fire began generating smoke. During the burn and mop-up activities (refer to **Section 4.8.10**), perimeter air samples were collected for approximately six hours. Air filters were changed out every three hours throughout the burn and the subsequent "mop-up" activities.

After the burn, perimeter air samples were collected for two additional days from only each of the four perimeter air monitors located 50 feet from the edge of the fire line. On each day, two samples (one in the morning and one in the afternoon) were collected from each of the four perimeter air monitors. The duration of each sample was approximately three hours.

A total of 88 perimeter air samples were collected, 44 of which were analyzed for LAA (4 samples before the burn, 24 during the burn, and 16 after the burn). All 44 air filters were prepared directly for analysis by TEM.

Table 4-1 outlines the number of perimeter air samples collected in the Slash Pile Burn Program. **Table 4-2** provides the perimeter air sampling locations by station ID, station description, and analyses conducted for perimeter air collected in Slash Pile Burn Program. Perimeter air sample locations are presented on **Figure 4-7b**.

Samples were collected in accordance with the *Slash Pile Burn Activity Based Sampling Rev. 0 Quality Assurance Project Plan* (USACE, 2015a). The perimeter air filters were sent to EMSL laboratory and Environmental Services Assistance Team Region 8 (ESATR8) laboratory for analysis of LAA by TEM. The high volume filter was analyzed in preference to the low volume filter and if the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2015 slash pile burn investigation sampling effort, including all associated field documentation, is provided in the *2015 FSSR* (MWH, 2016b). The results of the investigation are summarized in **Section 5.0** of this report.

4.7.6 Low-Intensity Prescribed Understory Burn (2015) - Sampling Activities

The objective of the Low-Intensity Prescribed Understory Burn investigation was to perform a small-scale, low-intensity controlled prescribed understory burn and to collect samples to

measure LAA concentrations in the air that resulted from the fire and associated firefighter disturbance activities. Perimeter air samples were collected before, during, and after the burn to measure LAA concentrations in air at varying distances in close proximity to the prescribed understory burn area to provide information on the potential for offsite migration of LAA. Refer to **Section 4.6.12** above for details on the goal of this EPA study.

Because wind directions varied during the understory burn activities, 12 air monitoring stations were placed around the burn area for perimeter air sampling before, during, and after (two days) the burn. The stations were placed approximately 50, 100, and 200 ft. away from the edge of the fire line nearest to the burn area. Four sampling stations for each distance interval were positioned at approximately each compass direction (i.e., north, south, east, and west). Each monitoring location had a high volume pump and a low volume pump.

Perimeter air samples were collected for approximately four hours at only the four perimeter air monitors 50 feet from the edge of the fire line prior to the burn event. The pre-burn sampling was conducted approximately one month prior to conducting the burn. The burn could not take place directly after the pre-burn sampling due to rainy weather conditions. Therefore, the burn sampling was postponed for approximately one month.

During the understory burn, perimeter samples were collected at 12 perimeter monitor stations (four monitor stations at each of three distances) starting after the fire was ignited. The sample duration for each sample was two hours (1-hour during the burn and during the 1-hour mop-up activity [refer to **Section 4.8.11**]). For the 50-foot perimeter monitors, each location had a high volume pump and a low volume pump, and for the 100-foot and 200-foot perimeter monitors, each location only had a high volume pump.

After the burn, perimeter air samples were collected for two days from only each of the four 50-foot perimeter air monitors. On each day, two samples (one in the morning and one in the afternoon) were collected from each of the four perimeter air monitors. The total sample duration was eight hours per day (4 hours in the morning and 4 hours in the afternoon) and air filters were changed after 4 hours.

A total of 60 perimeter air samples were collected, 33 of which were analyzed for LAA (4 samples before the burn, 13 during the burn, and 16 after the burn). Of the 33 samples, 29 were prepared directly and 4 were prepared indirectly for analysis by TEM.

Table 4-1 outlines the number of perimeter air samples collected in the Understory Burn Program. **Table 4-2** provides the perimeter air sampling locations by station ID, station description, and analyses conducted for perimeter air collected in Understory Burn Program. Perimeter air sample locations are presented on **Figure 4-7b**.

Samples were collected in accordance with the *Low-Intensity Prescribed Understory Burn Activity -Based Sampling Rev. 0 Quality Assurance Project Plan* (USACE, 2015b).

The perimeter air filters were sent to EMSL laboratory, ESATR8, and Hygeia Laboratories, Inc. for analysis of LAA by TEM. Perimeter air sample analysis methods for the understory burn were the same as described above in **Section 4.74.** Detailed information on the 2015 understory burn investigation field sampling effort, including all associated field documentation, is provided in the *2015 FSSR* (MWH, 2016b). The results of the investigation are summarized in **Section 5.0** of this report.

4.8 ACTIVITY-BASED SAMPLING AIR SAMPLING INVESTIGATIONS

ABS is a sampling technique that is used to measure air concentrations during disturbances of materials containing LAA. During ABS, air monitors are worn by personnel who are engaged in a variety of material disturbance activities, and the resulting air filters are analyzed to establish the concentration of LAA in air. These air concentrations can then be used to estimate exposures for the purposes of evaluating potential human health risks.

ABS air samples were collected in the OU3 Study Area as part of the Phase III, Phase IV Part A, and Phase V Part A sampling events. Additional sampling events were conducted in and around the OU3 Study Area between 2012 and 2015 to evaluate a variety of LAA material disturbance scenarios. All collected ABS air samples were analyzed for LAA. The following sections summarize the ABS programs. **Table 4-1** outlines the number samples collected for ABS air by sampling phase/event. **Table 4-2** provides the ABS air sampling locations by station ID, description, sampling phase/event, and analyses conducted. ABS air sample locations that were analyzed for LAA are presented on **Figure 4-8**. Detailed results for LAA detected in ABS air samples collected throughout the OU3 Study Area are provided and discussed in **Section 5.0**.

4.8.1 Phase III (2009) – Sampling Activities

The objective of the Phase III ABS was to evaluate human receptors that could potentially be exposed to LAA in the OU3 Study Area, including recreational visitors in the forested area and along the OU3 Study Area streams and ponds, as well as wood harvesters. The Phase III sampling program focused on the collection of ABS data to evaluate LAA exposures to recreational visitors in the forested area during the following types of activities:

- All-terrain vehicle (ATV) riding
- Hiking
- Wood-gathering
- Fire-pit digging
- Campfire burning

Twenty ABS areas were identified as candidate areas for evaluation in Phase III and were dispersed based on the large-scale spatial variability of measured LAA levels in forest soil, duff material, and tree bark, as well as inspection of available maps of roads, trails, and terrain in the OU3 Study Area. Eleven of these areas, predominately in the downwind direction (north-northeast of the mine), were selected for ABS evaluation. For each ABS area, two ABS personnel performed the following scripted activities:

Script 1. This script was designed to simulate recreational ATV riding in the forested area around the Former Mine Area. In this script, two ABS personnel rode individual ATVs. Personnel switched positions (leader/follower) after half of the sampling time had elapsed. Each person was in the leader/follower position for 10 minutes for a total of 20 minutes for this activity.

Script 2. This script was designed to simulate recreational visitor potential exposures while hiking in the forested area around the Former Mine Area. In this script, two ABS personnel hiked and then switched positions (leader/follower) after half of the sampling time had elapsed. Each person was in the leader/follower position for 40 minutes for a total of 80 minutes for this activity.

Script 3. This script was designed to simulate potential exposures during three campfire building scenarios: collecting wood for the campfire, digging a fire pit, and building and standing near a campfire. To limit the potential for an unintentional, uncontrolled forest fire, this activity did not occur in the ABS area, but was conducted on Grace owned property near Rainy Creek Road and Highway 37 (a significantly less vegetated area formerly known as the Flyway) using the wood collected from the ABS area. This activity lasted from 20 minutes to 30 minutes.

Two ABS samples were generated for each person for ATV riding and hiking scenarios and three ABS samples were generated for each person for fire building scenarios. Each person was wearing two air sampling pumps, a 4 l/min high volume pump and a 2 l/min low volume pump. ABS events were conducted at each area approximately every 10 days, starting at the end of August through the beginning of November 2009.

A total of 454 ABS samples were collected, 227 of which were analyzed for LAA. All air filters were prepared directly for analysis by TEM.

Table 4-1 outlines the number of ABS air samples collected in Phase III. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in Phase III. ABS air sample locations are presented on **Figure 4-8**.

Samples were collected in accordance with the *Remedial Investigation for Operable Unit 3 Libby Asbestos Superfund Site Phase III Sampling and Analysis Plan* (EPA, 2009c).

The ABS air filters were sent to EMSL laboratory and Hygeia Laboratories, Inc. for analysis of LAA by TEM. The high volume filter was analyzed in preference to the low volume filter and if the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications.

Detailed information on the Phase III field sampling effort, including all associated field documentation, is provided in the *Phase III Activity-Based Sampling Summary Report* (MWH, 2010) and the results are summarized in **Section 5.0** of this report.

4.8.2 Phase IV, Part A (2010) – Sampling Activities

The objective of the Phase IV Part A sampling program focused on the collection of ABS data to evaluate potential LAA exposures to recreational visitors along the OU3 Study Area streams and ponds, residential wood harvesters, USFS workers, and fire fighters in the forested area (under staged fire-fighting conditions). In addition, the Phase IV Part A SAP included a plan for the collection of opportunistic air samples during natural forest fires in the OU3 Study Area. For the purposes of the Phase IV Part A ABS effort, only a subset of the 11 ABS areas evaluated in the Phase III study were sampled. For most ABS scenarios evaluated in the Phase IV Part A effort, three ABS areas were selected to represent locations “Near” (ABS Area 10), “Intermediate” (ABS Area 7), and “Far” (ABS Area 2) from the Former Mine Area center. Although the study design was to perform ABS activities in area ABS Area 10, the location of the activities was modified at the time of collection to be located about one mile further downwind, closer to the Phase III ABS Area 6. Thus, to avoid potential confusion, the location of this area is referred to as ABS Area 6’. ABS activities were separated into 6 different “scripts” as follows:

Script 1. This script was designed to simulate recreational visitor potential exposures while hiking and antler hunting along LRC between Highway 37 and the Grace property line (refer to the "LRC Study Area" in **Figure 4-8**). The terrain along LRC is overgrown and there are no established trails; however, trespassers could enter this area near Highway 37 although it is more likely that they would use Rainy Creek Road. In this script, two ABS personnel walked up along the banks of the creek, vigorously disturbing bushes and other vegetation as needed to move along the bank of the creek to simulate walking/hiking. Activities also included the samplers using their hands to push aside ground vegetation to simulate hunting for shed antlers. Personnel switched positions (leader/follower) after half of the sampling time has elapsed. Five sampling events were conducted in August 2010.

Script 2. This script was designed to simulate potential exposures during non-commercial (e.g., residential) wood harvesting activities in the forested area in the OU3 Study Area. The script included two types of activity: 2A) driving to and from the wood harvesting area, and 2B) felling, limbing, cutting, and stacking harvested wood. Two ABS personnel performed the scripted activities in each ABS area during each sampling event. ABS was conducted in ABS Area 2, ABS Area 7, and ABS Area 6' (refer to **Figure 4-8**). Five sampling events were conducted in each ABS area between July and August 2010.

Script 3. The first part of this script (3A, 3B, 3C) was designed to simulate potential exposures to USFS workers during activities routinely performed as part of the USFS land management responsibilities. The script included three types of activities: 3A) maintenance of roads and trails, 3B) thinning of trees and vegetation, and 3C) surveying trees (i.e., stand examination). The second part of this script (3D, 3E) was designed to simulate exposures to USFS workers during fire-fighting activities. The script included two types of activities: 3D) cutting fire lines by hand using a Pulaski tool, and 3E) cutting fire lines using heavy equipment (e.g., a bulldozer or tractor plow). Two ABS personnel performed the scripted activities in each ABS area during each sampling event. ABS was conducted in ABS Area 2, ABS Area 7, and ABS Area 6' (refer to **Figure 4-8**). Five sampling events were conducted in each ABS area between July and August 2010.

Script 4. This script was designed to simulate potential exposures to ground-based fire fighters from LAA in air released by burning of contaminated duff material and trees in the OU3 Study Area. Personal and stationary air samples were to be collected during a simulated forest fire, which was to be achieved by the burning two large slash piles in the OU3 Study Area (refer to **Figure 4-8** for slash pile locations). However, due to concerns about the potential for an unintentional, uncontrolled forest fire, this script was not performed.

Script 5. This script was designed to provide data on potential exposures to aircraft pilots during fire suppression flights from LAA in air released by burning of contaminated duff material and trees in the OU3 Study Area. Script 5A was intended to collect data during a simulated forest fire (i.e., the slash pile burn). Script 5B was designed to collect opportunistic samples during natural forest fires in the OU3 Study Area, by placing an air monitor in the cockpit of responding aircraft. As noted above, the slash pile burn was not conducted and no wildfires had occurred in OU3 since the development of this 2010 SAP, until the 2013 Souse Gulch wildfire (refer to **Section 4.8.7**). Thus, no data had been collected, except for the opportunistic samples during the 2013 Souse Gulch wildfire (Note: Script 5B was superseded by the *OU3 Wildfire Contingency Air Monitoring Plan, Revision 3* [EPA, 2015d]).

Script 6. This script was designed to provide data on potential residential exposures from LAA in air during natural forest fires in the OU3 Study Area. As noted above, no wildfires have occurred

in the OU3 Study Area since the development of this SAP. Thus, no data had been collected, except for the opportunistic samples collected during the 2013 Souse Gulch wildfire (Note: This script and the associated SAP Addendum that was created to support a fire fighter ABS effort were superseded by the *OU3 Wildfire Contingency Air Monitoring Plan, Revision 3* [EPA, 2015d]).

During each of the sampling events each person was wearing three air sampling pumps, a 4 l/min high volume pump, a 2 l/min low volume pump, and a 1 l/min low volume pump.

A total of 756 ABS samples were collected, 252 of which were analyzed for LAA. Of the 252 samples, 130 were prepared directly and 122 were prepared indirectly for analysis by TEM.

Table 4-1 outlines the number of ABS air samples collected in Phase IV Part A. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in Phase IV Part A. ABS air sample locations are presented on **Figure 4-8**.

Samples for scripts 1 through 5 were collected in accordance with the *Remedial Investigation for Operable Unit 3 Libby Asbestos Superfund Site Phase IV Sampling and Analysis Plan Part A – Data to Support Human Health Risk Assessment* (EPA, 2010b).

The ABS air filters were sent to EMSL laboratory, ESATR8, and Hygeia Laboratories, Inc. for analysis of LAA by TEM. The high volume filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E). If the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed in preference to performing an indirect preparation on the high volume filter. If the low volume filter was deemed to be overloaded, an indirect preparation (with ashing) was performed of the high volume filter. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications.

Detailed information on the Phase IV Part A field sampling effort, including all associated field documentation, is provided in *Operable Unit 3 Phase IV Remedial Investigation Field Data Summary Report, Activity–Based Sampling* (MWH, 2011) and the results are summarized in **Section 5.0** of this report.

4.8.3 Phase V, Part A (2012) ABS – Sampling Activities

The objective of Phase V Part A was to collect ABS data to evaluate potential exposures to LAA by recreational visitors along the Kootenai River. The ABS air sampling was performed on a sand bar in the Kootenai River immediately downstream of the Rainy Creek. The ABS sampling design is discussed in detail in the *Final Phase V, Part A: Kootenai River Surface Water, Sediment, and Activity-Based Sampling SAP/QAPP* (EPA, 2012c) and is summarized below.

The ABS script was designed to simulate activities that are representative of actions that might be performed by local river guides and recreational visitors on the sand bar. The ABS script included landing a boat on the sand bar, walking around and simulating an individual fishing along the edges of the sand bar, and departing by boat. A team of two samplers landed a boat on the sand bar; the samplers shuffled their feet and gently kicked sediment and rock along the edges of the sand bar for five minutes. Then, the two samplers walked around the sand bar for 50 minutes, staying near the edge and occasionally crossing through the interior of the ABS area, to simulate an individual moving about the sand bar from one fishing location to another. Once 50 minutes had elapsed, the samplers loaded and launched the boat (shuffling their feet and gently

kicking sediment and rock in the process for five minutes). The total ABS time interval was 60 minutes.

ABS air samples were collected on the sandbar on the afternoon of September 19, 2012, during low-flow conditions within the Kootenai River. During the ABS event, two replicate ABS air samples were collected for each actor, one using a 4 l/min high volume pump and one using a 2 l/min low volume pump. Only the two high volume filters were analyzed; the two low volume filters were archived as per specifications in the *Final Phase V, Part A: Kootenai River Surface Water, Sediment, and Activity-Based Sampling SAP/QAPP* (EPA, 2012c).

Four ABS samples were collected, two of which were analyzed for LAA. All air filters were prepared directly for analysis by TEM, refer to **Figure 4-8** sample location ID (ISLAND) where these samples were collected

Table 4-1 outlines the number of ABS air samples collected in Phase V Part A. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in Phase V Part A. ABS air sample locations are presented on **Figure 4-8**.

Samples were collected in accordance with the *Sampling and Analysis Plan / Quality Assurance Project Plan for Operable Unit 3, Libby Asbestos Superfund Site Phase V, Part A: Kootenai River Surface Water, Sediment, and Activity-based Sampling* (EPA, 2012c).

The ABS air filters were sent to the EMSL laboratory for analysis of LAA by TEM. The high volume filter was analyzed in preference to the low volume filter and if the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications. Detailed information on the Phase V, Part A field sampling effort, including all associated field documentation, is provided in the *Phase V Remedial Investigation Field Summary Report* (MWH, 2013c) and the results are summarized in **Section 5.0** of this report.

4.8.4 Commercial Logging (2012) – Sampling Activities

The objective of the 2012 Commercial Logging investigation was to collect air samples during commercial logging activities to provide measured data on potential exposures to LAA for workers involved in commercial logging activities in the forest near the Former Mine Area. ABS air sampling was conducted during commercial logging activities in an area near the Former Mine Area to evaluate potential LAA exposures. Study design and methods are summarized below:

Study Location. Available data on levels of LAA measured in tree bark, soil, and duff material indicate that, in general, the levels of LAA tend to decrease with distance away from the center of the Former Mine Area (discussed in more detail in **Section 5.0**). The commercial logging study was performed in an area close to the Former Mine Area (in the downwind direction), where elevated concentrations of LAA have been reported in tree bark and duff material in previous studies. This study area was chosen to be representative of the high end of the potential exposures that may occur and is located on Grace property (a restricted area).

Timing and Duration of the ABS Effort. Commercial logging ABS efforts were conducted in September of 2012, when environmental conditions were likely to be driest and potential airborne LAA releases were highest. There were no sampling time durations established for this study. Rather, commercial logging workers (contracted by Grace) were to perform ABS during the

logging of approximately 100 trees. ABS samples collected in this study were typically one to two hours in duration and for activities spanning more than two hours, air filters were changed out every two hours to limit potential filter overloading.

Characterization of Soil, Duff material, and Tree Bark from the Forested Area. Samples of tree bark and duff material within the study area were collected and analyzed for LAA; these sampling designs are described in **Section 4.6.3**.

Characterization of LAA Levels in Air During Commercial Logging Activities. ABS samples were collected for a range of activities representative of commercial logging activities including: hand felling, hooking and skidding, mechanical processing, sample location restoration, and milling processes. These activities are described below.

- **Hand-Felling.** The felling of timber is the process of severing the tree from the stump and placing it on the ground. Hand-felling is the traditional method of skilled personnel, herein referred to as a sawyer, utilizing a handheld chain saw to cut the timber. ABS samples for the felling scenario were collected using personal air sampling pumps with the filter located on the shoulder of the sawyer.
- **Hooking and Skidding.** The hooking and skidding of timber is the process of dragging felled trees to a centralized location (the landing area) for further processing or transportation. For this study, trees were moved using a cable skidder, which requires an operator to get off the machine to manually attach trees with cables (or chokers). The activity of attaching chokers to logs is commonly referred to as "hooking." ABS samples for this scenario were collected using personal air sampling pumps with the filter located on the shoulder of the hookers/skidders. The samples represent air levels that occurred during both operations.
- **Mechanical Processing.** Timber processing is the act of cutting limbs from the tree and cutting the tree into the desired length and width. Although mechanical processors vary, most utilize an excavator-type machine that mechanically strips limbs from the tree and cuts the tree into desired lengths. Mechanical processors most often have enclosed cabs in which the operator is stationed through the duration of processing activities. ABS samples for this scenario were collected using personal air sampling pumps with the filter located on the shoulder of the operator inside the cab of the mechanical processing machine.
- **Milling Process.** The milling process is the act of removing bark from cut timber and cutting logs to appropriate size and shape for sale. This activity is commonly performed at a mill site that is remote from the forest. However, for this investigation, logs were cut into slabs and run through a chipper at the onsite landing area to simulate exposures that might occur in an offsite milling operation. ABS samples for this scenario were collected using stationary air monitors located 10 or 30 ft. from the chipper.
- **Sample Location Restoration.** Following harvesting operations, sample location restoration was performed utilizing a bulldozer to remove brush and tree litter from the landing area until the landing area had been cleared and the road restored to its original condition. ABS samples were collected using personal air samplers to represent exposures of the bulldozer operator and also a helper standing on the ground during bulldozing operations.

During each of the sampling events each person was wearing two air sampling pumps, a 4 l/min high volume pump and a 2 l/min low volume pump.

A total of 26 ABS samples were collected, 13 of which were analyzed for LAA. Of these 13 samples, five were prepared directly and eight were prepared indirectly for analysis by TEM. **Table 4-1** outlines the number of ABS air samples collected in the 2012 Commercial Logging. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in the 2012 Commercial Logging. ABS air sample locations are presented on **Figure 4-8**.

Samples were collected in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan Operable Unit 3, Libby Asbestos Superfund Site 2012 Commercial Logging Activity-Based Sampling* (EPA, 2012g).

The ABS air filters were sent to the EMSL laboratory for analysis of LAA by TEM. The high volume filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E). If the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed in preference to performing an indirect preparation on the high volume filter. If the low volume filter was deemed overloaded, an indirect preparation (with ashing) was performed of the high volume filter. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2012 commercial logging field sampling effort, including all associated field documentation, is provided in the *2012 Phase V Remedial Investigation FSSR* (MWH, 2013c) and the results are summarized in **Section 5.0** of this report.

4.8.5 Wood-burning Stove Ash Removal (2012) – Sampling Activities

The objective of the Wood-burning Stove Ash Removal investigation is presented in **Section 4.6.6**. The tasks performed as part of this investigation included the burning of wood in a wood-burning stove and the collection of personal air samples under an ABS sampling scenario of a person emptying the ash from the stove.

All ABS activities were conducted inside a temporary enclosure in the vicinity of the Lincoln County landfill, refer to **Figure 4-5b** for landfill location. The temporary enclosure was constructed of posts with polyvinyl sheeting to serve as walls. A wood-burning stove was placed inside the enclosure. Three new EPA-certified wood-burning stoves were utilized (one stove was dedicated to each tree collection location). During wood burning, the walls of the enclosure were removed so that the heat generated by the stove could dissipate into the open air. The enclosure walls were put in place for the ABS stove-emptying activities to simulate an indoor condition. Within this ABS area, the stove-emptying ABS scenario was repeated three times for the varying wood samples collected near the Former Mine Area, near Flower Creek, and near Bear Creek (refer to **Section 4.6.6**). (As noted previously, the Flower Creek and Bear Creek locations are not within the OU3 Study Area, but are included in the RI for the purposes of comparison to the location near the Former Mine Area).

The stove-emptying ABS activities were conducted in basic accordance with the script provided in the *Sampling and Analysis Plan/Quality Assurance Project Plan: Wood-Burning Stove Ash Removal Activity Based Sampling, Libby Asbestos Site, Operable Unit 4, Libby, Montana. Revision 0* (CDM Smith, 2012). In brief the ash was emptied from the woodstove using a long-

handled metal shovel, placing the ash material into a metal ash bucket. Once all of the ash had been shoveled out, a soft-bristled brush was used to sweep up and gather any additional ash material for removal and placed into the ash bucket. There was no specified sampling duration requirement for this ABS scenario. Rather, the scenario continued until the ash had been removed regardless of how long the activity took.

During each of the sampling events, each person wore two air sampling pumps, a 5.5 l/min high volume pump and a 2 l/min low volume pump.

Table 4-1 outlines the number of perimeter air ABS collected in the Wood-burning Stove Ash Removal. **Table 4-2** provides the ABS locations by station ID, station description, and analyses conducted for perimeter air collected in the Wood-burning Stove Ash Removal Program.

Samples were collected in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan: Wood-Burning Stove Ash Removal Activity Based Sampling, Libby Asbestos Site, Operable Unit 4, Libby, Montana. Revision 0* (CDM Smith, 2012).

Eighteen ABS air samples were collected and sent for analysis of LAA by TEM. The high volume filter was analyzed in preference to the low volume filter and all high volume filters were prepared using indirect methods due to high particulate loading levels on both the high volume and low volume filters (CDM Smith, 2013a). Each ABS air filter was prepared for analysis by using indirect preparation methods. The filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E) with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2012 Wood-burning Stove Ash Removal sampling effort, including associated field documentation, can be found in the *Data Summary Report: Wood-burning Stove Ash Removal Activity-Based Sampling* (CDM Smith, 2013a). The results of the investigation are summarized in **Section 5.0** of this report.

4.8.6 Souse Gulch (2013) – Sampling Activities

At the request of the USACE and the USPHS, FOH conducted environmental duff material/bark sampling and analysis and activity based air sampling on May 5-7, 2013, at the USACE Libby Dam. The USACE has plans to renovate areas of the Souse Gulch Campgrounds near the Libby Dam. Renovations will include excavation of soils and disturbance of forest vegetation (including timber, duff material, and brush). Several trees will have to be cut down. The USACE is concerned that workers may be exposed to elevated levels of LAA when conducting these activates. To establish potential exposure from cutting down trees and disturbing soils, the USACE tasked FOH with collecting representative core bark and duff material samples from trees and soils within the areas of the proposed renovations. In addition, the USACE is responsible for keeping roadways and driving trails in and around the Souse Gulch Campgrounds and Libby Dam areas clean. After each winter, sand used to coat the roadways for safer driving after ice and snow storms and other debris that collects on the roadways-including pine needles are removed using three types of street sweepers. FOH was tasked to collect tree bark, duff material samples, and personal air samples on workers driving the street sweepers and workers driving water trucks used to wet/dampen sand and debris prior to being picked up/swept by the street sweepers. The tree bark and duff material samples are discussed in **Section 4.6.7**.

Activity based air sampling during street sweeping was conducted. Airborne LAA levels were measured during the operation of three different types of street sweepers. The first two, a small

bobcat equipped with an automatic sweeper Model 763H L55 and a Tennant Model 192 Street Sweeper, have no debris pickup capacity or means to pre-wet debris to suppress dust prior to sweeping. A water truck with a water spray system was used to pre-wet the roadway. These two street sweepers followed the water truck. The third sweeper, a Tymco Regenerate Air Systems 600 Air Sweeper has a holding tank for water and a built-in water spray system that pre-wets debris prior to sweeping/picking up. Low volume and high volume air sampling pumps were set up in the sweeper cabs and tubing attached to collect personal air samples for each of the drivers to establish their LAA exposure. Street sweeper drivers suited up into full body disposable clothing and donned HEPA filter respirators. Low volume samples were collected at a flow rate of 2 l/min and were operated for approximately four hours. High volume samples were collected at a flow rate of 4 l/min and were also operated for approximately four hours. A total of 240 liters of air was collected for the low volume samples and 480 liters of air for the high volume samples. The low or high volume samples were analyzed based on particulate loading. Because of particulate loading the low volume samples were analyzed for the USACE personnel operating the bobcat 763H L55 and Tennant Model 192 sweepers. The high volume sample for the USACE worker operating the Tymco Regenerate Air Systems 600 Air Sweeper was analyzed. Samples were analyzed by Reservoirs Environmental Inc. located in Denver, Colorado. Reservoirs Environmental is accredited by the NVLAP for LAA analysis by TEM/PLM.

Eight ABS samples were collected, 5 of which were analyzed for LAA. All air filters were prepared directly for analysis by TEM.

Table 4-1 outlines the number of ABS air samples collected in the 2013 Souse Gulch sampling. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in the 2013 Souse Gulch sampling. ABS air sample locations are presented on **Figure 4-8**.

Samples were collected and analyzed in accordance with the SOP provided by the USACE – *Asbestos Activity Based Sampling Street Sweeping Sampling and Analysis Plan Libby Dam Libby, Montana* dated April 2013.The ABS air filters were sent to EMSL laboratories for analysis of LAA by TEM. The high volume filter was analyzed in preference to the low volume filter and if the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2013 Souse Gulch sampling effort, including sampling methodology and associated field documentation, is provided in the *Environmental Duff material/Bark Sampling & Analysis with Activity Based Air Sampling Investigation* (USACE, 2013) and the results are summarized in **Section 5.0** of this report.

4.8.7 Souse Gulch Wildfire Monitoring (2013) -Sampling Activities

The objective of the 2013 Souse Gulch Wildfire Monitoring was to collect opportunistic ABS air samples during a natural wildfire that occurred in the OU3 Study Area. Samples were collected from the cockpit of the responding helicopter and from near ground-based firefighters responding to the natural wildfire in the OU3 Study Area. Samples were analyzed by TEM under low magnification. Additionally, samples of perimeter air were collected during the wildfire and samples of ash from the burn area were collected following the fire (refer to **Sections 4.7.4** and **4.6.8** respectively).

Sixteen ABS samples were collected, prepared directly, and analyzed for LAA by TEM.

Table 4-1 outlines the number of ABS air samples collected in the 2013 Souse Gulch Wildfire Monitoring sampling. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in the 2013 Souse Gulch Wildfire Monitoring. ABS air sample locations are presented on **Figure 4-8**.

All sampling was conducted in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan, Operable Unit 3, Libby Asbestos Superfund Site, Wildfire Contingency Monitoring Plan, Revision 33* (EPA, 2015d). The ABS air filters were sent to the EMSL laboratories for analysis of LAA by TEM. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications and the results are summarized in **Section 5.0** of this report.

4.8.8 Commercial Logging (2014) – Sampling Activities

The objective of the 2014 Commercial Logging investigation was to collect air samples during commercial logging activities in areas of known low LAA concentrations in tree bark and duff material in the OU3 Study Area to evaluate the exposures of commercial logging workers that harvest trees in areas of known low LAA concentrations. The purpose of this investigation was different than the 2012 commercial logging effort, which was to collect air samples during commercial logging activities to provide measured data on potential exposures to LAA for workers involved in commercial logging activities in the forest near the Former Mine Area (refer to **Section 4.8.4**). As part of this investigation, samples of tree bark and duff material within the study area were collected and analyzed for LAA. Sampling efforts were conducted in August and September of 2014. Study design and methods are summarized below:

Study Location. Available data on levels of LAA measured in tree bark, soil, and duff material indicate that, in general, the levels of LAA tend to decrease with distance away from the center of the mine (as presented in **Section 5.0**). The commercial logging study was performed in an area approximately 4 miles from the center of the Former Mine Area, where low concentrations of LAA have been reported in tree bark and duff material from previous RI phase studies. The study area was chosen to be representative of the low end of the potential exposures that may occur and is located on USFS property (a publicly accessible area).

Timing and Duration of the ABS Effort. Commercial logging ABS efforts were conducted in August and September of 2014, when environmental conditions were dry and potential airborne LAA releases were highest. There were no sampling durations established for this study based on the earlier studies. Rather, commercial logging workers were to perform ABS during the logging of approximately 100 trees. For activities spanning more than two hours, air filters were changed out every two hours to limit potential filter overloading. Although the ABS samples collected in this study were typically one to two hours in duration, the concentrations measured were assumed to be representative of exposures that could occur over the full course of a work day.

Characterization of Duff Material and Tree Bark from the Forested Area. Samples of tree bark and duff material within the study area were collected and analyzed for LAA and these sampling designs are described in **Section 4.6.9**.

Characterization of LAA Levels in Air During Commercial Logging Activities. ABS samples were collected for a range of activities representative of commercial logging activities including:

hand felling, skidding of timber, mechanical processing, milling processes, and sample location restoration these activities are described in **Section 4.8.4**.

During each of the sampling events each person was wearing two air sampling pumps, a 4 l/min high volume pump and a 2 l/min low volume pump.

A total of 58 ABS samples were collected, 29 of which were analyzed for LAA. Of the 29 samples, 27 were prepared directly and two were prepared indirectly for analysis by TEM. **Table 4-1** outlines the number of ABS air samples collected in the 2014 Commercial Logging. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in the 2014 Commercial Logging sampling. ABS air sample locations are presented on **Figure 4-8**.

Samples were collected in accordance with the *Quality Assurance Project Plan: Commercial Logging Activity-Based Sampling Libby Asbestos Superfund Site Revision 0* (USACE, 2014a).

The ABS air filters were sent to EMSL laboratories for analysis of LAA by TEM. The high volume filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E). If the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed in preference to performing an indirect preparation on the high volume filter. If the low volume filter was deemed to be overloaded, an indirect preparation (with ashing) was performed of the high volume filter. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2014 Commercial Logging field sampling effort, including all associated field documentation, can be found in the *2014 Commercial Logging Activity-based Sampling* (EPA, 2015e). The results of the investigation are summarized in **Section 5.0** of this report.

4.8.9 Nature and Extent Forest ABS (2014) – Sampling Activities

The objective of the 2014 Nature and Extent investigation was to measure LAA concentrations in outdoor air during ABS at locations along the NPL boundary to estimate potential exposures and risks to firefighting populations that could be exposed to LAA in these forested areas. These risk estimates will be used to inform future decisions on the boundaries of the nature and extent of LAA impact in the forest. This study collected data from 10 sampling locations along the current NPL boundary, collocated with sampling locations evaluated in the Nature and Extent in the Forest investigation (USACE, 2014b). Sampling locations were selected to be spatially representative of the circumference of the NPL boundary, but not duplicative with locations sampled as part of the OU3 Study Area ABS studies. Sampling locations were placed in areas that were accessible via USFS roads and that appeared to have adequate tree cover (based on a cursory review of aerial images). This sampling event was conducted in August of 2014.

Each sampling event began by conducting the fire line ABS. During the event, two individuals participated in the ABS scenario and simulated firefighting activities of constructing a firebreak by hand. A Pulaski tool or other similar device was used to scrape away all combustible material down to mineral soil to establish a line approximately 18 inches wide. The two ABS participants worked side-by-side approximately 10 ft. apart. The ABS activity was performed for a period of 30 minutes. After 15 minutes, the relative positions of the two participants were reversed.

Each sampler wore two different sampling pumps, a 5.5 l/min high volume filter and a 2.0 l/min low volume filter. However, only one of the two air filters for each individual, either the high volume filter or the low volume filter, was analyzed by TEM. Thus, each sampling event included the collection of four fire line ABS air filters, two high volume filters and two low volume filters, of which two filters (one per actor) were analyzed.

In order to maximize the amount of time between the sampling events, the second ABS event was not conducted until the first event was completed for all ten locations. Likewise, the third ABS event was not conducted until the second event was completed for all ten locations.

A total of 120 ABS samples were collected, 60 of which were analyzed for LAA. All air filters were prepared directly for analysis by TEM.

Table 4-1 outlines the number of ABS air samples collected in the 2014 Nature and Extent Forest. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in the 2014 Nature and Extent Forest sampling. ABS air sample locations are presented on **Figure 4-9**.

Samples were collected in accordance with the *Quality Assurance Project Plan: Nature and Extent – Forest Activity-Based Sampling Libby Asbestos Superfund Site Revision 1* (USACE, 2014b)

Following ABS air sample collection, one soil sample was collected from each of the ten sampling locations as discussed in **Section 4.6.10**. The ABS air filters were sent to EMSL laboratories and ESATR8 for analysis of LAA by TEM. The high volume filter was analyzed in preference to the low volume filter and if the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2014 Nature and Extent field sampling effort, including all associated field documentation, can be found in the *Nature and Extent Forest Activity-based Sampling* (EPA, 2015f). The results of the investigation are summarized in **Section 5.0** of this report.

4.8.10 Slash Pile Burn (2015) – Sampling Activities

The objective of the Slash Pile Burn investigation was to perform a controlled prescribed slash pile burn and to collect samples to measure LAA concentrations in the air that resulted from the fire. Personal air samples were collected to measure LAA air concentrations in the breathing zone of forest workers while creating the slash pile area (pre-burn sampling). During the burn, personal air samples were collected to measure LAA air concentrations in the breathing zone of individuals near the fire while the slash pile was burning. After the burn, personal air samples were collected to measure LAA air concentrations in the breathing zone of forest workers during "mop-up" activities. Refer to **Section 4.6.11** above for details on the goal of this EPA study.

The pre-burn ABS samples were intended to help characterize LAA exposures related to disturbances of source materials (i.e., tree bark, duff, and soil) during the construction of a slash pile and the associated fire breaks and fire lines. Personal air samples were collected for the excavator operator that constructed the slash pile, fuel break, and fire line. The total sampling duration for this activity was two hours and air sample filters were changed every hour.

Sample collected during the burn were intended to characterize LAA exposures related to smoke releases during a slash pile burn. Two ABS personnel moved around the edges of the slash pile burn area, including locations in the cross-wind and downwind directions, performing the activities to manage and maintain the fire within the burn area. The burn lasted 5 hours and air sample filters were changed out every hour throughout the duration of the ABS activity.

The post-burn mop-up ABS sampling was intended to help characterize LAA exposures related to disturbances of ash and soil in the burn area to characterize exposures during mop-up activities. Once the fire was reduced to a smoldering phase and the entire burn area was deemed safe for personnel and equipment to enter, two ABS personnel performed mop-up activities. Personal air samples were collected for the excavator operator and the hose operator that entered the burn area to cover any remaining hot spots in the burn area with soil. This ABS activity was performed for a total of one hour and included both a “dry” mop-up scenario (i.e., where no water is applied during the mop-up activity) and a “wet” mop-up scenario (i.e., where water is applied during the mop-up activity). During the first 30 minutes, dry mop-up activities were performed using the excavator (i.e., mixing, stirring, and digging up the soil using the bucket of the excavator). During the last 30 minutes, mop-up activities were conducted with the hose operator applying water while the excavator continued using the excavator to extinguish any remaining hot spots. During mop-up activities, air sample filters were changed out every 15 minutes.

For the personal ABS air samples, two filters were collected, a 4 l/min high volume filter and a 2 l/min low volume filter. Either the high volume or low volume filter was then selected in preference and analyzed based upon specifications in the *Slash Pile Burn Activity Based Sampling Rev. 0 Quality Assurance Project Plan* (USACE, 2015a). Sampling locations are presented on **Figure 4-8**.

A total of 36 ABS samples were collected, 18 of which were analyzed for LAA. All air filters were prepared directly for analysis by TEM.

Table 4-1 outlines the number of ABS air samples collected in the Slash Pile Burn event. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in the Slash Pile Burn sampling. ABS air sample locations are presented on **Figure 4-8**.

Samples were collected in accordance with the *Slash Pile Burn Activity Based Sampling Rev. 0 Quality Assurance Project Plan* (USACE, 20015a).

The ABS air filters were sent to EMSL laboratories and ESATR8 for analysis of LAA by TEM. The high volume filter was analyzed in preference to the low volume filter and if the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2015 slash pile burn investigation field sampling effort, including all associated field documentation, is provided in the *2015 FSSR* (MWH, 2016b). The results of the investigation are summarized in **Section 5.0** of this report.

4.8.11 Low-Intensity Prescribed Understory Burn (2015) – Sampling Activities

The objective of the Low-Intensity Prescribed Understory Burn investigation was to perform a small-scale, low-intensity controlled prescribed understory burn and to collect samples to measure LAA concentrations in the air that result from the fire and associated firefighter disturbance activities. During the burn and mop-up activity, personal air samples were collected for individuals performing simulated ground-based firefighter activities to measure LAA air concentrations in the breathing zone during these activities. Refer to **Section 4.6.12** above for details on the goal of this EPA study.

Personal air monitoring was performed for two different ABS activities: during the understory burn and during mop-up activities. For both ABS activities air sample filters were changed out every 15 minutes throughout the duration of the ABS activity. During the burn, two ABS personnel moved around the edges of the fire line, monitoring for spot fires, and ensuring the fire perimeter was not compromised using fire suppression hand tools (i.e., Pulaski axe, fire rake, Mcleod tool). The understory burn lasted for approximately one hour. Once the fire was reduced to a smoldering phase and it was been deemed safe for personnel to enter the burn area, two personnel entered the burn area and simulated mop-up fire suppression activities using hand tools. The mop-up ABS activity was performed for a total of one hour and included both a dry mop-up scenario and a wet mop-up scenario, with each scenario conducted for 30 minutes.

Procedures for sample collection, preparation, and analysis are the same as those used for the slash pile burn event described above in **Section 4.8.10**, with the exception of indirect preparation for some of the samples collected. The ABS air filters were sent to EMSL laboratories, Hygeia Laboratories, Inc., and ESATR8 for analysis of LAA by TEM. The high volume filter was used to prepare a minimum of three grids using the grid preparation techniques described in Section 9.3 of ISO 10312:1995(E). If the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed in preference to performing an indirect preparation on the high volume filter. If the low volume filter was deemed to be overloaded, an indirect preparation (with ashing) was performed of the high volume filter. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications.

A total of 32 ABS samples were collected, 16 of which were analyzed for LAA. Of the 16 samples, eight were prepared directly and eight filters were prepared indirectly for analysis by TEM.

Table 4-1 outlines the number of ABS air samples collected in the Understory Burn event. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in the Understory Burn sampling. ABS air sample locations are presented on **Figure 4-8**.

Samples were collected in accordance with the *Low-Intensity Prescribed Understory Burn Activity-Based Sampling Rev. 0 Quality Assurance Project Plan* (USACE, 2015b).

Detailed information on the 2015 understory burn investigation field sampling effort, including all associated field documentation, is provided in the *2015 FSSR* (MWH, 2016b). The results of the investigation are summarized in **Section 5.0** of this report.

4.8.12 Trespasser Activity Based Sampling (2015) – Sampling Activities

The objective of the trespasser activity-based sampling investigation was to determine concentrations of LAA in activity-based air samples during source material disturbance activities in the Former Mine Area. Two trespassing ABS activities were evaluated:

- during ATV riding, on existing roads and trails (on-road) and in the disturbed area of the Former Mine Area off-road, and
- while rock hounding in the mined area.

Each ABS activity was conducted by two field personnel wearing two air monitors, a 4 liter/minute high volume pump and a 2 liter/minute low volume pump, to allow for the collection of two replicate filters (i.e., each filter represents the same sample collection duration, but different total sample air volumes). Only one of the two resulting air filters was selected for analysis, the other filter replicate was archived. To minimize the potential for filter overloading during ABS, air cassettes were changed every 15 minutes throughout each scenario.

There were two ATV riders during each ABS event, a leader and a follower. The distance between the leader and follower depended upon the terrain and amount of dust generated by the leader. The ATV riders traveled at an approximate speed of 10 miles per hour or less, depending on terrain and safety considerations. Riders followed each other throughout the duration of the ABS activity, and the leader and follower riders switched positions every 7-8 minutes throughout the event. As such, each air filter was representative of a leader/follower composite exposure. Two types of ATV riding were performed: 1) on existing roads and trails (on-road), and 2) on the disturbed area of the mine (off-road). There was no set sampling duration for the on-road ATV riding scenario; instead the scenario lasted as long as it took to travel to the end of the route and return back to the beginning of the route The total sampling duration for Route A was 45 minutes, for Route B was 75 minutes, and for Route C was 60 minutes. Three on-road ATV riding ABS events were performed, with each event conducted on one of three pre-determined routes. Three off-road ATV riding ABS events also were performed with each totaling 45 minutes for the sampling duration. The riders attempted to cover as much of the off-road ABS area designated in the SAP as possible during the sampling event.

During the rock hound ABS scenario, two individuals performed rock hound activities simultaneously. Each personnel carried a rock hammer and mimicked people looking for interesting rock and mineral specimens by examining outcrops, rock faces, and waste rock piles, collecting rock specimens in a bucket, and generally walking around the Former Mine Area. After conducting activities at a particular location, the personnel drove to the next location in the ATV, leaving the sampling pumps running while driving between locations. All of the rock hound ABS was performed on the disturbed area of the mine. Each rock hound sampling event sampling duration was a total of 45 minutes, with ABS personnel attempting to cover as much of the ABS area as possible during each sampling event. Three rock hound ABS events were performed.

A total of 120 ABS samples were collected, 60 of which were analyzed for LAA. All 60 air filters were prepared directly for analysis by TEM.

Table 4-1 outlines the number of ABS air samples collected in the Trespasser Activity event. **Table 4-2** provides the ABS air sampling locations by station ID, station description, and analyses conducted for ABS air collected in the Trespasser Activity sampling. ABS air sample locations are presented on **Figure 4-8**.

Samples were collected in accordance with the *Sampling and Analysis Plan / Quality Assurance Project Plan: Operable Unit 3 Study Area, Libby Asbestos Superfund Site Trespasser Activity-Based Sampling* (EPA, 2015c).

The ABS air filters were sent to EMSL laboratories and ESATR8 for analysis of LAA by TEM. The high volume filter was analyzed in preference to the low volume filter and if the high volume filter was deemed to be overloaded (i.e., >25% particulate loading on the filter) by the analytical laboratory, then the low volume filter was analyzed. Filters were prepared and analyzed in accordance with ISO 10312:1995(E), with all applicable Libby Site-specific laboratory modifications.

Detailed information on the 2015 trespasser activity based sampling effort, including all associated field documentation, is provided in the *2015 FSSR* (MWH, 2016b). The results of the investigation are summarized in **Section 5.0** of this report.

4.9 GEOTECHNICAL AND HYDROGEOLOGICAL INVESTIGATIONS

Geotechnical samples were collected as part of two separate events to establish: (1) the geotechnical and engineering characteristics and LAA content of the soils along possible creek diversion channels and in possible borrow source areas; and (2) collect needed geotechnical, geological, and hydrogeological data that will be used in the future as input parameters for various stability, seepage, and geologic analytical models of the KDID. The following sections summarize these field sampling efforts. **Table 4-1** outlines the number samples collected for geotechnical testing by sampling phase/event. **Table 4-2** provides the geotechnical sampling locations by station ID, description, sampling phase/event, and analyses conducted. Geotechnical sample locations are presented on **Figure 4-4a.**

4.9.1 Geotechnical Test Pit Evaluation (2014) - Investigation Activities

This investigation was conducted in June 2014. The objective of the test pit sampling effort was to collect additional field data to establish the geotechnical and engineering characteristics and LAA content of the soils along possible creek diversion channels and in possible borrow source areas (LAA soil samples collected as part of this investigation are discussed above in **Section 4.5.4**).

The following tasks were conducted during this effort:

1. Performed a reconnaissance (refer to S**ection 4.5.5**) along Rainy, Fleetwood, and Carney Creeks and intermittent tributaries. The reconnaissance also included the stretch of the LRC down to monitoring location LRC-06.
2. Excavated 27 test pits and evaluated geotechnical and engineering characteristics of soils and depth to groundwater along the potential creek diversion channels and along the LRC.
3. Evaluated the 27 excavated test pits for extent, thickness, and geotechnical and engineering characteristics of sources of potential borrow materials downstream of the KDID and in the potential aggregate borrow pit along the LRC for future use during remedial action construction activities.
4. Sampled near surface soils for both geotechnical properties and LAA analysis.

The excavation of 27 test pits was completed at locations surrounding and within the KDID and tailings impoundment materials, along potential creek diversions and, within potential construction borrow source areas. Test pits were excavated using an excavator to depths of up to 15 ft. bgs. All test pits were logged by a field geologist to identify and characterize soil type according to the USCS and describe the materials encountered according to interpretations of the type and nature of the deposit. Detailed field logging of the subsurface materials, stratigraphy and encountered obstructions (e.g., tree roots, buried pipes, etc.), as well as observations concerning groundwater infiltration were recorded on field logs during the excavation process. Composite soil samples of varying volumes were collected for geotechnical analysis (samples designated GT-XX). Volumes were based upon geotechnical testing requirements.

Along with the text pit samples, bulk samples were collected from the near surface of the Coarse Tailings Pile (samples designated CT-XX) located just east of the KDID, and from the Waste Rock Piles (samples designated WR-XX) located within the Carney Creek valley to the southeast of the KDID. The purpose of these samples was to better characterize the geotechnical composition of the various piles near the surface. Representative samples were collected by digging a hole with a hand shovel and collecting samples from one to three ft. below ground surface. Collected samples are representative of the fraction of the material smaller than three inches in diameter.

Geotechnical index testing was performed on 41 unique samples collected from the test pits. The following testing methods and quantities were performed as part of this program (ASTM, 2014):

- Natural Moisture Content Tests (ASTM D2216); *26 samples*
- Particle Size Analysis – Gradation Tests (ASTM D6913); *31 samples*
- Particle Size Analysis – Gradation with Hydrometer Tests (ASTM D422); *9 samples*
- Atterberg Limit Tests (ASTM D4318); *30 samples*
- Standard Proctor Compaction (ASTM D698); *3 samples*

Additionally, geotechnical index testing was performed on 15 unique near surface samples. The following testing methods and quantities were performed as part of this program (ASTM, 2014):

- Particle Size Analysis - Gradation Tests (ASTM D6913); *9 samples*
- Particle Size Analysis – Gradation with Hydrometer Tests (ASTM D422); *6 samples*
- Atterberg Limit Tests (ASTM D4318); *4 samples*

Based on the results, samples were classified according to ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (USCS).

Table 4-1, Panel B shows the number of soil samples collected during the Test Pit and Geotechnical sampling events. **Table 4-2** shows each of these soil sampling stations (CT-, WR-, GT-, and BH-) and their associated station description along with a star (*) under the Non-asbestos Analysis by Phase/Event when these samples were collected and analyzed for geotechnical index testing. Samples collected and analyzed for geotechnical index testing are not included in the nature and extent discussions in this report, and therefore, are not presented on the figures. The sample locations and geotechnical testing results are presented in the *Kootenai Development Impoundment Dam (KDID) Geotechnical and Hydrogeological Investigation Report* (MWH, 2015c).

Samples were collected in accordance with the *Work Plan for Geotechnical Characterization in Support of Creek Diversions at Libby Superfund Site OU3 Revision 2* (MWH, 2014a).

Soil samples collected for geotechnical analysis were picked up by Pioneer Technical Services, Inc. (Pioneer). Pioneer performed all geotechnical analysis by ASTM standards at their facility in Bozeman, MT.

Detailed information on the Geotechnical Test Pit effort including all associated field documentation and conclusions can be found in the *Kootenai Development Impoundment Dam (KDID) Geotechnical and Hydrogeological Investigation Report* (MWH, 2015c).

4.9.2 Investigation of the Kootenai Development Impoundment Dam (KDID) (2014) - Investigation Activities

A geotechnical investigation of the KDID and the Former Mine Area was conducted in 2014 under the oversight of MDEQ. The purpose of the investigation was to collect needed geotechnical, geological, and hydrogeological data that will be used for various stability, seepage, and geologic analytical models, which are collectively referred to as “Dam and Slope Stability Engineering”. The MDEQ, with assistance from Montana Department of Natural Resources and Conservation (MDNRC), is the lead reviewer for all Dam and Slope Stability Engineering work within the OU3 Study Area. The EPA is the lead agency and primary reviewer overseeing the CERCLA program at the OU3 Study Area. The EPA will coordinate with MDEQ on the state-led Dam and Slope Stability program and provide secondary review. The Dam and Slope Stability process has been integrated with the OU3 Study Area CERCLA RI/FS process in an effort to coordinate the work related to the dam with the CERCLA program. For example, erosion control methods that may be included in the Dam and Slope Stability remedy could also benefit water quality and should be considered in the CERCLA FS.

The scope of the Dam and Slope Stability process included KDID related issues, slope stability, erosion control, water management, and other mine closure related tasks. The Dam and Slope Stability evaluation will also balance KDID considerations for dam safety, slope stability, erosion control, and water management with the overall CERCLA objectives to protect human health and the environment.

Data collected from the 2014 investigation will be used in the future to develop a conceptual geotechnical and hydrological model with respect to the stratigraphy, engineering properties of the subsurface material, and the groundwater pressures within the KDID as part of the Dam and Slope Stability process. The investigation program consisted of drilling, field logging and evaluation, and geotechnical sampling of 13 boreholes. Boreholes were drilled in the area of the KDID for the purposes of evaluating the subsurface geotechnical and/or geologic conditions, performing in-situ testing, collecting geotechnical soil samples, and installing PVC standpipe piezometers. Vibrating wire piezometers also were installed in the PVC standpipe piezometers to collect groundwater pore pressure and temperature data.

Geotechnical testing was performed on 73 unique samples, which included:

- 28 SPT samples (retained in plastic baggies),
- 24 Mod Cal tube samples (retained in a brass or steel 6 inch tube),
- 7 Shelby Tube samples (retained in thin-walled Shelby Tube), and
- 14 Grab Samples from the recovered Sonic Core.

The following testing methods and quantities were performed as part of this program (ASTM, 2014):

- Natural Moisture Content Tests (ASTM D2216); *48 samples*
- Particle Size Analysis – Gradation Tests (ASTM D6913); *29 samples*
- Particle Size Analysis – Gradation with Hydrometer Tests (ASTM D422); *33 samples*
- Atterberg Limit Tests (ASTM D4318); *32 samples*
- Specific Gravity (ASTM D854); *7 samples*
- Density (ASTM 2937); *22 samples*
- Moisture Content and Density (ASTM D2216 & 2937); *21 samples*
- Triaxial Shear - Unconsolidated, Undrained (ASTM D2850); *6 samples*
- Consolidation Test (ASTM D2435); *5 samples*

Based on the results, samples were classified according to ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (USCS).

Table 4-1 outlines the number of soil samples collected in the KDID Investigation. **Table 4-2** provides the soil sampling locations by station ID, station description, and analyses conducted for soil samples collected in the KDID Investigation. Borehole sample locations that were analyzed for geotechnical characteristics are presented on **Figure 2-4b** inset sample IDs beginning with BH.

Samples were collected in accordance with the *Sampling and Analysis Plan / Quality Assurance Plan Geotechnical and Hydrogeological Investigation of the KDID* (MWH, 2014b).

Soil samples collected for geotechnical analysis were picked up by Pioneer Technical Services, Inc. (Pioneer). Pioneer performed all geotechnical analysis by ASTM standards at their facility in Bozeman, MT.

Detailed information on the KDID Investigation effort including all associated field documentation and conclusions can be found in the *Kootenai Development Impoundment Dam (KDID) Geotechnical and Hydrogeological Investigation Report* (MWH, 2015a). Results of the 2014 KDID investigation will be incorporated into the Dam and Slope Stability process and potentially expanded-upon in the CERCLA FS.

4.10 AQUATIC TOXICITY TESTS

The OU3 Study Area-specific toxicity tests provide information on the response of receptors that are exposed to OU3 Study Area environmental media in which they live or to which they are otherwise exposed. This may be done either in the field, which is most representative of field exposures, or in the laboratory using field exposure media collected from the OU3 Study Area. In the toxicity tests, test organisms are exposed to OU3 Study Area media containing LAA and measurements are made of organism endpoint responses to assess whether exposures are having an adverse impact on the receptor.

In the OU3 Study Area, two toxicity tests were conducted as part of the Phase II sampling program to evaluate the effect of fish and benthic invertebrate exposure to OU3 Study Area surface water

and sediment, respectively. An amphibian laboratory toxicity test was conducted as part of the Phase V Part B sampling program to evaluate if exposure of amphibians to LAA in sediment from the OU3 Study Area would result in adverse effects. In addition, in-stream (field) fish toxicity studies were conducted as part of the Phase V Part B sampling program to evaluate effects of exposure to fish (trout eggs or fry) to LAA in OU3 Study Area waters as compared to reference streams. The following sections summarize the study design of each toxicity test.

4.10.1 Trout Surface Water Toxicity Bioassay – Investigation Activities

The objective of this toxicity test was to evaluate in the laboratory the effect of fish exposure to LAA in the OU3 Study Area surface water. This test was conducted with newly-hatched larval (sac fry) rainbow trout (*Oncorhynchus mykiss*) under static renewal conditions for an exposure duration of six weeks. Survival, behavior, and growth were observed during the exposure period, and the histopathology of the fish was examined at the end of the study.

Because the primary focus of this test was on evaluating the potential toxicity of LAA in surface water to rainbow trout fry, the water used in the test was selected by monitoring the levels of LAA in OU3 Study Area waters in 2008, and choosing a time and place that was believed to be near the high-end of the observed range of LAA concentrations to collect surface water for use in the toxicity test. Based on a real-time review of the surface water concentrations in samples collected as part of the Phase II Part A sampling program (refer to **Section 4.2.2**), the tailings impoundment (station TP) was selected for evaluation in the OU3 Study Area-specific surface water toxicity test. Surface water for use in the toxicity test was collected from the tailings impoundment on May 8, 2008. Water was shipped to Parametrix Environmental Research Laboratory (PERL) in Albany, Oregon for use in the toxicity tests.

Before performing the toxicity tests, a pilot-scale study was conducted to evaluate if the aquarium water circulation system was sufficient to keep LAA fibers suspended in the test waters, thus confirming the homogeneity of exposure solution. As part of this study, triplicate samples were collected from the top and bottom third of the water column in the aquarium and samples were sent to the EMSL laboratory in Libby, Montana for rapid-turnaround analysis of LAA by TEM. The results from this pilot-scale study showed that there was no statistically significant difference, based on the Poisson ratio comparison test (Nelson, 1982), between water samples collected from the top of the aquarium and the bottom of the aquarium. This indicated that the water circulation system used in the aquarium was effective in confirming that the LAA in the water was well-mixed. Based on these results, the full-scale surface water toxicity test was initiated on May 22, 2008.

The OU3 Study Area surface water was used to prepare a series of test dilutions as follows: 100% (undiluted OU3 Study Area water), 10%, 1%, 0.1%, 0.01%, 0.001%, 0% (laboratory control water). At the test initiation, samples of the undiluted OU3 Study Area surface water were collected and sent to the EMSL laboratory in Libby, Montana laboratory for analysis of LAA and to ELI for analysis of metals/metalloids. During the larval stage, water was changed once every 10 days, and after swim up once every 3 days, for a total of seven “cycles.” For each round of static renewal, one composite water sample of each test dilution was collected shortly after the start of each renewal cycle, and one composite was collected at the end of the cycle. Samples from Cycle #1, Cycle #2, Cycle #4, and Cycle #7 were sent to the EMSL laboratory in Libby, Montana laboratory for the analysis of LAA by TEM, other water samples were archived at PERL.

4.10.2 Fiber Loss Pilot Washing Study – Investigation Activities

Problems with the above fish toxicity study resulted in a fiber loss washing pilot study to attempt to explain the LAA fiber loss issues observed. This pilot study was intended to evaluate the hypothesis that LAA fibers had adhered to a bio-film that was present in the mixing carboy and test aquaria walls. The pilot-study findings suggested the following:

- There was a loss of fibers from the water in the sample bottles. This loss could be accounted for by calculating the total amount of LAA in the bottles (in the water and on the bottle wall) and dividing by the volume of water in the bottle.
- There was a time-dependent loss of free fibers in the carboy used to hold the OU3 Study Area water sample, with the loss beginning to be apparent sometime after the start of Cycle #2 (day 11 of the toxicity test).
- There was a clear loss of fibers in the aquaria during each cycle that could not be attributed to a loss in the sample bottle.

The reason for the time-dependent loss of fibers in the carboy, the aquaria, and the sample bottles is not certain. However, the release of fibers in the sample bottles by ozonation and sonication suggests that a microbial growth may be occurring that tends to clump fibers together and ultimately binds the fibers to the walls of the container vessel. Thus, trout exposures in the toxicity tests likely diminished substantially as the test progressed and the lack of adverse effects in the study may be due to a lack of exposure and not representative of the true potential toxicity (see discussion in **Section 7.3.2**).

Toxicity tests were conducted in accordance with the *Phase II Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site Part C: Ecological Data* (EPA, 2008d). The toxicity test design and results are provided in detail in the *Toxicity of Asbestos in Waters from the Libby Superfund Site Operable Unit 3 (OU3) to Rainbow Trout (Oncorhynchus mykiss)* (Parametrix, 2009b) and the results are summarized in **Section 5.0** of this report.

4.10.3 Laboratory Aquatic Invertebrate Sediment Toxicity – Investigation Activities

The OU3 Study Area sediments were tested for toxicity in the laboratory using the amphipod *Hyalella azteca* in a 42-day test (EPA, 2000b; Test Method 100.4) for measuring the effects of sediment associated LAA and non-asbestos constituents on survival, growth, and reproduction. Sediments also were tested for toxicity to the midge *Chironomus tentans* using the life-cycle test (EPA, 2000b; Test Method 100.5) for measuring effects on survival, growth, and reproduction. The sediments used in these tests were selected at the high-end of the observed range of LAA sediment concentrations in OU3 Study Area streams and ponds. Based on a review of LAA results for sediment samples collected in Phase I and Phase II sampling programs (refer to **Sections 4.4.1** and **4.4.2**), two OU3 Study Area locations (CC-1 and TP-TOE2) were selected for evaluation in the OU3 Study Area -specific sediment toxicity test. In addition, sediments from the two offsite reference locations (BTT-R1 and NSY-R1) also were evaluated to provide an OU3 Study Area specific frame of reference for interpreting the results. See **Figure 4-3a** sample locations. Sediments for use in the toxicity tests were collected from October 14 through 17, 2008, and shipped to PERL in Albany, Oregon. Aliquots of each sediment sample were also submitted for analysis of LAA and metals/metalloids. The sediment toxicity tests were initiated on November 13 and 14, 2008, for *Hyalella* and *Chironomid*, respectively.

Toxicity tests were conducted in accordance with the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b) and *Phase II Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site Part C: Ecological Data* (EPA, 2008d). As part of the *Hyalella* toxicity test, a pore water pilot study was also conducted to quantify LAA levels within the sediment pore water of each test material at Day 0 (study initiation) and at Day 28 (at the termination of the study portion of the test). Five replicates per treatment were fitted with a suction lysimeter, which collected a 20 mL of pore water. Pore water samples from Day 0 were sent to the EMSL laboratory in Libby and samples from Day 28 were sent to Hygeia Laboratories in Sierra Madre, California for the analysis of LAA by TEM.

Detailed results of the 2008 OU3 Study Area sediment toxicity tests are summarized in *Toxicity of Libby Asbestos Superfund Site Operable Unit 3 (OU3) Sediments to the Freshwater Amphipod, Hyalella Azteca* and *Toxicity of Libby Asbestos Superfund Site Operable Unit 3 (OU3) Sediments to The Midge, Chironomus Tentans* (Parametrix, 2009c and 2009d) and the results are summarized in **Section 5.0** of this report.

4.10.4 Laboratory Amphibian Sediment Toxicity Test – Investigation Activities

The objective of the amphibian laboratory toxicity test was to establish if exposure of amphibians to LAA in the laboratory using sediment from the OU3 Study Area would result in adverse effects on survival, growth, or metamorphosis. Amphibians may be exposed to LAA in the aquatic environment both in water and sediment. This investigation focused on the evaluation of LAA exposures in sediment because previous attempts at surface water toxicity tests have shown that it is very difficult to maintain exposure conditions for LAA in surface water.

The assessment endpoints for the amphibian toxicity test were survival, growth, and metamorphosis. Reproduction was considered as a potential endpoint, but the length of time required to assess this endpoint (i.e., 5-6 additional months of exposure), and resources needed to complete a full reproduction study were decided to be impractical to implement. Potential effects on presumptive gonad tissue were proposed as an indirect way to evaluate the reproductive endpoint.

The goal was to expose organisms to the maximum sediment concentrations of LAA in the OU3 Study Area, prior to conducting the toxicity test, sediment was collected from the tailings impoundment (TP-TOE2) and Carney Creek (CC-1) (refer to **Figure 4-3a)**; these two locations have historically and consistently had some of the highest measured LAA concentrations in sediment at the mine). For each station, three “lots” of sediment were collected. Five replicate samples of each lot were prepared at the Troy SPF and analyzed by PLM-VE at the EMSL laboratory in Libby, Montana.

Toxicity tests were conducted in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan Operable Unit 3, Libby Asbestos Superfund Site Phase V Part B: 2012 Ecological Investigations* (EPA, 2013a). The toxicity test design and results are provided in detail in the *Amphibian Complete Metamorphosis Exposure Study* (Golder, 2013b) and the results are summarized in **Section 5.0** of this report.

4.10.5 Phase V, Part B In-Stream Field Fish Toxicity Studies (2012 and 2013) – Investigation Activities

The objective of this study was two parts:

1. To expose early life stage cutthroat trout eggs to LAA in OU3 Study Area pore water to establish if the exposure resulted in higher toxicity for several endpoints relative to that observed in reference streams. In this study, trout eggs were placed in WVB chambers buried within streambed gravel in both OU3 Study Area and reference streams to establish if there was a significant difference in hatching success, alevin survival and alevin growth endpoints.
2. To expose juvenile cutthroat trout to LAA in OU3 Study Area surface water to establish if there was a significant difference in growth or survival relative to that of reference streams. In this study, juvenile (3 – 5 inch) trout were place in cages in both the OU3 Study Area and reference streams to establish if there was a significant difference in survival and growth endpoints.

For the OU3 Study Area egg pore water toxicity study, six WVBs were placed in LRC, two boxes each at stations LRC-2, LRC-4, and LRC-5 (refer to **Figure 4-1a**). Six boxes also were placed into the gravel of reference streams, three boxes each at URC station URC-2 and in Noisy Creek (NSY) (refer to **Figure 4-1a**). The creek locations and burial treatment for the WVBs were meant to approximate exposures that could occur in a natural redd (fish spawning nest). Temperature controlled refrigerator / negative control eggs were also maintained in WVBs at an offsite laboratory as control organisms. For the juvenile trout surface water toxicity study, the test conditions were designed to mimic the exposure of young fish to LAA in a natural stream setting. As with the egg toxicity study, two floating juvenile trout cages were placed at each of the same three LRC locations for a total of six OU3 Study Area replicates; three replicate cages also were placed at each of the same two reference creeks. External examinations of all study specimens (unhatched egg, alevins, and juvenile trout) was conducted by a board certified pathologist.

Toxicity tests were conducted in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan Operable Unit 3, Libby Asbestos Superfund Site Phase V Part B: 2012 Ecological Investigations* (EPA, 2013a).

Water samples from OU3 Study Area and reference locations were analyzed for total LAA by TEM, treating the water with ozone/UV prior to analysis to remove biological material that might cause fiber clumping.

Eyed egg toxicity test results were presented and evaluated in three technical reports in the *Technical Memorandum: Eyed Egg Study. Libby Asbestos Superfund Site, Operable Unit 3,* the *Data Report: 2012 In Situ Westslope Cutthroat Trout Toxicity Studies, Operable Unit 3;* and the *Data Report: 2013 In Situ Westslope Cutthroat Trout Toxicity Study .Operable Unit 3* (SRC, 2013; Golder, 2013a and 2014a). The juvenile trout toxicity study is reported in the same data report as the 2012 eyed egg study. The results of these studies are summarized in **Section 5.0** of this report.

4.11 AQUATIC COMMUNITY AND HABITAT STUDIES

Another line of evidence that is often relied upon in the evaluation of ecological risks is direct observations of ecological community and habitat metrics. These observations seek to establish

whether any receptor population has unusual numbers of individuals (either lower or higher than expected), or whether the diversity (number of different species) of a particular category of receptors (e.g., plants, fish, small mammals, birds) is different in the OU3 Study Area than expected (relative to a selected reference area).

In the OU3 Study Area, direct observations (surveys) of the fish and aquatic invertebrate community and stream habitat were made during the 2008 and 2009 field seasons as part of the Phase III sampling program. In addition, a stream pool classification evaluation was performed in 2011 as part of the Phase IV Part B sampling program. A resident trout lesion study and an amphibian field study were conducted in 2012 as part of the Phase V sampling program. The following sections summarize the investigation activities for each study. Results are summarized in **Section 5.0** of this report.

4.11.1 Fish Community – Investigation Activities

Surveys of fish density and diversity were performed in October of 2008 and September 2009. A total of nine stream locations were evaluated, including two in URC (URC-1A and URC-2), four in LRC (LRC-1, LRC-2, LRC-3, and LRC-5), one location downstream of the tailings impoundment (TP-TOE2) and at two offsite reference locations (BTT-R1 and NSY-R1) (refer to **Figure 4-1a**).

In 2008, fish of two size classes (<65mm and >65 mm - <100 mm) were collected using electroshocking equipment. Multiple passes of electroshocking were performed at each sampling location. In 2009, minnow traps were used in addition to the electroshocking passes in an effort to increase the effectiveness of capturing fish in the smaller of the two size classes. Length, weight, and species type were recorded for each fish collected.

Surveys were completed in accordance with the *Remedial Investigation for Operable Unit 3 Libby Asbestos Superfund Site Phase III Sampling and Analysis Plan* (EPA, 2009c). Detailed information on the fish community sampling methods and findings is provided in *Final Data Report: Remedial Investigation, Operable Unit 3 of the Libby Asbestos Superfund Site, Phase II, Part C: Autumn 2008 Aquatic Data Collection Program* and *Final Data Report: Remedial Investigation, Operable Unit 3 of the Libby Asbestos Superfund Site, Phase III: Autumn 2009 Aquatic Data Collection Program* (Parametrix, 2009a and 2010) and the results are summarized in **Section 5.0** of this report.

4.11.2 Benthic Macroinvertebrate Community – Investigation Activities

Surveys of benthic macroinvertebrate (BMI) density and diversity were performed in 2008 and 2009 at the same OU3 Study Area and reference sampling stations where fish surveys were performed. At each location, BMI samples were collected using two different protocols, EPA's Rapid Bioassessment Protocol and US Forest Service Surber Protocol. For each sample, invertebrates were identified to the genus level and the relative abundance of each taxon was reported.

Surveys were completed in accordance with the *Remedial Investigation for Operable Unit 3 Libby Asbestos Superfund Site Phase III Sampling and Analysis Plan* (EPA, 2009c). Detailed information on the BMI sampling efforts are provided by Parametrix (2009a and 2010) and the results are summarized in **Section 5.0** of this report.

4.11.3 Habitat Assessment – Investigation Activities

Because variations in habitat can contribute to differences in aquatic populations between stations, a habitat assessment was completed at each aquatic community survey location using procedures from the EPA RBP method (Plafkin *et al.*, 1989; Barbour *et al.*, 1999). Ten alternative measures of habitat quality were combined to yield an overall habitat quality score (HQS) for each sampling location that reflects overall habitat quality. For each sampling location, a relative score (percent of reference) was also calculated. This relative score indicates how closely habitat quality was matched to the reference station.

Surveys were completed in accordance with the *Remedial Investigation for Operable Unit 3 Libby Asbestos Superfund Site Phase III Sampling and Analysis Plan* (EPA, 2009c). Detailed information on the Habitat Assessment is provided in Parametrix 2009a and 2010 and the results are summarized in **Section 5.0** of this report.

4.11.4 Stream Pool Assessment – Investigation Activities

In 2011, the Phase IV Part B data collection efforts included a field investigation to better characterize the habitat suitability of OU3 Study Area and reference streams for fish. The study included the collection of stream pool characteristics in OU3 Study Area and reference streams to provide information on habitat factors that might influence fish population abundances. In small streams, the high temperature in water during the summer is an important factor in determining habitat suitability for fish. Access to deeper pools, where water is cooler, is critical for fish to escape excess heat in the summer, and also to prevent freezing in the winter. Although stream habitat and surface water temperature data were collected in earlier investigations, additional surface water temperature data and more detailed characterization data of the in-stream pools were needed to utilize habitat suitability index (HSI) models for cutthroat and rainbow trout to evaluate the suitability of Rainy Creek to support and sustain fish populations (Raleigh *et al.,* 1984) and to assess whether habitat factors were influencing fish populations in Rainy Creek. The Phase IV Part B habitat data were collected to provide information for HSI model variables V_1 (average maximum water temperature) and V_{15} (pool class rating).

The stream pool assessment was conducted in accordance with the *Phase IV Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site Part B: 2011 Surface Water Study* (EPA, 2011a). Detailed information on the Stream Pool Assessment is provided in the *Final Data Report: OU3 and Reference Stream Pool Assessment (Size, Temperature), 2011, Libby, Superfund Site, OU3, Lincoln County, Montana (*Anchor QEA, LLC, 2012*)* and the results are summarized in **Section 5.0** of this report.

4.11.5 Phase V, Part B Resident Trout Study – Investigation Activities

The objective of this study was to establish whether the frequency and severity of lesions or abnormalities in fish resident in LRC is higher than for fish from reference creeks. Key study design features of the resident trout study are summarized below.

Resident trout in two size classes (<65 mm and > 65 mm - < 100 mm) were sought for the lesion study; a total of 20 fish (10 in each size class) from LRC and 20 fish from each of two reference streams, for a total of 60 fish sought in all the streams. Due to difficulties in 2008 and 2009 in capturing the younger size class fish in LRC (none were obtained in either year) the capture of the resident trout from all streams was temporally advanced from September/October to early

August in the event the young fish were growing out of the small size class due to the warmer creek temperatures in LRC.

Resident trout in both of the size classes targeted were captured using electro-shocking at LRC, URC, and NSY in early August 2012 (between August 1 and 6, 2012). Minnow traps were also deployed, but were largely unsuccessful in capturing any fish. Within LRC, fish in both size classes were collected at multiple stations, including locations where previous population studies have been performed. Sampling was conducted at stations LRC-2, LRC-3, LRC-4, LRC-5, and TP-TOE2 and at reference stations URC-2, URC-1A, and NSY-R1 (refer to **Figure 4-1a**).

Captured fish were examined in the field for external parasites or other external gross abnormalities. Lengths of collected fish were measured in the field, from the tip of the snout to the tip of the top lobe of the caudal fin (to the nearest mm) and recorded in the field notebook and forms. Only cutthroat, rainbow, and cutbow trout within the two size classes were kept; any other fish were released. Collected fish were kept in plastic containers filled with cold water from their respective creek until transported to the offsite laboratory for processing and preservation. Processing in the offsite laboratory included: fish euthanization, recording the weight of each fish, verification of field collected length measurement, and preserving the organism for external examination by a board certified pathologist.

Captured fish were euthanized, preserved in 10% neutral buffered formalin, and shipped to Northwest ZooPath pathology laboratory in Monroe, Washington for external examinations followed by histological examinations on a subset of the specimens. External examinations focused on abnormalities present on the head, fins, skin, and gills. Particular attention was paid to any abnormalities of the gills and lateral line. If tumors or other anomalies were identified, these tumors/abnormalities were excised, sectioned, stained, and examined microscopically by the pathologist.

Surface water sample collection was not a part of the resident trout lesion study design. This is because a single water sample collected at the time of fish collection would not reflect the concentrations to which the fish were exposed over their lifespan.

Samples were collected and processed in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan Operable Unit 3, Libby Asbestos Superfund Site Phase V Part B: 2012 Ecological Investigations* (EPA, 2012d). Detailed study results are presented in the *Data Report: 2012 Resident Trout Study* (Golder, 2013c) and the results are summarized in **Section 5.0** of this report.

4.11.6 Phase V, Part B Amphibian Field Study – Investigation Activities

The objective of this study was to establish if there was a discernible difference among the various amphibian developmental stages present in the OU3 Study Area ponds relative to those occurring in reference ponds as well as to establish whether there was a higher incidence of lesions or abnormalities. Key study design features of the amphibian field study are summarized below.

Sampling Design:

Study Areas. A field reconnaissance was performed in March 2012 to decide upon candidate locations for collecting developing amphibians. OU3 Study Areas selected included: Carney Creek Pond, Fleetwood Creek Pond, Mill Pond, and the tailings impoundment (Golder, 2012)

(refer to **Figure 4-1a**). Reference areas selected included: Bobtail Pond, Banana Lake, and Tepee Pond 1 (Golder, 2012) (refer to **Figure 4-1a**). Prior to use as a reference location, sediment samples were collected from each candidate reference pond for analysis of LAA and non-asbestos constituents to verify that the ponds were not contaminated. Candidate reference areas included: Bobtail Pond 1, Bobtail Pond 2, Banana Lake, Shrieber Lake, Tepee Pond 1, and Tepee Pond 2. Reference areas were selected based on the analytical results and general habitat similarity to the OU3 Study Area ponds.

Environmental Characterization. The amphibian field study was conducted in accordance with the Phase V Part B SAP/QAPP (EPA, 2012d). During the study, the field teams visited the onsite and reference locations twice a week to check if specimens from each developmental window were available. The exact time that amphibians breed and their eggs begin development depends on many environmental factors, especially temperature. During each of the bi-weekly visits, pond water temperature was measured and recorded.

Surface water samples were collected weekly once egg masses were estimated to be present starting on May 24, 2012 and ending on August 31, 2012. Surface water sampling was performed in accordance with the OU3 Study Area-specific SOP No. 3, *Surface Water Sampling*, using the direct sampling methods. Water samples were submitted for analysis of LAA by TEM.

Because sediments are not expected to vary substantially over time, two samples of sediment were collected for analysis of LAA, the first sample near the beginning of the study (May 5, 2012) and the second sample near the end of the study (October 9, 2012). Sediment sampling was performed in accordance with the OU3 Study Area-specific SOP No. 5, *Sediment Sampling*. In brief, at each pond surface sediment was collected from the pond edge at multiple points around the pond and composited into a single sample. After being processed (dried, sieved, ground) by the Troy sample processing facility, sediment samples were submitted for analysis of LAA by PLM-VE by the EMSL laboratory in Libby, MT as detailed in SOP SRC-LIBBY-03. There were not any coarse fractions for sediment samples. Non-asbestos constituent analyses of sediment were performed by Energy Laboratory in Billings, MT.

Amphibian Developmental Stages. Because information on the potential effects of LAA on amphibian development is lacking in the scientific literature, the field study evaluated the full developmental period from egg mass through metamorphosis. The frequency of specimen collection from each developmental window (refer to below), was dependent upon meteorological conditions and specimen availability. Developmental stages were stratified into four windows, as follows:

- egg mass,
- embryo-larval (Gosner stages 21-25),
- hind limb development completion (Gosner stages 37-40), and
- metamorphic completion (post-climax) (Gosner stage 46).

Amphibian Measurement Endpoints. Measurement endpoints for each developmental window included external physical examination for abnormalities in all specimens and all life stages, regardless of species. In addition, necropsy was performed in all newly metamorphosed specimens. Organism weights and lengths were also measured for each

lifestage. Histopathology was then performed on the metamorphosed specimens by a board certified pathologist

Samples were collected in accordance with the *Sampling and Analysis Plan/Quality Assurance Project Plan Operable Unit 3, Libby Asbestos Superfund Site Phase V Part B: 2012 Ecological Investigations* (EPA, 2012d). Detailed results of the amphibian field study are presented in *Data Report: 2012 Field Collection, Examination and Pathology of Amphibian Species* (Golder, 2014b) and the results are summarized in **Section 5.0** of this report.

4.12 SMALL MAMMAL COMMUNITY ASSESSMENT

Direct observations of the ecological community at a site are often used as one line of evidence in the assessment of potential ecological risks. In the case of small mammals, because there are no accurate and representative data on measures of asbestos exposure in wild small mammals the study was designed to sample multiple small mammal species to evaluate organism health and determine whether a higher incidence of lesion frequency and severity at the OU3 Study Area was discernible relative to small mammal species captured at reference locations. Small mammal species at the OU3 Study Area were captured at locations reported to have the highest duff material concentrations of LAA on the OU3 Study Area. Targeted small mammal species included the deer mouse and chipmunk.

Samples were collected in accordance with the *Remedial Investigation for Operable Unit 3 Libby Asbestos Superfund Site Phase III Sampling and Analysis Plan* (EPA, 2009c). Details of the field collection efforts for the small mammal survey, including all field documentation, are summarized in the final data report, *Summer 2009 Small Mammal Data Collection Program* (Golder, 2010).

4.13 BIRD COMMUNITY ASSESSMENT

A bird community literature-based evaluation was conducted as part of the *Final Asbestos BERA* (EPA, 2014a) and the *Final Non-Asbestos BERA (*CDM Smith, 2013c). There were 175 birds identified as residing all or part of the year within the OU3 Study Area and 17 of these birds are listed as species of concern to the State of Montana (refer to **Table D-7** of **Appendix D**). However, not all of these 17 birds are equally likely to occur within the OU3 Study Area. Based on an evaluation of where the birds were reported within Lincoln County, the following two birds are considered to be the most likely to occur in the OU3 Study Area:

- Flammulated Owl (*Otus flammeolus*)
- Northern Goshawk (*Accipiter gentilis*)

Results of the evaluation were utilized in the *Final Asbestos BERA* (EPA, 2014a) and *Final Non-Asbestos BERA* (CDM Smith, 2013c) which are discussed in further detail in **Section 7.0**.

4.14 FISH AND GAME TISSUE COLLECTION

In 2012, a study, referred to as the *Fish and Game Tissue Assessment*, was conducted to investigate LAA tissue burdens in fish and large game collected from the OU3 Study Area. All samples generated as part of the investigation were collected, documented, and handled in accordance with the*. Sampling and Analysis Plan/Quality Assurance Project Plan: Fish and Game Tissue Assessment. Libby Asbestos Site, Operable Unit 4* (EPA, 2012j).

The purpose of the study was to collect data on tissue burdens of LAA that could accumulate in large game and fish tissue to evaluate two potential human ingestion exposure scenarios:

- **Ingestion of Game.** One exposure scenario is the ingestion of edible tissue from hunted game that forage at the OU3 Study Area. Large game, including deer and elk, have been observed at the OU3 Study Area and may be exposed to LAA in a variety of potential exposure media. It is possible that these animals may have accumulated LAA in their tissues as a result of these exposures.
- **Ingestion of Fish.** Large fish occur in the Mill Pond and were collected to provide data on the ingestion of LAA in edible fish tissue (fillets) from fish caught from local streams and ponds that contain LAA.

A total of two rainbow trout, three cutbow trout, and one cutthroat trout along with one mule deer were collected in the OU3 Study Area and tissue samples were analyzed by TEM (see EPA, 2012j for analysis methodology).

Detailed information on the study design and collection methods are presented in the *Data Summary Report: Fish and Game Tissue Assessment* (CDM Smith, 2013d) and the results are summarized in **Section 5.0** of this report.

5 NATURE AND EXTENT OF CONTAMINATION

The following subsections present the nature and extent of non-asbestos constituents and LAA detected in the various media sampled in the OU3 Study Area as part of the RI. For the purposes of the nature and extent discussion for these constituents (as well as the fate and transport in **Section 6.0**), the following primary media definitions (EPA, 2015g) are used:

- **Mine Waste:** Soil, rock, and other earthen materials excavated from a mine and slimes, tailings, dusts, sludges, or other waste products from the crushing, cleaning, milling, or beneficiation of ores.
- **Soil:** The unconsolidated mineral or organic matter on the surface of the Earth that has been subjected to, and shows effects of, environmental factors of: climate (including water and temperature effects), and macro- and microorganisms, conditioned by relief, acting on parent material over a period of time. Soil excludes materials defined as mine waste, bark, duff, or ash.
- **Bark:** The tough outer covering of the woody stems and roots of trees, shrubs, and other woody plants outside the vascular cambium (note that only LAA analyses were performed for bark samples).
- **Duff:** Partially- to fully-decomposed bark, twigs, needles, leaves, grasses, and other vegetation and the layer of litter that occurs on top of the mineral soil in forested areas (note that only LAA analyses were performed for duff samples).
- **Ash:** The solid residue left when combustible material is thoroughly burned (note that only LAA analyses were performed for ash samples).
- **Surface water:** Any waters on the Earth's surface including, but not limited to, streams, lakes, ponds, and reservoirs; and irrigation and drainage systems discharging directly into a stream, lake, pond, reservoir, or other surface water. Water bodies used solely for treating, transporting, or impounding pollutants shall not be considered surface water.
- **Groundwater:** Water occupying the voids within a geologic stratum and within the zone of saturation.

Other media that were sampled, but were not specifically defined in EPA, 2015g, include bedrock and outcrops (synonymous with bedrock), cover/fill material and road material (included with “soil” herein), glacial materials and alluvium (included with “soil” herein), sediment pore water (i.e., water occupying the spaces between sediment particles in an aqueous environment), tissue, and air. It is important to note that comparisons to the various benchmarks and reference levels made throughout this section are intended for describing the nature and extent of constituents that may be attributable to historical activities related to mining, milling, and activities ancillary to mining and milling that occurred in the OU3 Study Area. These comparisons should not be misinterpreted as equating to the level or extent of actual risk posed to potential receptors in the OU3 Study Area, which are discussed later in **Section 7.0**. Likewise, the benchmarks and reference levels used herein do not establish the chemical-specific Applicable or Relevant and Appropriate Requirements (ARARs) for the OU3 Study Area. The ARARs will be established in the Record of Decision (ROD).

In addition, it should be noted that naturally occurring materials and erosional processes that were unrelated to prior anthropogenic activities have likely contributed to both non-asbestos and LAA levels in various media in and around the OU3 Study Area. Although OU3 Study Area-specific background levels have not been established for the various media of concern, where applicable,

reference levels that were collected from areas that were presumed to have not been impacted by historical mine-related activities were utilized for comparison purposes herein. The subject of naturally occurring materials is discussed in **Section 2.11.1.**

5.1 NATURE AND EXTENT OF NON-ASBESTOS CONSTITUENTS

The nature and extent of non-asbestos constituents are presented by media below. Because many of the analyzed constituents are naturally occurring (e.g., metals/metalloids), detected concentrations are compared to various established benchmarks and reference levels in an attempt to identify constituent concentrations that may be attributable to historical mining activities or remnant mine wastes. Where applicable, these comparison benchmarks and reference levels for the non-asbestos constituents include the following:

- Montana Department of Environmental Quality Circular DEQ-7 numeric water quality standards for Montana's surface and groundwaters (http://deq.mt.gov/Portals/112/Water/WQPB/Standards/PDF/DEQ7/FinalApprovedDEQ7.pdf).
- Numeric surface water quality standards established under the Administrative Rules of the State of Montana (ARM) 17.30.601 through 17.30.670 to protect beneficial water uses (http://www.mtrules.org/gateway/Subchapterhome.asp?scn=17%2E30%2E6).
- Background threshold concentrations of inorganic constituents in Montana surface soils (https://deq.mt.gov/Land/statesuperfund/background).
- Constituent concentrations at reference locations presumed to be not impacted by historical mining activities (e.g., locations upstream or outside of areas disturbed by mining activities). As discussed below, reference locations were sampled for non-asbestos constituents in the following media: surface water, sediment, and soil.

Independent of this nature and extent evaluation, all detected non-asbestos constituents were further evaluated in the EPA-prepared risk assessments for non-asbestos constituents that are summarized in **Section 7.0**. A complete data summary for all RI non-asbestos data is included in **Appendix E**.

5.1.1 Non-Asbestos Data Considerations

5.1.1.1 Non-Asbestos Reference Data

Various OU3 Study Area RI activities included sampling environmental media at reference locations that were presumed to not be impacted by previous mining activities or the presence of mine waste. The analytical results from the reference-location samples are compared herein with the analytical results from the samples collected in the OU3 Study Area as a line-of-evidence to identify the non-asbestos constituent concentrations in the OU3 Study Area that may be elevated due to natural conditions specific to the Former Mine Area and/or as a result of previous mining activities or the presence of mine waste (i.e., mine-impacted). Non-asbestos reference data are available for surface water (**Section 5.1.2**), sediment (**Section 5.1.4**), and soil (**Section 5.1.5**) as discussed below in the media-specific subsections.

5.1.1.2 Non-Asbestos Data Adequacy Evaluation

The *Phase III Sampling and Analysis Plan for Operable Unit 3* (EPA, 2009) included a detailed evaluation of the adequacy of available non-asbestos data for surface water, groundwater, sediment, and soil/mine waste to determine if additional sampling was needed in the Phase III investigation to support risk management decision-making. As indicated in the *Human Health Risk Assessment for Non-Asbestos Contaminants, Operable Unit 3, Libby Superfund Site* (CDM Smith, 2013b), available non-asbestos data from the OU3 Study Area were found to be spatially and temporally representative, since multiple surface water and sediment samples were collected from each major segment of the OU3 Study Area watershed during three different times of year, and groundwater samples were collected during a two-year period from all existing functional wells in the OU3 Study Area. Statistical adequacy was evaluated by performing a conservative risk-based screen for each media. In all cases, screening-level risks were low (see EPA, 2009 for results). "Thus, it was concluded that available data for non-asbestos contaminants in surface water, groundwater, sediment, and soil/mine waste were adequate to support risk management decision-making and that no further non-asbestos contaminant sampling was needed in subsequent RI sampling programs" (CDM Smith, 2013b).

5.1.1.3 Evaluation of Non-Asbestos Analytical Quantification Limits

A limitation to comparing non-asbestos constituent concentrations to the various benchmark levels is that the analytical method-specific practical quantification limits (PQLs) are sometimes higher than the associated benchmark concentration. In other cases, there is no established benchmark level for a particular constituent. **Tables E-5a** through **E-5c** (located in **Appendix E**) include comparisons of PQLs (for surface water, groundwater, and soil/mine waste, respectively) to the associated benchmark levels for all constituents that were not detected. **Tables E-5a** through **E-5c** highlight the constituents where the mean PQL, calculated for constituents with more than one sample, is greater than the associated benchmark level. In these situations, it is not possible to know with certainty if the constituent concentration is present at concentrations greater than the associated benchmark level. However, there is no specific reason to suspect that these constituents are present at significant levels in the OU3 Study Area and they are not likely to pose a significant limitation to defining the nature and extent of non-asbestos constituents.

5.1.2 Non-Asbestos Constituents in Surface Water

Figure 4-1b depicts the locations within the OU3 Study Area and reference locations (generally outside of the OU3 Study Area) where surface water samples were collected during the Phase I, Phase II, and spring 2015 (WT-2015) sampling programs for non-asbestos analyses (note that the 2015 locations were only sampled for water chemistry and general water quality parameters). In Phase I, surface water samples were collected in October 2007 at a total of 24 locations along Carney Creek, Fleetwood Creek, and Rainy Creek, including the ponds and impoundments on these streams, as well as nearby seeps. In Phase II, surface water samples were collected at the same locations as Phase I, plus additional stations in upper Rainy Creek (URC-1A), Carney Creek pond (CC-Pond), the upper tailings pond (UTP), and in the reference areas (Noisy Creek [NSY-R1] and Bobtail Creek [BTT-R1] located outside of the OU3 Study Area). With the exception of the two reference areas, Phase II surface water samples for non-asbestos constituents were collected twice from each station, once in June 2008 and once in September 2008.

All Phase I and Phase II surface water samples were analyzed for metals and metalloids, petroleum hydrocarbons, anions, nitrogen-containing compounds, and other water quality

parameters. In addition, several selected surface water samples were analyzed for a broad suite of other constituents, including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and selected radionuclides. **Table 5-1** shows the non-asbestos analyses that were performed for surface water samples from each location and the number of times each location was sampled. **Tables 5-2a** and **5-2b** summarize all of the analytical results for non-asbestos constituents that were detected in surface water within the OU3 Study Area and outside of the OU3 Study Area, respectively. A complete summary of the surface water analytical results (including non-detected constituents) is contained in **Appendix E**.

The nature and extent evaluation of non-asbestos constituents in surface water included the following steps:

- Comparison to Montana DEQ-7 Standards.
- Comparison to results from reference locations.
- Evaluation of spatial and temporal patterns.

5.1.2.1 Comparison with DEQ-7 Human Health Standards for Surface Water

Non-asbestos results from OU3 Study Area and reference surface water samples were compared with DEQ-7 human health standards to aid in the determination of the nature and extent of various constituents (see **Table 5-3a**). No non-asbestos constituents were detected in OU3 Study Area or reference surface water samples at concentrations that exceed their respective DEQ-7 human health standards (see **Table 5-3a**).

5.1.2.2 Comparison with DEQ-7 Aquatic Life Standards for Surface Water

Non-asbestos results from OU3 Study Area and reference surface water samples were compared with DEQ-7 aquatic life standards to aid in the determination of the nature and extent of various constituents (see **Tables 5-3a** and **5-3b**). OU3 Study Area seep locations were excluded from the DEQ-7 aquatic-life standards comparisons because these locations are not considered viable aquatic habitat in the *Non-Asbestos BERA*. However, surface water samples from locations that may be impacted by these seeps (i.e., Carney Creek) were included in this assessment.

DEQ-7 has both acute and chronic surface-water standards for aquatic life (see **Table 5-3a**). There are standards for metals in total (unfiltered) sample results with the exception of aluminum, in which case the standards are for the dissolved (filtered) sample results. No non-asbestos constituents were detected in the OU3 Study Area or reference locations at concentrations above DEQ-7 acute surface water standards for aquatic life. Non-asbestos constituents that exceeded DEQ-7 chronic surface-water standards for aquatic life at OU3 Study Area locations included iron in the September 2008 sample collected from FC-Pond, and lead (calculated based on hardness; see **Table 5-3c**) in the October 2007 sample collected from FC-Pond. The maximum iron concentration at FC-Pond was 1760 µg/L compared to the DEQ-7 chronic standard of 1000 µg/L. The maximum lead concentration at FC-Pond was 5.1 µg/L compared to the DEQ-7 chronic standard of 4 µg/L. At the reference surface water location URC-1A in Upper Rainy Creek, located within the OU3 Study Area (discussed below), copper (calculated based on hardness; see **Table 5-3b**) was detected at 16 µg/L above the DEQ-7 chronic surface-water standard of 12.7 µg/L for aquatic life in the June 2008 sample. These sample locations were upstream of the disturbed areas of the Former Mine Area.

The range of detected iron and lead concentrations in the FC-Pond samples was relatively large, and were below the DEQ-7 standard in two of the three samples collected from this location. In the three FC-Pond samples, iron concentrations ranged from 50 µg/L to 1760 µg/L, and lead concentrations ranged from 0.5 µg/L to 5.1 µg/L with two of the three samples having detectable levels. As would be expected with total metals analyses, the higher iron and lead concentrations correlate with the increased total suspended solids (TSS) concentrations in the three samples collected from FC-Pond. Potential mine-related exceedances of DEQ-7 chronic surface-water standards for aquatic life are limited to iron and lead, are inconsistent (more often below the DEQ-7 standard than above), and are not widespread in the OU3 Study Area (exceedances occurred only at the FC-Pond location). Moreover, these constituents (i.e., iron and lead) may have naturally elevated concentrations due to the mineralogy of the OU3 Study Area as described in **Section 2.11.1**.

5.1.2.3 Comparison of OU3 Study Area Surface Water Data with Reference Data

Inorganic, non-asbestos results from OU3 Study Area surface water samples were compared statistically with the inorganic, non-asbestos results from the reference locations to identify constituent concentrations that may be elevated within the OU3 Study Area relative to reference. This evaluation was performed as a line-of-evidence to identify inorganic, non-asbestos constituents that may have elevated concentrations in OU3 Study Area surface water. A description of the statistical evaluation is contained in **Appendix H**. Note that this evaluation was limited to inorganic constituents that occur naturally (e.g., metals/metalloids) because organics are likely to have anthropogenic origin both within and outside of the OU3 Study Area. Therefore, comparing organic constituent concentrations detected in the OU3 Study Area with organic constituent concentrations detected at reference locations would not help determine if the presence of organic constituents in the OU3 Study Area samples are mine-related. A discussion of organic, non-asbestos constituents detected in OU3 Study Area sediment samples is presented separately below in **Section 5.1.4.2**.

Inorganic, non-asbestos constituents that were found to have elevated concentrations relative to reference were evaluated using box-and-whisker plots to identify the surface water sampling locations, or groups of locations, where the elevated constituent concentrations were located in the OU3 Study Area. This information was used to identify the spatial distribution of the elevated inorganic, non-asbestos constituent concentrations, if possible. Note that evaluations of temporal trends are limited because most surface water locations have only been sampled two or three times for non-asbestos constituents.

Surface water reference locations (i.e., locations presumed to not be impacted by previous mining activities or existing mine wastes) include locations in Noisy Creek (NSY-R1) and Bobtail Creek (BTT-R1) (see **Table 5-2b** for off-site reference location summary data), and sample locations in Upper Rainy Creek (URC-1, URC-1A, and URC-2); see **Figure 4-1b**.

The inorganic, non-asbestos constituents in the OU3 Study Area surface water samples that were elevated compared to reference locations are listed on **Table H-2** (located in **Appendix H**). With the exception of barium, fluoride, and manganese, none of the inorganic, non-asbestos constituents listed as elevated on **Table H-2** are on the CERCLA Priority List of Hazardous Substances (ATSDR, 2015). The remainder of the inorganic, non-asbestos constituents that are elevated compared to reference locations are general water quality parameters (e.g., cations and anions), and are discussed separately below. Box-and-whisker plots of the analytical results for these constituents are depicted for all OU3 Study Area surface water sampling locations in **Appendix H**, **Attachment H-1**. The box-and-whisker plots are useful for visualizing the locations

(or groups of locations) where the inorganic, non-asbestos constituents are elevated relative to other OU3 Study Area locations, and for visualizing the range of detected concentrations at each location.

Box-and-whisker plots show that the highest concentrations of barium (both total and dissolved) generally are in the seeps along the waste rock piles (highest barium concentrations were detected at seep locations CCS-1, CCS-9, and CCS-16) and in Carney Creek location CC-2. Maximum concentrations of barium in the seeps along the waste rock piles ranged from 600 µg/L to 1,000 µg/L for both total and dissolved fractions. The maximum barium concentration at CC-2 was 700 µg/L for both total and dissolved fractions. The lowest barium concentrations were detected in the Upper Tailing Pond location (UTP; maximum concentration of 200 µg/L for both total and dissolved fractions), where concentrations were similar to reference (note that the UTP location is upgradient from where potentially mine-impacted discharges enter the Tailing Pond [e.g., Fleetwood Creek and runoff from the coarse tailings]). Barium is commonly associated with barite deposits, which occur naturally in the region.

Manganese concentrations were generally similar at most locations, except for seep location CCS-6 (maximum concentration of 360 µg/L for total and 610 µg/L for dissolved) and CCS-16 (maximum concentration of 940 µg/L for total and 980 µg/L for dissolved) where concentrations were higher. Manganese is commonly associated with biotite, pyrite, and manganese oxide minerals, which occur naturally in the region.

Fluoride concentrations were higher in Lower Rainy Creek below the KDID (including the Mill Pond) relative to the other OU3 Study Area surface water sampling locations. Fluoride concentrations in Lower Rainy Creek and the Mill Pond range from 600 µg/L to 1,100 µg/L, compared to 50 µg/L to 300 µg/L at all other surface water sampling locations. Presence of higher fluoride levels in Lower Rainy Creek may be related to fluorapatite and biotite minerals (associated with the pyroxenite bedrock) in the fine tailings pile.

Both surface water and sediment samples were collected at many of the same locations (a discussion of non-asbestos constituents in sediment is presented below in **Section 5.1.4**). A qualitative review of the surface water and sediment box-and-whisker plots indicates that the elevated barium and manganese concentrations in the surface water samples collected at seep location CCS-16 described above correlate with the barium and manganese concentrations in the sediment samples collected at the same location (i.e., barium and manganese concentrations also are elevated in the sediment samples collected at CCS-16). However, there does not appear to be a correlation between barium and manganese concentrations in surface water and sediment samples collected at CCS-1, CCS-6 and CCS-9. There also does not appear to be a clear correlation between the barium concentration detected in the surface water sample at the CC-2 location and the barium concentration in the sediment sample collected at the same location. The elevated fluoride concentrations detected in the Lower Rainy Creek surface water samples do not correlate with fluoride concentrations in the sediment samples collected at the same locations.

Several other general water quality parameters (that had elevated concentrations relative to reference locations) generally were higher in the seep locations and Carney Creek (down-gradient of the seeps), including alkalinity, bicarbonate, calcium, hardness, magnesium, phosphorous, potassium, sodium, TDS, and sulfate. These results suggest that interaction of water with the waste rock piles (which overlie the seeps that ultimately drain to Carney Creek) may be causing higher levels of inorganic, non-asbestos constituents observed in surface water in the area.

Based on the groundwater and surface water geochemistry evaluation presented in **Section 2.9**, the groundwater monitored by Wells D, E, and H may be hydraulically connected with water discharging at the seep locations. Visual comparisons of the box-and-whisker plots for the inorganic, non-asbestos constituents detected at the seep locations with the inorganic, non-asbestos constituents detected in Wells D, E, and H do not conclusively support this conceptual model (note that groundwater data are evaluated separately below in **Section 5.1.3**). This is because the relative constituent concentrations in the seep samples do not consistently correlate with the relative constituent concentrations in the groundwater samples from Wells D, E, and H. For example, some seep results correlate with groundwater results from one and sometimes two of these wells, but not the others. It does appear that the inorganic, non-asbestos constituent concentrations detected at the seeps correlate most consistently with the groundwater data from Wells E and H. Based on this qualitative comparative review, it is possible that the water discharging from the seep locations is a combination of groundwater and interflow (i.e., the lateral movement of water in the unsaturated zone that first returns to the surface or enters a stream prior to becoming groundwater).

Other possible conclusions that can be drawn from the inorganic, non-asbestos box-and-whisker plots include:

- With a few exceptions (e.g., fluoride and manganese), the concentrations of inorganic, non-asbestos constituents in surface water do not exhibit clear decreasing trends downstream in Lower Rainy Creek away from the former mined area. Decreasing trends away from the mined area would be expected if the mined area was the only source of the elevated constituent concentrations (i.e., constituent concentrations would be expected to attenuate and dilute away from the mined area due to influx of other water sources). However, surface water in Lower Rainy Creek may contain concentrations of inorganic, non-asbestos constituents from mining-related sources (e.g., tailings) in the OU3 Study Area that have possibly washed down Rainy Creek from the area of the Former Libby Vermiculite Mine and remain in sediment.
- Inorganic, non-asbestos constituent concentrations are generally lower in the surface water samples collected from the ponds (relative to the seep and stream locations), and were generally lowest in Tailings Pond surface water samples. This observation implies that inorganic, non-asbestos constituents in surface water are not concentrating in the ponds near the mined area; or, in the case of the Tailings Pond, inorganic, non-asbestos constituent concentrations are being diluted by non-mine-impacted flows from Upper Rainy Creek.

It also should be noted that several of the inorganic, non-asbestos constituents that were found to be elevated relative to reference (including barium, fluoride, and manganese) have the potential to be naturally elevated due the mineralogy of the OU3 Study Area as described in **Section 2.11.1**. As a result, constituent concentrations being elevated within the OU3 Study Area relative to reference locations may not be indicative of mine-related impacts.

5.1.2.4 Detected Organic Constituents in OU3 Study Area Surface Water

The detected organic, non-asbestos constituents in surface water are summarized on **Table 5-2a** and the results are depicted graphically by location in the box-and-whisker plots included in **Appendix H**, **Attachment H-5**. Detected organic, non-asbestos constituents in surface water were limited to:

- Benzene (detected in one of the three samples collected from seep location CCS-14 in October 2007 at a concentration of 0.65 µg/L).
- C5 to C8 aliphatics (detected in one of the three samples collected in October 2007 at seep location CCS-1 at a concentration of 30 µg/L and in seep location CCS-14 at a concentration of 62 µg/L).
- Total extractable hydrocarbons (detected in one of the three samples collected at seep location CCS-8 in June 2008 at a concentration of 571 µg/L, at seep location CCS-14 in October 2007 at a concentration of 320 µg/L, and in FC-Pond on October 2007 at a concentration of 470 µg/L).
- Total purgeable hydrocarbons (detected in one of the three samples collected at seep location CCS-1 in October 2007 at a concentration of 27 µg/L and at seep location CCS-14 in October 2007 at a concentration of 53 µg/L).

With the exception of the one total extractable hydrocarbons detection at FC-Pond, all organic, non-asbestos constituent detections were limited to seep locations, suggesting that the detections could be related to the waste rock piles that overlie the seeps. However, the results indicate that detectable organic, non-asbestos constituents in surface water are limited to benzene and ranges of aliphatics and hydrocarbons, are low level and inconsistently detected (more often below the laboratory detection limit than above), and detections only occurred at three seeps and FC-Pond.

5.1.2.5 Summary of the Nature and Extent of Non-Asbestos Constituents in Surface Water

The data regarding non-asbestos constituents in surface water are summarized below.

- No non-asbestos constituents were detected in OU3 Study Area or reference surface water samples at concentrations that exceed their respective DEQ-7 human health standards or their respective DEQ-7 acute surface water standards for aquatic life.
- Potential mine-related exceedances of DEQ-7 chronic surface water standards for aquatic life are limited to iron and lead, are inconsistent (more often below the DEQ-7 standard than above), and are not widespread in the OU3 Study Area (exceedances occurred only at the FC-Pond location).
- Concentrations of barium, fluoride, manganese and other general water quality parameters were elevated in the OU3 Study Area samples compared to the reference locations. With the exception of fluoride (which was highest in Lower Rainy Creek), the highest concentrations of these constituents generally were detected in the samples collected from the seeps that discharge from the base of the waste rock piles in the Carney Creek drainage. This suggests that higher inorganic, non-asbestos constituents may be due to water interaction with the waste rock piles (which overlie the seeps). However, constituent concentrations that are elevated in the OU3 Study Area relative to reference locations may not be indicative of mine-related impacts due the mineralogy of the OU3 Study Area.
- Qualitative comparative review of the surface water and sediment box-and-whisker plots contained in **Appendix H** indicate that the elevated barium, fluoride, and manganese concentrations in OU3 Study Area surface water (relative to reference) generally do not correlate with constituent concentrations in the sediment sampled at the same locations. The exception is at seep location CCS-16 where there is correlation between barium and manganese concentrations in the surface water and sediment.

- Qualitative comparative review of the inorganic, non-asbestos constituents detected at the seeps with the constituents detected in groundwater sampled from Wells D, E and H do not conclusively support the conceptual model that the groundwater monitored by these wells may be hydraulically connected with water discharging at the seep locations (see **Section 2.9**). Some component of the seep flow may be from interflow, which is the lateral movement of water in the unsaturated zone that first returns to the surface or enters a stream prior to becoming groundwater.
- Detectable organic, non-asbestos constituents in surface water were limited to low levels of benzene and ranges of aliphatics and hydrocarbons, were inconsistently detected (more often below the laboratory detection limit than above), and were not widespread in the OU3 Study Area (detections only occurred at three seeps and FC-Pond).
- The nature and extent of non-asbestos constituents in surface water in the OU3 Study Area is considered adequately defined, and additional evaluations of non-asbestos constituents in surface water are not considered necessary at this time.

5.1.3 Non-Asbestos Constituents in Groundwater

As discussed in **Section 4.3**, groundwater samples were collected from five wells (A, C, D, E, and H) as part of Phase II. The sampled well locations are depicted on **Figure 4-2** and the well construction information is summarized on **Table 2-5**. As summarized on **Table 2-5**, Wells A and C were completed in overburden (alluvium and glacial materials) and Wells D, E, and H were completed in bedrock. The groundwater monitored by these wells is classified *Class I* based on an average SC value of 360 micromhos per centimeter (µmhos/cm) measured in the groundwater samples (see **Section 2.7.3**).

Three rounds of sampling were completed at each well, occurring in the summer and fall of 2008, and the spring of 2009. All Phase II groundwater samples were analyzed for metals and metalloids, petroleum hydrocarbons, anions, nitrogen-containing compounds and other general water quality parameters, cyanide, and selected radionuclides. Additional groundwater samples were collected in 2015, but the analytical suite for the 2015 samples was limited to LAA and general water quality parameters. **Table 5-4** lists the non-asbestos analyses that were performed for groundwater samples from each well and the number of times each well was sampled. **Table 5-5** summarizes the analytical results for non-asbestos constituents that were detected in groundwater. A complete summary of the groundwater analytical results (including non-detected constituents) is contained in **Appendix E**.

The nature and extent evaluation of non-asbestos constituents in groundwater included the following steps:

- Comparison to Montana DEQ-7 standards.
- Evaluation of spatial and temporal trends.

5.1.3.1 Comparison with DEQ-7 Human Health Standards for Groundwater

Non-asbestos results from OU3 Study Area groundwater samples were compared with DEQ-7 human health standards (see **Tables 5-5** and **5-6**). Note that the DEQ-7 standards are used herein solely to aid in the determination of the nature and extent of various constituents and do

not constitute an ARAR determination. Note that DEQ-7 aquatic life standards (acute and chronic) are not intended for groundwater.

Only one non-asbestos constituent was found to exceed DEQ-7 human health standards. Gross alpha in the June 2009 sample collected from Well E (see **Table 5-6**), which had a concentration of 15.7 picocuries per liter (pCi/L), slightly exceeded its respective DEQ-7 human health standard (15 pCi/L). The gross alpha concentrations were well below the DEQ-7 standard in the two other samples collected from Well E (i.e., 6.6 pCi/L in July 2008 and 6 pCi/L in September 2008), and were well below the DEQ-7 standard in all groundwater samples collected from the other OU3 Study Area wells.

Comparison of OU3 Study Area groundwater data with DEQ-7 human health standards suggests that OU3 Study Area groundwater has not been impacted by previous mining activities or existing mine wastes with respect to non-asbestos constituents.

5.1.3.2 Detected Inorganic Constituents in OU3 Study Area Groundwater

Inorganic, non-asbestos results from the OU3 Study Area groundwater samples were evaluated to identify the spatial distribution and possible sources of constituents. The detected inorganic, non-asbestos constituents in groundwater are summarized on **Table 5-5** and the results are depicted graphically by location in the box-and-whisker plots included in **Appendix H, Attachment H-4**. As discussed in **Section 2.11.1.1**, many of these constituents are expected to be detected (i.e., are naturally occurring) at potentially elevated concentrations due to the mineralogy in the OU3 Study Area. There are no site-specific reference groundwater data (i.e., data from locations presumed to be un-impacted by previous mining activities or the presence of mine wastes) to compare with the inorganic, non-asbestos groundwater data collected from the OU3 Study Area. As a result, it is not known if any inorganic, non-asbestos constituents may be elevated compared with concentrations at reference locations as a result of previous mining activities or existing mine waste.

Based on a qualitative review of the box-and-whisker plots, there are no clear patterns in the data to suggest significant differences between bedrock and overburden groundwater. As discussed in **Section 2.9**, the lack of variability in the concentrations of the cations and anions at the Former Mine Area is likely due to the local geology.

Additional discussion of possible correlation between inorganic, non-asbestos constituents detected in bedrock groundwater and inorganic, non-asbestos constituents detected at the seep locations is included above in **Section 5.1.2.4**.

5.1.3.3 Detected Organic Constituents in OU3 Study Area Groundwater

The detected organic, non-asbestos constituents in groundwater are summarized on **Table 5-5** and the results are depicted graphically by location in the box-and-whisker plots included in **Appendix H, Attachment H-5**. Detected organic, non-asbestos constituents in groundwater were limited to:

- Toluene (detected in one of three samples collected from Well D at a concentration of 0.86 µg/L and detected in one of three samples collected at Well E, at a concentration of 0.78 µg/L).

- Total extractable hydrocarbons (detected in one of five samples collected from Well A at a concentration of 926 µg/L, in two of four samples collected from Well E, at concentrations of 391 µg/L and 414 µg/L, and in one of three samples collected from Well H, at a concentration of 1,130 µg/L).

All of the wells that had detectable organic, non-asbestos constituents are located hydraulically up- or cross-gradient from the former mill, landfarming operations, and historical landfill described in **Section 2.11.1.2** (i.e., potential sources of VOC/hydrocarbons). However, no indications of significant organic impacts were detected in groundwater samples.

Based on the groundwater and surface water geochemistry evaluation presented in **Section 2.9**, the groundwater monitored by Wells D, E, and H may be hydraulically connected with water discharging at the seep locations. Further, it is noted that total extractable hydrocarbons were detected in samples from both Wells E and H and the seep locations.

These results indicate that detectable organic, non-asbestos constituents in groundwater were inconsistently detected, and only low levels of toluene and total extractable hydrocarbons were detected.

5.1.3.4 Summary of the Nature and Extent of Non-Asbestos Constituents in Groundwater

The data regarding non-asbestos constituents in groundwater are summarized below.

- The only non-asbestos constituent to exceed a DEQ-7 human health standard was gross alpha in the June 2009 sample collected from Well E. However, overall comparison of OU3 Study Area groundwater data with DEQ-7 human health standards suggests that OU3 Study Area groundwater has not been impacted by previous mining activities or existing mine wastes with respect to non-asbestos constituents.
- Detectable inorganic, non-asbestos constituents in groundwater are naturally occurring and are expected to be detected at potentially elevated concentrations in the OU3 Study Area. There are no clear patterns in the data that suggest possible mine-related sources or causes of elevated constituent concentrations in the groundwater in the OU3 Study Area.
- Organic, non-asbestos constituents in groundwater were detected at relatively low levels for toluene and total extractable hydrocarbons, and were inconsistently detected (i.e., toluene and total extractable hydrocarbons were sometimes above and sometimes below the laboratory detection limit at the same location).
- The nature and extent of non-asbestos constituents in groundwater in the OU3 Study Area is considered adequately defined, and additional evaluations of non-asbestos constituents in groundwater are not considered necessary at this time.

5.1.4 Non-Asbestos Constituents in Sediment

Sediment samples were collected from the same locations and at the same time as surface water samples during Phase I and Phase II (see **Figure 4-3b**). The Phase II sediment sampling plan differed from Phase I for the tailings impoundment and each of the ponds (the Mill Pond and the ponds on Carney Creek and Fleetwood Creek) in that each was sampled by collecting a series of grab samples rather than 1-2 composite samples. A total of 17 grab samples were collected at the tailings impoundment and five grab samples were collected from each pond in order to

investigate the degree of spatial variability of parameter levels in sediments. In addition, sediment samples were collected from various locations during the Phase V Part B investigation, which focused on providing sediment data to support an amphibian metamorphic bioassay conducted for the OU3 Study Area. These locations included both ponds within the OU3 Study Area and reference ponds.

Most sediment samples were analyzed for metals/metalloids, petroleum hydrocarbons, anions, total organic carbon, and other sediment-quality parameters. In addition, several selected sediments were analyzed for a broad suite of other chemicals, including VOCs, SVOCs, pesticides, PCBs, PAHs, and cyanide. **Table 5-7** lists the non-asbestos analyses that were performed for sediment samples from each location and the number of times each location was sampled. **Tables 5-8a** and **5-8b** summarize the analytical results for non-asbestos constituents that were detected in sediment within the OU3 Study Area and outside of the OU3 Study Area, respectively. A complete summary of the sediment analytical results (including non-detected constituents) is contained in **Appendix E**.

The nature and extent evaluation of non-asbestos constituents in sediment included the following steps:

- Comparison to reference locations.
- Evaluation of spatial patterns.

5.1.4.1 Comparison of OU3 Study Area Sediment Data with Reference Data

Inorganic, non-asbestos results from OU3 Study Area sediment samples were compared statistically with the inorganic, non-asbestos results from the reference locations to identify constituent concentrations that were elevated within the OU3 Study Area relative to reference. This evaluation was performed as a line-of-evidence to identify inorganic, non-asbestos constituents that may have elevated concentrations in OU3 Study Area sediment. A description of the statistical evaluation is contained in **Appendix H**. Note that this evaluation was limited to inorganic constituents that occur naturally (e.g., metals/metalloids) because organics are likely to have anthropogenic origin both within and outside of the OU3 Study Area. Therefore, comparing organic constituent concentrations detected in the OU3 Study Area with organic constituent concentrations detected at reference locations would not help determine if the presence of organic constituents in the OU3 Study Area samples are mine-related. A discussion of organic, non-asbestos constituents detected in OU3 Study Area sediment samples is presented separately below in **Section 5.1.4.2**.

Inorganic, non-asbestos constituents that were found to have elevated concentrations relative to reference were evaluated using box-and-whisker plots to identify the sediment sampling locations, or groups of locations, where the elevated constituent concentrations were located in the OU3 Study Area. This information was used to identify the spatial distribution of the elevated inorganic, non-asbestos constituent concentrations, if possible. Note that evaluations of temporal trends are limited because most sediment locations have only been sampled two or three times for non-asbestos constituents.

Sediment reference locations (i.e., locations assumed to be not impacted by previous mining activities or existing mine wastes) include the following (see **Figure 4-3b**):

- Banana Lake
- Bobtail Pond 1
- Bobtail Pond 2
- Bobtail Creek (BTT-R1)
- Noisy Creek (NSY-R1)
- Schrieber Lake
- Tepee Pond 1
- Tepee Pond 2
- Upper Rainy Creek (URC-1, URC-1A, and URC-2)

The inorganic, non-asbestos constituents in the OU3 Study Area sediment samples that had elevated concentrations compared to reference are listed on **Table H-3** (located in **Appendix H**). All of these constituents have the potential to naturally occur in elevated concentrations in the OU3 Study Area compared to areas having different mineralogy (see **Section 2.11.1.1**). Box-and-whisker plots of the analytical results for these constituents are depicted for all OU3 Study Area sediment sampling locations in **Appendix H, Attachment H2**. The box-and-whisker plots are useful for visualizing the locations (or groups of locations) where the inorganic, non-asbestos constituents are elevated, and are useful for visualizing the range of detected concentrations at each location. The box-and-whisker plots indicate that inorganic, non-asbestos constituent concentrations generally are higher in the sediment samples collected from the ponds (Tailings Pond, Carney Creek Pond, Mill Pond) and generally are lower in the sediment samples collected from the creeks (Lower Rainy Creek, Carney Creek, Fleetwood Creek) and in the seeps; (note that this is opposite of the inorganic, non-asbestos constituent concentrations in surface water, which were generally lower in the ponds and generally higher in the seeps and streams). Of the pond locations, inorganic, non-asbestos constituent concentrations tend to be highest in sediment locations in the Mill Pond and Tailings Pond. These data suggest that the bulk of potentially mine-impacted sediment are contained in the fine tailings behind the KDID (i.e., within the Tailings Pond) and sediments in the Mill Pond, and to a lesser extent in the sediments that have accumulated in Fleetwood Pond and Carney Creek Pond.

Within the Tailings Pond, inorganic, non-asbestos constituent concentrations generally were lowest at sediment sampling location TP-17, which is located at the north end of the pond and upstream of where sediment entrained in flow from Fleetwood Creek and runoff from the Tailings Pile enters the pond (see **Figure 4-3b**). Within the Mill Pond, inorganic, non-asbestos concentrations generally were highest in the samples collected in the middle of the pond (MP-1 and MP-2), and lowest along the south end of the pond (MP and MP-5; see **Figure 4-3b**). The box-and-whisker plots otherwise indicate a high degree of spatial variability of the inorganic, non-asbestos constituent concentrations in the sediments within each pond.

5.1.4.2 Detected Organic Constituents in OU3 Study Area Sediment

The detected organic, non-asbestos constituents in OU3 Study Area sediment samples are summarized on **Table 5-8a** and the results are depicted graphically by location in the box-and-whisker plots included in **Appendix H**, **Attachment H5**. The SVOC/PAH constituents detected in sediments were located in the Tailings Pond and Lower Rainy Creek (LRC-2 and/or TP-TOE2) and were inconsistent (more often below the laboratory detection limit than above). These results indicate that the presence and distribution of SVOC/PAH constituents in sediments in the OU3 Study Area is not significant or widespread.

Volatile organic compound (VOC)/hydrocarbon detections in OU3 Study Area sediments were limited to toluene, naphthalene, and extractable aliphatics or hydrocarbons. The extractable aliphatics/hydrocarbon detections generally have similar distribution and trends as the inorganic, non-asbestos constituents in sediment described above (i.e., generally are higher in the sediment samples collected from the ponds and generally highest in sediment locations in the Mill Pond and Tailings Pond). Naphthalene detections were limited to two samples collected from the tailing pond and one sample collected from the Mill Pond. Toluene was detected in one sample collected at seep location CCS-1. These results also suggest that the presence and distribution of VOCs/hydrocarbons in sediments in the OU3 Study Area is not significant or widespread.

5.1.4.3 Summary of the Nature and Extent of Non-Asbestos Constituents in Sediment

The data regarding non-asbestos constituents in sediment are summarized below.

- Several inorganic, non-asbestos constituents were found to have elevated concentrations in the OU3 Study Area sediment samples relative to the reference sampling locations. However, constituent concentrations being elevated in the OU3 Study Area relative to reference locations may not be indicative of mine-related impacts due to the mineralogy of the OU3 Study Area.
- Inorganic, non-asbestos constituent concentrations generally were higher in the sediment samples collected from the ponds (e.g., Tailings Pond, Carney Creek Pond, Mill Pond) and generally were lower in the sediment samples collected from the creeks (Lower Rainy Creek, Carney Creek, Fleetwood Creek) and in the seeps. This is opposite of the inorganic, non-asbestos constituent concentrations in surface water, which were generally lower in the ponds and generally higher in the seeps and streams.
- Inorganic, non-asbestos constituent concentrations tend to be highest in sediment locations in the Mill Pond and Tailings Pond. These data suggest that the bulk of potentially mine-impacted sediment are contained in the fine tailings behind the KDID (i.e., within the Tailings Pond) and sediments in the Mill Pond, and to a lesser extent in the sediments that have accumulated in Fleetwood Pond and Carney Creek Pond.
- Organic, non-asbestos constituent data suggest that the presence and distribution of VOCs/hydrocarbons in sediments in the OU3 Study Area is not significant or widespread.
- The nature and extent of non-asbestos constituents in sediment in the OU3 Study Area is considered adequately defined, and additional evaluations of non-asbestos constituents in sediment are not considered necessary at this time.

5.1.5 Non-Asbestos Constituents in Soil/Mine Waste

Figure 4-4b depicts the locations where samples of soil/mine waste materials were collected. Samples were collected from each of the principal mine waste materials that have been identified in the OU3 Study Area (mine waste rock, fine tailings, and coarse tailings), and from soils in the former mill area and roadway materials used for construction of unpaved sections of Rainy Creek Road. Forest soil samples (from the distal ends of the asbestos-sampling transects described in **Section 4.6.1**) were used to provide data from reference locations (i.e., locations presumed not to be impacted by previous mining activities or the presence of mine wastes).

All soil/mine waste samples were analyzed for metals/metalloids, anions, and other soil quality parameters. Mine waste rock, tailings, soil from the former mill area, and roadway materials were also analyzed for petroleum hydrocarbons and the three roadway materials samples were analyzed for PCBs and PAHs. Samples collected from the fine tailings were analyzed for a broad suite of other chemicals, including VOCs, SVOCs, pesticides, PCBs, and PAHs. The reference forest soil samples were analyzed for metals/metalloids only. **Table 5-9** lists the non-asbestos analyses that were performed for soil/mine waste samples from each location and the number of times each location was sampled. **Table 5-10** summarizes the analytical results for non-asbestos constituents that were detected in the soil/mine waste samples. A complete summary of the soil/mine waste analytical results (including non-detected constituents) is contained in **Appendix E**.

The nature and extent evaluation of non-asbestos constituents in soil/mine waste included the following steps:

- Comparison to Montana Background Soils.
- Comparison to reference locations.
- Evaluation of spatial patterns.

5.1.5.1 Comparison of Inorganic Constituents with Montana Background Threshold Concentrations

Non-asbestos results from OU3 Study Area soil/mine waste and reference forest soil samples were compared directly to background threshold concentrations of inorganic constituents in Montana surface soils (Hydrometrics, Inc., 2013). These comparisons with Montana background concentrations were made only to provide context to the constituent concentrations in the mine waste and forest soil.

The constituents in the OU3 Study Area soil/mine waste samples and reference forest soil sample locations that exceeded Montana background concentrations are listed on **Tables 5-10** and **5-11**. Several inorganic constituents exceeded the Montana background threshold concentrations in both OU3 Study Area and reference sample locations, including aluminum, chromium, cobalt, iron, nickel, and vanadium. Barium, lead, and thallium exceeded Montana background threshold concentrations in the OU3 Study Area samples, but not in the reference samples; and cadmium and manganese exceeded the Montana background threshold concentration in the reference samples but not in the OU3 Study Area samples. All of the inorganic, non-asbestos constituents that exceeded Montana background threshold concentrations in the OU3 Study Area samples have the potential to be naturally present in elevated concentrations based on the mineralogy of the OU3 Study Area (i.e., elevated concentrations compared with locations that have different mineralogy; see **Section 2.11.1.1**). Therefore, these exceedances of the Montana background threshold concentrations in the OU3 Study Area soil/mine waste samples are not unexpected, and are not necessarily indicative of mine-related impacts.

5.1.5.2 Comparison of OU3 Study Area Soil/Mine Waste Data with Forest Soil Reference Data

Forest soil samples (from the distal ends of the asbestos-sampling transects described in **Section 4.6.1** and shown on **Figure 4-4b**) were analyzed for non-asbestos constituents (metals/metalloids only) to provide data from reference locations (i.e., locations assumed to not be impacted by previous mining activities or the presence of mine wastes). Inorganic, non-asbestos results from OU3 Study Area soil/mine waste samples were compared statistically with

the inorganic, non-asbestos results from the reference sampling locations to identify constituent concentrations that are elevated relative to reference. A description of the statistical evaluation is contained in **Appendix H**. This evaluation was performed as a line-of-evidence to identify inorganic, non-asbestos constituent concentrations that may be elevated in the OU3 Study Area. Note that this evaluation was limited to inorganic constituents that occur naturally (i.e., metals/metalloids) because organics are likely to have anthropogenic origin both within and outside of the OU3 Study Area. Therefore, comparing organic constituent concentrations detected in the OU3 Study Area with organic constituent concentrations detected at reference locations would not help determine if the presence of organic constituents in the OU3 Study Area samples are mine-related. A discussion of organic, non-asbestos constituents detected in OU3 Study Area soil/mine waste samples is presented separately below in **Section 5.1.5.3**.

Inorganic, non-asbestos constituents in the soil/mine waste samples that were found to have elevated concentrations relative to reference forest soil were evaluated to identify the soil/mine waste sampling locations, or groups of locations, where the elevated constituent concentrations were located in the OU3 Study Area. This information was used to identify the spatial distribution of the elevated non-asbestos constituent concentrations, if possible. Temporal trends cannot be evaluated because locations only were sampled once or twice for non-asbestos constituents; however, temporal trends are not anticipated for inorganic, non-asbestos constituents in soil/mine waste.

The inorganic, non-asbestos constituents in the OU3 Study Area soil/mine waste samples that had elevated concentrations compared to reference are listed on **Table H-4** (located in **Appendix H**), and include aluminum, barium, chromium, cobalt, copper, iron, nickel, and vanadium. The analytical results for these constituents are plotted for all OU3 Study Area soil/mine waste sampling locations in **Appendix H**, **Attachment H-3**. The data plots show that the highest concentrations of these constituents were detected in the two multi-point composite samples collected from the tailings impoundment and some outcrop samples. However, other outcrop samples had low concentrations of these constituents relative to other OU3 Study Area locations. It should be noted that elevated concentrations of naturally occurring metals/metalloids are expected in outcrop samples. There are no other obvious trends that can be seen on the soil/mine waste data plots with regard to spatial distribution or potential sources of inorganic, non-asbestos constituents in the soil/mine waste. As discussed above in **Section 5.1.5.1** and **2.11.1.1**, these results are not unexpected because of the mineralogy of the OU3 Study Area, and are not necessarily indicative of mine-related impacts.

5.1.5.3 Detected Organic Constituents in OU3 Study Area Soil/Mine Waste

The detected organic, non-asbestos constituents in the soil/mine waste samples are summarized on **Table 5-10** and the results are depicted graphically by sampled location in the box-and-whisker plots included in **Appendix H**, **Attachment H-5**. Of the six locations that were analyzed for SVOCs/PAHs, the detectable SVOC/PAH constituents were limited to the two samples collected from the tailings impoundment (MS-4 and MS-5). Detected VOCs were limited to a single detection of toluene in one sample collected from the central waste rock pile (MS-14; 0.066 mg/kg), and detections of methyl acetate in each of the two samples collected from the tailings impoundment (MS-4; 0.56 mg/kg and MS-5; 1.7 mg/kg). These results indicate that the presence and distribution of SVOCs/PAHs and VOCs in soil/mine waste in the OU3 Study Area is not significant or widespread.

Total extractable hydrocarbons were detected in most soil/mine waste samples, with relatively higher concentrations detected in the Rainy Creek road material samples, in fine tailings samples,

and in one sample collected from the east waste rock pile (MS-20). The exception is that concentrations of total extractable hydrocarbons were below the practical quantification limit (PQL) in all four samples collected from the coarse tailings. Concentrations of total purgeable hydrocarbons were below the PQL in most samples analyzed with the exceptions of one sample from the west waste rock pile (MS-28) and two samples from the central waste rock pile (MS-14 and MS-18). Of the six locations that were analyzed for C9 to C18 aliphatics, detections were limited to the two samples collected from the tailings impoundment (MS-4 and MS-5). Of the six locations that were analyzed for C19 to C36 aliphatics, detections included all three road material samples collected from the Rainy Creek Road area (MS-1, MS-2, and MS-3), both samples collected from the fine tailings (MS-4 and MS-5), and one sample in the east waste rock pile (MS-20). For C11 to C22 aromatics, detections included all three road material samples collected from the Rainy Creek Road area (MS-1, MS-2, and MS-3), one sample collected from the fine tailings (MS-5), and one sample in the east waste rock pile (MS-20). Other ranges of hydrocarbons in the soil/mine waste samples were generally below the PQL (e.g., C5 to C8 aliphatics and C9 to C10 aromatics), with the exception of one sample collected in the central waste rock pile (MS-14). These detections of various hydrocarbons do not exhibit clear spatial patterns that indicate specific areas that are impacted or potential sources of hydrocarbon contamination.

5.1.5.4 Summary of the Nature and Extent of Non-Asbestos Constituents in Soil/Mine Waste

The data regarding non-asbestos constituents in soil/mine waste are summarized below.

- Several inorganic, non-asbestos constituents exceeded the Montana background threshold concentrations in both OU3 Study Area and reference sample locations; and several inorganic, non-asbestos constituents were found to have elevated concentrations relative to the reference sampling locations. These results are not unexpected because of the mineralogy of the OU3 Study Area, and are not necessarily indicative of mine-related impacts.
- The presence and distribution of SVOCs/PAHs and VOCs in soil/mine waste in the OU3 Study Area is not significant or widespread. Ranges of hydrocarbons were detected in the soil/mine waste samples across the OU3 Study Area. These detections of various hydrocarbons do not exhibit clear spatial patterns that indicate specific areas that are impacted or potential sources of hydrocarbon contamination.
- The nature and extent of non-asbestos constituents in soil/mine waste in the OU3 Study Area is considered adequately defined, and additional evaluations of non-asbestos constituents in soil/mine waste are not considered necessary at this time.

5.2 NATURE AND EXTENT OF LAA

The nature and extent of LAA in various media are presented in this section. Because LAA is naturally occurring within the OU3 Study Area due to the presence of the large mineral deposit and natural geologic and glacial conditions, it is likely that the LAA detections in all media are related to both natural and anthropogenic movement of naturally occurring sources. Data relevant to background concentrations in the mine area are discussed below. However, to date, no background or reference LAA levels have been established that are directly applicable to the OU3 Study Area.

The EPA evaluated data gathered as part of the nature and extent evaluation for the OU3 Study Area in its risk assessments that are summarized in **Section 7.0**. A complete data summary for all RI LAA data is included in **Appendix E**.

5.2.1 LAA Data Considerations

5.2.1.1 LAA Data Adequacy Evaluation

There were a variety of field QC samples, preparation laboratory QC samples, and analytical laboratory QC analyses included as part of the sampling investigations performed in the OU3 Study Area. A detailed review and discussion of the results for QC samples and analyses is provided in the annual QA/QC summary reports for the OU3 Study Area prepared by EPA's QATS contractor. These reports are provided in **Appendix G**. In summary, the quality of the LAA data was deemed sufficient for the intended use.

LAA data collected as part of the OU3 Study Area RI for LAA in surface water, sediment, groundwater, and soil/mine waste were considered adequate to support the risk assessments. Risk assessments performed were documented in the reports titled: *Final Site-wide Human Health Risk Assessment* (for LAA) (EPA, 2015a) and the *Final Site-wide Baseline Ecological Risk Assessment* (for LAA) (EPA, 2014a), which are discussed in **Section 7.0**.

5.2.1.2 LAA Background and Naturally Occurring Materials Data

As discussed in **Section 2.6.1**, EPA conducted an investigation at the Libby Site to characterize LAA in soil from areas that were thought to be representative of background conditions. The investigation was presented in the document titled: *Final Background Soil Summary Report Libby Asbestos Superfund Site, Montana* (CDM Smith, 2014b). The primary conclusion of the report was that there is a non-zero level of LAA in soils within the Kootenai Valley that is not attributable to vermiculite mining and processing activities at the Libby Site. The average total LAA concentration in background soil was estimated to be approximately 0.014% by mass. However, while these estimates may be representative of background conditions within the Kootenai Valley, they likely are not representative of background conditions within the OU3 Study Area. This is because of the unique natural geologic character of Vermiculite Mountain (i.e., a large, high-quality vermiculite ore body containing high percentages of fibrous and asbestiform amphiboles), which was the reason the site was mined. As a result, it can be inferred that background LAA concentrations within the OU3 Study Area (i.e., proximal to Vermiculite Mountain) would be higher than the more distal surrounding areas where the EPA conducted the background study. However, the true nature of background LAA concentrations in the OU3 Study Area has not been established.

The report titled: *Test Pit LAA Results and Creek Reconnaissance Report, OU3 Study Area* (MWH, 2016a; see also **Section 4.5.5**) included identification and LAA-concentration testing of naturally occurring, non-mine-impacted geologic materials located near the KDID. Fine fraction (PLM-VE) LAA concentrations in these naturally occurring materials ranged from ND (Bin A) to 1% (Bin C) in the glacial materials, and were as high as 2% in the pyroxenite bedrock samples (although outcrop samples collected during other sampling events have measured LAA at levels up to 8%). Naturally occurring LAA within the glacial deposits and bedrock outcrops would be expected to contribute to LAA in surface water along Rainy Creek due to natural erosional processes. Although these results support the conceptual model that background LAA concentrations within the OU3 Study Area are higher than the more distal surrounding areas,

additional sampling and analysis of representative materials would be required in order to establish background levels for the various media in the OU3 Study Area.

Because there are not LAA-specific benchmarks or reliable background levels for the OU3 Study Area, the detected LAA concentrations in the various media are largely presented below in terms of detected concentrations and concentration ranges. The exceptions to this are LAA concentrations in surface water and groundwater, which are compared with the National Primary Drinking Water Regulation (NPDWR) Maximum Contaminant Level (MCL) for asbestos of 7 million fibers per liter of water (MFL). The MCL is based on fibers longer than 10 µm in length (>10 µm).

5.2.2 LAA Concentrations in Soil, Mine Waste, and Bedrock

As described in **Section 4.5,** the forest soil, soil and mine waste, and bedrock samples collected during various sampling phases/events were analyzed for a broad suite of analytes, including LAA. The following is a discussion of the nature and extent of LAA in each of these media. A comprehensive analytical data summary is provided in **Appendix E**.

Overview. **Tables 5-12a** through **5-15b** present the summary statistics (minimum, maximum, mean, number of detections, etc.) for LAA results and analysis type (fine fraction; PLM-VE and coarse fraction; PLM-Grav) for forest soil, former mine area soil, bedrock, and mine waste samples for both sample area/material type and station. All samples were analyzed for PLM-VE and only select samples where a coarse fraction was present were analyzed for PLM-Grav. For consistency on how soil samples were evaluated and interpreted at the other OUs within the Libby Site, the fine fraction and coarse fraction samples were not combined as per the procedures described in *Technical Memo 8* (EPA, 2008f). Rather, *Technical Memo 8* was only referenced to obtain the semi-quantitative values (surrogate values) for the various qualitative soil results in order to derive mean values for specific groupings of soil and soil like samples. For example, for results of Bin B2 (<1%) the surrogate value of 0.6% was used as provided in *Technical Memo 8.* Once each qualitative soil result was replaced with a surrogate value, means could then be calculated. The coarse fraction (PLM-Grav) results are presented in the data tables in order to provide all of the analytical results from the RI but are not discussed herein. **Figures 5-1a** and **5-1b** present the spatial pattern of fine fraction LAA (PLM-VE) of samples collected in the vicinity of the Former Mine Area, which are discussed herein. In general, the highest percentages of PLM-VE LAA reported in samples were from road soil (25%, sample TS-C-11, collected on a mine bench), bedrock (8%, outcrop sample MS-25), waste rock (5%, sample MS-15), and coarse tailings (4%, sample GT-11). The extent of LAA (PLM-VE) levels in soil, mine waste, and bedrock samples ≥0.2% by mass (the lowest quantifiable level using the EPA-approved method) is shown on **Figures 5-1a** and **5-1b**. As shown on **Figures 5-1a** and **5-1b**, the area with LAA (PLM-VE) in soil, mine waste, or bedrock ≥0.2% encompasses approximately 1,544 acres, although LAA was detected at levels below 0.2% beyond this area.

Forest Soil. Forest soils were collected in the forested areas shown on **Figure 4-5a** and the analytical data are summarized on **Tables 5-12a** (by distance from former mine area center) and **5-12b** (by station). Note that soils collected during post-burn events are not summarized in these tables because they do not represent native forest soil conditions, rather post-burn soil summary results are presented in **Table 5-24**. The extent of forest soil LAA detections in the vicinity of the Former Mine Area is shown on **Figures 5-1a** and **5-1b** for the fine fraction (PLM-VE) only. As shown on **Figures 5-1a** and **5-1b** and on **Tables 5-12a, Panel A** and **5-12b, Panel A**, of the 89 samples collected and analyzed for LAA (PLM-VE), the only forest soil samples with detections of LAA (trace or higher) were collected within approximately two miles from the center of the Former

Mine Area (Near). One sample (SL135-01, located between the former mill site and the KDID) had a LAA result of Bin C (6%), two samples (SL45-01, located 0.5 mile northwest of the mine center, and SP15-Pre-S, located 1 mile to the north-northwest of the mine center) had results of Bin B2 (≥0.2% and <1%), 12 samples had results of Bin B1 (above ND, but less than 0.2%), and 74 of the sample locations were Bin A (ND). None of the forest soil samples collected more than two miles beyond the mine center had any LAA detections by PLM-VE.

Former Mine Area Soil. The locations and LAA levels (PLM-VE) for Former Mine Area soil samples are shown on **Figure 5-1a** and summarized on **Tables 5-13a** (by material) and **5-13b** (by station). As shown on **Tables 5-13a, Panel A** and **5-13b, Panel A** the range of LAA (PLM-VE) in Former Mine Area soil was Bin A (ND) to Bin C (up to 25%). Former Mine Area soils were grouped into material categories for evaluation. The ranges and mean values of LAA (PLM-VE) for each of the soil material categories are presented below.

- Road Material: the range of LAA was ND to 25% (sample TS-C-11, collected on a mine bench), with a mean value of 2%.
- Cover/Fill Material: the range of LAA was ND to 3% (samples GT-14, GT-15, and GT-26), with a mean value of 1%.
- Alluvium/Other Material: the range of LAA was <0.2% to 2% (samples VW-1-10, VW-1-14, and VW-1-15), with a mean value of 0.4%.
- Glacial Material: the range of LAA was ND to 1% (sample GT-16), with a mean value of 0.2%.

Bedrock. LAA occurs in cross-cutting veins and dikes that occur throughout the pyroxenite bedrock. These veins and dikes generally range from a few millimeters to several meters in thickness, and the LAA concentration in these zones is estimated to range between 50-75% (Meeker *et al.,* 2003). The locations and LAA levels (PLM-VE) for Former Mine Area bedrock samples are shown on **Figure 5-1a** and were taken from bedrock outcroppings or where bedrock was encountered in a test pit. As shown on **Tables 5-14a, Panel A** and **5-14b, Panel A**, the range of LAA (PLM-VE) in bedrock samples was ND (sample GT-19) to 8% (sample MS-25), with a mean value of 1%. LAA-bearing veins were not targeted by the bedrock sampling program, which may explain the variability in LAA concentrations in these samples

Mine Waste. The areal extent and approximate volumes of mine waste are shown on **Figure 5-2.** Approximately 40.7 million cubic yards (MCY) of waste rock, 3.2 MCY of fine tailings, and 14.7 MCY of coarse tailings are present at the site. Approximately 1.2 MCY of coarse tailings were used to construct the KDID. As shown on **Tables 5-15a, Panel A** and **5-15b, Panel A**, the range of LAA (PLM-VE) in coarse tailings was from Bin B2 (≥0.2% to <1%) to Bin C (4%, sample G-11), with a mean value of 1%. The range of LAA (PLM-VE) in fine tailings was within Bin B2 (≥0.2% to <1%) with a mean value of 0.6%. The range of LAA (PLM-VE) in waste rock was from Bin B2 (≥0.2% to <1%) to Bin C (up to 5%, sample MS-15), with mean values ranging from 0.6% (Bin B2, central and east piles) to 2% (Bin C, west pile).

5.2.2.1 Summary of the Nature and Extent of LAA in Soils and Mine Waste

The data regarding LAA in soils and mine waste are summarized below.

- In general, the highest percentages of LAA (PLM-VE) reported in samples were from road soil (25%, sample TS-C-11, collected on a mine bench), bedrock (8%,

outcrop sample MS-25), waste rock (5%, sample MS-15), and coarse tailings (4%, sample GT-11).

- The extent of LAA (PLM-VE) levels in soil, mine waste, and bedrock samples ≥0.2% by mass extends approximately 1,544 acres within the boundaries of the Former Mine Area and along Rainy Creek, although LAA was detected at levels below 0.2% beyond this area.
- The only forest soil samples with detections of LAA (PLM-VE) (trace or higher) were collected within approximately two miles from the center of the Former Mine Area (Near).
- Approximately 40.7 million cubic yards (MCY) of waste rock, 3.2 MCY of fine tailings, and 14.7 MCY of coarse tailings are present within the boundaries of the Former Mine Area.

5.2.3 LAA Concentrations in Groundwater

As described in **Section 4.3**, select groundwater wells and piezometers were sampled in 2008 (July and September), 2009 (June), and 2015 (April and May) for analysis for a broad suite of analytes, including LAA. Groundwater wells and piezometers were screened in overburden, alluvial, or glacial material (collectively referred to as "shallow" wells/piezometers) and in bedrock. Groundwater well and piezometer locations are shown on **Figure 4-2** and **Figure 5-3**. Results, presented below, are compared with the NPDWR MCL for asbestos in water of 7 MFL (based on fibers >10 µm). The groundwater analytical data are provided in **Appendix E**. A summary of LAA concentrations in groundwater samples is provided in **Tables 5-16a** (by screened area) and **5-16b** (by station). LAA was detected in some of the equipment rinsate blank samples that were collected during the 2015 sampling event. As a consequence, the EPA third party validator, CB&I, blank-adjusted the groundwater results to account for the possibility of cross-contamination between samples collected in the field using the contaminated equipment. The blank-adjustment method is documented in a record of modification form attached to a memorandum that discusses these samples specifically (see **Appendix I**).

As shown in **Table 5-16a**, 20 samples were collected from eight shallow well/piezometer locations and 14 samples were collected from bedrock wells. Total[6] LAA was detected in groundwater samples from all of the wells/piezometers except for piezometers BH-05A-1 and BH-07A-1 and Well D. Detected total LAA levels ranged from 0.90 MFL (Well E) to 139 MFL (BH-03A-1). However, only two samples, both of which were collected from shallow wells/piezometers, contained concentrations of LAA >10 µm greater than the MCL (see **Table 5-16b**). The samples from piezometer BH-01A-2 (7.7 MFL, collected on May 21, 2015) and piezometer BH-03A-1 (12 MFL, collected on April 19, 2015) contained LAA levels above the MCL. Both piezometers were installed as part of the KDID geotechnical investigation that occurred in 2014; with BH-01A-2 installed within the fine tailings impoundment and BH-03A-1 installed within the up-gradient, central portion of the KDID embankment (see **Figure 5-3**). Elevated LAA levels in these two samples are thought to be related to suspended sediment in the water at the time of sampling, given that the other samples collected in 2015 from both piezometers (BH-01A-2, 1.4 MFL on April 19, 2015 and BH-03A-1, 1.5 MFL on May 19, 2015) had significantly lower LAA levels. In addition, sampling pump issues were noted during the April 2015 sampling in BH-03A-1. The pump had to be removed and replaced in the well prior collection of the sample. It is also noted that none of the other shallow wells/piezometers located down-gradient from piezometers BH-

[6] "Total" is used to define all the countable LAA structures recorded during the TEM analysis (i.e., all structures with length ≥0.5 µm).

01A-2 and BH-03A-1 contained LAA levels above the MCL. This indicates that significant down-gradient migration of LAA is not occurring within shallow groundwater.

As shown, in **Table 5-16b**, none of the bedrock groundwater samples contained concentrations of LAA above the MCL. This illustrates that although a downward vertical flow gradient (from overburden materials towards bedrock) is indicated in the vicinity of the KDID (see **Section 2.7.2**), no significant LAA-impacts in bedrock groundwater are indicated by the analytical data. **Figure 5-3** displays the spatial pattern of the maximum detected concentrations of LAA >10 µm in length in groundwater.

It has been demonstrated (see **Section 5.2.4**) that LAA levels in surface water are directly related to flow velocity. Given the low seepage velocity and natural filtration that typically occurs in porous aquifers, it is expected that very little transport of LAA would occur within groundwater. The general lack of significant LAA levels detected in groundwater samples collected over time supports this assumption.

5.2.3.1 Summary of the Nature and Extent of LAA in Groundwater

The data regarding LAA in the groundwater are summarized below.

- Only two of the 20 samples collected from shallow wells/piezometers contained concentrations of LAA greater than the MCL. Both are attributed to sediment (due to insufficient development and/or pump issues) in the piezometers.
- No impacts above the MCL in bedrock groundwater were observed.
- Given the low seepage velocity and natural filtration that typically occurs in porous aquifers, it is expected that very little transport of LAA would occur within groundwater.

5.2.4 LAA Concentrations in Surface Water, Sediment, and Pore Water

As described in **Section 4.2** and **Section 4.4**, the surface water and sediment samples collected during the various sampling phases/events were analyzed for a broad suite of analytes, including LAA and non-asbestos constituents. The following is a discussion of the nature and extent of LAA constituents in surface water, sediment, and pore water. For the purposes of evaluating nature and extent of LAA along the Kootenai River, surface water sample results collected as part of the OU4 RI also are included (CDM Smith, 2014a). The comprehensive surface water, sediment, and pore water analytical data summary for LAA is provided in **Appendix E**.

A summary of the LAA concentrations in surface water is provided in **Table 5-17a** (by surface water area) and **Table 5-17b** (by station). All surface water LAA sampling locations are presented on **Figure 4-1a**. Note that the 10 surface water sample results collected using a syringe for free fiber analysis during Phase IV, Part B are not included in the summary of results below because the collection method varied from the standard sampling methods for all other surface water samples. The results for the free fiber analysis are located in **Appendix E**.

Tables 5-18a and **5-18b** present the summary statistics (detections by Bin, number of detections, etc.) for LAA results and analysis type (**Panel A**: PLM-VE and **Panel B:** PLM-Grav, if a coarse fraction was present) for sediment samples by surface water area and by station, respectively. All sediment LAA sampling locations are presented on **Figure 4-3a**. Sediment data using LAA (PLM-VE) are used for discussion purposes herein and are presented on **Figures 5-4b** and **5-4c**.

The watersheds of Fleetwood Creek, Carney Creek, and Rainy Creek, as well as the Rainy Creek discharge into the Kootenai River are shown on **Figure 2-5a**. An evaluation of each stream reach in the OU3 Study Area and the Kootenai River is presented below to describe the concentration, distribution, and potential sources of LAA in the surface water and sediment. As shown on **Tables 5-17a** and **5-17b**, total LAA was detected in all of the water bodies within the OU3 Study Area at maximum levels that ranged from 1.3 MFL (Kootenai River) to 1,200 MFL (Tailings Pond area). The following discussion presents surface water data for LAA fibers >10 µm, which is the standard for comparison with the MCL of 7 MFL.

As discussed in **Sections 4.2.6** and **4.2.8**, pore water samples were collected during the Phase V Part B investigations to support the ecological risk assessment. LAA concentrations in pore water samples are provided in **Appendix E**. All pore water LAA sampling locations are co-located with sediment sampling locations as presented on **Figure 4-3a** and the pore water results are discussed in **Section 5.2.4.5**.

5.2.4.1 Fleetwood Creek

This evaluation of Fleetwood Creek surface water and sediment includes sample data from Fleetwood Creek (sample locations FC-1 and FC-2) and Fleetwood Pond (sample location FC-Pond). Surface water data for maximum LAA concentrations (>10 µm) per sample location are presented on **Figure 5-4a**.

Fleetwood Creek Surface Water. The three Fleetwood Creek sampling locations, as well as time series graphs of LAA concentrations and flow rates, are shown in **Figure 5-5a**. A general correlation between flow rate and LAA concentrations can be seen at the sample locations FC-1 and FC-2. Flow data are not applicable at FC-Pond because flow is expected to be negligible in the pond. As shown on **Table 5-17a**, of the 46 surface water samples collected within Fleetwood Creek (including the FC-Pond) from three stations, the concentrations of LAA >10 µm range from 0 MFL to 289 MFL with a mean of 8.7 MFL. The sample result of 289 MFL, collected on September 12, 2008, is suspect as it is an order of magnitude higher than all other samples collected at that sample location (see graph for FC-Pond in **Figure 5-5a**). The DSR (CDM Smith, 2016) notes that the higher result in this sample could be attributable to higher amounts of sediment in this sample as a consequence of sample collection methods using a peristaltic pump and tubing. Therefore, if this sample is discounted, the maximum concentration of LAA >10 µm is 28 MFL (also at FC-Pond). All other LAA concentrations at FC-Pond are less than or equal to 7 MFL.

Figure 5-5b shows the summary statistics and the elevation of each sampling location in Fleetwood Creek (also presented in **Table 5-17b**). The maximum concentrations of LAA >10 µm collected in surface water from upstream to downstream sample locations in Fleetwood Creek are as follows:

- FC-1: 0.92 MFL
- FC-Pond: 289 MFL (as discussed above, this result is likely due to a sample collection anomaly and is not considered representative of surface water concentrations in FC-Pond)
- FC-2: 3.1 MFL

Based on the data presented in **Table 5-17b** and shown in **Figure 5-5b,** MCL exceedances for LAA occur only at sampling station FC-Pond. LAA MCL exceedances are recorded in six of 23 samples (26%) in FC-Pond, which is adjacent to and downslope of the coarse tailings. LAA entrained in runoff from the coarse tailings likely is the source of the higher LAA concentrations detected at FC-Pond and FC-2 locations (relative to the LAA concentrations in the upstream FC-1 location, which does not receive runoff from the coarse tailings). The higher LAA concentrations in the FC-Pond surface water relative to the upstream and downstream sampling locations may indicate that LAA accumulates in the pond, possibly as a result of the negligible flow rates in the pond relative to the stream, which allows the suspended LAA to settle in the pond. The concept that LAA concentrates in FC-Pond relative to the stream is supported by the sediment data discussed below (i.e., LAA concentrations also are higher in the FC-Pond sediment samples relative to the stream). It also is likely that the higher LAA concentrations in the coarse tailings adjacent to the pond relative to the LAA concentrations in the coarse tailings closer to the FC-2 sampling location directly influence the LAA concentrations in the surface water in FC-Pond and FC-2 (see **Figures 5-1a** and **5-4a**).

The slope between the sampling stations in Fleetwood Creek is generally uniform with a slight increase in slope between FC-Pond and FC-2. This increase in slope may impact the higher concentrations of LAA at FC-2 due to increased energy and erosion that would be associated with higher flow velocities.

Fleetwood Creek Sediment. As shown on **Tables 5-18a, Panel A** (by surface water area) and **5-18b, Panel A** (by station), a total of 22 sediment samples were collected along Fleetwood Creek and analyzed for fine-fraction (PLM-VE) LAA from nine sample locations. The maximum LAA concentrations (PLM-VE) from upstream to downstream sediment sample locations within Fleetwood Creek are as follows:

- FC-1: Bin B1 (>ND to <0.2%)
- FC-Pond: Bin C (up to 4%)
- FC-2: Bin B1 (>ND to <0.2%)

All LAA sample results (PLM-VE) for FC-1 and FC-2 are either Bin A (ND) or Bin B1 (trace; detected LAA <0.2%). Samples in the Fleetwood Creek Pond ranged from Bin B1 (>ND to <0.2%) to Bin C (≥1%). A total of 15 sediment samples were collected within FC-Pond and two samples were Bin B1 (trace; detected LAA <0.2%), nine samples were Bin B2 (≥0.2% to <1%), and four samples were Bin C (≥1%). All four Bin C sample results were collected from either FC-Pond (three samples) or FC-POND-1 (one sample), which are in close proximity to each other near the southern bank of the pond nearest the stream outlet (see **Figure 5-4b**). The FC-Pond location has the highest mean concentration at 2% by percent mass, whereas both FC-1 and FC-2 have mean concentrations of 0.1% by percent mass. Too few samples were collected at all other FC-Pond sample locations (i.e., FC-POND 1, FC-POND 2, etc.) to accurately calculate a mean by percent mass value.

As with the surface water data discussed above, the source of the LAA detected in the sediment likely is the coarse tailings adjacent to the Fleetwood Creek. The higher LAA concentrations in the Fleetwood Creek Pond relative to the stream sampling locations likely are a result of the difference in flow-rate between the pond and the creek (which allows LAA to settle out in sediments in the pond), or due to the higher LAA concentrations in the coarse tailings near the pond.

5.2.4.2 Summary of the Nature and Extent of LAA in Fleetwood Creek Surface Water and Sediment

The data regarding LAA in Fleetwood Creek surface water and sediment are summarized below.

- MCL exceedances for LAA in surface water only occur at sampling station FC-Pond, which is adjacent to and downslope of the coarse tailings. The highest surface water concentration in FC-Pond of is 28 MFL. (The sampling result of 289 MFL is suspected to be anomalous due to sampling bias.)
- LAA entrained in runoff from the coarse tailings likely is the source of the higher LAA concentrations detected in surface water and sediment at FC-Pond and FC-2 locations (relative to the LAA concentrations in the upstream FC-1 location, which does not receive runoff from the coarse tailings).
- The higher LAA concentrations in the FC-Pond surface water and sediment relative to the upstream and downstream sampling locations may indicate that LAA accumulates in the pond, possibly as a result of the negligible flow rates in the pond relative to the stream, which allows the suspended LAA to settle in the pond. The variable LAA concentrations in the coarse tailings may also influence the detected LAA concentrations in the surface water and sediment in Fleetwood Creek.

5.2.4.3 Carney Creek

This evaluation of Carney Creek surface water and sediment includes sample data from the creek, Carney Pond, and several seeps that discharge near the base of the waste rock piles located to the north of Carney Creek. Surface water data for maximum LAA concentrations (>10 µm) per sample location are presented on **Figure 5-4a**.

Carney Creek Surface Water.
Seeps. A total of 21 samples were collected from seven seep locations as shown on **Table 5-17a** and **Figure 4-3a**. The concentrations of LAA >10 µm in these seep surface-water samples ranged from 0 MFL to 32 MFL, with a mean of 3.4 MFL. The highest mean LAA concentrations were detected at seep locations CCS-1 (mean LAA concentration of 12 MFL), CCS-6 (mean LAA concentration of 5.8 MFL), and CCS-14 (mean LAA concentration of 3.2 MFL). LAA concentrations also were higher in sediment samples collected at locations CCS-1 and CCS-6 (see **Table 5-18b, Panel A**; sediment results are discussed below). However, LAA concentrations were elevated in the sediment samples collected at locations CCS-8, CCS-9, and CCS-16, whereas the LAA concentrations in the surface water samples collected at CCS-8, CCS-9, and CCS-16 were relatively low (maximum detected LAA concentrations at these locations ranged from 0.05 MFL to 1.2 MFL, respectively). This indicates that there is not a consistently strong correlation between LAA concentrations in the surface water and sediments collected from the same seep locations.

Creek and Pond. The five Carney Creek sampling locations (including Carney Pond, CC-Pond), as well as time series graphs of LAA concentrations and flow rates, are shown in **Figure 5-6a**. A general correlation between flow rate and LAA concentrations can be seen at sample location CC-2. The limited data set at CC-1, CC-3A, and CC-3B preclude meaningful evaluation, but are suggestive of a correlation between flow rate and LAA concentrations. Flow versus LAA concentration relationships were not evaluated at the CC-Pond sampling station because flow in the pond is expected to be negligible. As shown on **Table 5-17a**, of the 72 surface water samples

collected within the creek (including within CC-Pond) at five stations, the concentrations of LAA >10 µm range from 0 MFL to 26 MFL with a mean of 1.9 MFL. The sample with the maximum concentration of LAA (26 MFL) was collected on September 20, 2011 at CC-2. Because this concentration did not correspond with an increase in flow rate at CC-2, this location was resampled on November 9, 2011, which resulted in a concentration of 0 MFL therefore, the 26 MFL result is considered anomalous and may be a result of sediment in the sample from sample collection methods. Therefore, discounting the 26 MFL result, the maximum concentration of LAA >10 µm is 7.5 MFL (also at CC-2).

Figure 5-6b shows the sampling locations, summary statistics, and the elevation of each sampling location for Carney Creek. The maximum concentrations of LAA >10 µm collected from upstream to downstream sample locations within Carney Creek are as follows:

- CC-3B: 0.12 MFL
- CC-3A: 1.9 MFL
- CC-1: 0.44 MFL
- CC-Pond: 6.6 MFL
- CC-2: 26 MFL (as discussed above, this result is likely due to a sample collection anomaly and is not considered representative of surface water concentrations at CC-2 as confirmed by the opportunistic sample collected on November 9, 2011).

Based on the data presented in **Table 5-17b** and shown on **Figure 5-6b**, MCL exceedances for LAA occur only at sampling station CC-2, located near the confluence with Lower Rainy Creek. LAA MCL exceedances are recorded in only three of 39 samples (8%) in CC-2. LAA concentrations in surface water increase between CC-1 and CC-Pond and continue to increase between CC-Pond and CC-2. Several factors likely account for this observed increase in LAA >10 µm including:

- Upper Carney Pond is in contact with the toe of the waste rock pile along the entire north perimeter and the slope to the south of the creek near upper Carney Pond is composed of native glacial till material (MWH, 2016a).
- Segments of lower Carney Creek below Carney Pond were observed to be confined on both sides by native till material, which contains naturally occurring LAA (MWH, 2016a).
- Mica flakes were observed during the site reconnaissance (MWH, 2016a) in the vicinity of CC-2. Mica is commonly collocated with LAA.
- Multiple seeps with elevated LAA concentrations flow into Carney Creek.
- Settling of LAA transported into the pond from upstream reaches. The higher LAA concentrations in the CC-Pond surface water relative to the upstream sampling locations suggests that LAA accumulates in the pond, possibly through settling of LAA transported to the pond from upstream reaches. Although flow rates were not measured in the pond, it is expected that the flow rate in the pond is negligible compared to the flow rates in the stream.
- The slope between CC-Pond and CC-2 is higher than the rest of the reach (see **Figure 5-6b**) which may attribute to the higher concentrations of LAA at CC-2 due to increased energy and erosion (of both the waste rock pile and native glacial till materials) that would be associated with higher flow velocities. LAA may be accumulating in CC-Pond from contributions of upstream sources as well as from

the waste rock pile and the native glacial till materials (sediment data are discussed below).

Carney Creek Sediment.

Seeps. As shown on **Tables 5-18a, Panel A** (by surface water area) and **5-18b, Panel A** (by station), a total of 21 sediment samples were collected and analyzed for fine-fraction (PLM-VE) LAA from seven seep sample locations along Carney Creek. The LAA concentrations in the seep sediment samples included:

- Bin B1 (trace; detected LAA <0.2%): 2 samples from 2 different locations
- Bin B2 (≥0.2% to <1%): 7 samples from 5 different locations
- Bin C (≥1%): 12 samples from 5 different locations

The highest (i.e., Bin C) fine-fraction (PLM-VE) LAA detections were located at CCS-1, CCS-6, CCS-8, CCS-9, and CCS-16.

Creek and Pond. As shown on **Tables 5-18a, Panel A** and **5-18b, Panel A**, a total of 37 sediment samples were collected and analyzed for fine fraction LAA in sediment (PLM-VE) from nine Carney Creek sample locations (including Carney Pond). The maximum fine fraction (PLM-VE) LAA concentrations from upstream to downstream sediment sample locations within Carney Creek are as follows:

- CC-1: Bin C (7%)
- CC-Pond: Bin C (10%)
- CC-2: Bin B2 (≥0.2% to <1%)

One of the 20 fine fraction LAA sample results for CC-1 is Bin B2 (≥0.2% to <1%) and the remaining 19 samples are Bin C (≥1%). All three fine fraction LAA sample results for CC-2 are either Bin B1 (trace; detected LAA <0.2%) or Bin B2 (≥0.2% to <1%). Samples in Carney Pond ranged from Bin B1 (trace; detected LAA <0.2%) to Bin C (≥1%). A total of 14 sediment samples were collected from six distinct locations within Carney Pond (see **Figure 5-4b** for sediment sample locations) and seven samples were Bin B1 (trace; detected LAA <0.2%), three samples were Bin B2 (≥0.2% to <1%), and four samples were Bin C (≥1%). All four Bin C sample results within Carney Pond were collected from either location CC-Pond (three samples) or CC-POND-1 (one sample), which are both along the northern bank adjacent to the waste rock pile. CC-Pond has the highest mean concentration at 6% by mass, whereas CC-1 and CC-2 have mean concentrations of 4% and 0.5% by mass, respectively.

As with the surface water data discussed above, the source of the LAA detected in the sediment in the Carney Creek and Carney Pond samples likely has multiple sources (e.g., presence of mica flakes, which are commonly collocated with LAA in the creek, seep contributions, contact with the waste rock pile, and/or native glacial till material). The higher fine fraction (PLM-VE) LAA in the sediment in Carney Pond relative to the stream sampling locations likely are a result of the difference in flow-rate between the pond and the creek (which allows LAA to settle out in sediments in the pond), or due to contact with waste rock or native alluvial fill materials.

The material surrounding Carney Creek (and surrounding Lower Rainy Creek as discussed below) is predominantly composed alluvial and glacial type deposits, which consist of light to dark, greenish-gray, fine to coarse sand and silty sand with gravel of varying lithologies, and with visible

mica flakes (MWH, 2016a). Naturally occurring LAA within the glacial deposits would also be expected to contribute to LAA in surface water along Carney Creek.

5.2.4.4 Summary of the Nature and Extent of LAA in Carney Creek Surface Water and Sediment

The data regarding LAA in Carney Creek surface water and sediment are summarized below.

- MCL exceedances for LAA in surface water occur only at sampling station CC-2, located near the confluence with Lower Rainy Creek. LAA MCL exceedances were recorded in only three of 39 surface water samples in CC-2. It is unlikely that the highest surface water concentration in CC-2 of 26 MFL is representative of true concentrations at this location and likely due to sampling error. Elevated LAA concentrations also were detected in several seep surface water samples.
- LAA concentrations were measured at progressively higher levels in surface water between CC-1, CC-Pond, and CC-2. Several factors are likely influencing the LAA concentration levels in Carney Creek including: contributions of LAA from the naturally occurring surficial geology, portions of Carney Creek and Carney Pond contacting the waste rock piles, contributions form seeps that discharge from the base of the waste rock piles, LAA accumulating in Carney Pond, and erosional effects as a result of the steeper slope along this reach.
- Fine-fraction LAA was detected in all sediment samples collected from the seep, creek and pond sampling locations in the Carney Creek drainage. As with the surface water, the source of the LAA detected in the sediment in the Carney Creek and Carney Pond samples likely has multiple sources (e.g., presence of mica flakes in the creek, seep contributions, contact with the waste rock pile and native glacial till material, changes in flow velocity between the creek and pond).
- The detected LAA concentrations in the surface water and sediment samples collected at the seep locations were among the highest detected in the OU3 Study Area. This suggests that waste rock piles (which overlie the seeps) may have the most significant mine-related impacts to OU3 Study Area surface water and sediment with regards to LAA concentrations. Naturally occurring geologic materials also may be a source of detectable LAA in Carney Creek.

5.2.4.5 Rainy Creek

Rainy Creek includes four distinct areas that will be discussed independently due to their varied location, LAA concentrations, and potential sources of LAA contributing to sample concentrations. These areas include: Upper Rainy Creek, Tailings Pond Area, KDID Toe Drains, and Lower Rainy Creek. East Tub Gulch is a tributary drainage that contributes flow to Lower Rainy Creek and is discussed in this section as well. Other potential sources of LAA in Rainy Creek include mine waste, which was reportedly placed into Rainy Creek prior to initiation of the wet mill process, and naturally occurring materials within the creek bed. The nature and extent of LAA in surface water and sediment will be discussed in each of these areas separately. This section also includes a discussion of the pore water sampling performed in Rainy Creek as described in **Sections 4.2.6** and **4.2.8.** Surface water data for maximum LAA concentrations (>10 µm) per sample location are presented on **Figure 5-4a**.

Upper Rainy Creek Surface Water. The three Upper Rainy Creek sampling locations (URC-1, URC-1A, URC-2) and the associated time series graphs of LAA concentrations and flow rates are shown on **Figure 5-7a**. No correlation between flow rate and LAA concentrations is evident at

URC-1 (not shown on **Figure 5-7a** because all surface water concentrations were non-detect) or URC-1A. This is attributable to a lack of impact from mining activities and naturally occurring LAA at these sampling locations. Correlation between flow rate and LAA concentrations can be seen at sample location URC-2. As shown on **Table 5-17a**, of the 48 surface water samples collected within the Upper Rainy Creek at three locations, the concentrations of LAA >10 µm range from 0 MFL to 6.6 MFL with a mean of 0.21 MFL.

Figure 5-7c shows the sampling locations, summary statistics, the maximum and mean concentrations, and the elevation of each sampling location for Upper Rainy Creek. The maximum concentrations of LAA >10 µm collected from upstream to downstream sample locations within Carney Creek are as follows:

- URC-1: 0 MFL
- URC-1A: 0.05 MFL
- URC-2: 6.6 MFL

Based on the data presented in **Table 5-17b** and shown in **Figure 5-7c,** no MCL exceedances for LAA occur along Upper Rainy Creek. LAA concentrations increase with proximity to disturbed areas of the mine and with distance from the headwaters. An increase in LAA concentration is evident between URC-1A and URC-2. The slope between sample location URC-1A and URC-2 does not appear to be a factor in contributing to higher concentrations of LAA at URC-2, since the grade between these two sampling points is gradual. URC-2 has elevated LAA concentrations when compared to upstream sampling points, which is potentially indicative of disturbance due to mining activities. The creek also may be intercepting naturally occurring materials with higher concentrations of LAA.

Upper Rainy Creek Sediment. As shown on **Table 5-18a, Panel A** (by surface water area) and **Table 5-18b, Panel A** (by station), a total of 10 sediment samples were collected and analyzed for fine fraction LAA (PLM-VE) from three sample locations in Upper Rainy Creek (see **Figure 5-4b)**. The maximum LAA concentrations from upstream to downstream sediment sample locations within Upper Rainy Creek are as follows:

- URC-1: Bin A (ND)
- URC-1A: Bin B1 (trace; detected LAA $\leq$0.2%)
- URC-2: Bin B2 ($\geq$0.2% to <1%)

Three of the four sample results for URC-2 are Bin B1 (trace; detected LAA <0.2%), while the fourth sample is Bin B2 ($\geq$0.2% to <1%). Samples in URC-1A ranged from Bin A (ND) (2 samples) to Bin B1 (trace; detected LAA <0.2%) (1 sample). All three URC-1 samples were Bin A (ND). URC-2 has the highest mean concentration at 0.3% by mass, whereas URC-1 and URC-1A have mean concentrations of 0.03% and 0.1% by mass, respectively.

Similar to the surface water data at URC-2 discussed above, the source of the LAA detected in the sediment at URC-2 is potentially indicative of disturbance due to mining activities and the creek may be intercepting naturally occurring materials with higher concentrations of LAA.

Tailings Pond Area Surface Water. The four Tailings Pond Area sampling locations (UTP, TP, TP-Overflow, and TP-Overflow-A) as well as a time series graph of LAA concentrations and flow rates for TP-Overflow are shown in **Figure 5-7a**. A correlation between flow rate and LAA concentrations is evident at TP-Overflow. Flow data is not applicable at the UTP and TP sampling

locations as they are located in the Tailings Ponds where flow is expected to be negligible relative to the adjacent streams. TP-Overflow-A does not have recorded flow data due to lack of water. As shown on **Table 5-17a**, of the 74 surface water samples collected within the Tailings Pond Area, the concentrations of LAA >10 µm range from 0 MFL to 50 MFL with a mean of 4.8 MFL.

Figure 5-7c shows the sampling locations, surface water summary statistics, the max and mean concentrations, and the elevation of each sampling location in the Tailings Pond Area. The maximum concentrations of LAA longer than 10 µm in length collected from upstream to downstream sample locations within the Tailings Pond Area are as follows:

- UTP: 4.5 MFL
- TP: 50 MFL
- TP-Overflow: 0.79 MFL
- TP-Overflow-A: 0 MFL

Based on the data presented in **Table 5-17b** and shown in **Figure 5-7c,** MCL exceedances for LAA in the Tailings Pond Area surface water occur only at sampling location TP. LAA MCL exceedances are recorded in 11 of 56 samples (20%) in sample location TP. The maximum LAA concentrations at sample location TP reduced during the years it was sampled with the maximum recorded concentration at sample location TP in the year 2008 at 50 MFL of LAA >10 µm. This was followed by sampling in 2011, 2012, and 2015 with maximum concentrations of LAA >10 µm of 28 MFL, 19 MFL, and 3.5 MFL, respectively. It should be noted that the Former Mine Area had relatively low spring runoff volumes in 2015. However, these reductions in concentrations at sample location TP could be a result of cleaner sediments being flushed down both Upper Rainy Creek and Fleetwood Creek covering the more highly impacted sediment materials within the Tailings Pond. The key factor likely influencing the historically elevated concentrations of LAA >10 µm at sample location TP is its historical use as a tailings pond for the mine and its location at the base of the coarse tailings pile.

Tailings Pond Area Sediment. As shown on **Tables 5-18a, Panel A** (by surface water area) and **5-18b, Panel A** (by station), a total of 38 sediment samples were collected and analyzed for fine fraction LAA (PLM-VE) in sediment from 19 sample locations (see **Figure 5-4b**). On average two samples were taken from each sample location. All sample results had detections; 14 samples were Bin B1 (trace; detected LAA $\leq$0.2%), 19 samples were Bin B2 ($\geq$0.2% <1%), and five samples were Bin C ($\geq$1%). The Bin C detections were spread out across the pond on both the northwest (1.5% at TP and 2% at TP-4) and the southeast banks (2% at TP-3) as well as near the middle of the pond (2% at TP-7 and 1% at TP-10).

Similar to the surface water data discussed above, the key factor likely influencing the concentration of LAA in sediment at the Tailings Pond Area is its historical use as a tailings pond for the mine and its location at the base of the coarse tailings pile.

KDID Toe Drains Surface Water. A total of 70 surface water samples were collected from 12 KDID toe drain locations (sample locations D-1 through D-12 shown on **Figure 5-4a**). As shown on **Tables 5-17a** and **5-17b,** the concentrations of LAA >10 µm in these surface water samples ranged from 0 MFL to 0.41 MFL, with a mean of 0.022 MFL (all well below the MCL). The low levels of LAA in the KDID Toe Drains and in Lower Rainy Creek just below the KDID are likely due to combination of low permeability materials in the impoundment and contribution of un-impacted groundwater to toe drain flow. Inflow of groundwater into both the KDID Toe Drains and

Lower Rainy Creek just below the KDID would be expected to reduce LAA concentrations within the toe drain water.

The KDID embankment materials and fine tailings have low hydraulic conductivities compared to underlying alluvial materials. Consequently, the primary source of water in the toe drains during low or base flow conditions is likely the alluvium beneath the fine tailings materials. To better understand the flow regime within and around the KDID, surface water flow measurements were made within all of the creeks and toe drains in and around the KDID in spring 2015 (this is the subject of a forthcoming report). Based on flow measurements, flow rates increase by more than 50% in most instances in Rainy Creek below the KDID compared to the combined flows from Upper Rainy and Fleetwood Creeks. These data indicate that this interval, just below the KDID, is likely a gaining portion of Lower Rainy Creek during high flow periods. Further evidence of this are the multiple seeps and locations of standing water observed in the Rainy Creek Valley between the KDID and the Mill Pond during springtime. Flows measured in Lower Rainy Creek just below the Mill Pond (LRC-2) are approximately the same as flows measured in Lower Rainy Creek just above the confluence with the Kootenai River (LRC-6) over the spring 2015 sampling period, indicating a relatively small contribution from runoff from the lower portion of the drainage basin during this timeframe. It should be noted that there were no significant (more than 0.3 inch as measured at Libby Ranger Station) precipitation events recorded within this sampling period so surficial runoff is expected to be a relatively minor contribution to the measured surface flows.

Based on the results of the geochemical evaluation of surface water and groundwater (see **Section 2.9**) and on the above findings, groundwater is expected to be a significant contributor to flow both in the KDID Toe Drains and in Lower Rainy Creek below the KDID. It has been demonstrated that LAA levels in surface water are directly related to flow velocity. Given the low seepage velocity and natural filtration that typically occurs in porous aquifers, it is expected that very little transport of LAA would occur within groundwater. The lack of significant LAA levels detected in groundwater samples (see **Section 5.2.3**), supports this assumption. Therefore, inflow of groundwater into both the KDID Toe Drains and Lower Rainy Creek just below the KDID would be expected to reduce LAA concentrations in these areas and within the toe drain water.

KDID Toe Drains Sediment. No sediment samples were collected at the toe drain locations.

East Tub Gulch Surface Water. East Tub Gulch is tributary drainage located to the northwest of Lower Rainy Creek, which enters Lower Rainy Creek downstream of LRC-5 (see **Figures 4-1a**, **5-7b**, and **5-7c**). The ponds at the mouth of this creek are referred to herein as the East Tub Gulch Ponds. It should be noted that U.S. Geological Survey (USGS) maps reference Tub Gulch as a drainage located to the west of Rainy Creek, discharging directly into the Kootenai River, and located outside of the Rainy Creek drainage basin. The small tributary drainage northwest of Lower Rainy Creek has been referenced as East Tub Gulch herein to differentiate it from the USGS map showing Tub Gulch, and to account for previous documents referring to the tributary creek Tub Gulch.

A total of 12 surface water samples were collected from two locations in East Tub Gulch and analyzed for LAA; one in East Tub Gulch creek (East-TGC) and one in the East Tub Gulch pond (East-TGP) (see **Tables 5-17a** and **5-17b**). The concentrations of LAA >10 µm in these 12 surface water samples ranged from 0 MFL to 0.78 MFL, with a mean of 0.17 MFL (all well below the MCL). These results suggest that surface water in East Tub Gulch is not adversely impacted by historical mining activities or the presence of mine wastes, and that the East Tub Gulch drainage is not contributing significant amounts of LAA to Lower Rainy Creek.

East Tub Gulch Sediment. No sediment samples were collected in East Tub Gulch.

Lower Rainy Creek Surface Water. The 11 Lower Rainy Creek sampling locations, as well as time series graphs of LAA concentrations and flow rates for locations with flow data, are shown in **Figures 5-7a** and **5-7b**. A general correlation between flow rate and LAA concentrations can be seen in graphs with sufficient data for evaluation (e.g., TP-TOE1, LRC-2, LRC-6, etc.). Flow data is not applicable at the Mill Pond (MP) sampling location because flow is expected to be negligible relative to the adjacent streams. As shown on **Table 5-17a**, of the 263 surface water samples collected within the creek (including the pond) from the 11 locations, the concentrations of LAA >10 µm range from 0 MFL to 66 MFL, with a mean of 3.0 MFL.

Figure 5-7c shows the sampling locations, summary statistics, the max and mean concentrations, and the elevation of each sampling location for Lower Rainy Creek. The maximum and mean concentrations of LAA >10 µm collected from upstream to downstream sample locations within Upper Rainy Creek are presented below respectively:

- TP-TOE1: 1.6 MFL and 0.35 MFL
- TP-TOE1A: 0.25 MFL and 0.074 MFL
- TP-TOE2: 1.2 MFL and 0.4 MFL
- MP: 10 MFL and 1.1 MFL
- LRC-1: 7.5 MFL and 1.1 MFL
- LRC-2: 9.0 MFL and 1.7 MFL
- LRC-2A: 4.2 MFL and 2.9 MFL
- LRC-3: 2.6 MFL and 1.2 MFL
- LRC-4: 8.3 MFL and 3.4 MFL
- LRC-5: 13 MFL and 3.9 MFL
- LRC-6: 66 MFL and 6.9MFL

Based on the data presented in **Table 5-17b** and shown in **Figure 5-7c,** MCL exceedances for LAA occur in 25 of 263 samples (10%) from TP-TOE1 to LRC-6. Six of the 11 Lower Rainy Creek sampling locations have results with MCL exceedances. In general, the mean concentration of LAA in surface water increases with distance from the KDID.

A comparison of LAA concentration test results and surface water flow rates at LRC-2 and LRC-6 indicates a general correlation between higher flow rates and LAA concentrations above the MCL, particularly at LRC-6.

Evaluation of the maximum concentrations of LAA measured indicates a possible increase or additional contribution of LAA in surface water between LRC-5 and LRC-6. It should be noted that slopes along the alignment of Rainy Creek are flatter above LRC-4 (typically between 1% and 5% grade), begin to increase in slope between LRC-4 and LRC-5, and are steepest between LRC-5 and LRC-6 (typically between 5% and 10% grade, but up to 19.5% in places). This indicates that the higher LAA readings at LRC-6 are related to increased energy and erosion that would be associated with higher flows.

Lower Rainy Creek Sediment. As shown on **Tables 5-18a, Panel A** (by surface water area) and **5-18b, Panel A** (by station), a total of 58 sediment samples were collected and analyzed for fine fraction LAA (PLM-VE) from 14 sample locations (two at the toe of the KDID, six at the Mill Pond, and six along the length of Lower Rainy Creek) (see **Figure 5-4b** for locations). The results

indicated detections of LAA in all samples; 11 samples were Bin B1 trace; detected LAA <0.2%), 17 samples were Bin B2 (≥0.2% to <1%), and 30 samples were Bin C (≥1%). The Bin C detections were spread out along the length of Lower Rainy Creek. The highest mean concentration at 10% by mass occurred at TP-TOE2.

During the Vermiculite Removal operation conducted in 2012 and the summer of 2013, vermiculite material was noted in what was classified as "native soils" that extended to the banks of Lower Rainy Creek. LAA-bearing materials in sediment and within native soils adjacent to Lower Rainy Creek would be expected to contribute to LAA in surface water during higher flow periods.

The material surrounding Carney and Lower Rainy Creeks is predominantly composed of similar alluvial and glacial type deposits as those observed in the test pit investigation program (MWH, 2016a). Light to dark, greenish-gray, fine to coarse sand and silty sand with gravel of varying lithologies and with visible mica flakes were observed in the creek bed over the length of Lower Rainy Creek. In addition, based on field observations, Lower Rainy Creek appears to be down-cutting into underlying glacial material. Naturally occurring LAA within the glacial deposits would be expected to contribute to LAA in surface water along this stretch of Rainy Creek.

Vermiculite materials were also observed in discrete piles, embankment fills at the Mill Pond and East Tub Gulch ponds, general fill materials (particularly down-gradient of the KDID), within pipe backfill and road fill, and in overbank and alluvial deposits along the majority of Lower Rainy Creek. All of these vermiculite materials (which may be collocated with LAA-bearing materials), in addition to the naturally occurring materials within the basin, would be expected to have the potential to contribute LAA to surface water.

Rainy Creek Pore Water. Pore water samples were collected during the Phase V Part B investigations to support the ecological risk assessment. The pore water inside the Whitlock-Vibert box (Pore Water [In]) and gravel pore water (outside the box) (Pore Water [Out]) were measured as discussed in **Section 4.2.6**. LAA concentrations in pore water samples are provided in **Appendix E**. All pore water LAA sampling locations are co-located with sediment sampling locations as presented on **Figure 5-4b**.

For Pore Water [In], samples were collected from LRC-2, LRC-4, LRC-5, URC-2, and NSY-RI. LAA >10µm ranged from 0.63 MFL to 485 MFL in the LRC locations with a mean concentration of 47 MFL, 0 MFL to 1.8 MFL in the URC location, and) MFL to 1.7 MFL in the NSY reference location. Total LAA concentrations ranged from 5 MFL (LRC-2) to 3,434 MFL (LRC-4) in the LRC locations with a mean concentration of 299 MFL, 0 MFL to 22 MFL in the URC location, and 0 MFL to 21 MFL in the NSY reference location.

For Pore Water [Out], samples were collected from LRC-2, LRC-4, and LRC-5. LAA longer than 10µm in length ranged from 13 MFL to 415 MFL with a mean concentration of 201 MFL and total LAA concentrations ranged from 242 MFL to 2,700 MFL with a mean concentration of 1315 MFL. The total LAA concentrations increased in a downstream direction from LRC-2 to LRC-5; however, the LAA >10µm did not exhibit this same increasing trend.

It should be noted that pore water sample concentrations were highly variable across replicate samples and across samples collected during the sample durations. The variability of the results is potentially due to the difficulties noted in the sample collection process, which resulted in the presence of variable amounts of sediment in the pore water samples (CDM Smith, 2016).

5.2.4.6 Summary of the Nature and Extent of LAA in Rainy Creek Surface Water and Sediment

The data regarding LAA in Rainy Creek surface water and sediment are summarized below.

General Findings

- It can be generally concluded that flow rate and creek slope directly affect LAA concentrations in surface water.
- Pond sediments (Fleetwood Pond, Carney Pond, Tailings Pond, and Mill Pond) accumulate LAA due to a reduction in stream velocity, which allows the suspended LAA to settle. During storm events, re-suspension of LAA in sediments could potentially increase LAA concentrations in surface water.
- Both naturally occurring and mine disturbances are contributing to LAA concentrations in surface water and sediment.

Upper Rainy Creek

- No MCL exceedances for LAA in surface water occur along Upper Rainy Creek.
- LAA concentrations in surface water and sediment increase with proximity to the disturbed areas of the mine.

Tailings Pond Area

- MCL exceedances in surface water only occur at the TP pond sampling location in 20% of the samples collected.
- The maximum concentrations of LAA >10 µm in surface water are reducing in magnitude over time at sample location TP.
- The predominant factor likely influencing the elevated concentrations of LAA in sediment at the Tailings Pond Area and at surface water sampling location TP is its historical use as a tailings pond for the mine and its location at the base of the coarse tailings pile.

KDID Toe Drains

- The low levels of LAA in the KDID Toe Drains and in Lower Rainy Creek just below the KDID are likely due to an influx of unimpacted groundwater in the area. The lack of significant LAA levels detected in groundwater samples would be expected to reduce LAA concentrations in these areas and within the toe drain samples.

East Tub Gulch

- No MCL exceedances for LAA in surface water occur in East Tub Gulch.
- Surface water results suggest the East Tub Gulch drainage is not contributing significant amounts of LAA to Lower Rainy Creek.

Lower Rainy Creek

- Surface water sample analyses indicate exceedances of the MCL at various sampling locations occurring typically between the months of April and May, with maximum concentrations up to 66 MFL >10 µm at LRC-6. Samples obtained from LRC-6 contained more frequent exceedances of the MCL compared to the other Lower Rainy Creek locations. A comparison of LAA concentration test results and surface water flow rates at LRC-2 and LRC-6 indicates a general correlation between higher flow rates and LAA concentrations above the MCL, particularly at

LRC-6. The higher LAA concentrations at LRC-6 are related to increased energy and erosion associated with higher flows and steeper gradients.
- LAA-bearing materials in sediment and within native soils adjacent to Rainy Creek would be expected to contribute to LAA in surface water during higher flow periods.
- Lower Rainy Creek appears to be down-cutting into underlying glacial material. Naturally occurring LAA within the glacial deposits would be expected to contribute to LAA in surface water along this stretch of Rainy Creek.

5.2.4.7 Kootenai River

Kootenai River Surface Water. As shown on **Tables 5-17a** (by surface water area) and **5-17b** (by station), a total of 73 surface water samples were collected from 19 locations in the Kootenai River over a length of the river of approximately 33 miles (see **Figure 4-1a** and **Figure 5-4a**). Concentrations of LAA >10 µm in these surface water samples ranged from 0 MFL to 0.098 MFL, with a mean of 0.0063 MFL (all well below the MCL of 7 MFL).

Given the periodic elevated LAA levels that have been detected in surface water in Rainy Creek (discussed in **Section 5.2.4.5**), particularly during high flow events, Rainy Creek is a potential contributor to the presence of LAA in the Kootenai River. However, evaluation of the magnitude of the Rainy Creek contribution is confounded by the number of other potential sources of LAA within the Libby Site boundary that are not associated with the OU3 Study Area (including both historical and present-day activities). These other potential sources of LAA to the Kootenai River are briefly summarized below, depicted on **Figure 5-8**, and discussed in greater detail in **Section 2.11.1.3**. These include:

- Materials containing naturally occurring LAA, which have been observed within the Kootenai Valley.
- Operations at the former Export Plant (OU1), which was located immediately adjacent to the Kootenai River and managed vermiculite concentrate (over 350,000 tons during a 4-year period) for at least 30 years.
- The former Screening Plant at OU2, which managed over 6,600,000 tons of vermiculite concentrate on the east side of the Kootenai River. Concentrate was size-sorted and transported from this location by a conveyor bridge system across the river to the rail load-out system on the other side of the river adjacent to the Burlington Northern Rail Lines. Records indicate that the Screening Plant conveyor system collapsed into the Kootenai River (see **Figure 2-18**) in 1979 due to a train derailment where derailed freight cars hit the loading facility (Missoulian, 1979; Western News, 1979).
- Based on investigations and evaluations conducted as part of the OU4 RI, many properties adjacent to the Kootenai River required response actions due to LAA impacts, including the Bluffs area. Additionally, four creeks (Flower Creek, Granite Creek, Pipe Creek, and Libby Creek), all tributaries of the Kootenai River, required removal actions due to agency placement of LAA-impacted riprap along the stream channels. Subsequently, over 6,800 cubic yards and 115 truckloads of contaminated soil and riprap material were removed from the four Kootenai River tributaries.

The Rainy Creek confluence with the Kootenai River is over two miles from the Former Mine Area whereas the non-OU3 Study Area sources of LAA are significantly closer or, immediately adjacent to, the Kootenai River.

Sampling results indicate that LAA discharged into the Kootenai River from various sources has not resulted in significant LAA concentrations in the Kootenai River surface water, likely because the large volume of water flowing in the Kootenai River dilutes the LAA concentrations. A comparison of average flows in the Kootenai River and Rainy Creek helps put the potential contributions from Rainy Creek in perspective. Measured flow in Lower Rainy Creek averaged 2.82 cfs at the LR-6 ISCO station between the years 2008 and 2015, and flow in the Kootenai River averaged 10,988 cfs at the USGS station (#12,301,933) located below the Libby Dam during that same period (0.025% contribution).

Kootenai River Sediment. As shown on **Tables 5-18a** (by surface water area) and **5-18b** (by station), a total of 20 sediment samples were collected and analyzed for fine fraction LAA (PLM-VE) from 20 sample locations. The LAA concentrations in the Kootenai River sediment samples included:

- Bin A (ND): 3 samples from 3 different locations
- Bin B1 (trace; detected LAA <0.2%): 10 samples from 10 different locations
- Bin B2 (≥0.2% to <1%): 7 samples from 7 different locations

The mean concentration of fine fraction LAA in sediment samples was 0.3% in mass.

In order to assess the distribution of LAA along the length of the Kootenai River, the fine fraction LAA in sediment (PLM-VE) is presented below for specific reaches of the Kootenai River; from sample locations upstream of the mouth of Lower Rainy Creek (URK-2) to downstream sample locations at the City of Troy (#25). The Kootenai River is assessed geospatially to focus on possible relationships with potential LAA source locations (as discussed in **Section 2.11.1**). One sediment sample was collected from each of the following locations as shown on **Table 5-18b**. **Figure 5-4c** depicts each of the sample location.

Upstream of the Mouth of Lower Rainy Creek. There is one upstream location (UKR-2) where sediment was collected and analyzed. The result of the sediment sample collected at UKR-2 was Bin A (ND).

Immediately Downstream of Lower Rainy Creek Mouth. There were six locations (KR-9, KR-10, KR-11, KR-12, KR-13, and KR-20) immediately downstream of the mouth of Lower Rainy Creek. The mouth of Lower Rainy Creek passes through OU2, where the former Screening Plant and Flyway were located. The results of the LAA analysis for these samples ranged from Bin A (ND for KR-12) to Bin B1 (trace; detected LAA <0.2% for KR-9, KR-10, KR-11, and KR-13), to Bin B2 (≥0.2% to <1% for KR-20). There appears to be very little accumulation of LAA in sediment near the mouth of Lower Rainy Creek.

Vicinity of Libby Creek and OU1. There were three locations (KR-21, #15-Kootenai River, and #16-Kootenai River) where sediment samples were collected and analyzed along this reach of the Kootenai River. The results of the LAA analysis ranged from Bin A (ND for #15-Kootenai River) to Bin B2 (≥0.2% to <1% for #16-Kootenai River and KR-21).

Downstream of OU1 Past the City of Troy. There are 10 locations (from #17-Kootenai River thru #26-Kootenai River) downstream from OU1 where sediment samples were collected and analyzed. This reach of the Kootenai River includes OU4, where Flower Creek, and Pipe Creek discharge into the Kootenai River. The results of the LAA analysis ranged from: Bin B1

(trace; detected LAA <0.2% for #17-Kootenai River, #20-Kootenai River, #22-Kootenai River, #23-Kootenai River, #25-Kootenai River, and #26-Kootenai River) to Bin B2 (≥0.2% to <1% for #18-Kootenai River, #19-Kootenai River, #21-Kootenai River, and #24-Kootenai River).

5.2.4.8 Summary of the Nature and Extent of LAA in Kootenai River Surface Water and Sediment

The data regarding LAA in Kootenai River surface water and sediment are summarized below.

- Seventy-three surface water samples were collected and analyzed for LAA at sample locations spread out over approximately 33 miles of the Kootenai River, starting upstream (UKR-2) of the mouth of Lower Rainy Creek to the City of Troy (#25-Kootenai River).
- There were no exceedances of the LAA MCL in any of the 73 water samples analyzed; the highest concentration of LAA >10µm was 0.098 MFL, with a mean concentration of 0.006 MFL.
- Twenty sediment samples were collected and the analyzed by the PLM-VE method for fine fraction LAA at sample locations between upstream of the Rainy Creek Mouth (UKR) to approximately 8 miles north-northeast of the City of Troy (#26-Kootenai River).
- The highest concentration of fine fraction LAA in the sediment samples was Bin B2 (≥0.2% to <1%); the mean concentration of fine fraction LAA in the sediment samples was 0.3% in mass.
- There are a number of potential sources (e.g., OU1, OU2, conveyor system, riprap in creeks, and natural material) that have contributed LAA to the Kootenai River that are not associated with the OU3 Study Area (historical or present day activities).
- There appears to be very little accumulation of LAA in sediment near the mouth of Lower Rainy Creek, which further supports the idea that contribution of LAA to the Kootenai River from Lower Rainy Creek, is not significant.

5.2.5 LAA Concentrations in Tree Bark, Duff Material, Ash and Smoke from the Forested Areas

The following presents a discussion of the nature and extent of LAA in tree bark, duff material, ash, and smoke from the forested area samples. For the purposes of evaluating the extent of LAA, EPA has directed that levels of tree bark, duff material, and ash be presented in terms of "total" structures (referred to in the appended tables as "Total LAA") as well as PCME LAA. "Total LAA" includes both asbestos and non-asbestiform analogues of the same amphiboles and often includes structures with widths and lengths outside the range that can be detected by PCM (total includes all structures with a length ≥0.5 µm and an aspect ratio ≥3:1). Because the LAA toxicity values were developed from epidemiologic studies that employed PCM for exposure determinations, PCME LAA is the measure most relevant for the purposes of human health risk assessment. Tree bark, duff material, ash and smoke data from forested area samples are provided in **Appendix E**. PCME and total LAA data for tree bark and duff in the vicinity of the Former Mine Area are also presented on **Figures 5-9a** and **5-9b,** respectively. PCME and total LAA data for ash are presented on **Figures 5-11**. Additionally, a discussion of LAA in ash and smoke is also presented below.

Tree Bark. **Tables 5-19a** (by distance from Former Mine Area center) and **5-19b** (by station) present summaries of LAA results for tree bark from the forested area. **Figures 5-9a** and **5-9b**

present sample locations for the maximum PCME and maximum total LAA detections in tree bark, respectively. Data are presented as a surface loading estimate (i.e., Ms/cm^2 of bark surface area). The EPA made these estimations by assuming that all particulate found in each bark sample was present on the surface. Surface areas were estimated based on the gross geometry of each sample; neither bark layer thickness nor bark roughness was measured.

Maximum concentrations were observed in the predominant wind direction towards the northeast (refer to **Figures 5-9a** and **5-9b** OU3 Study Area Wind Rose inset). PCME LAA tree bark levels ranged from 0 to 4.9 Ms/cm^2 (SL15-04) and total LAA tree bark levels ranged from 0 to 32 Ms/cm^2 (WA-Near). Both locations were within two miles from the center of the Former Mine Area. Tree bark data were grouped on **Table 5-19a** into near (within two miles from the center of the Former Mine Area), intermediate (between two and six miles from the center of the Former Mine Area), and far (more than six miles from the center of the Former Mine Area) data sets. As shown on **Table 5-19a**, maximum PCME LAA levels for the near, intermediate, and far data groupings were 4.9 Ms/cm^2 (SL15-04), 1.9 Ms/cm^2 (SL45-07), and 0.77 Ms/cm^2 (Location #20, sample location from the Nature and Extent Study, USACE, 2014b), respectively. Maximum total LAA levels for the near, intermediate, and far data groupings were 32 Ms/cm^2 (WA-Near), 8.8 Ms/cm^2 (SL255-06), and 2.6 Ms/cm^2 (Location #20), respectively. Primarily, PCME LAA and total LAA levels are highest within approximately two miles of the center of the mine area, within a northeast-trending area that correlates with the prevailing wind directions, and to the south southwest, as presented on **Figures 5-9a** and **5-9b**. PCME LAA levels for tree bark samples collected four or more miles from the center of the Former Mine Area were all less than 1 Ms/cm^2. Total LAA levels for tree bark samples collected six or more miles from the center of the Former Mine Area were all less than 3 Ms/cm^2. (Note: 1 Ms/cm^2 and 3 Ms/cm^2 are not risk-based thresholds, but are arbitrarily selected values to illustrate the relative magnitude of fiber levels in bark.)

Duff Material. **Tables 5-20a** (by distance from Former Mine Area center) and **5-20b** (by station) present summaries of LAA results for duff material from the forested area. **Figures 5-9a** and **5-9b** present sample locations for the maximum PCME and maximum total LAA detections in duff material, respectively. Results for LAA were reported on a dry weight basis as million structures per gram (Ms/g-dw) of duff material. Generally, like tree bark, LAA concentrations were higher in duff samples collected within two miles of the center of the former mine area within a northeast-trending area that correlates with the prevailing wind directions. In addition, one area to the west (SL255-04) of the mine center showed a relatively high duff concentration.

PCME LAA in duff samples ranged in concentration from 0 to 572 Ms/g-dw (SL75-03; within two miles from the center of the Former Mine Area) and total LAA in duff samples ranged in concentration from 0 to 3,200 Ms/g-dw (SL45-01; within two miles from the center of the Former Mine Area). Duff data were grouped on **Table 5-20a** into near (within two miles from the center of the Former Mine Area), intermediate (between two and six miles from the center of the Former Mine Area), and far (more than six miles from the center of the Former Mine Area) data sets. As shown on **Table 5-20a**, maximum PCME LAA levels for the near, intermediate, and far data groupings were 572 Ms/g-dw (SL75-03), 505 Ms/g-dw (SL255-04), and 10 Ms/g-dw (Location #19) and the maximum total LAA levels for the near, intermediate, and far data groupings were 3,200 Ms/g-dw (SL45-01), 2,200 Ms/g-dw (SL255-04), and 64 Ms/g-dw (SL75-15), respectively. As shown on **Figure 5-9a**, none of the intermediate samples collected beyond 2.5 miles from the mine center contained PCME duff levels greater than 100 Ms/g-dw. As shown on **Figure 5-9b**, none of the intermediate samples beyond 4.5 miles from the mine center contained total duff levels greater than 150 Ms/g-dw (SL45-08). (Note: 100 Ms/g-dw and 150 Ms/g-dw are not risk-based thresholds, but are an arbitrary selected value to illustrate the relative magnitude of LAA levels in duff.)

Ash and Smoke. As discussed in **Section 4.6.5**, the Simulated Open Burning of Duff Material investigation was performed in EPA's OBTF to examine the potential for smoke emissions of LAA from the simulated open burning of duff samples collected from the OU3 Study Area. Prior to being burned, the duff starting material was analyzed for LAA as well as characterized as fuel using proximate and ultimate analyses (EPA, 2012i). These measurements were combined with measurements of the mass of duff material burned and various flow rates through the OBTF to generate an estimate of emission factors of fibers per PM (LAA fibers per mass of duff material burned divided by $PM_{2.5}$ in terms of mass emitted per mass of duff burned). The emission factors were combined to yield estimates of LAA fibers per mass of $PM_{2.5}$. This modified emission factor was used by the EPA to perform an exposure assessment of firefighting personnel and Libby residents that might be subjected to inhalation exposures of LAA fibers should a wildfire occur in the vicinity of the Former Mine Area (EPA, 2013e,f) (refer to **Section 6.1.2.6**). Under the conditions that were tested, fractions of PCME asbestos fibers (the asbestos fibers that meet the dimensional characteristics to be of health concern) ranging from 88% to 105% (average = 92%) appear to remain behind in the residual bottom ash after the burn was completed for the High Temperature burn conditions and fractions of PCME asbestos fibers ranging from 88% to 115% (average = 99%) appear to remain behind in the residual bottom ash after the burn was completed for the Low Temperature burns. Calculated results greater than 100%, were mostly due to analytical variability between sampled media (e.g., LAA in ash, LAA in duff). These observations suggest that the majority of the LAA fibers that are present in the duff do not become entrained into the air (smoke) emissions, but remain in the ash after the duff material is burned. The complete data for this investigation are presented in the *Emissions of Amphibole Asbestos from the Simulated Open Burning of Duff material from Libby, MT* (EPA, 2012i).

Additional tree bark, duff material, and ash samples have been collected and analyzed for LAA as part of specific ABS investigations for the OU3 Study Area RI. Because these samples were collected in conjunction with an ABS event, these data are discussed and presented below in the ABS **Section 5.2.7**.

5.2.5.1 Summary of the Nature and Extent of LAA in Tree Bark, Duff Material, Ash and Smoke

The data regarding LAA in tree bark, duff material, ash, and smoke are summarized below.

- Generally, PCME LAA levels were highest within tree bark and duff closest to the Former Mine Area and within a northeast-trending area that correlates with the prevailing wind directions. The mean PCME LAA levels for tree bark for the near, intermediate, and far data groupings were 0.74 Ms/cm^2, 0.22 Ms/cm^2, and 0.049 Ms/cm^2, respectively. The mean total LAA levels for tree bark for the near, intermediate, and far data groupings were 3.7 Ms/cm^2, 0.88 Ms/cm^2, and 0.17 Ms/cm^2, respectively.
- The mean PCME LAA levels for duff samples from the near, intermediate, and far data groupings were 141 Ms/g-dw, 18 Ms/g-dw, and 1.2 Ms/g-dw, respectively. The mean total LAA levels for duff samples from the near, intermediate, and far data groupings were 733.7 Ms/g-dw, 78.8 Ms/g-dw, and 6.8 Ms/g-dw, respectively.
- These data indicate LAA levels in tree bark and duff material tend to decrease with increasing distance from the Former Mine Area. The highest LAA levels are generally within 3 to 4 miles of the mine center.
- Results of controlled burn tests using LAA-impacted duff and firewood from the OU3 Study Area indicate the majority (>90%) of the LAA fibers present in the

media that is burned do not become entrained in air emissions, but are retained in the ash.

5.2.6 Ambient Air

As described in **Section 4.7**, ambient air samples were collected as part of the OU3 Study Area RI during fall 2007 and summer and fall 2008. LAA data in ambient air near the Former Mine Area were collected at 12 sampling stations (see **Figure 5-10**). One round of sampling (four sequential 5-day samples) was performed during the month of October 2007, and a second round (8 sequential 5-day samples) was collected in the interval from July to October 2008 (EPA, 2008b). The relatively long sampling duration (five days) was used to provide assurance that the samples were representative of long term average concentrations.

Ambient air sample results for LAA are provided in **Appendix E** and are summarized on **Table 5-21a** (by season) and **5-21b** (by station). Ambient air sample locations and maximum PCME LAA detections are shown on **Figure 5-10.**

As shown on **Tables 5-21a** and **5-21b**, PCME LAA levels in ambient air ranged from ND to 0.0056 structures per cubic centimeter (s/cc). As shown on the wind rose on **Figure 5-10**, the prevailing wind direction is to the northeast in the area. However, the highest mean concentration of PCME LAA in ambient air was reported at Station A-9 (0.0056 s/cc), which is located south, or upwind of the prevailing wind direction, from the mine. As shown on **Table 5-21a**, the mean PCME value for summer (0.0.00034 s/cc) was observed to be higher than the mean value for fall (0.000053 s/cc). The low levels of LAA detected in ambient air are presumed to be due to wind or other disturbances that released fibers from existing sources (soil, tailings, waste rock, outcrops, etc.) into air at the time of sampling.

The mean wind speed recorded at the OU3 Study Area meteorological monitoring station between 2007 and 2013 was 5.5 MPH, which is very similar to the mean wind speed measured during the ambient air sampling periods (5.0 MPH) during fall 2007 and summer and fall 2008. This illustrates that ambient air sampling was conducted during a period that closely represented typical wind conditions at the OU3 Study Area.

The *Final LAA HHRA* (EPA, 2015a) states that exposures to outdoor ambient air concentrations at the levels detected at the OU3 Study Area do not pose a significant risk to human health.

5.2.6.1 Summary of the Nature and Extent of LAA in Ambient Air

The data regarding LAA in ambient air are summarized below.

- PCME LAA levels in ambient air ranged from ND to 0.0056 s/cc.
- Ambient air sampling was conducted during a period that closely represented typical wind conditions at the OU3 Study Area.
- The *Final LAA HHRA* (EPA, 2015a) states that exposures to outdoor ambient air concentrations at the levels detected at the OU3 Study Area do not pose a significant risk to human health.

5.2.7 Activity-based Sampling (ABS) Air

Various investigations conducted within the OU3 Study Area have demonstrated that LAA is present in a variety of environmental media. However, the detection of LAA in a source medium, does not necessarily indicate that human exposures to LAA released to air during disturbances of these media would result in unacceptable exposures or risks (EPA, 2015a). The amount of LAA that could be released to air and inhaled depends on a number of factors, including the level of LAA in the source medium, the nature, intensity, and duration of the disturbance activity, meteorological conditions (e.g., relative humidity, wind direction, and speed), and conditions of the source medium (e.g., soil moisture content, vegetation coverage). Because of this, predicting the LAA levels in air based on measured LAA levels in source media is extremely difficult. For this reason, EPA recommends a source disturbance approach for investigating asbestos-contaminated Superfund sites (EPA, 2008g). This type of sampling is referred to as activity-based sampling (ABS) and involves the collection of personal air samples under "vigorous" source-disturbance conditions designed "to result in air concentrations that are at the high end of what could occur" (EPA, 2008g). The specific type and duration of disturbance activities used can be influenced by site-specific considerations. The air concentrations measured under these types of activities provide high-end estimates of potential inhalation exposure concentrations that can be used to calculate potential risks.

Personal air sampling was conducted as part of ABS events in the locations shown on **Figure 4-8**. ABS included collection of personal air samples during activities that were assumed to be consistent with possible activities that could occur in the OU3 Study Area. Air samples were analyzed for PCME LAA (samples collected during Phases III and IVA also included analysis for total LAA; these data are included in **Appendix E**, but are not discussed herein). During ABS, air monitors were worn by personnel that were engaged in a variety of source disturbance activities, and the resulting air filters were analyzed for LAA to determine the PCME LAA air concentration. These air concentrations were then used to estimate exposures for the purposes of evaluating potential human health risks (discussed in **Section 7.0**). It should be noted that personal air ABS concentrations varied considerably depending on the scenario, the intensity of the disturbance, location of the disturbance, level of LAA in the disturbed media, and meteorological conditions. Many of the ABS samples were indirectly prepared. As discussed previously (see **Section 3.5.1**), for the purposes of calculating EPCs for determining risk, an indirect preparation adjustment factor of 2.5 was used to account for the probable bias in air concentration estimates resulting from the use of an indirect preparation method. This same adjustment factor was utilized herein in order to allow a meaningful data summary to be presented.

Additional media were also collected in conjunction with several of the ABS events including ash, pre- and post-burn forest soil, tree bark, duff material, ambient air, and perimeter air samples. All ABS analytical data are provided in **Appendix E.**

The following sections present summaries of the ABS media results. Sample data are discussed herein in terms of ABS scenario and the distance from the center of the Former Mine Area, where the samples were collected:

- Near (within two miles from the center of the Former Mine Area),
- Intermediate (between two and six miles from the center of the Former Mine Area), and
- Far (greater than six miles from center of the Former Mine Area).

ABS data were utilized in the human health risk assessment, which is discussed in **Section 7.2**.

5.2.7.1 ABS Scenario – Recreational Hiking in the Forested Area

ABS air samples collected during this scenario were meant to simulate recreational visitor potential exposures while hiking in the forested area around the Former Mine Area (refer to **Section 4.8.1**). Samples were collected from near, intermediate, and far distances from the Former Mine Area Center and are summarized on **Tables 5-22a** and **5-22b**. Sample locations are presented on **Figure 4-8** and results are summarized below.

ABS Personal Air

- **Near:** A total of 12 ABS air samples were collected from ABS locations ABS-10 and ABS-14. The mean PCME LAA concentration for all Near hiking ABS air samples was 0.00050 s/cc.
- **Intermediate:** A total of 37 ABS air samples were collected from ABS locations ABS-03, ABS-05, ABS-06, ABS-07 and ABS-13. The mean PCME LAA concentration for all Intermediate hiking ABS air samples was 0.00065 s/cc.
- **Far:** A total of 26 ABS air samples were collected from ABS locations ABS-01, ABS-02, ABS-08, and ABS-11. The mean PCME LAA concentration for all Far hiking ABS air samples was 0.00023 s/cc.

For the Hiking scenario, LAA frequency of detections were highest in areas ABS-11 and ABS-14. The frequency of detection tended to be lowest in ABS areas located furthest from the mine. LAA was not detected in ABS samples in areas ABS-01, ABS-02, ABS-06, ABS-08, ABS-10, and ABS-13.

5.2.7.2 ABS Scenario – Lower Rainy Creek Hiking Including Antler Hunting

ABS air samples collected during this scenario were meant to simulate recreational visitor potential exposures while hiking (e.g., antler hunting) along LRC between Highway 37 and the Grace property line (refer to **Section 4.8.2**). Samples were collected from Intermediate distances from the Former Mine Area center and are summarized on **Tables 5-22a** and **5-22b**. The sampling location is presented on **Figure 4-8** (see area identified as "LRC Study Area") and results are summarized below in brief.

ABS Personal Air

- **Intermediate:** A total of 10 ABS air samples were collected along LRC with a mean PCME LAA concentration of 0.0093 s/cc.

5.2.7.3 ABS Scenario – Recreational ATV Riding in the Forested Area

ABS air samples collected during this scenario were meant to simulate recreational visitor potential exposures while riding ATVs in the forested area around the Former Mine Area (refer to **Section 4.8.1**). Samples were collected from near, intermediate, and far distances from the Former Mine Area Center and are summarized on **Tables 5-22a** and **5-22b**. Sample locations are presented on **Figure 4-8** and results are summarized below in brief.

ABS Personal Air

- **Near:** A total of 13 ABS air samples were collected from ABS locations ABS-10' and ABS-14. The mean PCME LAA concentration for all Near ATV ABS air samples was 0.0014 s/cc.

- **Intermediate:** A total of 36 ABS air samples were collected from ABS locations ABS-03, ABS-05, ABS-06, ABS-07, and ABS-13. The mean PCME LAA concentration for all Intermediate ATV ABS air samples was 0.00050 s/cc.
- **Far:** A total of 27 ABS air samples were collected from ABS locations ABS-01, ABS-02, ABS-08, and ABS-11. With the exception of ABS-11, which had one detected sample of 0.0060 s/cc, all ABS air samples were ND. The mean PCME LAA concentration for all Far ATV ABS air samples was 0.00022 s/cc.

For the recreational ATV riding scenario, LAA frequency of detection were highest in area ABS-10'. The frequency of detection tended to be lowest in ABS areas located furthest from the mine. LAA was not detected in ABS samples in areas ABS-01, ABS-02, ABS-05, ABS-06, ABS-08, ABS-13, and ABS-14.

5.2.7.4 ABS Scenario – Recreational Campfire Building

ABS air samples collected during this scenario were meant to simulate recreational visitor potential exposures while building campfires in the forested area around the Former Mine Area (refer to **Section 4.8.1**). Samples were collected from near, intermediate, and far distances from the Former Mine Area Center and are summarized on **Tables 5-22a** and **5-22b**. Sample locations are presented on **Figure 4-8** and results are summarized below in brief.

ABS Personal Air

- **Near:** A total of 10 ABS air samples were collected from ABS locations ABS-10' and ABS-14. The mean PCME LAA concentration for all Near Campfire Building ABS air samples was 0.0024 s/cc.
- **Intermediate:** A total of 40 ABS air samples were collected from ABS locations ABS-03, ABS-05, ABS-06, ABS-06', ABS-07, and ABS-13. The mean PCME LAA concentration for all Intermediate Campfire Building ABS air samples was 0.0022 s/cc.
- **Far:** A total of 26 ABS air samples were collected from ABS locations ABS-01, ABS-02, ABS-08, and ABS-11. The mean PCME LAA concentration for all Far Campfire Building ABS air samples was 0.00046 s/cc.

For the recreational campfire building scenario, LAA frequency of detection was highest in area ABS-10'. The frequency of detection was lowest in ABS areas located furthest from the mine. LAA was not detected in ABS samples in areas ABS-08, ABS-11, and ABS-14.

5.2.7.5 ABS Scenario – Residential Wood Harvester

ABS air samples collected during this scenario were meant to simulate potential exposures during non-commercial (e.g., residential) wood harvesting activities in the forested area in the OU3 Study Area (refer to **Section 4.8.2**). Scenarios included wood harvester driving, wood harvester cutting, felling and limbing, and cutting and stacking. Samples were collected from Intermediate and Far distances from the Former Mine Area center and are summarized on **Tables 5-22a** and **5-22b**. Although the study design was to perform ABS activities in ABS Area 10 (near), the location of the activities was modified at the time of collection to an area approximately one mile further downwind, closer to the Phase III ABS Area 6. Thus, to avoid potential confusion, the location of this area is referred to as ABS Area 6' (intermediate). Sample locations are presented on **Figure 4-8** and results are summarized below in brief.

ABS Personal Air

- **Intermediate**: A total of 60 ABS air samples were collected between the four different scenarios, listed above, from ABS locations ABS-06' and ABS-07. The mean PCME LAA concentration per scenario for these locations combined are 0.00013 s/cc (wood harvester driver), 0.0015 s/cc (wood harvester cutting), 0.0015 s/cc (felling and limbing), and 0.00070 s/cc (cutting and stacking). PCME LAA was detected in 14 of the 60 samples collected ranging in concentrations from ND to 0.0060 s/cc for the felling and limbing scenario in ABS-07.
- **Far:** A total of 32 ABS air samples were collected between the four different scenarios, listed above, from ABS location ABS-02 with a mean PCME LAA concentration per activity of 0 (wood harvester driver), 0.00025 s/cc (felling and limbing), and ND (cutting and stacking). The wood harvester cutting activity had less than three samples therefore a mean value was not calculated. PCME LAA was detected in only one of the 32 samples collected with a concentration of 0.0030 s/cc for the felling and limbing scenario in ABS-02.

For the residential wood harvester scenarios, LAA frequency of detection was highest in area ABS-06' for the cutting scenario. The frequency of detection tended to be lowest in ABS areas located furthest from the mine. LAA was not detected in ABS samples in areas ABS-06' (harvester felling and limbing and cutting and stacking scenarios), ABS-07 (harvester driving scenario), and ABS-02 (harvester driving, harvester cutting, and cutting and stacking scenarios).

5.2.7.6 ABS Scenario – USFS Worker Activities

ABS air samples collected during this scenario were meant to simulate potential exposures to USFS workers during activities routinely performed as part of the USFS land management responsibilities (refer to **Section 4.8.2**). Scenarios included trail maintenance, thinning trees, stand exam, cutting fire lines by hand, and cutting fire lines with heavy equipment. Samples were collected from intermediate and far distances from the Former Mine Area Center and are summarized on **Tables 5-22a** and **5-22b**. As noted above, although the study design was to perform ABS activities in area ABS Area 10 (near), the location of the activities was modified at the time of collection to be located about one mile further downwind, closer to the Phase III ABS Area 6. Thus, to avoid potential confusion, the location of this area is referred to as ABS Area 6' (intermediate). Sample locations are presented on **Figure 4-8** and results are summarized below in brief.

ABS Personal Air

- **Intermediate:** A total of 100 ABS air samples were collected between the five different scenarios, listed above, from ABS locations ABS-06' and ABS-07. The mean PCME LAA concentration per scenario for these locations combined are 0.00030 s/cc (trail maintenance), 0.00015 s/cc (thinning trees), 0.00051 s/cc (stand exam), 0.0069 s/cc (cutting fire lines by hand), and 0.0025 s/c (cutting fire lines with heavy equipment). PCME LAA was detected in 23 of the 100 samples collected ranging in concentrations from ND to 0.038 s/cc for the cutting fire lines by hand scenario in ABS-07.
- **Far:** A total of 50 ABS air samples were collected between the five different scenarios, listed above, from ABS location ABS-02 with a mean PCME LAA concentration per activity of 0.00030 s/cc (trail maintenance), 0.00030 s/cc (thinning trees), 0 (stand exam), 0.0045 s/cc (cutting fire lines by hand), and 0.0016 s/c (cutting fire lines with heavy equipment). PCME LAA was detected in 10 of the

50 samples collected ranging in concentrations from ND to 0.014 s/cc for the cutting fire lines with heavy equipment scenario in ABS-02.

For the USFS scenarios, LAA frequency of detection was highest in area ABS-07 for the cutting fire lines by hand scenario. The frequency of detection tended to be lowest in ABS areas located furthest from the mine. LAA was not detected in ABS samples in areas ABS-06' (worker trail maintenance, worker thinning trees, worker stand exam, cutting fire lines by hand scenarios) and ABS-02 (worker stand exam scenario).

5.2.7.7 ABS Scenario – Recreational Fishing

ABS air samples collected during this scenario were meant to simulate activities that might be performed by local river guides and recreational visitors and anglers on the sand bar (refer to **Section 4.8.3**). Samples were collected from a sand bar island in the Kootenai River immediately downstream of the confluence with Rainy Creek and are summarized on **Tables 5-22a** and **5-22b**. The sampling location is presented on **Figure 4-8** (see location identified as "Island") and results are summarized below in brief.

ABS Personal Air

- **Intermediate:** Two ABS air samples were collected on the sand bar; both samples were ND.

5.2.7.8 ABS Scenario – Commercial Logging

Unlike the ABS scenarios discussed above where only ABS air samples were collected, ABS air, tree bark, and duff material samples were collected and analyzed as part of the Commercial Logging ABS investigations. ABS air samples collected during this scenario were intended to simulate commercial logging activities in the forest proximate to the Former Mine Area (refer to **Sections 4.8.4 and 4.8.8**). Scenarios included site preparation, hand felling, hooking and skidding, mechanical processing, simulated milling/cutting slabs, and site restoration. Samples were collected from Near (in 2012) and Intermediate (in 2014) distances from the Former Mine Area Center, and are summarized on **Tables 5-19b** (tree bark), **5-20b** (duff), and **5-22a** and **5-22b** (ABS air). The 2012 samples collected from the Near distance were approximately 1.1 miles from the center of the Former Mine Area, whereas the 2014 samples collected from the Intermediate distance were approximately 4.5 miles from the center of the Former Mine Area. Sample locations are presented on **Figures 4-5a** and **4-8** and results are summarized below in brief by media type.

Tree Bark and Duff Material

- **Near:** Tree bark and duff material were collected from five near sample locations (CL-A through CL-E in which replicate analysis was performed three times on each sample, refer to **Figure 4-5a**). The highest tree bark surface loading levels and duff concentrations for LAA were from the trees collected from the near locations, with a mean PCME LAA concentration of 0.55 Ms/cm^2 and a mean total LAA concentration of 3.1 Ms/cm^2. The highest duff material concentrations for LAA also were from the duff material collected from the near locations, with a mean PCME LAA concentration of 100 Ms/g and a mean total LAA concentration of 384 MS/g. The maximum PCME LAA concentration for tree bark was 2.8 Ms/cm^2 collected from location CL-A and the maximum PCME LAA concentration for duff material was

194 Ms/g collected from location CL-B (refer to **Figure 4-5a**). These two locations are northeast of the Former Mine Area (i.e., in the prevailing wind direction), and are approximately 1.5 miles apart.

- **Intermediate:** Tree bark and duff material were collected from five intermediate sample locations (CL-F-1 through CL-F-5, refer to **Figure 4-5a**). Because fewer than three samples were collected for the tree bark and duff material Intermediate sample locations the mean was not calculated. Three of the five tree bark samples were ND, with the maximum PCME LAA surface loading level for tree bark of 0.054 Ms/cm^2 at CL-F-2. Four of the five duff material samples were ND, with the maximum PCME LAA concentration for duff material of 0.29 Ms/g at CL-F-5.

ABS Personal Air

- **Near:** A total of 13 ABS air samples were collected for the different scenarios, listed above, from the 2012 commercial logging ABS location with a mean PCME LAA concentration per activity of 0.0034 s/cc (hand felling) and 0.10 s/cc (skidding/hooking). All other activities had fewer than three samples, therefore, mean values were not calculated. Site preparation and cutting slabs ABS were not performed in the near location. PCME LAA was detected in all 13 of the samples collected ranging in concentrations from 0.00089 s/cc for the hand felling scenario to 0.16 s/cc for the skidding/hooking of timber scenario.
- **Intermediate:** A total of 29 ABS air samples were collected between the different scenarios, listed above, from the 2014 commercial logging ABS location with a mean PCME LAA concentration per activity of 0.0022 s/cc (hand felling) and 0.00065 s/cc (skidding/hooking). All ABS samples associated with cutting slabs pre-milling, mechanical processing, and milling were ND. The site restoration activity had fewer than three samples, therefore, a mean was not calculated. PCME LAA was detected in 3 of the 29 samples, ranging in concentrations from ND to 0.0079 s/cc for the site preparation scenario.

The commercial logging ABS near results indicate that the highest LAA air concentrations occur during scenarios that cause disturbances of duff and soil (e.g., skidding, bulldozing during site restoration activities), while scenarios that are associated mainly with disturbance of tree bark (e.g., sawing, processing, chipping) tend to produce lower LAA air concentrations. The ABS results also show the mean ABS air concentrations measured during the 2014 commercial logging investigation conducted in the Intermediate location are consistently lower than concentrations measured during the commercial logging investigation conducted in the Near location. In particular, air concentrations during skidding/hooking activities (which were the logging activities that resulted in the highest LAA releases in 2012) were more than 100 times lower in the 2014 investigation. This finding also is consistent with the results of the tree bark and duff materials sampled for the commercial logging scenarios in the near and intermediate locations, where the PCME LAA concentrations of both the tree bark and duff material were significantly lower the Intermediate locations than in the Near locations.

5.2.7.9 ABS Scenario – Wood-burning Stove Ash

ABS air samples collected during this scenario were meant to simulate a person emptying ash from a wood burning stove (refer to **Section 4.8.5**). ABS air, perimeter air, tree bark, and ash samples were collected and analyzed as part of this ABS investigation. Tree bark and ash samples were collected prior to the stove-emptying activity to provide information on LAA concentrations in materials selected for the burn. Perimeter air monitoring also was conducted during the wood burning and stove emptying events to verify that ABS activities did not result in

releases to air outside of the ABS area. Firewood was collected from dead trees at three locations at varying distances from the Former Mine Area: Near Mine (approximately one mile downwind of the Former Mine Area), Near Flower Creek (approximately two miles south of Libby and nine miles from the Former Mine Area), and Near Bear Creek (approximately 10 miles south of Libby and outside the current NPL boundary). Samples are summarized on **Tables 5-19b** (tree bark), **5-22a** and **5-22-b** (ABS air), **5-23** (ash), **5-25a** and **5-25b** (perimeter air). Firewood tree collection locations and maximum LAA detections for tree bark and ash are presented on **Figures 4-5b, 5-9c,** and **5-11**, respectively. The results are summarized below in brief by media type.

Tree Bark and Ash

- **Near Mine:** The highest tree bark surface loading levels for LAA were for the trees collected from the Near Mine location (WA-Near in which replicate analysis was performed three times on each sample), with a mean PCME LAA concentration of 0.92 Ms/cm^2 and a mean total LAA surface loading concentration of 6.1 Ms/cm^2. For ash samples (WA-Near in which replicate analysis was performed three times on each sample), the highest LAA concentrations were measured in ash following the burning of trees collected from the near location, with a mean PCME LAA concentration of 15 Ms/g and a total LAA surface loading concentration of 35 Ms/g.
- **Near Flower Creek**: The tree bark mean surface loading PCME LAA concentration for the Flower Creek location (WA-FC in which replicate analysis was performed three times on each sample) was 0.013 Ms/cm^2, and the mean total LAA concentration was 0.076 Ms/cm^2. The mean PCME LAA concentration in ash was 0 Ms/g and the total LAA concentration was 0.67 Ms/g (WA-FC in which replicate analysis was performed three times on each sample).
- **Near Bear Creek:** The tree bark mean surface loading PCME LAA concentration for the Bear Creek location (WA-BC in which replicate analysis was performed three times on each sample) was 0.0036 Ms/cm^2, and the mean total LAA concentration was 0.0088 Ms/cm^2. The mean PCME and total LAA concentrations in ash were both 1.8 Ms/g (WA-BC in which replicate analysis was performed three times on each sample).

PCME LAA and Total LAA mean levels for tree bark decreased as a function of distance from the Former Mine Area. These data also show that a significant amount of LAA remains in the ash after burning wood. This observation is consistent with trial burn experiments in woodstoves (Ward *et al.,* 2009) and in test burn chambers (EPA, 2012i), which indicated that the majority of LAA structures were retained in the ash when either wood or duff materials were burned under experimental conditions.

Perimeter Air

- A total of six perimeter air samples (three during the burn, and three during ABS) were collected to verify that ABS activities did not result in releases to air outside of the ABS area. All six perimeter air samples were ND for total LAA s/cc, refer to **Figure 5-12**.

ABS Personal Air The investigation consisted of three ABS events, where each event utilized firewood from the Near Mine, Near Flower Creek, and Near Bear Creek locations described above.

- **Near Mine:** The highest PCME LAA air concentrations in ABS air were for activities performed during the collection of ash generated from the burning of trees collected from the near location, with a mean ABS air concentration of 0.14 s/cc.

- **Near Flower Creek:** Mean PCME LAA air concentrations were 0.0074 s/cc for activities performed during the collection of ash generated from the burning of trees collected from the intermediate location.
- **Near Bear Creek:** Mean PCME LAA air concentrations were 0.0029 s/cc for activities performed during the collection of ash generated from the burning of trees collected from the far location.

The mean ABS air concentrations tended to decrease as a function of the tree collection distance from the mine. It should be noted that, a significant amount of variability in ABS air concentrations was noted between ABS events for each tree collection location (CDM Smith, 2013a). However, this variability was considered representative of the real variability that may be present in real exposure scenarios that may occur in Libby, and is not considered to be a data limitation (CDM Smith, 2013a).

5.2.7.10 ABS Scenario – Souse Gulch Campground Street Sweeper

ABS air samples collected during this scenario were meant to simulate workers driving street sweepers and water trucks used to wet/dampen sand and debris prior to being picked/swept up by the street sweepers within the Souse Gulch Campgrounds (refer to **Sections 4.6.7** and **4.8.6**). The USACE collected and analyzed ABS air, tree bark, and duff material samples as part of this ABS investigation. Tree bark and duff material were collected and analyzed for LAA to establish potential exposure to workers cutting down trees and disturbing duff material within the areas of the proposed Souse Gulch Campground renovations. Samples were collected from the Souse Gulch Campground area, which is an intermediate location from the Former Mine Area Center. Results are summarized on **Tables 5-19b** (tree bark), **5-20b** (duff), **5-22a** and **5-22b** (ABS air)**.** Sample locations are presented on **Figures 4-5a** and **4-8** and results are summarized below in brief by media type.

Tree Bark and Duff Material

- **Intermediate:** Tree bark and duff material were collected from sample locations within the Souse Gulch area (SG-DB stations; refer to **Figure 4-5a**). Because fewer than three samples were collected for the tree bark and duff material, the mean was not calculated. The maximum PCME LAA concentration for tree bark was 0.037 Ms/cm^2 at SG-DB7 and the maximum total LAA concentration was 0.20 Ms/cm^2 at SG-DB6. The maximum PCME LAA concentration for duff material was 5.7 Ms/g at SG-DB6 and the maximum total LAA concentration was 8.9 Ms/cm^2 at SG-DB7. The minimum PCME LAA concentration for tree bark and duff were both ND.

ABS Personal Air

- **Intermediate:** Five ABS air samples were collected from the Souse Gulch ABS locations during the street sweeping scenarios, no PCME LAA was detected during the Bobcat and Tennant equipment usage and the mean PCME LAA concentration was 0.00051 s/cc for the Tymco Regenrat equipment usage. Of the five ABS air samples collected, four were ND. The maximum PCME LAA concentration was 0.0015 s/cc.

5.2.7.11 ABS Scenario – Souse Gulch Wildfire

Opportunistic samples were collected during a natural wildfire, referred to as the Souse Gulch Wildfire, that occurred in the OU3 Study Area. ABS air, perimeter air, and ash samples were collected and analyzed as part of this investigation. ABS air samples were near firefighters fighting a natural fire and in the cockpit of the responding helicopter (refer to Section **4.8.7**). Opportunistic perimeter air samples were collected, including stationary monitors in the McGillivray Campground and a mobile station placed downwind of the fire and near responding ground-based firefighters. Ash samples were collected and analyzed to measure LAA concentrations in ash in the Souse Gulch burn area following the wildfire to provide information on the potential for subsequent exposures to human or ecological receptors. Samples were collected from the Souse Gulch and McGillivray Campground areas, which are intermediate locations from the Former Mine Area Center. Results are summarized on **Tables 5-21a** and **5-21b** (ambient air), **5-22a** and **5-22b** (ABS air), and **5-23** (ash). Sample locations are presented on **Figures 4-5a** and **4-8** and results are summarized below in brief by media type.

Perimeter Air

- **Intermediate:** Ambient air monitoring was conducted at one fixed station within the McGillivray Campground area (refer to **Figure 4-8;** location F-1) and at one mobile station. PCME LAA concentrations for both the fixed and mobile ambient air station samples were ND.

Ash

- **Intermediate:** Mean PCME LAA concentrations were observed in ash samples ranging from 15 Ms/g (Souse Gulch 1) to 26 Ms/g (Souse Gulch 2) with PCME LAA concentrations ranging from ND to 34 Ms/g. Mean Total LAA concentrations ranged from 51 Ms/g (Souse Gulch 1) to 75 Ms/g (Souse Gulch 2) with Total LAA concentrations ranging from 34 Ms/g to 90 Ms/g.

ABS Personal Air

- **Intermediate:** ABS air samples were collected during two different ABS scenarios; aircraft cockpit monitoring and firefighter ABS (refer to **Section 4.8.7**). The PCME LAA concentration result for the air craft cockpit monitoring was ND. For the firefighter ABS scenario, 15 samples were collected and the mean PCME LAA concentration was 0.00031 s/cc. Of the 15 firefighter ABS air samples collected, 13 were ND, with a maximum PCME LAA concentration of 0.0031 s/cc.

5.2.7.12 ABS Scenario – Nature and Extent Fire Line

ABS air samples collected during this scenario were meant to simulate firefighters cutting a fire line in the forested areas along the NPL boundary outside of the OU3 Study Area (refer to **Section 4.8.9**). Samples were collected from far distances from the Former Mine Area Center and are summarized on **Tables 5-22a** and **5-22b**. Sample locations are presented on **Figure 4-9** and results are summarized below in brief.

ABS Personal Air

- **Far:** A total of 60 ABS air samples were collected from 10 different ABS locations (2, 6, 19, 20, 22, 25, 32, 35, 40, and 46). PCME LAA was detected in seven of the 60 samples, ranging in concentrations from ND to 0.0023 s/cc in location 46. The overall mean PCME LAA concentration was 0.00017 s/cc.

No apparent spatial trends in these ABS concentration results were noted (CDM Smith, 2016). However, mean PCME LAA concentrations for these areas outside the NPL boundary were much lower than concentrations measured during similar ABS scenarios within the OU3 Study Area (see **Section 5.2.7.6**).

5.2.7.13 ABS Scenario – Slash Pile Burn

ABS air samples collected during this scenario were meant to simulate a forest worker creating a slash pile and then burning the slash pile (refer to **Section 4.8.10**). ABS air, tree bark, duff material, forest soil (pre- and post-burn), ash, and perimeter air samples were collected and analyzed as part of this ABS investigation. Prior to the burn, tree bark, duff material, and forest soil samples were collected to represent the materials included in the slash pile. One ash sample was collected from the burn area prior to conducting mop-up ABS activities for use in decision-making on potential mitigation measures in burn areas following a burn and soil samples were collected after the burn. Perimeter air samples were collected before, during, and after the burn to measure LAA concentrations in air at varying distances in close proximity to the burn area to provide information on the potential for offsite migration of LAA. Samples were collected from a near distance location from the Former Mine Area Center and are summarized on **Tables 5-12b** (pre-burn soil), **5-19b** (tree bark), **5-20b** (duff), **5-22a** and **5-22b** (ABS air), **5-23** (ash), **5-24** (post-burn soil), **5-25a** and **5-25b** (perimeter air). Sample locations are presented on **Figures 4-5a, 4-7b,** and **4-8**. Results are summarized below in brief by media type.

Tree Bark

- **Near:** Because fewer than three samples were collected for each of the tree bark sample locations the mean was not calculated. Three tree bark samples (SP15-TBark1, SP15-TBark2, and SP15-TBark3) were collected with PCME LAA concentrations ranging from 0.19 Ms/cm^2 to 0.78 Ms/cm2 and total LAA concentrations ranged from 1.9 to 5.5 Ms/cm^2.

Duff Material

- **Near:** Because fewer than three samples were collected for each of the duff material sample locations the mean was not calculated. Five duff material samples (SP15-Duff1 through SP15-Duff5) were collected with PCME LAA concentrations ranging from ND to 62 Ms/g and total LAA concentrations ranging from 12 Ms/g to 269 Ms/g.

Soil

- **Near**: Soil was collected pre-burn and post-burn and LAA was detected in all soil samples, with soil concentrations of Bin B1 (trace; <0.2%) to Bin B2 (<1%) in the fine ground fraction by PLM-VE. Trace levels of LAA also were present in the coarse fraction of all samples by PLM-Grav.

Ash

- **Near:** Ash sample mean PCME LAA concentrations were 482 Ms/g and mean total LAA concentrations were 2,555 Ms/g (sample IDs SP15-Ash1 through SP15-Ash3). The minimum PCME LAA concentration was 69 Ms/g and the maximum PCME LAA concentration was 698 Ms/g. The minimum total LAA concentration was 1729 Ms/g and the maximum total LAA concentration was 3392 Ms/g.

Perimeter Air

- **Near**: A total of 88 perimeter air samples were collected, 44 of which were analyzed for LAA. All of the pre-burn perimeter air samples were ND. During the burn, the LAA air concentrations tended to decrease with increasing distance from the burn area, with maximum PCME LAA concentrations ranging from 0.071 s/cc (at the west 50-foot monitor) to 0.0038 s/cc (at the west 200-foot monitor) . LAA was detected in only one of the post-burn perimeter air samples collected during the first day of post-burn monitoring (0.0038 s/cc at the north 50-foot monitor); all samples collected during the second day of post-burn monitoring were ND.

ABS Personal Air

- **Near:** A total of 36 air samples were collected, 18 of which were analyzed for LAA. LAA was detected in all of the personal ABS air samples collected during the slash pile construction and during dry and wet mop-up activities. In addition, with the exception of 2 samples, LAA was also detected in all of the personal ABS air samples collected during the slash pile burn. Mean PCME LAA concentrations ranged from 0.011 s/cc (during the burn activity) to 0.068 s/cc (during the wet mop-up activity). Because fewer than three samples were collected for the dry mop-up and the pile construction activities the mean values were not calculated. PCME LAA concentrations were highest during the dry mop-up activity (maximum PCME LAA concentration of 0.17 s/cc) and during the slash pile construction activity (maximum PCME LAA concentration of 0.19 s/cc) and lowest during the burn (maximum PCME LAA concentration of 0.028 s/cc).

5.2.7.14 ABS Scenario – Low-Intensity Prescribed Understory Burn

ABS air samples collected during this scenario were meant to simulate activities associated with a low-intensity prescribed understory burn (refer to **Section 4.8.11**). ABS air, tree bark, duff material, forest soil (pre- and post-burn), ash, and perimeter samples were collected and analyzed as part of this ABS investigation. Prior to the burn, tree bark, duff material, and forest soil samples were collected to represent the materials burned. One ash sample was collected from the burn area prior to conducting mop-up ABS activities for use in decision-making on potential mitigation measures in burn areas following a burn and soil samples were collected after the burn. Perimeter air samples were collected before, during, and after the burn to measure LAA concentrations in air at varying distances in close proximity to the burn area to provide information on the potential for offsite migration of LAA. Samples were collected from a near distance location from the Former Mine Area Center and are summarized on **Tables 5-12b** (pre-burn soil), **5-19b** (tree bark), **5-20b** (duff), **5-22a** and **5-22b** (ABS air), **5-23** (ash), **5-24** (post-burn soil), **5-25a** and **5-25b** (perimeter air). Sample locations are presented on **Figures 4-5a, 4-7b,** and **4-8**. Results are summarized below in brief by media type.

Tree Bark

- **Near:** Because fewer than three samples were collected for each of the tree bark sample locations the mean was not calculated. Four tree bark samples (B15-B1-T1 through B15-B4-T1) were collected with three PCME LAA concentrations of ND and one of 0.066 Ms/cm^2 surface loading. Total LAA concentrations ranged from ND to 0.67 Ms/cm^2 surface loading. The PCME LAA results were lower than those measured during the Slash Pile Burn Investigation.

Duff Material

- **Near:** Because fewer than three samples were collected for each of the duff material sample locations the mean was not calculated. Five duff material samples (B15-Duff1 through B15-Duff5) were collected with PCME LAA concentrations ranging from ND to 48 Ms/g and total LAA concentrations ranging from 5.7 Ms/g to 135 Ms/g. The PCME LAA results were lower than those measured during the Slash Pile Burn Investigation.

Soil

- **Near:** Soil was collected for both pre-burn and post-burn and LAA was detected in all soil samples, with all soil concentrations of Bin B1 (trace; <0.2%) in the fine ground fraction by PLM-VE. No samples had a coarse fraction of PLM-Grav.

Ash

- **Near:** The ash sample mean PCME LAA concentration is 179 Ms/g and mean total LAA concentration is 807 Ms/g (sample IDs B15-Ash1 through B15-Ash3). The minimum PCME LAA concentration was 54 Ms/g and the maximum PCME LAA concentration was 418 Ms/g. The minimum total LAA concentration was 362 Ms/g and the maximum total LAA concentration was 724 Ms/g. Results were lower than those measured during the Slash Pile Burn Investigation.

Perimeter Air

- **Near:** A total of 60 perimeter air samples were collected. All of the pre-burn perimeter air samples were ND. During the burn, the LAA air maximum PCME LAA concentrations ranged from 0.0039 s/cc (at the north 50-foot monitor) to 0.0058 s/cc (at the north 100-foot monitor) and 0.0039 s/cc (at the north 200-foot monitor). LAA was detected in only one of the post-burn perimeter air samples collected during the second day of post-burn monitoring (0.0019 s/cc at the north 50-foot monitor); all other post-burn samples were ND.

ABS Personal Air

Near: A total of 32 air samples were collected, 16 of which were analyzed for LAA. LAA was detected in all of the personal ABS air samples collected during the understory burn scenario activities. Mean PCME LAA concentrations were 0.078 s/cc (during the burn activity), 0.75 s/cc (during the dry mop-up activity), and 0.18 s/cc (during the wet mop-up activity). PCME LAA concentrations were highest during the dry mop-up activity and lowest during the burn. The dry mop-up activity yielded air concentrations that were approximately four times higher than the wet mop-up activity.

5.2.7.15 ABS Scenario – Mine Site Trespasser

ABS air samples collected during this scenario were meant to simulate potential exposures to trespassers who may enter the Former Mine Area (refer to **Section 4.8.12**). Scenarios included on- and off-road ATV riding, and rock hounding. Samples were collected from only near distances from the Former Mine Area Center and are summarized on **Tables 5-22a** and **22b**. Sample locations are presented on **Figure 4-8** and results are summarized below in brief.

ABS Personal Air

- **Near:** A total of 18 ABS air samples were collected during the rock hounding scenario with a mean PCME LAA concentration of 0.14 s/cc. PCME LAA was detected in 18 of the 18 samples collected during the rock hounding scenario, ranging in concentrations from 0.008 s/cc to 0.32 s/cc. A total of 18 ABS air samples were collected during the off-road ATV scenario with a mean PCME LAA concentration of 0.022 s/cc. PCME LAA was detected in 15 of the 18 samples collected during the off road ATV scenario ranging in concentrations from ND to 0.066 s/cc. A total of 24 ABS air samples were collected during the on road ATV scenario, from three different routes (A, B, and C), with a mean PCME LAA concentration of 0.0030 s/cc, 0.0024 s/cc, and 0.022 s/cc, respectively. PCME LAA was detected in 12 of the 24 samples collected during the off road ATV scenario ranging in concentrations from ND to 0.048 s/cc.

For the Mine Site Trespasser scenarios, LAA frequency of detection was 100% for the rock hound scenario. For the ATV riding scenarios the LAA frequency of detections was highest for the off-road riding vs. the on-road scenario. The frequency of detection for the on-road ATV scenario was highest along Route C.

5.2.7.16 Summary of ABS Results

Personal air ABS result concentrations span several orders of magnitude depending on the scenario, the intensity of the disturbance scenario, location of the disturbance, level of LAA in the disturbed media, and meteorological conditions. The personal air ABS concentrations tend to decrease with distance from the Former Mine Area, which is also consistent with the mean levels for both tree bark and duff material that also tend to decrease as a function of distance from the Former Mine Area. These ABS air data are used in the human health risk assessment (see **Section 7.2**) to evaluate potential exposures and risks from inhalation of LAA.

5.2.8 Tissues

Tissues. As discussed in **Section 4.14**, fillet samples for fish collected from the Mill Pond were analyzed for LAA by TEM. **Table 5-26** presents a summary of the fish tissue results; this table provides detailed information on each fish collected (species, length, weight), as well as the analysis results. Structure counts and tissue concentrations are presented based on both total LAA (all recorded structures) and LAA >10 µm, because this is the concentration metric that is used for the purposes of evaluating potential ingestion exposures. LAA was detected in each fish fillet sample and total LAA results ranged from 9.4E+03 to 6.4E+06 structures per gram of tissue on a wet weight basis (s/g, ww), with a mean concentration of 1.2E+06 s/g, ww. The mean concentration based on LAA >10 µm was 4.2E+04 s/g, ww.

Tissue samples from a mule deer hunted near the Former Mine Area also were analyzed for LAA by TEM. Tissue samples included inside shoulder and backstrap muscle samples (for assessing potential human health risks associated with the ingestion of LAA in game tissue) and other target organs, including the heart, liver, lung, kidney, and diaphragm. LAA was not observed in any deer tissue sample (refer to **Table 5-26**).

5.2.8.1 Summary of the Nature and Extent of LAA in Tissues

LAA fibers were present in the fillet tissues of fish collected from the Mill Pond, but LAA was not detected in any muscle or organ tissues of a mule deer that was hunted from within the OU3 Study Area.

6 CONTAMINANT FATE AND TRANSPORT

This section describes the processes affecting the fate and transport of LAA and non-asbestos constituents in the OU3 Study Area. The evaluation of LAA and non-asbestos constituent fate and transport is based on the OU3 Study Area physical characteristics, source characteristics, and the results of the LAA RI sampling investigations. Separate fate and transport discussions are presented below for LAA and non-asbestos constituents because there are fate and transport characteristics that are unique to each.

6.1 Fate and Transport of LAA

6.1.1 Source and Mechanism for Release

LAA occurs naturally in the environment and may be released to water and air from erosion and the weathering of natural deposits of LAA-bearing rocks. LAA also may be released to the environment when these natural deposits are disturbed, such as during mining operations. Asbestos is released to the environment from the crushing, screening, and milling of ore, the processing of asbestos products, the use of asbestos-containing materials, and the transport and disposal of asbestos-containing materials (ATSDR, 2001a). In the OU3 Study Area, historical mining, milling, and processing of vermiculite at the Former Mine Area, between 1920 and 1990, caused releases of LAA to the environment. Erosion of the exposed source rock, waste rock piles, and tailings also caused releases to the environment. Although the primary mechanism for release of LAA is no longer occurring (i.e., the crushing, screening, and milling of ore), varying levels of LAA remain in tailings, waste rock, and naturally occurring material (e.g., LAA-bearing glacial till).

6.1.2 Fate and Transport Mechanisms

Once asbestos fibers enter the environment, they tend to settle out of the air or water and deposit onto soil and sediment (EPA, 1979; Millette, 1979). The following subsections further address fate and transport mechanisms in these media at the OU3 Study Area.

6.1.2.1 Air

Once LAA fibers are released, the primary transport mechanism for fibers is by air, fibers will then be deposited to other locations and possibly onto other media (e.g., soil, water, tree bark, duff material). The rate at which asbestos particles are deposited likely depends on their size and aerodynamic characteristics. Jaenicke (1980) reported that submicron particles are removed rapidly "because of their large mechanical mobility and their attachment to larger aerosol particles." At the other end of the spectrum, the largest particles (~100 µm in diameter) are "removed quickly (in hours) because of the large sedimentation rate." Particles of intermediate size, ranging from 0.1 microns to several microns in radius exhibit the largest residence time. These are generic observations for generic particles, and the aerodynamics of LAA were not evaluated in this report.

Air transport of LAA near the Former Mine Area likely occurred during the active mining, milling, and processing activities, especially during the period when dry processing was performed (prior to 1974, see **Section 1.3**). After mining activities ceased (i.e., since 1990), it is possible that some suspension of LAA occurred during significant wind events, or ground-disturbing activities in the OU3 Study Area. The potential for suspension of LAA is greatest in the mining disturbed

area where source rock, mined materials, and tailings are exposed at, or near, the ground surface. However, based on ambient air monitoring conducted in these areas, LAA levels detected were not high enough to demonstrate significant LAA transport at levels that pose a significant human health risk.

It is possible that air can also transport LAA fibers that are present in LAA-impacted bark or duff when it burns, either during a forest fire or during burning of LAA-impacted bark in a fireplace or woodstove (see **Section 6.1.2.5**). However, as demonstrated during perimeter air monitoring during understory and slash pile burn ABS tests, LAA levels detected in smoke during these events were not high enough to pose a significant human health risk. It is also likely that fibers detected in air during these events were due to mechanical and other direct human disturbance of ash, rather than released in smoke during the burning of trees and duff. As further described in **Section 6.1.2.6** below, in burn chamber studies conducted by EPA (EPA, 2012i), the majority of LAA fibers that are present in duff when burned were shown to remain in ash and did not become entrained in air emissions.

The RI sampling results indicate that the areas with the relatively highest concentrations of LAA in the soil, tree bark, and duff away from the mined area generally are present within a northeast/southwest-trending area that correlates with the prevailing wind directions. This is demonstrated by the LAA impacted areas shown on **Figure 5-9a** and **5-9b**.

Additionally, an air dispersion and deposition model was created by Reax Engineering to be used in conjunction with collected sample data. The model was created using EPA's American Meteorological Society/EPA Regulatory Model (AERMOD) modeling system. The model report is included in **Appendix J**. The model was based on the previously conducted air dispersion modeling that CDM Smith performed for the site on behalf of EPA.

The Reax/Grace model was run initially without deposition to confirm that the model results were comparable with the EPA/CDM model. The Reax/Grace AERMOD analysis was found to be a more conservative model as discussed in the report. Observed differences are likely related to the differences in the weather data utilized.

The Reax/Grace model includes the use of a particle size distribution drawn from available historical data (references listed in the modeling report) allowing for particulate deposition to be enabled. This approach may more accurately reflect real conditions because it includes particulate deposition. Modeled deposition rates are provided only to illustrate the extent of potential historical deposition rates and are not indicative of current exposures or risks. The model output data are presented on **Figure 6-1**. As shown on **Figure 6-1**, the highest deposition rates are predicted near the Former Mine Area.

6.1.2.2 Water and Sediment

It is possible that LAA fibers may enter water bodies via air or erosion of soils, mine waste material, and sediments that contain LAA, or through contact with natural, LAA-bearing materials (e.g., bedrock outcrops or glacial material). In water, the distance that LAA fibers may travel from the point of origin likely depends on the surface chemistry and mineralogy of the fiber (EPA, 1979), and the flow rate.

After eroded LAA-bearing soils enter the water, LAA fibers may remain suspended in the water column even after soil particles have settled. However, Libby Site data suggest that LAA concentrations in water tend to increase when the level of turbidity increases (CDM Smith, 2014a).

This is consistent with published findings that indicate that asbestos concentrations were highest in water when turbidity levels were above approximately 0.2 NTUs (Logsdon, 1979). However, fiber interaction with natural organic matter may increase precipitation (ATSDR, 2001a; EPA, 1979). Studies have shown that asbestos fibers in water will adhere to algae, perhaps due to the positive surface charge of the fibers, which results in clumping and increased settling (Webber and Covey, 1991). Because there may be a range of asbestos fiber sizes in water, and settling time differs by size, there may be a vertical distribution of asbestos fibers in large bodies of water (Chatfield and Dillon, 1983). Even after settling, asbestos fibers in sediment may be re-entrained into water following sediment disturbances.

In the OU3 Study Area, surface runoff (and associated eroded materials) generally drains from the mine areas to the Fleetwood Creek and Carney Creek basins. LAA fibers entrained in these creek flows largely settle out in the streambed sediments, overbank deposits, or in the sediments in the impoundments along the drainage path (see **Section 5.2.4**). As discussed in **Section 5.2.4**, concentrations of LAA ranged widely in surface water samples collected in Fleetwood Creek, Carney Creek, LRC, and the Kootenai River (refer to **Figure 5-4a**). Other studies have shown that asbestos concentrations in surface water near natural chrysotile deposits in California are usually highest during or after rain events (Webber and Covey, 1991). At the Libby Site, surface water monitoring of streams near the mine show similar results; LAA concentrations in water tend to vary seasonally, with the highest concentrations reported in the spring during periods of runoff (CDM Smith, 2016). During periods of high flow (when LAA concentrations are generally highest in surface water), LAA fibers likely settle out in overbank deposits away from the main stream channel, or across the banks and shorelines of impoundments.

6.1.2.3 Groundwater

It has been demonstrated that entrainment of LAA in water is typically correlated with higher flow velocity. Given the low seepage velocity and natural filtration that typically occurs in porous aquifers, it is expected that very little transport of LAA would occur within groundwater. The general lack of significant LAA levels detected in groundwater samples collected over time supports this conclusion.

6.1.2.4 Soil

Movement of LAA fibers through soils or from soil to surface water occurs during surface runoff or erosion. Asbestos fibers in soil are fairly immobile, and fibers less than 2 µm in diameter will tend to move at the same rate as clays (EPA, 1979). LAA fibers in soil can become suspended in the air by activities that disturb the LAA entrained in soil. The release of LAA from soil to air depends upon many factors, including the soil moisture content (drier conditions tend to increase release), vegetation coverage and condition (plant cover will tend to decrease release), and the intensity of the disturbance activity (higher intensity activities will result in higher releases).

As discussed in **Section 5.2.2**, the highest concentrations of LAA in the OU3 Study Area soil samples were generally measured in samples collected near the mine area (samples collected from a road on one of the mine benches and waste rock samples contained the highest levels of LAA by PLM-VE). The LAA in the soil has the potential to be suspended in air or water if the soil is disturbed by an activity, or transported via runoff/erosion (refer to **Figure 5-1a**).

6.1.2.5 Tree Bark and Duff Material

Studies suggest that LAA fibers may also settle onto the ground surface and the outer surface of trees (bark) (Ward *et al.,* 2006 and 2012). Data on LAA levels on the bark surface of trees have been collected in the forested area near the Former Mine Area and within approximately one to two miles away from the NPL boundary. These data showed that tree bark surface loading levels of LAA tended to be relatively highest on trees collected closest to the mine, northeast of the mine center in the direction of prevailing winds, and southwest of the mine center along Rainy Creek (refer to **Figures 5-9a** through **5-9c**).

LAA fibers on the tree bark or in the duff can be lofted into the air during commercial logging or wood-gathering activities. When trees die or otherwise exfoliate the outer layers of bark, the bark is transferred to the forest floor. The LAA fibers on the bark of a dead tree or exfoliated bark from a living tree will become a component of the forest duff material, and will eventually be combined with the soil. For example, research conducted at the University of Montana on ponderosa pines within the southeastern Klamath Mountains found 34 to 49 percent of material within the upper layers of duff mounds beneath the trees consisted of sloughed bark (Garlough, 2010). Ponderosa pines are found in warmer, dryer areas of the OU3 Study Area; therefore, it can be assumed that similar amounts of sloughed bark contribute to the upper layer of duff materials in these areas. Like soil, the LAA in the duff material has the potential to mobilize if the duff material is disturbed by an activity or transported via runoff/erosion.

Bark sloughing or exfoliation is a widely observed phenomenon in woody plants and occurs as an active physiological process as well as a mechanical weathering process (Chang, 1954, Esau, 1965; Kramer and Kozlowski, 1960 and 1979; Addicott, 1982). Trees that germinated after mining activities ceased are expected to have significantly less LAA in bark. LAA on the bark of older trees is likely to diminish naturally, as the bark exfoliates and becomes entrained into the duff mound at the base of the tree. Similarly, the concentration of LAA in the materials contributing to the duff volume (e.g., exfoliated bark, falling branches, stems, leaves, needles, pine cones) is also likely to diminish naturally over time. Eventually, LAA fibers in the duff material are expected to be buried by un-impacted duff material, which will then decompose, thereby reducing the overall LAA concentrations in soil. The rates at which duff generation and decomposition occur are currently unknown for the OU3 Study Area, and have not been widely studied for a similar ecosystem; therefore, the rates of natural reduction of LAA in bark and duff cannot yet be predicted. Recently-collected bark and duff samples suggests this process occurs very slowly, on the order of decades.

6.1.2.6 Ash and Smoke

Studies have shown that asbestos fibers can become entrained in ash following the burning of asbestos-contaminated wood and duff (EPA, 2012i; EPA, 2013d; Ward *et al.,* 2009). The results of these studies indicate that the majority of LAA fibers remained in the ash following the combustion process. For example, in the EPA study (EPA, 2012i), an average of 92% to 99% of the asbestos fibers remained in the residual ash after the test burns. These results also suggest that the potential for LAA to be mobilized in smoke is insignificant. Similarly, perimeter air monitoring during understory and slash pile burn ABS showed that LAA levels in smoke were well below levels that may pose a significant human health risk. It is unknown whether these results would be representative of conditions that would be encountered in a large fire.

Following the burning of LAA-impacted bark and duff, the resulting LAA-impacted ash has the potential to mobilize if the ash is disturbed (e.g., due to physical disturbance such as firefighter dry mop-up activities, precipitation or wind events, or via erosional processes).

The EPA and others have conducted additional studies to simulate forest fire combustion of LAA-impacted biomass (EPA, 2012k; EPA, 2013e; EPA, 2013f). These reports are summarized below.

- *EPA Technical Memorandum. Subject: Simulation of Forest Fire Combustion of Amphibole Contaminated Biomass with Resultant Health Risk Assessment for Residents of Libby, Montana (EPA, 2012k).* This technical memorandum summarizes data and analysis that estimates asbestos air concentrations that may occur as a result of a forest fire in the OU3 Study Area. Results from this report were based on results of the EPA, 2012a study. Two scenarios were used (simulation of smoldering and flaming conditions) in the trials, resulting in the development of human health cancer risks and cancer hazard estimates. The final conclusions state, "Whether fires occur at a frequency of one every 70 years or two fires every 70 years at the vermiculite mine site, both cancer risks and non-cancer hazards are found to be below EPA targets."
- *EPA Evaluation of Impacts of Forest Fires That Occur in Operable Unit 3 on Air and Soil in Libby (EPA, 2013e).* This memorandum describes studies and calculations performed by EPA to estimate potential LAA exposures to residents in Libby associated with forest fires in the OU3 Study Area. Results summarized from this memorandum state, "…EPA has determined that exposures and health risks to residents in Libby are likely to be low, both from direct inhalation of fibers in air and by deposition of fibers to soil."
- *EPA Evaluation of Exposure to Firefighters in Operable Unit 3 (EPA, 2013f).* This memorandum describes calculations performed by the EPA to estimate potential LAA exposures to firefighters in the OU3 Study Area. EPA concludes, "Estimated exposure of firefighters in OU3 to LAA in smoke might exceed the OSHA standard for short times under worst case or high-end conditions, but typical short term and long term exposures are likely to be within OSHA limits."
- *Detailed TEM Results for Air Samples Collected During the Souse Gulch Wildfire (CDM Smith, 2016).* On July 28, 2013, a small fire in the Souse Gulch day-use area on Lake Koocanusa burned approximately 1.5 acres. Air samples were collected during the fire, including firefighter activity-based sampling (ABS, n=16), a mobile monitor, which ran for approximately four hours, a Libby Airport helicopter (approximately one-hour sample), and from the McGillivray campground (approximately 24 hours). TEM results showed that only two of 16 ABS samples measured LAA, with results near the sensitivity levels of the analysis.

From a fate and transport perspective, the results of the above studies demonstrate that the transfer of LAA to smoke from LAA-impacted biomass is insignificant relative to other fate and transport mechanisms. Additional modeling, particularly for a large-scale event, will need to be evaluated to contribute to these conclusions.

6.1.3 Contaminant Persistence

Asbestos fibers are non-volatile and insoluble. They may be transported and distributed by air and water and tend to persist under typical environmental conditions (ATSDR, 2001a). There are differences in the ability of different types of asbestos to persist in the environment. For instance, ASTDR concluded that chrysotile asbestos may degrade more readily than amphibole asbestos

under certain environmental conditions (e.g., acidic environments) (ATSDR, 2001a). Possible transformation and degradation for each environmental medium is discussed below.

Air. ASTDR has concluded that asbestos particles are not known to undergo any significant transformation or degradation in air (ATSDR, 2001a).

Water. Asbestos fibers are relatively stable in water and are not prone to significant chemical or biological degradation. However, some asbestos fibers may undergo chemical alteration and adsorb additional organic agents. In general, asbestos does not volatilize from water surfaces. In water, at low pH, chrysotile asbestos may undergo some dissolution, as magnesium hydroxide leaches from the outer brucite layer, but amphibole asbestos is expected to persist in aquatic environments with little change for long periods of time (ATSDR, 2001a).

Soil. In general, asbestos fibers are not known to undergo significant transformation or degradation in soil (ATSDR, 2001a).

6.2 Fate and Transport of Non-asbestos Constituents

6.2.1 Source and Mechanism for Release

Non-asbestos constituents such as metals and metalloids occur naturally in the environment and are released during erosion and the weathering of natural deposits of metal/metalloid-bearing rocks. The rate that metals/metalloids are released to the environment may be accelerated when these natural deposits are disturbed, such as during mining operations. Water that contacts exposed hillsides, waste rock piles, and mine tailings has the potential to mobilize (by eroding or leaching) metals/metalloids. As a result, metals/metalloids can become concentrated in depositional areas (e.g., in sediments), or dissolved or suspended in surface water or groundwater at concentrations.

Some chemicals used at the mine in the processing of vermiculite ore might also be present in on-site waste materials. Various reagents were used to facilitate the separation of higher quality ores from lesser quality ores. The reagents reported included #2 Diesel fuel, Armeen T (tallow alkyl amine), fluorosilicic acid, and lesser quantities of flocculants, defoamers, frothers, and other reagents. In addition, past use of the application of oil on mine roads as a dust control measure was reported (EPA, 2007b).

6.2.2 Fate and Transport Mechanisms

6.2.2.1 Soil and Sediment Transport

Soil constituents may be physically transported through mass wasting and erosion. Mass wasting is a general term for "*the dislodgement and downslope transport of soil and rock material under the direct application of gravitational body stresses*" (Bates and Jackson, 1997). Evidence of mass wasting in the OU3 Study Area includes the slumping and downslope movement of the waste rock piles. Erosion is the "*general process or group of processes whereby the materials of the Earth's crust are loosened, dissolved, or worn away, and simultaneously moved for one place to another, by natural agencies, which included weathering, solution, corrasion*[7]*, and transportation*" (Bates and Jackson, 1997). The primary mechanism of erosion in the OU3 Study

[7] Corrasion is a process of erosion whereby rocks and soil are mechanically removed or worn away by the abrasive action of solid materials moved along by wind, waves, running water, glaciers, or gravity.

Area is erosion by water (e.g., water flowing in streams, and precipitation and snowmelt runoff). Conceptually, as runoff water flows over and off exposed hillsides, waste rock piles, and mine tailings, the soil and rock particles (and the associated inorganic and organic constituents) can be transported and deposited on the ground surface, and in surface water channels and ponds. Deposition is dependent on sediment size, flow velocities, and stream-channel morphology. It is unlikely that wind erosion has a major role in moving soil and rock in the OU3 Study Area.

6.2.2.2 Surface Water and Groundwater Transport

In addition to acting to physically erode and transport soil and sediments as described above, surface water can dissolve and leach constituents from the source rock. The constituents can remain dissolved in the surface water flow, or precipitate out in down gradient locations (e.g., along stream banks or in pond sediments). Infiltrating surface water also can transport constituents to groundwater. Dissolved or suspended constituents in groundwater can flow down gradient within the groundwater system, or can discharge back to surface water at seep locations. Water also can move through the subsurface as interflow, which is the lateral movement of water in the unsaturated zone that first returns to the surface or enters a stream prior to becoming groundwater. Interflow within waste rock and tailings has the potential to transport constituents (either dissolved or suspended) to down-gradient seep or stream locations.

6.2.3 Contaminant Persistence

Inorganic, non-asbestos constituents (metals and metalloids) generally do not decay or biodegrade and will persist through time. Natural processes cause attenuation of metals/metalloids as they are transported along pathways away from the source areas. These processes include precipitation, sorption, dilution, and dispersion. Organic, non-asbestos constituents are somewhat less persistent (compared to metals/metalloids) as they are also subject to volatilization and bio-transformations. Eventually, the organic, non-asbestos constituents degrade to compounds such as carbon dioxide and water.

7 RISK ASSESSMENTS FOR LAA AND NON-ASBESTOS CONSTITUENTS

The EPA has evaluated the risks posed by LAA and non-asbestos constituents separately and a summary of the risk assessments for LAA and non-asbestos constituents are presented below.

7.1 RISK ASSESSMENT OVERVIEW

7.1.1 LAA Risk Assessments

The EPA prepared an initial screening-level human health risk assessment for exposure to LAA at the OU3 Study Area in 2011 (EPA, 2011c). The initial risk assessment was considered a screening-level assessment because not all of the data used in the assessment had been validated at the time (i.e., RI data collected through 2010), and because the EPA was in the process of, but had not yet completed, developing LAA-specific cancer and non-cancer toxicity factors. The screening-level risk assessment provided initial estimates of the levels of risk that may be associated with LAA exposure during a range of different types of human activities in the OU3 Study Area. In December 2014, the EPA released the final LAA-specific cancer and non-cancer toxicity factors (detailed below in **Sections 7.2.1 and 7.2.2**), and EPA finalized the *LAA HHRA* in 2015.

The final risk assessments for LAA are included in the following documents:

- The Final Site-wide Human Health Risk Assessment (for LAA) (EPA, 2015a; referred to throughout this report as the *Final LAA HHRA*) was issued in November 2015. The purpose of this report was to quantify potential human health risks from exposures to LAA at the Libby Site under current and reasonably anticipated future use. This risk assessment is summarized below in **Section 7.2** and a copy of the complete report is provided in **Appendix K**.
- The Final Site-wide Baseline Ecological Risk Assessment (for LAA) (EPA, 2014a; referred to throughout this report as the *Final Asbestos BERA*) was issued in December 2014. The purpose of this report was to describe the likelihood, nature, and extent of adverse effects on ecological receptors in all of the Libby Superfund OUs, including the OU3 Study Area, that result from exposure to LAA released to the environment as a result of past mining, milling, and processing activities at the OU3 Study Area. This risk assessment is summarized below in **Section 7.3** and a copy of the complete report is provided in **Appendix K**.

7.1.2 Baseline Risk Assessments for Non-Asbestos Constituents

The final risk assessments for non-asbestos constituents are included in the following documents (note that non-asbestos risk assessments only were performed for the OU3 Study Area and not the entire Libby Site):

- Final Human Health Risk Assessment for Non-Asbestos Contaminants – Operable Unit 3 – Libby Asbestos Superfund Site - Libby, Montana (CDM Smith, 2013b; referred to throughout this report as the *Final Non-Asbestos HHRA*). The purpose of this report was to quantify potential human health risks from exposures to non-

asbestos COPCs at the OU3 Study Area under current and future conditions. This risk assessment is summarized below in **Section 7.4** and a copy of the complete report is provided in **Appendix K**.

- Final Baseline Ecological Risk Assessment for Non-Asbestos Contaminants - Operable Unit 3 – Libby Asbestos Superfund Site - Libby, Montana (CDM Smith, 2013b; referred to throughout this report as the *Final Non-Asbestos BERA*). The purpose of this report was to describe the likelihood, nature, and extent of adverse effects on ecological receptors in the OU3 Study Area that result from exposure to non-asbestos constituents released to the environment as a result of past mining, milling, and processing activities at the OU3 Study Area. This risk assessment is summarized below in **Section 7.5** and a copy of the complete report is provided in **Appendix K**.

7.1.3 General EPA Risk Assessment Methods

As a general policy, the EPA uses the results of the baseline risk assessments to determine whether a release or threatened release poses potential risks to human health or the environment (ecological receptors) that may warrant remedial action and to determine if a site presents an imminent and substantial endangerment (EPA, 1991). In addition, the results of the baseline risk assessments may be used in concert with other factors to determine the appropriate remedial response. Risk management decisions generally take into account the sum of all the risks contributed by differing exposure scenarios, rather than simply evaluating each one independently.

A HHRA presents estimates of both cancer risks and non-cancer hazards that may result from exposure to contaminants. Cancer risk is defined as the probability that cancer will occur as a result of incremental lifetime exposure to non-asbestos constituents occurring at the site. Compound-specific cancer risks are computed for individual carcinogenic constituents. Total or cumulative cancer risks are computed by summing the compound-specific cancer risks for a given receptor.

Non-cancer hazard is expressed as a Hazard Quotient (HQ), which is estimated as the ratio of the constituent exposure (dose) over a period of time to a reference dose (a dose not expected to be associated with any appreciable non-cancer health effect). Cumulative and/or multi-media constituent exposures at a site are evaluated by summing constituent HQs to estimate a Hazard Index (HI). Because non-cancer effects are organ specific, further refinement of the HI can be accomplished by deriving target-organ-specific HIs (i.e., summing HQs only for those constituents that have similar target organs).

Where the baseline risk assessment indicates that a cumulative site risk to a receptor using reasonable maximum exposure assumptions for either current or future land use exceeds a cancer risk of 1E-04 (one additional cancer in ten thousand exposed people), or if the HQ or HI exceeds 1.0, action under CERCLA is generally warranted. However, on a site-specific basis, the EPA may determine that remedial action is warranted when cumulative cancer risks are between the 1E-06 to 1E-04 range (EPA, 1991).

A BERA presents a “weight of evidence” evaluation to determine whether there is a likelihood of significant and ecologically relevant adverse effects (risk) posed to specific receptor group populations (e.g., fish, mammals, invertebrates, etc.) for site constituents of concern. The weight of evidence is determined for each receptor group by evaluating the results of various measures of effect (also known as lines of evidence) to determine whether the preponderance of the

evidence either supports or refutes a finding of risk. Lines of evidence typically include estimates of risk based on receptor-specific HQ values (Chemical-specific HQs for ecological receptors are typically computed by dividing a media concentration or potential receptor dose by its corresponding toxicity reference value (TRV)), and results of multiple empirical studies that address measures of effect on endpoints of concern; typically organism growth, survival or reproduction. These effect studies may be laboratory or field based.

For the *Final Asbestos BERA* for the OU3 Study Area, HQ values were not computed because ecological toxicity reference values for asbestos do not exist. Instead, the *Final Asbestos BERA* for the OU3 Study Area relies on site-specific field and laboratory empirical studies to support the weight of evidence analysis.

Summaries of the LAA and non-asbestos human health and ecological risk assessments follow in the remainder of this section.

7.2 LAA HUMAN HEALTH RISK ASSESSMENT

The purpose of the *Final LAA HHRA* document (EPA, 2015a) is to estimate potential human health risks from potential exposures to LAA at the Libby Site under current and foreseeable future conditions. The *Final LAA HHRA* is a comprehensive document for the entire Libby Site; therefore, there is not a separate HHRA for the OU3 Study Area. The *Final LAA HHRA* assessment is discussed in further detail below with citations from the *Final LAA HHRA* presented as quotations. The complete document is provided in **Appendix K**.

7.2.1 Toxicity Assessment

"The adverse effects of asbestos exposure in humans have been the subject of a large number of studies and publications. Exposure to asbestos may induce several types of both non-cancer and cancer effects. A detailed summary of the cancer and non-cancer effects of asbestos is provided in the ATSDR *Toxicological Profile for Asbestos* (ATSDR, 2001b) and in EPA's *Airborne Asbestos Health Assessment Update* (EPA, 1986). A detailed summary of effects related specifically to LAA is provided in the *Toxicological Review for Libby Amphibole Asbestos* (EPA, 2014b)" (EPA, 2015a).

7.2.1.1 Cancer Effects

"Many epidemiological studies have reported increased mortality from cancer in workers exposed to asbestos, especially from lung cancer and mesothelioma (tumor of the thin membrane that covers and protects the internal organs of the body). In addition, a number of studies suggest asbestos exposure may increase risk of cancer of the larynx (commonly called the voice box) and ovarian cancer (IARC, 2012). Based on these findings, and supported by extensive data from animal studies, EPA has classified asbestos as a known human carcinogen" (EPA, 2015a) via the inhalation exposure pathway on its Integrated Risk Information System (IRIS). IRIS is an electronic database containing human health toxicity values for various constituents.

"Cancer risk from inhalation exposure is determined based on an inhalation unit risk (IUR) value, which is defined as the excess lifetime cancer risk estimated to result from continuous exposure to one asbestos fiber per cubic centimeter of air (1 f/cc). The LAA-specific IUR, referred to as IUR_{LA}, is derived from a group of workers employed at the vermiculite mining and milling operation

in and around Libby, referred to as the "Libby worker cohort". The IUR_{LA} is 0.17 $(PCM\ f/cc)^{-1}$ (EPA, 2014b)." (EPA, 2015a)

Data on cancer risks from ingestion-only exposure are limited; however, the "EPA has determined that there is an increased risk of developing benign intestinal polyps as a consequence of long-term ingestion of asbestos-contaminated drinking water. This finding is the basis for the MCL for asbestos in drinking water (EPA, 2015a)." The MCL for asbestos in water is based on an oral slope factor derived for intermediate length chrysotile asbestos. The *Final LAA HHRA* presents three basic strategies available for estimation of the oral slope factor for asbestos:

- **"Epidemiological studies of cancer risk associated with exposure to asbestos in drinking water.** None of the available epidemiological studies of cancer risk in humans exposed to asbestos in drinking water are suitable for estimating quantitative dose response relationships (EPA, 1988b; ATSDR, 2001b).
- **Extrapolation from studies of workers exposed by inhalation.** Both EPA and the National Academy of Sciences sought to estimate the risk of gastrointestinal cancer after oral exposure by extrapolating dose-response data from occupational studies (EPA, 1980; NAS, 1983). However, these potency estimates are rather uncertain because of uncertainty both in the level of inhalation exposure and in the extent of transfer of fibers from the lung to the gastrointestinal tract, and this method for quantification of oral risk is not considered reliable (EPA, 1988b).
- **Extrapolation from animal studies.** EPA (1988b) determined that the most reliable study for estimation of oral cancer risk was the data on benign intestinal polyps in male rates exposed to intermediate length chrysotile (NTP, 1985). Based on the data from this study, EPA (1988b) calculated an upper bound on slope (q1*) of 1.4E-13 $(TEM\ fibers\ per\ liter\ [f/L])^{-1}$. Based on this, ingestion of 2 liters per day (L/day) of drinking water containing 1.0 MFL would result in an increased cancer risk to humans of about 1.4E-07. This corresponds to an oral slope factor of 7.0E-08 per million fibers ingested." (EPA, 2015a)

"The carcinogenic response in male rats exposed to intermediate range chrysotile was used by the EPA to derive the MCL for asbestos in water. It is important to note that the derived oral slope factor has not been approved for use at Superfund sites, and EPA's IRIS does not identify any quantitative value for evaluation of oral exposure to asbestos." (EPA, 2015a) Moreover, all studies of oral exposure to amphibole asbestos were negative for carcinogenicity. Refer to the Appendix A of the *Final LAA HHRA* for a comprehensive discussion on the screening level assessment of risks from oral exposure to LAA.

7.2.1.2 Non-Cancer Effects

"Non-cancer effects from asbestos exposure include asbestosis (formation of scar tissue in the lung parenchyma) and several types of abnormalities in the pleura (the membrane surrounding the lungs), such as pleural effusions (excess fluid accumulation in the pleural space), pleural plaques (collagen deposits and calcification), and pleural thickening.

Non-cancer hazard from inhalation exposure is determined based on a reference concentration (RfC) value. The RfC is an estimate (with uncertainty spanning an order of magnitude) of a continuous inhalation exposure that is likely to be without an appreciable risk of deleterious effects in humans (including sensitive subgroups) during a lifetime (EPA, 2009d). The LAA-specific RfC, referred to as RfC_{LA}, is derived from a group of workers employed at the O.M. Scott Plant in

Marysville, Ohio. This plant utilized vermiculite that originated from the mine in Libby from 1959 to 1980 in their lawn care products. Localized pleural thickening was selected as the critical effect endpoint for the derivation of the RfC_{LA}. The RfC_{LA} is 0.00009 PCM f/cc (EPA, 2014b)." (EPA, 2015a)

However, "studies in humans and animals indicate that ingestion of asbestos causes little or no risk of non-carcinogenic injury. Because ingested asbestos fibers are poorly absorbed, the tissue most highly exposed to ingested asbestos is the gastrointestinal tract epithelium. A few studies reported some histological or biochemical changes in gastrointestinal tract cells of rats chronically exposed to oral doses of asbestos, but, in an extensive series of lifetime dietary exposure studies in rats and Syrian hamsters, comprehensive microscopic evaluation of tissues and organs found no excess non-neoplastic lesions in the gastrointestinal epithelium or in other tissues or organs in animals exposed to daily doses as high as 500 to 830 milligrams of asbestos per kilogram body weight per day (mg/kg/day). The weight of evidence indicates that asbestos ingestion does not cause any significant non-carcinogenic effects in the gastrointestinal tract or other tissues." (EPA, 2015a) Refer to the Appendix A of the *Final LAA HHRA* for a comprehensive discussion on the screening level assessment of risks from oral exposure to LAA.

7.2.2 Exposure Assessment

Conceptual Site Model. **Figure 2-12** is an adaptation of the CSM developed for the *Final LAA HHRA* and presents the CSM for human exposure to LAA specific to the OU3 Study Area. The CSM presents in graphical form how LAA in source media from the OU3 Study Area could be transported in the environment to exposure media that humans may encounter. The primary exposure media within the OU3 Study Area is outdoor air.

7.2.2.1 Exposure Parameters

The risk assessment evaluates potential inhalation exposures for several receptor populations, including recreational visitors, USFS workers, USFS fire fighters, commercial loggers, and trespassers. Receptor-specific exposures are computed for exposure scenarios consistent with each receptor population. "Exposure estimates in the risk assessment do not seek to evaluate exposures for specific individuals." (EPA, 2015a) Rather, exposure estimates are calculated for representative members of the receptor population, calculating exposures based on both "typical" levels of exposure and "high-end" exposures. "These two exposure estimates are referred to as central tendency exposure (CTE) and reasonable maximum exposure (RME), respectively." (EPA, 2015a)

"For each exposure scenario evaluated in the risk assessment, information on estimated exposure time (ET, in hours per day), exposure frequency (EF, in days per year), and exposure duration (ED, in years) is used to derive a lifetime time-weighting factor (TWF) as follows:

$$TWF = (ET/24 \cdot EF/365 \cdot ED/70)$$

The value of the TWF ranges from zero to one, and describes the average fraction of a lifetime during which the specific exposure scenario occurs." (EPA, 2015a) The use of a TWF is consistent with the underlying basis for the IUR_{LA} and the RfC_{LA}, both of which are based on lifetime exposures. For each exposure scenario, TWFs are computed for both CTE and RME exposures.

7.2.2.2 Exposure Point Concentrations

An exposure point concentration (EPC) is an estimate of the concentration of a constituent (LAA) that a receptor may be exposed to under a specific exposure scenario. In the case of LAA, the EPC is a concentration of LAA fibers in air (PCME LAA s/cc). A reliable method to predict LAA levels in air based on measured LAA levels in source media (e.g., soil, duff, etc.) is not currently available. For this reason, the EPA recommends an empirical approach for estimating EPCs at asbestos-contaminated Superfund sites, where concentrations of asbestos in air resulting from activities that disturb source media are measured rather than predicted (EPA, 2008g). This type of sampling is referred to as activity-based sampling (ABS).

To date, eleven different ABS investigations have been conducted at the OU3 Study Area to estimate representative EPCs of LAA from various activities that disturb source media. These studies have included a wide range of activities that are typical of the defined receptor populations, including, but not limited to, riding all-terrain vehicles (ATVs), hiking, driving, residential wood harvesting, commercial logging, USFS activities (e.g., fighting fires and performing forest maintenance and surveying activities). In total, 700 ABS air samples have been collected within the OU3 Study Area since 2007.

In addition to ABS sampling, nearly 100 outdoor ambient air samples and over 75 perimeter air samples have been collected for the OU3 Study Area. Ambient air samples differ from ABS samples because they are designed to measure LAA in air absent any specific source media disturbance activity. Perimeter air samples were taken during the slash pile burn and prescribed understory burn ABS events to quantify the concentration of LAA in air at varying distances and directions before, during, and after ABS activities in the forested area.

"All ABS and ambient/perimeter air samples have been analyzed by TEM. During the analysis, detailed information for each observed asbestos structure (e.g., asbestos type, structure type, length, width) is recorded. For the purposes of computing risk estimates, it is necessary to" (EPA, 2015a) convert the TEM analysis results to estimates of "what would have been detected had the sample been analyzed by PCM." (EPA, 2015a) This conversion is necessary because the IUR_{LA} and the RfC_{LA} were derived from studies in which PCM was the primary method for LAA analysis. "For convenience, structures detected under TEM that meet the recording rules for PCM are referred to as PCM-equivalent (PCME) structures. TEM analysis results for air samples are expressed as PCME LAA structures per cubic centimeter of air (s/cc)." (EPA, 2015a)

Typically, multiple measurements of LAA in air are determined for each ABS scenario. This results from the collection of multiple samples during an ABS event, the conduct of replicate ABS sampling events, or both. In accordance with the EPA asbestos risk assessment guidance (EPA, 2008g), EPCs for each exposure scenario are calculated as the arithmetic mean of all scenario-specific air sampling measurements, evaluating non-detect samples at a concentration value of zero. In some cases, air sampling filters were indirectly prepared for TEM analysis and an adjustment factor was applied before including the concentration in the calculation of arithmetic mean. As described in **Section 3.5.1**, the EPA's site-specific adjustment factor of 2.5 was used for PCME LAA for indirectly prepared samples to account for the probable bias introduced through the indirect preparation technique. The derivation and use by the EPA of the adjustment factor of 2.5 in the *Final LAA HHRA* is described in Appendix D of the *Final LAA HHRA* (EPA, 2015a).

7.2.3 Risk Characterization

"The basic equation used to estimate excess lifetime cancer risk from inhalation of LAA is:

$$Risk = EPC \cdot TWF \cdot IUR_{LA}$$

where:

Risk = Lifetime excess risk of developing cancer (lung cancer or mesothelioma) as a consequence of LAA exposure.

EPC = Exposure point concentration of LAA in air (PCME LAA s/cc). The EPC is an estimate of the long-term average concentration of LAA in inhaled air for the specific exposure scenario being assessed.

TWF = Time-weighting factor which represents the fraction of a lifetime involved in the specific exposure scenario being assessed.

IUR_{LA} = LAA-specific inhalation unit risk $(0.17 \text{ PCM s/cc})^{-1}$

The basic equation used for characterizing non-cancer hazards from inhalation exposures to LAA is as follows:

$$HQ = EPC \cdot TWF / RfC_{LA}$$

where:

HQ = Hazard quotient for non-cancer effects from LAA exposure

EPC = Exposure point concentration of LAA in air (PCME LAA s/cc)

TWF = Time-weighting factor

RfC_{LA} = LAA-specific reference concentration (0.00009 PCM s/cc)" (EPA, 2015a)

7.2.4 Results

The Libby Site risk assessment characterizes risks to people from exposure to LAA at the OU3 Study Area to help risk managers determine if remedial actions are necessary to address risks, and if so, which exposure scenarios would need to be addressed in future remedial actions. Sections 5, 6, and 8 of the *Final LAA HHRA* present discussions specific to OU3 Study Area media and risks from exposures to these media, refer to Tables 5-1 through 5-4, 6-16 through 6-17, and 8-1 through 8-6 of the *Final LAA HHRA* included in **Appendix K**. Results of the risk assessment are intended to help inform the OU3 site manager and the public about the magnitude of potential risks attributable to LAA and to guide the selection of final remedial actions for the OU3 Study Area. The exposure scenario-specific risks, cumulative risk, and LAA HHRA uncertainty assessment from the *Final LAA HHRA* are presented below.

7.2.4.1 Exposure Scenario-Specific Risks

In total, more than 150 different exposure scenarios were evaluated in the risk assessment. For a given exposure scenario, non-cancer HQs can exceed 1 even when cancer risks are less than 1E-04, which indicates that non-cancer exposure is a more sensitive metric of potential concern. For LAA, EPA has determined that a non-cancer HQ of 1 is approximately equivalent to a cancer risk of 1E-05. The estimated RME cancer risks for all exposure scenarios at the OU3 Study Area are less than 1E-04.

There were very few exposure scenarios that, when considered alone, yield RME non-cancer HQs that exceed 1. Those that did were conducted under conservative scenarios (e.g., ABS conducted during dry weather conditions with conservative exposure scenarios) and were located in the Former Mine Area. These exposure scenarios are shown in **Figure 7-1** and listed from highest to lowest HQ. **Figure 7-1** compares the HQ values for OU3 Study Area scenarios with scenarios for other OUs to consider cumulative risks as discussed below. The exposure scenarios exceeding an HQ of 1 related to the OU3 Study Area are presented below:

- Outdoor worker exposures during commercial logging activities in OU3 near the mine (approximately 1 mile from the Former Mine Area center), especially those logging activities that disturb soil and duff material (e.g., site restoration, skidding) (HQ=2 for site restoration; HQ=5 for skidding);
    - Time-weighting factor for both activities was conservatively based on an ET= 10 hours per day, EF=24 days per year, and an ED=12 years.
- Firefighter exposures while performing dry mop-up activities after an understory burn that occurs near the mine (approximately 1 mile from the Former Mine Area center) (HQ=5);
    - Time-weighting factor for this activity was conservatively based on an ET=2 hours per day, EF=7 days per year, and an ED=25 years.
- Forest worker exposures while building slash piles near the mine (approximately 1 mile from the Former Mine Area center) (HQ=2);
    - Time-weighting factor for this activity was conservatively based on an ET=8 hours per day, EF=10 days per year, and an ED=10 years.
- Trespasser rock hound exposures in the disturbed area of the mine in OU3 (HQ=2);
    - Time-weighting factor for this activity was conservatively based on an ET=6 hours per day, EF=3 days per year, and an ED=52 years.
- Residential exposures (outside of OU3 Study Area) during woodstove ash disturbances (i.e., while emptying ash from the woodstove and then using a soft-bristled brush to sweep up and gather any additional ash material) when firewood is collected from near the mine (approximately 1 mile from the Former Mine Area center) (HQ=2).
    - Time-weighting factor for this activity was conservatively based on an ET= 0.25 hours per day, EF=48 days per year, and an ED=52 years.

7.2.4.2 Cumulative Risk

Most people who live or work in Libby or Troy may be exposed to LAA by a combination of the exposure scenarios described above and shown in **Figure 7-1**. “Consequently, it is important to estimate the total (cumulative) risk to a receptor that is exposed to multiple scenarios over their lifetime. The calculation of cumulative risk is complicated by the fact that the exposure pattern of

each individual at the Site may be unique. However, the EPA does not typically perform risk calculations for specific individuals, but rather for generic classes of receptor populations with common exposure patterns. Thus, the goal of the cumulative risk assessment is to characterize how cumulative risk depends on different types of disturbance activities, LAA levels in the source media, and exposure locations." (EPA, 2015a) Typically, if an HQ is less than or equal to 1, then remedial action is generally not warranted (EPA, 1991). However, to ensure protectiveness in consideration of potential cumulative exposures, EPA determined that an HQ of 0.6 is the appropriate threshold for frequently used residential properties within OU4 (EPA, 2016; CDM Smith, 2015b). In other words, EPA determined that cumulative risks can be mitigated by addressing individual risk drivers that have an HQ greater than 0.6.

Figure 7-1 includes the calculated risk drivers for both the OU3 Study Area and the other OUs in order to illustrate the individual risk drivers with an HQ of 0.6 or greater across the Libby Asbestos Superfund Site. It is important to note that the calculated HQ for OU4 background soils resulted in an ABS HQ value of 0.6 (shown in **Figure 7-1** as the Background OU4 "Bucket of Dirt" ABS result). This result provides a line-of-evidence that a HQ threshold of 0.6 is conservative because it is representative of background conditions in OU4, and CERCLA generally does not require cleanup to below background levels (EPA, 2002b). The appropriate remedial criteria for the OU3 Study Area will be evaluated during the FS and established in the ROD.

There are a large number of possible exposure scenario combinations that could be evaluated in the cumulative risk assessment for the Site. The choice of which combinations to evaluate is a matter of judgment. The *Final LAA HHRA* presents several alternative cumulative exposure scenario combinations representing a wide range of potential cumulative risks. These examples help to identify which exposure scenarios that tend to have the largest contribution to cumulative risk.

The cumulative risk calculations demonstrate:

- People who are predominantly exposed at properties and in locations where steps have been taken to limit potential exposures to LAA (e.g., exterior soil removals, interior vermiculite insulation removals, and cleanings have been completed or deemed not to be necessary) or at locations where lower LAA levels in source media (e.g., woodstove ash exposures when firewood is collected outside of approximately one mile from the center of the Former Mine Area, forest fire worker building slash piles at distances greater than 1 mile from the Former Mine Area center, outdoor worker firefighter during simulated burning activities) are likely to have cumulative risks that are below a level of concern, even when the cumulative scenario includes many different exposure activities across multiple OUs.
- Cumulative exposure and risk can be reduced by changing the locations where the activities are performed (e.g., collecting firewood from areas far from the mine site).
- Cumulative exposure has the potential to become significant if the majority of the receptor lifetime is spent at properties and in locations where LAA is present and where people are engaging in source disturbance activities that have a high potential for LAA releases.
- When cumulative exposure includes scenarios where LAA-contaminated source materials are disturbed, such as trespassing on the disturbed area of the mine site, disturbing surface soils with Bin B2/C concentrations, performing certain activities related to commercial logging operations near the mine site, disturbing vermiculite insulation during tradesperson activities, or disturbing subsurface soils with

residual LAA contamination, these exposures may be important risk drivers for cumulative risk estimates. The EPA defines a risk driver as an individual exposure scenario that contributes a substantial fraction of the cumulative risk (EPA, 2015a).

- It is not necessary to address every single exposure scenario to significantly lower cumulative HIs. Addressing exposures for the risk drivers will have the greatest impact in lowering cumulative exposures and risks.

7.2.4.3 LAA HHRA Uncertainty Assessment

Uncertainties exist in the *Final LAA HHRA* "due to limitations in the exposure and toxicity assessments and the ability to accurately determine cumulative exposure and risk from multiple sources over a lifetime." (EPA, 2015a) The *Final LAA HHRA* has used the best available science to evaluate potential human health exposures and risks from LAA at the OU3 Study Area; "however, there are number of sources of uncertainty that affect the risk estimates that must be considered when making risk management decisions. The most important of these uncertainties are listed below.

- Uncertainty in true long-term average LAA concentrations in air
- Uncertainty in the EPC due to non-detects
- Uncertainty due to air filter preparation methods
- Uncertainty due to analytical methods
- Uncertainty due to field collection methods
- Uncertainty in human exposure patterns
- Uncertainty in toxicity values used in risk characterization
- Uncertainty in the cumulative risk estimates

Because of these uncertainties, the cancer risks and non-cancer HQs for individual exposure scenarios are uncertain, and consequently all estimates of cumulative cancer risks and non-cancer HI values presented in the *Final LAA HHRA* are also uncertain, and should be considered approximate. Actual risks may be either higher or lower than estimated." (EPA, 2015a)

For a detailed discussion on each of the uncertainties listed above, refer to *Section 10 Uncertainty Assessment* of the *Final LAA HHRA* included in **Appendix K**.

7.3 ASBESTOS BASELINE ECOLOGICAL RISK ASSESSMENT

The purpose of the *Final Asbestos BERA* (EPA, 2014a) assessment was to describe the likelihood, nature, and extent of adverse effects on ecological receptors in the OU3 Study Area that result from exposure to LAA released to the environment as a result of past mining, milling, and processing activities at the OU3 Study Area. The *Final Asbestos BERA* (EPA, 2014a) assessment is discussed in further detail below with citations from the *Final Asbestos BERA* presented as quotations. The complete document is provided in **Appendix K**. Data used to support the *Final Asbestos BERA* have been collected as part of several investigations described in **Section 4.0**.

7.3.1 Conceptual Site Model

Figure 2-13 presents the CSM for exposure of each general ecological receptor group (fish, benthic macroinvertebrates, amphibians, aquatic plants, terrestrial plants, birds, mammals, soil

invertebrates, reptiles) to mining-related LAA releases at the OU3 Study Area as described in the *Final Asbestos BERA*. As shown, the following exposure pathways were evaluated quantitatively in the *Final Asbestos BERA*:

- Aquatic Receptors (fish, benthic macroinvertebrates, amphibians) – Direct contact exposures with sediment and/or surface water
- Wildlife Receptors (birds and mammals) – Exposures by four primary pathways
  1. Ingestion of LAA in or on dietary items
  2. Incidental ingestion of soil and/or sediment while feeding
  3. Ingestion of contaminated water
  4. Inhalation of LAA in air caused by current airborne emissions or disturbance during feeding, foraging, and nesting

7.3.2 Weight of Evidence Evaluation

In the *Final Asbestos BERA,* three different lines of evidence are presented:

- Site-specific toxicity tests,
- Population and community demographic observations, and
- In-situ measures of exposure and effects.

Each of these lines of evidence has inherent advantages and limitations. Therefore, the *Final Asbestos BERA* used a weight-of-evidence evaluation to develop risk conclusions, combining the findings across each line of evidence and taking the relative strengths and weaknesses of each line of evidence into account.

The weight of evidence risk conclusions and confidence in these conclusions are summarized below for each ecological group of interest at the OU3 Study Area. A result summary discussion for each line of evidence is provided in the *Final Asbestos BERA* included in **Appendix K**.

Fish. For fish, "the weight of evidence suggests that LAA in waters of LRC is not causing adverse effects on resident trout." (EPA, 2014a) By extension, since concentrations of LAA in the Kootenai River are substantially lower than in LRC, no studies were conducted on the effects of LAA on fish in the Kootenai River (including sensitive species such as the federally protected white sturgeon and bull trout) and, therefore, are not of concern. "Confidence in this conclusion is medium to high. The chief limitation to the in-situ exposure studies is that there is no control over environmental variables and the findings are limited to the conditions and concentration values that occurred during the studies (about 40-45 MFL for eyed eggs and about 10-30 MFL for juvenile trout). Consequently, if substantially higher concentrations were to occur in other years, the consequences, if any, cannot be predicted. In general, the chief limitation to fish population surveys is that population parameters and habitat variable often tend to be variable between years, making it difficult to distinguish between random and site-related differences. However, in this case, results were relatively consistent across two years, so confidence in these studies is good." (EPA, 2014a)

Benthic Macroinvertebrates. For benthic macroinvertebrates, the findings of the site specific sediment toxicity tests and the site-specific population studies "suggest that benthic macroinvertebrate communities along LRC may rank as slightly impaired compared to off-site reference locations, but are not impaired compared to URC. The differences are not extensive and might be due, at least in part, to differences in habitat quality. Taken together, these findings

support the conclusion that LAA in LRC may be causing small to moderate effects on survival of some species, but that the overall benthic macroinvertebrate community is not substantially impacted. Confidence in this conclusion is medium to high. One potential limitation to the site-specific studies is that the test species (*H. azteca* and *C. tentans*) are not expected to occur in mountain streams, and native species (mainly mayflies, stoneflies, caddisflies, true flies, and beetle larvae) might have differing sensitivities. While benthic community and habitat surveys often display considerable variability between years, in this case the results are relatively consistent between two years, providing good confidence in the survey results." (EPA, 2014a)

Amphibians. For amphibians, the findings of the site-specific sediment toxicity test and the survey of external and histological lesions in field-collected organisms support the conclusion that "sediments and waters in OU3 are not likely to be causing any ecologically significant adverse effects on amphibian populations" (EPA, 2014a) given a lack of overt signs of toxicity. The presence of an apparent lag time for metamorphosis in the laboratory study was determined by the laboratory study director to be a statistical artifact, and speculated that there would be no adverse effects from this finding to wild populations given natural plasticity in timing of metamorphosis and the presence of metamorphosed individuals found in the Site ponds. "Confidence in this conclusion is medium to high. The most significant uncertainty is whether the apparent delay in the final stages of metamorphosis might be of concern. Further studies would be need to determine if the apparent lag in final stage development is reproducible, and whether complete metamorphosis is ultimately achieved in exposed organisms." (EPA, 2014a)

Mammals. For mammals, there was one line of evidence available to evaluate risks from LAA exposure, an evaluation of lesion prevalence and severity in mice captured from the OU3 Study Area compared to mice from a reference area. "This is considered to be a relatively strong line of evidence because a) mice are likely to have high exposure to LAA in duff material and soil, b) the area selected for study was at the high end of LAA contamination observed in duff material, and c) the mice collected would have been exposed by all relevant exposure routes (inhalation, ingestion of soil, ingestion of food items)." (EPA, 2014a) Although the prevalence or mean severity of some types of lesions was higher in mice from the OU3 Study Area than the reference area, none of the lesions were judged to be associated with LAA exposure. They were instead attributable to normal parasitism or diseases common to wild mice. Moreover, none were judged to be associated with significant decrements to overall animal health, and no evidence of meaningful differences in body size or age of the mice was detected. Based on these results, "it is considered likely that LAA exposures in OU3 are not causing any ecologically significant effects on populations of small mammals residing in the forest areas OU3." (EPA, 2014a)

"Confidence in this conclusion is high. However, there are several uncertainties in extrapolation of the results from this study to other mammals that may be exposed in OU3, including the following:

- Larger mammals generally have longer life spans than mice, and consequently might have higher cumulative exposures than mice. Because effects of inhalation exposure to asbestos are usually found to be related to cumulative exposure in humans and laboratory animals (ATSDR, 2001a), this raises the possibility that risk of effect might be higher in larger mammals with longer lifespans than mice. However, numerous studies have shown that while effects of asbestos exposure in humans usually take many years to develop, the same effects occur in rats and mice within 1-2 years (ATSDR, 2001a). Moreover, home range is often much larger for large mammals than small mammals, so longer-lived species such as deer, elk, bear, lynx, etc., would generally be expected to spend only a fraction of their

lifespan in areas near the mine, thereby reducing their tendency for exposure. Although uncertain, there is no compelling evidence to presume that mammals with longer life spans than mice would likely be more at risk than mice.

- The mice that were evaluated were trapped in an area near the Former Mine Area where concentration levels of LAA in duff material are at the high end of the range that has been observed in the forest area. However, LAA levels on the Former Mine Area site itself are likely higher due to the presence of LAA veins in the ore body as well as in waste rock and tailing areas onsite. Consequently, mammals residing in the mined area (as opposed to the forest area around the mine) may have higher exposures." (EPA, 2014a)

Birds. There was one line of evidence available to evaluate the effect of LAA exposure on birds exposed in the OU3 Study Area, a literature-based evaluation of the relative sensitivity to the effects of inhaled particulates in birds compared to mammals. "Based on the available information, it is concluded that birds are not more sensitive, and are probably less sensitive, to the effects of inhaled particulates than mammals. Because a site-specific study of the effects of LAA on small mammals did not detect any evidence for increased incidence or severity of asbestos-related lesions in the respiratory tract, it is concluded that ecologically significant adverse effects are not likely to be of ecological concern in populations of birds exposed to LAA in OU3. Although a comparable comparative study was not attempted with regard to relative sensitivity by the oral exposure route, because no effects were noted in the gastrointestinal system of mice exposed in the OU3 Study Area, there is no reason to expect that effects in the gastrointestinal system of birds would be of concern. Confidence in this conclusion is medium. However, in the absence of direct studies of birds from the OU3 Study Area, several possible uncertainties remain including the following:

- The relative LA exposure levels of birds compared to mice in OU3 is not certain. It is assumed that of the wide variety of bird species that occur in OU3, ground foraging birds with small home ranges would tend to be most exposed, both by inhalation of fibers released to air and by ingestion of prey or food items capture in duff or soil. However, considering that mice are likely exposed nearly continuously in the duff or soil, while birds are likely to be exposed only while foraging, and would likely have low exposure while in trees or bushes, it is considered likely that birds are not more exposed, and might be less exposed, than mice.
- Much of the available information on the relative effects of inhaled particulates in birds is derived from studies of domestic poultry (chickens, ducks). In general, wild birds tend to be more robust than domestic fowl, which would tend to decrease sensitivity (Wideman, 2011). However, if effects on respiratory function do occur in wild birds, they might have larger consequences than observed in domestic fowl due to the higher demands on respiratory function during migration. Noting that these two uncertainties could influence risk estimates in opposite directions, and that migratory birds are likely to have lower exposures than resident birds, the conclusion that birds are not likely to be more sensitive than mammals is considered to be reliable." (EPA, 2014a)

7.4 NON-ASBESTOS BASELINE HUMAN HEALTH RISK ASSESSMENT

The purpose of the *Final Non-Asbestos HHRA* document is to quantify potential human health risks from exposures to non-asbestos COPCs at the OU3 Study Area under current and future conditions. The *Final Non-Asbestos HHRA* (CDM Smith, 2013a) assessment is discussed in

further detail below with citations from the *Final Non-Asbestos HHRA* presented as quotations. The complete document is provided in **Appendix K**. Data used to support the *Final Non-Asbestos HHRA* for the OU3 Study Area have been collected as part of several investigations described in **Section 4.0**.

7.4.1 Basis for Concern

"Although LAA is the primary concern at the Libby Site, other constituents (mainly metals)" naturally "present in the ore body may also have been released to the environment as a result of past mining and milling activities. In addition, other chemicals such as foaming agents, petroleum products, herbicides, pesticides, and PCBs may have been used or released during mining and milling operations within OU3." (CDM Smith, 2013a)

7.4.2 Conceptual Site Model

Figure 2-14 presents a CSM for human exposure to non-asbestos contaminants at the OU3 Study Area. The model presents in graphical form the ways in which materials released during mining operations might be contacted by people that use the OU3 Study Area.

Under current conditions in the OU3 Study Area, a range of different human receptors may be exposed to COPCs in the OU3 Study Area, including:

- Recreational visitors along streams and ponds
- Recreational visitors in the forested area
- Wood cutters and USFS workers in the forested area
- Trespassers in the Former Mine Area

At present, there are no groundwater wells in the OU3 Study Area that are used for drinking water. However, use of groundwater for drinking water by recreational visitors or workers might occur in the future, so this pathway is also of potential concern.

The OU3 Study Area does not include residential exposure scenarios. This is because any properties geographically within the OU3 Study Area that are currently residential (e.g., homes, yards, other frequently used areas) will be evaluated as part of OU4. Based on currently available information, future residential development is not reasonably anticipated in other areas of the OU3 Study Area (CDM Smith, 2013b).

7.4.3 Constituents of Potential Concern

EPA has performed several rounds of sampling and analysis to characterize the levels of non-asbestos contaminants in environmental media in the OU3 Study Area, including soils in the Former Mine Area, surface water and sediment in the OU3 Study Area streams and ponds, and groundwater from existing wells in the Former Mine Area. "Because non-asbestos data were not available for forest soils near the Former Mine Area, data from the Former Mine Area were used as a conservative surrogate for this medium.

The data were used to identify non-asbestos COPCs by comparing the maximum detected concentration for each constituent in each environmental medium to an appropriate risk-based concentration (RBC). If the maximum value exceeded the RBC, the constituent was retained as a COPC for that medium. Otherwise, the constituent was excluded as a COPC for that medium.

Implementation of this selection process lead to the identification of the following non-asbestos COPCs per medium:

- Surface water - manganese, fluoride, benzene
- Sediment - arsenic, cobalt, iron, manganese, thallium
- Groundwater - iron, manganese
- Soil (based on mined materials and soils in the Former Mine Area)
- Ingestion: arsenic, cobalt, thallium, benzo(a)pyrene
- Inhalation: aluminum, arsenic, barium, cobalt, manganese, nickel
- Fish - no COPCs identified" (CDM Smith, 2013a)

7.4.4 Toxicity Assessment

"All toxicity values used to characterize risk were selected in accordance with the EPA established hierarchy, preferring values that are listed in EPA's IRIS. If values were not available from IRIS, then the next preference was to seek Provisional Peer Reviewed Toxicity Values for Superfund (PPRTVs) developed by EPA's Superfund Health Risk Technical Support Center. If PPRTVs were not available, toxicity values were obtained from other sources, such as the ATSDR minimal risk levels (MRLs), California EPA Toxicity Criteria Database, and the EPA Health Effects Assessment Summary Tables (HEAST)." (CDM Smith, 2013a)

7.4.5 Exposure Assessment

The following exposure scenarios for the *Final Non-Asbestos HHRA* were evaluated quantitatively:

- Incidental ingestion of surface water and sediment from OU3 Study Area ponds and streams by recreational visitors
- Incidental ingestion of soil in the Former Mine Area by trespassers
- Incidental ingestion of soil in the forested areas surrounding the Former Mine Area by recreational visitors (hikers), wood cutters, and USFS personnel
- Inhalation of airborne particulates derived from soil in the Former Mine Area and soil in the forest areas during ATV riding
- Hypothetical future ingestion of groundwater from wells in the OU3 Study Area by recreational visitors

"Because no COPCs were identified for ingestion of fish, this pathway was not evaluated further.

Exposure was quantified using the standard equations recommended by the EPA for use at Superfund sites. Exposure parameters were based on the EPA default guidelines, or were based on professional judgment. For the purposes of this risk assessment, focus was placed on characterizing reasonable maximum exposure (RME), which is representative of the high-end of the range of exposures which may be possible. Exposure point concentrations were calculated from the data using EPA's ProUCL application to derive upper confidence limits (UCLs) on the mean concentration." (CDM Smith, 2013a)

7.4.6 Risk Characterization

Non-cancer and cancer risks were computed from the exposure estimates and the toxicity values in accordance with standard EPA equations (refer to Section 5.0 of the *Final Non-Asbestos HHRA* provided in **Appendix K**).

7.4.7 Results

Total risks to recreational visitors summed across all exposure media and COPCs show that non-cancer HIs are below a level of concern (less than 1) and cancer risks are usually below the lower end of EPA's acceptable risk range (less than 1E-06), both within and across exposure scenarios. Because the recreational visitor was the maximally exposed receptor, risks to wood cutters and USFS personnel from forest soil exposures would be even lower than those calculated for the recreational visitor. Based on these results, the EPA has concluded that human health risks from exposure to non-asbestos COPCs at the OU3 Study Area are likely to be below a level of concern (CDM Smith 2013a).

7.5 NON-ASBESTOS BASELINE ECOLOGICAL RISK ASSESSMENT

The purpose of the *Final Non-Asbestos BERA* was to describe the likelihood, nature, and extent of adverse effects on ecological receptors in the OU3 Study Area that result from exposure to non-asbestos constituents released to the environment as a result of past mining, milling, and processing activities at the OU3 Study Area (CDM Smith, 2013b). The *Final Non-Asbestos BERA* (CDM Smith, 2013b) assessment is discussed in further detail below with citations from the *Final Non-Asbestos BERA* presented as quotations. The complete document is provided in **Appendix K**. Data used to support the *Final Non-Asbestos BERA* for the OU3 Study Area have been collected as part of several investigations (refer to **Section 4.0**).

7.5.1 Basis for Concern

As noted above, although LAA is the primary concern at the Libby Site, other constituents (mainly metals) present in the ore body also may have been released to the environment as a result of past mining and milling activities. In addition, other constituents such as foaming agents, petroleum products, herbicides, pesticides, and PCBs may have been used or released during mining and milling operations within the OU3 Study Area.

The Former Mine Area is disturbed by past mining activity and some areas remain largely devoid of vegetation. Outside the Former Mine Area, most of the OU3 Study Area is forested, with Douglas fir and Lodgepole pine being the predominant species. The Former Mine Area is located within the Rainy Creek watershed, which includes several creeks and ponds, as well as the tailings impoundment. Various terrestrial and aquatic species are expected to occur at the OU3 Study Area, including several federally-listed and state species of concern.

7.5.2 Conceptual Site Model

Figure 2-15 presents the CSM for exposure of each general ecological receptor group (fish, aquatic invertebrates, amphibians, terrestrial plants, soil invertebrates, birds, mammals) to mining-related non-asbestos contaminants at the OU3 Study Area. "As shown, the following exposure pathways were evaluated quantitatively" (CDM Smith, 2013b) in the *Final Non-Asbestos BERA*:

- "Aquatic Receptors (fish, aquatic invertebrates, amphibians) – Direct contact exposures with sediment and/or surface water
- Terrestrial Plants and Soil Invertebrates – Direct contact exposures with soil
- Wildlife Receptors (birds and mammals) – Exposures by three primary pathways
  1. Ingestion of contaminants in or on dietary items
  2. Incidental ingestion of soil and/or sediment while feeding
  3. Ingestion of contaminated water" (CDM Smith, 2013b)

7.5.3 Constituents of Potential Concern

An initial HQ screen was completed as part of the *Final Non-Asbestos BERA*. The goal of the screen was to eliminate from further consideration any contaminants, media, or receptor groups for which the data indicate risks are clearly below a level of concern. Chemicals with concentrations above toxicity benchmarks were retained as COPCs for further evaluation in the refined HQ evaluation.

7.5.4 Risk Assessment Approach

"Three risk assessment evaluation strategies were used to evaluate risks for ecological receptors at OU3, the HQ approach, site-specific community evaluations, and site-specific toxicity tests. Each of these risk assessment evaluation strategies has advantages and limitations. For this reason, conclusions based on only one method of evaluation may be misleading. Therefore, the best approach for reaching reliable conclusions is to combine the findings across all of the methods for which data are available, taking the relative strengths and weaknesses of each method into account in a weight of evidence evaluation." (CDM Smith, 2013b)

7.5.5 Weight of Evidence Evaluation

In the *Final Non-Asbestos BERA* three different lines of evidence are presented:

- Refined HQ evaluations
- Habitat and community evaluations
- Site-specific toxicity test evaluations

The risk conclusions for each line of evidence, the confidence associated with each line of evidence, and the overall weight of evidence conclusion for each ecological receptor group of interest at the OU3 Study Area are detailed below.

7.5.5.1 Aquatic Receptors.

Fish. For fish, the weight of evidence suggests that risks from non-asbestos constituents in the OU3 Study Area are likely to be minimal. However, the fish community evaluation showed a lower fish density and decreased biomass in LRC relative to reference areas, which could be consistent with an assumption of non-asbestos COPC toxicity to trout. However, a number of the other lines of evidence for fish indicate otherwise (some of which became available after the *Final Non-Asbestos BERA* was prepared). For example, there are a number of habitat quality factors that correlate strongly with trout density suggesting that habitat is strongly influencing the apparent differences in fish density and biomass. In addition, an *in situ* stream toxicity study of early life stage (egg, hatched alevin) trout did not indicate any significant likelihood of population effects

from the small hatch reductions that were observed at the site (which included exposure to non-asbestos COPCs). Further, no effects that could contribute to decreased survival of larger fish were identified either in an *in situ* caged juvenile trout study or from gross examination of resident trout taken from the site stream; both of which included exposure to asbestos and non-asbestos COPCs. "For fish, the weight of evidence suggests that risks from non-asbestos constituents in OU3 are likely to be minimal." (CDM Smith, 2013b)

Aquatic Invertebrates. "For aquatic invertebrates, the community evaluations in Rainy Creek showed that the aquatic invertebrate community ranked as unimpaired to slightly impaired and habitat quality may be a contributing factor to any observed effects. Although HQ values suggest that risks to aquatic invertebrates from chromium, manganese, and nickel in sediment were possible" (CDM Smith, 2013b), the OU3 Study Area specific toxicity tests with *C. tentans* and *H. azteca* showed no adverse effects to growth and reproduction in exposed organisms and some slight impacts to survival. Results from the benthic community surveys conducted along LRC occasionally rank as slightly impaired compared with off-site reference creeks, but do not indicate impairment when compared to the on-site reference location (i.e., URC). The differences are not extensive and may actually reflect differences in habitat quality. "The weight of evidence suggests that risks from non-asbestos constituents in the OU3 Study Area are likely to be minimal." (CDM Smith, 2013b)

7.5.5.2 Terrestrial Plants and Soil Invertebrates.

"For plants and terrestrial invertebrates, the single line of evidence available (HQ) indicated that the potential for risk from several metals (barium, cobalt, nickel, vanadium) in the mined area cannot be excluded. However, due to the conservative nature of the toxicity benchmarks used in deriving HQ values, results should not be interpreted as evidence that risk does exist." (CDM Smith, 2013b)

7.5.5.3 Wildlife Receptors.

"For wildlife, the single line of evidence available (HQ) showed that risks to wildlife were either not expected or were likely to be minimal for nearly all COPCs for all receptors. The exception is potential risks to insectivorous wildlife from the ingestion of barium, manganese, and vanadium in aquatic invertebrates. The calculated HQ values are likely to be biased high and actual risks are likely to be lower" (CDM Smith, 2013b) due to conservative assumptions about bioaccumulation of metals through the food web. "Thus, results should not be interpreted as evidence that risk does exist." (CDM Smith, 2013b)

8 POTENTIAL DATA GAPS

This section presents potential data gaps identified during review of the RI data presented in this report. These potential data gaps were then considered in the context of the results of the risk assessments summarized in **Section 7.0** to evaluate if filling the data gap is necessary to further characterize the nature and extent of *risks* in the OU3 Study Area, or if filling the data gap is necessary in order to adequately evaluate the feasibility of remedial alternatives in the FS. The need to fill any of the potential data gaps discussed below will be further evaluated as part of the OU3 Study Area FS.

The potential data gap summary below is organized by non-asbestos constituents and LAA in the various media to align with the presentation of the nature and extent of contamination in **Section 5.0**.

8.1 Potential Non-Asbestos Data Gaps

8.1.1 Surface Water

A potential data gap associated with evaluating the nature and extent of non-asbestos constituents in surface water may be that sufficient data were not collected during different flow conditions to fully evaluate if constituent concentrations vary in relation to flow rate. Phase I and II data were collected in an attempt to capture fall, spring, and summer time periods (including both high and low flow conditions). However, the data set is not sufficient to fully evaluate variability of constituent concentrations in relation to flow rate at all areas within the site. However, as discussed in **Section 5.1.1.2**, the available data were considered suitable for evaluating risks, and the conclusions of the risk assessments were that the non-asbestos constituents in surface water in the OU3 Study Area do not pose unacceptable risks to human health or the environment (see **Sections 7.4. and 7.5**). As a result, the nature and extent of non-asbestos constituents in surface water in the OU3 Study Area is considered adequately defined and additional evaluations of non-asbestos constituents in surface water are not considered necessary at this time.

8.1.2 Groundwater

Potential data gaps associated with the evaluation of non-asbestos constituents in groundwater include:

- The sampled wells were not installed and constructed with the objective of collecting environmental samples. However, based on the well rehabilitation efforts described in **Section 2.7.1** and the known well construction information, the groundwater analytical results are considered adequate for evaluating the nature and extent of non-asbestos constituents in groundwater.
- There are no reliable reference groundwater data (i.e., data from locations presumed to be un-impacted by previous mining activities or the presence of mine wastes) to compare with the inorganic, non-asbestos groundwater data collected from the OU3 Study Area. Comparing OU3 Study Area data with reference data would provide a line-of-evidence for identifying inorganic, non-asbestos constituents that may be elevated in groundwater as a result of previous mining activities or existing mine waste.

However, the available groundwater data were considered suitable for evaluating risks, and the conclusions of the risk assessments were that the non-asbestos constituents in groundwater in the OU3 Study Area do not pose unacceptable risks to human health or the environment (see **Section 7.4**). Moreover, the results of the detected non-asbestos constituents in the available groundwater samples summarized in **Section 5.1.3** do not indicate that previous mining activities or the presence of mine waste have had a significant impact on groundwater. As a result, the nature and extent of non-asbestos constituents in groundwater in the OU3 Study Area is considered adequately defined and additional evaluations of non-asbestos constituents in groundwater are not considered necessary at this time.

8.1.3 Sediment

A potential data gap associated with evaluating the nature and extent of non-asbestos constituents in sediment may be that no samples were collected at depths that can be used to evaluate the vertical extent of non-asbestos constituents deeper than six inches bgs. Another potential data gap is that the volumes of sediments in the streams and ponds with elevated non-asbestos-constituent concentrations is not known. However, as discussed in **Section 5.1.4.3**, the available data were considered suitable for evaluating risks, and the conclusions of the risk assessments were that the non-asbestos constituents in sediment in the OU3 Study Area do not pose unacceptable risks to human health or the environment (see **Sections 7.4** and **7.5**). As a result, the nature and extent of non-asbestos constituents in sediment in the OU3 Study Area is considered adequately defined and additional evaluations of non-asbestos constituents in sediment are not considered necessary at this time.

8.1.4 Soil/Mine Waste

A potential data gap associated with evaluating the nature and extent of non-asbestos constituents in soil/mine waste may be that not all samples were analyzed for SVOCs/PAHs or the full suite of VOCs. Another data gap may be that the soil/mine waste samples were not collected at depth, so there are no data regarding the potential vertical extent of mine-related non-asbestos impacts. However, as discussed in **Section 5.1.1.3**, the available data were considered suitable for evaluating risks, and the conclusions of the risk assessments were that the non-asbestos constituents in soil/mine wastes in the OU3 Study Area do not pose unacceptable risks to human health or the environment (see **Sections 7.4** and **7.5**). As a result, the nature and extent of non-asbestos constituents in soil/mine waste in the OU3 Study Area is considered adequately defined and additional evaluations of non-asbestos constituents in sediment are not considered necessary at this time.

8.2 Potential LAA Data Gaps

8.2.1 Lack of Representative LAA Background Data in the OU3 Study Area

As discussed in **Section 2.6.1**, EPA conducted an investigation at the Libby Site to characterize LAA in soil from areas that were thought to be representative of background conditions. The investigation was presented in the document titled: *Final Background Soil Summary Report Libby Asbestos Superfund Site, Montana* (CDM Smith, 2014b). The primary conclusion of the report was that there is a non-zero level of LAA in soils within the Kootenai Valley that is not attributable to vermiculite mining and processing activities at the Libby Site. The average total LAA concentration in background soil was estimated to be approximately 0.014% by mass. However, while these estimates may be representative of background conditions within the Kootenai Valley,

they likely are not representative of background conditions within the OU3 Study Area. This is because of the unique natural geologic character of Vermiculite Mountain (i.e., a large, high-quality vermiculite ore body containing high percentages of fibrous and asbestiform amphiboles), which was the reason the site was mined. As a result, it can be inferred that background LAA concentrations within the OU3 Study Area (i.e., proximal to Vermiculite Mountain) would be higher than the more distal surrounding areas where the EPA conducted the background study. However, the true nature of background LAA concentrations in the OU3 Study Area has not been established. Background levels for several media would be very difficult to establish and discerning the source (e.g., naturally occurring or anthropogenic) of the LAA adds additional complexity to the evaluation. The need to address this data gap will be assessed in the FS.

8.2.2 Soil, Mine Waste, and Bedrock

The extent of LAA-impacted forest soils between sample points is a potential data gap. However, the extent of LAA-impacted forest soils was interpolated between sample points. A limitation of this interpolation is that soils between sampling points may have lower levels of LAA, because the higher levels of LAA would be located at the base of trees where shed bark and duff are located before degrading into soils. Because TEM analyses of bark and duff are a more sensitive metric of LAA presence compared to PLM-VE analyses of forest soil, additional measurements of LAA in forest soil by PLM-VE are not deemed necessary.

Other than a few samples collected during the test pit investigation, the bulk of the solid media samples were collected near the ground surface. Accordingly, the vertical extent of LAA impacts in Former Mine Area soils is a potential data gap. However, elevated, naturally occurring LAA levels are expected to be present throughout the pyroxenite bedrock which underlies the soils and other media in the Former Mine Area.

Although extensive roadway material sampling has been performed within the Former Mine Area, there are no data for unpaved roads within approximately two to four miles from the center of the mine. Because many of these roads may have used gravel from local pits, additional data may be necessary to characterize LAA concentrations in roadway materials.

8.2.3 Groundwater

One possible data gap with regards to LAA concentrations in groundwater is that no groundwater wells were located to the northeast of the Former Mine Area. However, groundwater conditions are anticipated to be the same in these areas as in the areas investigated. In addition, groundwater likely flows towards, and discharges into, Fleetwood Creek in this area, which in turn flows directly into the KDID impoundment.

8.2.4 Surface Water and Sediment

A potential data gap associated with evaluating the nature and extent of LAA in surface water may be that additional temporal surface water sample data samples need to be collected during high flow periods in select areas in order to more definitively establish that LAA concentrations are influenced by flow conditions. However, as discussed throughout **Section 5.2.4**, the available data are considered suitable and sufficient for performing the Phase 2 FS.

Another potential data gap related to surface water is that the depth and volume of the LAA-impacted ponds in the OU3 Study Area are not known. The necessity of filling this data gap will be evaluated in the FS.

The current presence and extent of wetlands and jurisdictional waters within the OU3 Study Area that could be potentially impacted by a future remedy is currently unknown. The field work for this evaluation was conducted in the Spring of 2016.

A potential data gap associated with evaluating the nature and extent of LAA in sediment is the need for additional sediment data along the overbank of the Kootenai River to better evaluate the extent of potential LAA impacts along the Kootenai River. However, 20 sediment samples have been collected within the Kootenai River between Troy and the southeastern edge of the OU3 Study Area, 17 of which were Bin B1 or Bin B2 (trace; detected LAA <1%); the remainder were ND. The data were considered sufficient for preparation of the human health risk assessment (EPA, 2015a). The need for additional sediment investigation to evaluate whether remedial action may be necessary to mitigate potential future exposures will be determined during the FS.

8.2.5 Tree Bark and Duff Material

The extent of LAA-impacted tree bark and duff between sample points is a potential data gap. However, sufficient data were collected in order to interpolate between sample points. However, additional data on LAA levels in tree bark and duff may be necessary to refine this interpolation between tree bark and duff data points.

Establishing temporal LAA data patterns in tree bark and duff may be important for evaluating the feasibility of remedial alternatives. However, insufficient data were collected to establish temporal LAA data patterns, and significant temporal changes were not expected during the time frame of this investigation.

8.2.6 Ambient Air

Ambient air data were collected during three events. It is believed that sufficient data have been collected to support the findings of the RI. Further, sufficient data were collected to support the preparation of the *Final LAA HHRA* (EPA, 2015a), and estimated risks (refer to **Section 7.0**) indicate exposures to outdoor ambient air concentrations at the levels detected at the OU3 Study Area do not pose a significant risk to human health.

8.2.7 ABS Potential Data Gaps

Risk estimates (refer to **Section 7.0**) indicate commercial logging risks (skidding and site restoration scenarios) are above a level of concern near the mine (within two miles from the center of the Former Mine Area) and below a level of concern at an intermediate distance (approximately four miles) from the center of the Former Mine Area. Additional commercial logging ABS data need to be collected in intermediate areas (two to four miles from the center of the Former Mine Area) in order to better define the point at which risks become acceptable within this area.

Risk estimates (refer to **Section 7.0**) indicate a resident emptying woodstove ash after burning firewood collected from within approximately one mile from the mine center are above a level of concern and below a level of concern using firewood from Flower Creek and Bear Creek, which are located south of Libby (i.e., far from the mine). Because the risk estimates indicate

disturbances of woodstove ash risks are above a level of concern when firewood is collected near the mine, ABS data may need to be collected in intermediate areas in order to better define the point at which risks become acceptable within the OU3 Study Area.

Due to the inherent danger associated with fire ABS activities (e.g., slash pile and prescribed burns) only limited events have been performed. Additional tree bark and duff data are anticipated, along with modeling activities, to predict areas where potential exposures would result in unacceptable risk.

The majority of ABS investigations for the OU3 Study Area have been conducted in locations downwind (northwest) of the mine. The lack of ABS data in upwind/crosswind locations is a potential data gap. Additional tree bark and duff data is anticipated, along with modeling activities, to predict areas where potential exposures would result in unacceptable risk.

Data on LAA in smoke from a high-intensity fire has not been collected and may be necessary to better define exposure to firefighters. However, it may not be practicable to perform high-intensity fire sampling. Therefore, data from the low-intensity burn testing will be utilized for the FS evaluations.

9 SUMMARY AND CONCLUSIONS

A Remedial Investigation was performed at the OU3 Study Area within the Libby Asbestos Superfund Site between 2007 and 2015. The OU3 Study Area encompasses a former vermiculite mine, historically known as Vermiculite Mountain, and the areas adjoining the mine. The former vermiculite mine began limited operations in the 1920s and was operated on a larger scale by Grace from approximately 1963 to 1990. Vermiculite from the mine contains amphibole-type asbestos, referred to as LAA.

The purpose of the OU3 Study Area RI was to:

1. characterize the nature and extent of potential impacts within the OU3 Study Area resulting from historical mining, milling, and activities ancillary to mining and milling,
2. describe the fate and transport of these potential constituents,
3. provide information relevant to the assessment of human and ecological risks, and
4. obtain data to support the evaluation of remedial alternatives in the FS.

Media sampled as part of the RI to date included surface water, groundwater, sediment, sediment pore water, soil, mine waste, tree bark, forest soil, duff material, fish and game tissues, ash, ambient air, and ABS air. The various media have been analyzed for LAA and other non-asbestos constituents that potentially could have been released to the environment as a result of mining activities. A summary of the RI findings by media is presented below, along with conclusions.

9.1 Surface Water and Sediment

Former Mine Area Drainages. Several organic and inorganic non-asbestos constituents were detected in the OU3 Study Area surface water and sediment samples. Some of the constituents are likely elevated in concentration due to the geology in the vicinity of the Former Mine Area. The non-asbestos risk assessments concluded that non-asbestos constituents in surface water and sediment do not pose unacceptable risks to human health and the environment.

LAA has been detected in surface water at levels above the MCL in Fleetwood Creek Pond (FC-Pond), Carney Creek (CC-2; near the confluence with LRC), seeps (at the base of the waste rock piles), and in various locations along LRC, with maximum concentrations detected at LRC-6 (near the mouth of Rainy Creek). Elevated LAA in surface water was typically measured between the months of April and May. The higher LAA concentrations were typically observed to be associated with higher flows and steeper gradients, which led to increased energy and erosion. Higher LAA concentrations also may be associated with run-off from LAA-impacted media.

LAA was detected in the majority of sediment samples collected from the creek and pond sampling locations near the Former Mine Area, with the highest levels (up to 10%) measured in Carney Pond and in LRC (TP-TOE2; located south of the KDID). Contributions of LAA from naturally occurring surficial geologic materials (bedrock and glacial material) and contact with mine waste materials appear to be contributing to LAA in sediment and surface water. LAA appears to accumulate in pond sediment due to a reduction in stream velocity, which allows the suspended LAA to settle. During increased surface water flow events (e.g. storm events), re-suspension of LAA in sediments could potentially increase LAA concentrations in surface water.

As concluded in the *Final Asbestos BERA*, the weight of evidence suggests that LAA in waters of LRC is not causing adverse effects on resident trout. LAA in LRC may be causing small to

moderate effects on survival of some species, but that the overall benthic macroinvertebrate community is not substantially impacted. Sediments and waters in the OU3 Study Area are not likely to be causing any ecologically significant adverse effects on amphibian populations given a lack of overt signs of toxicity.

Kootenai River. There were no exceedances of the MCL in any of the surface water samples analyzed; and the highest concentration of LAA in sediment samples was Bin B2 (≥0.2% to <1%); these LAA levels were measured downstream of LRC and at several locations near and downstream of Libby and Troy. There appears to be very little accumulation of LAA in sediment near the mouth of LRC, which indicates that contribution of LAA to the Kootenai River from LRC is not substantial. There are a number of other potential sources of LAA within the Libby Site boundary (OU1, OU2, former river conveyor system, riprap in creeks, and natural material) that are not associated with the OU3 Study Area. The human health risk assessment performed for the Libby Site found no significant risks associated with recreational activities that may disturb LAA in Kootenai River sediments under current conditions (EPA, 2015a). However, if Kootenai River sediments were to become exposed and dry in the future, such as during an extended drought event or a dredging scenario where sediments are placed in accessible areas and allowed to dry out, additional evaluations of Kootenai river sediments may be necessary to determine whether these sediments pose an unacceptable risk.

9.2 Groundwater

The overall RI data suggests that groundwater has not been significantly impacted by previous mining activities or existing mine wastes with respect to non-asbestos constituents. The non-asbestos human health risk assessment concluded that ingestion of non-asbestos constituents in groundwater do not pose unacceptable risks to human health.

With respect to LAA, of the 20 samples collected from eight shallow well/piezometer locations, only two samples contained concentrations of LAA greater than the MCL; both are attributed to sediment (due to insufficient development) in the piezometers. Given the low seepage velocity and natural filtration that typically occurs in porous media, it is expected that very little transport of LAA would occur within the shallow groundwater. In addition, LAA was not detected above the MCL in bedrock groundwater samples. Thus, the RI data suggest that groundwater has not been significantly impacted by previous mining activities or existing mine wastes with respect to LAA. The *Final LAA HHRA* concluded that risk from ingestion of LAA in groundwater from wells within the OU3 Study Area is of low concern.

9.3 Soil, Mine Waste, and Bedrock

Several inorganic, non-asbestos constituents exceeded the Montana background threshold concentrations in soil in the OU3 Study Area and reference sample locations; and several inorganic, non-asbestos constituents were found to be elevated relative to the reference locations. These results are consistent with the mineralogy of the OU3 Study Area. The presence and distribution of SVOCs/PAHs and VOCs in soil/mine waste in the OU3 Study Area are not significant or widespread.

LAA concentrations in naturally occurring materials ranged from ND (Bin A) to ≥1% (Bin C) in the glacial materials, and were as high as 8% in the pyroxenite bedrock samples. In general, the highest percentages of LAA reported in samples were from road soil (25%, collected on a mine bench), bedrock (8%, outcrop sample), waste rock (5%), and coarse tailings (4%). The extent of

detected LAA in soil, mine waste, and bedrock samples ≥0.2% by mass extends over an area of approximately 1,544 acres, although LAA was detected at levels below 0.2% beyond this area. The only forest soil samples with detections of LAA were collected within approximately two miles from the center of the Former Mine Area. Approximately 40.7 MCY of waste rock, 3.2 MCY of fine tailings, and 14.7 MCY of coarse tailings are present in the Former Mine Area.

9.4 Tree Bark, Duff Material, Ash and Smoke

The mean PCME LAA levels for the near (within two miles from the center of the Former Mine Area), intermediate (between two and six miles from the center of the Former Mine Area), and far (more than six miles from the center of the Former Mine Area) tree bark data groupings were 0.70 Ms/cm^2, 0.22 Ms/cm^2, and 0.049 Ms/cm^2, respectively. The mean PCME LAA levels for the near, intermediate, and far duff data groupings were 141 Ms/g-dw, 23 Ms/g-dw, and 1.2 Ms/g-dw, respectively. These data indicate LAA levels in tree bark and duff material tend to decrease with increasing distance from the Former Mine Area. The highest LAA levels are generally within 3-4 miles of the mine center. Results of controlled burn tests using LAA-impacted duff and firewood from the OU3 Study Area indicate the majority (>90%) of the LAA fibers present in the media that is burned do not become entrained in air emissions, but are retained in the ash. Potential human health exposures from disturbances of tree bark, duff material, and ash were evaluated through the collection of ABS air (see **Section 9.7**).

As concluded in the *Final Asbestos BERA*, the weight of evidence suggests LAA exposures are not causing any ecologically significant effects on populations of terrestrial ecological receptors (e.g., mammals and birds) residing in the forest areas of the OU3 Study Area.

9.5 Ambient Air

Ambient air sampling was conducted during various conditions to assess whether LAA fibers would become airborne due to wind disturbance, in conditions that closely represented typical wind conditions at the OU3 Study Area. Results showed that PCME LAA levels in ambient air ranged from ND to 0.0056 s/cc. The *Final LAA HHRA* concluded that exposures to outdoor ambient air concentrations of LAA at the levels detected at the OU3 Study Area do not pose a significant risk to human health.

9.6 Tissues

LAA fibers were present in the fillet tissues of fish collected from the Mill Pond, but LAA was not detected in any muscle or organ tissues of a mule deer that was hunted from within the OU3 Study Area. The *Final LAA HHRA* concluded that risk from ingestion of LAA in fish and game tissues derived from the OU3 Study Area is of low concern. Additionally, the *Final Asbestos BERA* concluded that ecological receptors in OU3 are unlikely to be adversely impacted by LAA or non-asbestos constituents released to the environment by previous vermiculite mining and milling activities.

9.7 ABS and Human Health Risk Assessment

ABS involves the collection of air samples under scripts describing a variety of vigorous source-disturbance conditions that are designed “to result in air concentrations that are at the high end of what could occur” (EPA, 2008g). These air concentrations provide high-end estimates of

potential inhalation exposure concentrations that can be used to conservatively calculate potential risks.

Air samples collected from ABS performed in the OU3 Study Area were used to provide high-end estimates of potential inhalation exposure concentrations to evaluate potential human health risks. In total, more than 150 different exposure scenarios were evaluated in the *Final LAA HHRA.* The exposure scenarios, exceeding an HQ of 1 related to the OU3 Study Area are presented below and on **Figure 7-1**.

- Outdoor worker exposures during commercial logging activities in OU3 near the mine (approximately 1 mile from the Former Mine Area center), especially those logging activities that disturb soil and duff material (e.g., skidding, site restoration) (HQ=2 for site restoration; HQ=5 for skidding);
- Firefighter exposures while performing dry (as opposed to wet) mop-up activities after an understory burn that occurs near the mine (approximately 1 mile from the Former Mine Area center) (HQ=5);
- Forest worker exposures while building slash piles near the mine (approximately 1 mile from the Former Mine Area center) (HQ=2);
- Trespasser rock hound exposures in the disturbed area of the mine in OU3 (HQ=2); and
- Residential exposures (outside of OU3 Study Area) during woodstove ash disturbances (i.e., while emptying ash from the woodstove) when the burned firewood is sourced from near the mine (approximately 1 mile from the Former Mine Area center) (HQ=2).

The cumulative risk calculations demonstrate:

- People who are predominantly exposed at locations where lower LAA levels in source media (e.g., forest fire worker building slash piles at distances greater than 1 mile from the Former Mine Area center, outdoor worker firefighter during simulated burning activities) are likely to have cumulative risks that are below a level of concern, even when the cumulative scenario includes many different exposure activities across multiple OUs.
- Cumulative exposure and risk can be reduced by changing the locations where the activities are performed (e.g., collecting firewood from areas far from the mine site).
- Cumulative exposure has the potential to become significant if the majority of the receptor lifetime is spent at properties and in locations where LAA is present and where people are engaging in source disturbance activities that have a high potential for LAA releases.
- When cumulative exposure includes scenarios where LAA-contaminated source materials are disturbed, such as trespassing on the disturbed area of the mine site, disturbing surface soils with Bin B2/C concentrations, performing certain activities related to commercial logging operations near the mine site, disturbing vermiculite insulation during tradesperson activities, or disturbing subsurface soils with residual LAA contamination, these exposures may be important risk drivers for cumulative risk estimates. EPA defines a risk driver as an individual exposure scenario that contributes a substantial fraction of the cumulative risk (EPA, 2015a).

- It is not necessary to address every single exposure scenario to significantly lower cumulative HIs. Addressing exposures for the risk drivers will have the greatest impact in lowering cumulative exposures and risks.

9.8 Summary of Data Gaps to be Potentially Addressed in the OU3 Study Area Feasibility Study

This section presents a summary of potential data gaps discussed in **Section 8.0** that potentially should be filled to support the FS**.** The need to fill any of the potential data gaps will be addressed in the OU3 Study Area FS.

- **Soil and Mine Waste.** Although extensive roadway material sampling has been performed within the Former Mine Area, there are no LAA data for unpaved roads within approximately two to four miles from the mine. Because many of these roads may have used gravel from local pits, additional data may be necessary to characterize LAA concentrations in roadway materials.
- **Woodstove Ash.** Risk estimates (refer to **Section 7.0**) indicate a resident emptying woodstove ash after burning firewood collected from within approximately one mile from the mine center are above a level of concern and below a level of concern using firewood from Flower Creek and Bear Creek, which are located south of Libby. ABS data may need to be collected in intermediate areas (two to four miles) from the center of the Former Mine Area in order to better define the point at which risks become acceptable within the OU3 Study Area.
- **Surface Water.** The depth and volume of the LAA-impacted ponds in the OU3 Study Area are currently not known. It may be necessary to fill this data gap during the FS in order to evaluate remedial alternatives.
- **Sediment.** The depth and volume of LAA-impacted sediment in ponds and streams in the OU3 Study Area are not currently known. It may be necessary to fill this data gap during the FS in order to evaluate remedial alternatives. In addition, it may be necessary to collect additional sediment data along the Kootenai River during the FS to ensure appropriate controls are in place to address potential future sediment exposure scenarios.
- **ABS Air during Commercial Logging Activities.** Risk estimates indicate commercial logging risks (skidding and site restoration scenarios) are above a level of concern near the center of the Former Mine Area and below a level of concern at an intermediate distance (approximately four miles) from the center of the Former Mine Area. Additional commercial logging ABS data may need to be collected in intermediate areas (two to four miles) from the center of the Former Mine Area in order to better define the point at which risks become acceptable within the OU3 Study Area.
- **ABS Air during a Wildfire.** Data on LAA in smoke from a high-intensity fire have not been collected and may be necessary to better define exposure to firefighters. However, it may not be practicable to perform high-intensity fire sampling. Therefore, data from the low-intensity burn testing will be utilized for the FS evaluations.
- **Tree Bark and Duff Material.** Additional data on LAA levels in tree bark and duff may be necessary to refine the interpolation between sampling points. Establishing temporal LAA data patterns in tree bark and duff may also be important for evaluating the feasibility of remedial alternatives.

9.9 Conclusions

The data analysis performed for this report concluded that LAA is the only contaminant of concern for the OU3 Study Area. The *Final Asbestos BERA* concluded that aquatic and terrestrial ecological receptors are unlikely to be adversely impacted by LAA. Thus, humans are the only receptor of concern. The *Final LAA HHRA* concluded that the primary exposure media to LAA within the OU3 Study Area is outdoor air during certain activities that disturb various source media (e.g., soil, duff material, ash) and the exposure pathway of greatest concern is inhalation by persons conducting those activities.

The nature and extent of LAA in the OU3 Study Area is considered to be adequately defined, with the exception of the data gaps identified, based upon the data analysis performed for this report. The available data are considered suitable and sufficient for initiating the FS, although additional characterization activities are anticipated to refine remedial areas. The OU3 boundary for purposes of the FS and remedy implementation is currently under development.

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Tables

Table 2-1: Libby Montana: Age, Gender, and Racial Distribution (2010 US Census)

Age (years)	<5	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+
	143	137	126	160	158	291	270	400	352	591
Gender	Female	Male								
	1,350	1,278								
Race or Ethnicity	White	Black or African American	Native American or Native Alaskan	Asian	Native Hawaiian or Other Pacific Islander	Other	Two or More Races	Hispanic or Latino[a]		
	2,521	3	29	11	1	9	54	66		
Total Population	2,628									

Notes:
[a] Hispanic or Latino persons may be of any race and are considered an ethnic group rather than a racial group thus, this number is not included in the total population.
Source: U.S. Census, 2010

Table 2-2: Employment Distribution by Economic Sector In 2010

Total Labor Force	Agriculture, Forestry, Fishing and Hunting, or Mining	Construction	Manufacturing	Wholesale Trade	Retail Trade	Transportation and Warehousing, and Utilities	Information	Finance, Insurance, Real Estate, Rental	Professional, Scientific, Management, Administrative, and Waste Management Services	Educational, Health, and Social Services	Arts, Entertainment, Recreation, Accommodation, and Food Services	Other Services	Public Administration	Unemployed	Population 16 Years and Older
1,125	76	74	10	0	96	12	59	49	78	333	235	92	11	86	2,232

Source: U.S. Census, 2010

Table 2-3: Seasonal Average Temperature and Precipitation at Libby Ranger Station[a]

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Seasonal Max. Temperature (ºF)	33.5	41.3	52.0	62.5	71.6	78.9	86.3	86.8	75.2	59.0	41.0	33.0	60.1
Avg. Seasonal Mean Temperature (ºF)	25.9	31.8	39.4	47.0	55.1	61.8	67.2	67.0	57.4	46.0	34.3	26.9	46.7
Avg. Seasonal Min. Temperature (ºF)	18.2	22.2	26.7	31.4	38.5	44.7	48.1	47.1	39.6	32.9	27.6	20.8	33.2
Avg. Seasonal Precipitation (in.)	1.95	1.47	1.31	1.05	1.63	1.68	1.30	1.01	1.02	1.37	2.40	2.21	18.40

Notes:
[a] – Period of record is 1981 – 2010. http://www.ncdc.noaa.gov/cdo-web/datatools/normals
ºF – degrees Fahrenheit
in. - inches

Table 2-4: Generalized Stratigraphy of the OU3 Study Area[1]

Age	Formation	Group	Map Label	General Description	Estimated Thickness (meters)
Quaternary	Alluvium	—	Qal	Alluvium or colluvium.	—
Quaternary - Pleistocene	Glacial Till	—	Qgt,Qgf	Glacial till and lacustrine deposits.	—
Middle Cretaceous [2]	Rainy Creek Igneous Complex	—	Kpy,Ks	Biotite, pyroxenite, nepheline syenite, and syenite with quartz and calcite veins.	—
Precambrian[3]	Libby Formation	Missoula Group	pCm	Light-gray to dark-gray argillite, calcareous argillite, sandstone, and shale.	1829-2316
	Striped Peak Formation	Missoula Group	pCm	Thin-bedded ferruginous and sericitic dark-red to purplish sandstone and quartzite.	610-762
	Wallace Formation	Piegan Group	pCpi	Most heterogenous formation of the Belt Supergroup. Main constituents calcareous or dolomitic argillite and shale. Mostly gray, green, and green-yellow colors. Molar-tooth structure is characteristic of Middle Wallace.	2438-4572
		Ravalli Group	pCr	Medium-gray, bluish-gray, and white quartzite, argillite, and quartzitic argillite.	2134-3048
	Prichard Formation	Lower Belt	pCp	Blue-gray, dark-to-medium-gray, grayish-brown and grayish-black argillite. Light-gray to white quartzite.	2743-3048

Notes:
1. Stratigraphy based on Boettcher 1963 and Weekes 1981
2. Weekes (1981) dates this unit as early Jurassic while Boettcher (1963) and Zinner (1983) date this unit as middle Cretaceous.
3. These Formations and Groups are part of the Belt Supergroup which is an immense package of sedimentary rocks that extend southward from Canada through western Montana and into northern and central Idaho. The map label pC is used to present the Belt Supergroup as a whole package on Figure 2-3.

Table 2-5: Former Mine Area Historic Well Summary

		Groundwater Well Construction Information										
Well ID	Construction Date[1]	Northing(ft)[3]	Easting(ft)[3]	Approximate Surface Elevation (ft)	Well Diameter (in)	Casing Material	Screened Interval (ft bgs)[1]	Depth to Groundwater Pre - Post Rehabilitation (ft bgs)[2]	Measured Total Well Depth (ft bgs)	Material Screened[4]	Depth to Water November 2014 (ft bgs)	Groundwater Elevation November 2014 (ft amsl)
Well A[2]	--	1577009.4	534134.0	3359	6	Steel	--	3.0 - 1.6	41.2	Overburden (Alluvial or Glacial)	3.5	3356
Well B[3]	1973	1580068.1	529704.6	2716.2	8 (2)	Steel (PVC)	43 - 50	NA-40.8	NA	Overburden (Glacial)	38.87	2677
Well C[2,3]	--	1581544.4	531205.3	2773.0	10	Steel	--	22.9 - 23.2	72.4	Overburden (Glacial)	23.5	2749
Well D[2]	1986	1580365.6	534069.1	3821	10	Steel	345 - 385	241.5 - 243.9	339.6	Bedrock (Pyroxenite)	241.2	3580
Well E[2]	2000	1579751.4	534923.3	3879	2	PVC	235 - 250	172.3 - 190.8	197.5	Bedrock (Pyroxenite)	39.7	3839
Well F	--	1578550.9	533468.3	3780	2	PVC	--	NA-Dry	214.3	Bedrock (Pyroxenite)	Dry	Dry
Well G	2000	1574417.3	537189.4	3774	6	Steel	283 (open base)	--	NA	Bedrock (Pyroxenite)	NA	NA
Well H[2]	2004	1580509.4	532682.2	3333	2	PVC	59 - 69	59.9 - Dry	69.1	Bedrock (Pyroxenite)	NA	NA
Well I	1971	1582871.9	539929.2	3375	6	Steel	113 - 116	--	NA	Bedrock (Pyroxenite)	NA	NA
Well J	--	1580991.8	536116.7	3786	6	Steel	--	3.4	68.2	Overburden (Alluvial or Glacial)	1.4	3784

Notes:

1) Information included from construction records which appear to coincide with well location
2) Rehabilitated by MWH in 2008
3) Elevation information from BHI Survey conducted 11/7/14, Montana State Plane NAD 83 International Foot Coordinates with NAVD88 elevations
4) Judgement based on construction records, measured total well depth, and measured water levels

-- unknown
amsl above mean sea level
bgs below ground surface
ft feet
in inches
NA not available
PVC polyvinyl chloride

Table 2-6: Historical KDID Piezometers Installed During KDID Construction

Piezometer Construction Information											
Piezometer ID	Location	Northing(ft)[3]	Easting(ft)[3]	Top of Casing Elevation (ft)[3]	Casing Type	Casing Stickup (ft ags)[3]	Measured Base of Piezometer (ft btoc)	Measured Base of Piezometer (ft bgs)	Apparent Material at Base	Depth to Water November 2014 (ft bgs)	Groundwater Elevation November 2014 (ft amsl)
P	KDID Crest, Right Abutment	1582966.3	531737.4	2933.6	2" PVC	1.6	102	100.4	Foundation (Glacial Till)	Dry	Dry
P1	KDID Crest, Central / Right Abutment	1582863.7	531891.3	2925.2	4" PVC	3.3	104	100.7	Embankment	Dry	Dry
P2[2]	KDID Crest, Max Section	1582755.9	532015.9	2924.9	4" PVC	3.2	122	118.8	Foundation (Alluvium)	116.6	2805.1
P3[1]	Dam Crest, Max Section	1582649.2	532134.8	2925.6	4" PVC	3.6	61	57.4	Embankment	Dry	Dry
P4[2]	Dam Crest, Central / Left Abutment	1582554.7	532242.1	2925.3	4" PVC	2.7	106	103.3	Embankment	Dry	Dry
P5[2]	Dam Crest, Left Abutment	1582455.2	532353.0	2926.6	4" PVC	3.7	104	100.3	Foundation (Glacial Till)	Dry	Dry
PM1[2]	Lower Downstream Bench, Max Section	1582589.7	531827.6	2849.9	2" PVC	0.6	55	54.4	Foundation (Alluvium)	53.4	2795.9
PM2[2]	Higher Downstream Bench, Max Section	1582632.5	531974.5	2907.8	2" PVC	0.7	105	104.3	Foundation (Alluvium)	102.34	2804.7
PM3[2]	Lower Downstream Bench, Max Section	1582509.7	531914.6	2849.3	2" PVC	0.7	52	51.3	Embankment	Dry	Dry
PM4[2]	Lower Downstream Bench, Left Abutment	1582359.9	532074.4	2847.4	2" PVC	0.6	41	40.4	Embankment	Dry	Dry
PM5	Middle Downstream Bench, Left Abutment	1582357.1	532165.7	2875.9	2" PVC	0.7	50	49.3	Embankment	Dry	Dry
PM6	Higher Downstream Bench, Left Abutment	1582346.7	532272.4	2904.1	2" PVC	0.6	66	65.4	Embankment	Dry	Dry
A8	Downstream Toe, Central / Left Abutment	1582388.4	531850.5	2798.7	1.5" PVC	2.0	28	26.0	Alluvium	5.3	2791.4

Notes:

1) Piezometer P3 map have originally been completed in the foundation but appears to have been partially filled with material since construction
2) Base depth within the anticipated error for interpretations of geologic contacts
3) From BHI Survey conducted 11/7/14, Montana State Plane NAD 83 International Foot Coordinates with NAVD88 elevations
4) Measured in December 2014

ags above ground surface
amsl above mean sea level
bgs below ground surface
btoc below top of casing
ft feet
ID Identification
KDID Kootenai Development Impoundment Dam

Table 2-7: 2014 Installed Piezometer Construction Details

			Coordinates		Piezometer Construction Information									Groundwater Measurements		
Drill Hole ID	Location	Piezometer ID	Northing (ft)	Easting (ft)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Casing Stickup Above Ground Surface (ft)	Drill Hole Total Depth (ft bgs)	Type	Slot Size (inch)	Bottom of Screened Interval (ft bgs)	Screened Length (ft)	Geologic Material	Depth to Ground Water (ft btoc)	Ground Water Elevation (ft amsl)	Ground Water Measurement Date
BH-01A	Impoundment	BH-01A-1	1,582,930.1	532,041.5	2908.2	2910.7	2.5	201	2-inch Sch 80 PVC	0.02" Factory Slotted	200.6	5.0	Bedrock	112.89	2,797.82	4-Nov-2014
		BH-01A-2	1,582,930.2	532,041.1	2908.2	2910.9	2.7	201	2-inch Sch 80 PVC	0.02" Factory Slotted	106.6	5.0	Alluvium	104.35	2,806.55	4-Nov-2014
BH-01B		BH-01B-1	1,582,932.9	532,037.7	2908.3	2910.8	2.6	90.4	2-inch Sch 80 PVC	0.02" Factory Slotted	88.3	10.0	Embankment Fill	Dry	NA	4-Nov-2014
		BH-01B-2	1,582,932.9	532,037.7	2908.3	2910.8	2.6	90.4	2-inch Sch 80 PVC	0.02" Factory Slotted	59.5	10.0	Tailing	60.99	2,849.82	4-Nov-2014
BH-02	KDID Crest, Left Abutment	BH-02-1	1,582,469.0	532,257.0	2931.5	2931.2	-0.3	143	2-inch Sch 80 PVC	0.02" Factory Slotted	132	5.0	Glacial Till	126.14	2,805.08	4-Nov-2014
		BH-02-2	1,582,469.1	532,257.3	2931.5	2931.2	-0.3	143	2-inch Sch 80 PVC	0.02" Factory Slotted	105	10.0	Embankment Fill	Dry	NA	4-Nov-2014
BH-03A	KDID Crest, Max. Section	BH-03A-1	1,582,752.4	531,935.6	2932.4	2932.2	-0.2	248	2-inch Sch 80 PVC	0.02" Factory Slotted	141	5.0	Alluvium / Till	126.90	2,805.30	4-Nov-2014
BH-03B		BH-03B-2	1,582,749.0	531,939.2	2932.4	2932.1	-0.3	118	2-inch Sch 80 PVC	0.02" Factory Slotted	117	10.0	Embankment Fill	115.08	2,817.05	4-Nov-2014
BH-04	KDID Crest, Right Abutment	BH-04-1	1,582,942.3	531,729.7	2932.7	2932.3	-0.3	124.5	2-inch Sch 80 PVC	0.02" Factory Slotted	97	5.0	Glacial Till	Dry	NA	4-Nov-2014
		BH-04-2	1,582,942.1	531,729.7	2932.7	2932.4	-0.3	124.5	2-inch Sch 80 PVC	0.02" Factory Slotted	81	10.0	Embankment Fill	80.76	2,851.59	4-Nov-2014
BH-05A	KDID, Mid-Slope Bench, Max. Section	BH-05A-1	1,582,563.3	531,857.5	2849.2	2848.9	-0.3	155	2-inch Sch 80 PVC	0.02" Factory Slotted	153.7	5.0	Bedrock	87.72	2,761.21	4-Nov-2014
		BH-05A-2	1,582,563.2	531,857.4	2849.2	2848.9	-0.3	155	2-inch Sch 80 PVC	0.02" Factory Slotted	69.7	5.0	Alluvium	51.41	2,797.52	4-Nov-2014
BH-05B		BH-05B-1	1,582,559.5	531,862.1	2849.1	2848.9	-0.2	47.3	2-inch Sch 80 PVC	0.02" Factory Slotted	46.5	10.0	Embankment Fill	Dry	NA	4-Nov-2014
BH-06	Downstream Toe, Left Side	BH-06-1	1,582,355.9	531,843.2	2795.8	2798.6	2.9	60.2	2-inch Sch 80 PVC	0.02" Factory Slotted	58.7	5.0	Bedrock	8.07	2,790.56	4-Nov-2014
		BH-06-2	1,582,355.9	531,843.0	2795.8	2798.2	2.5	60.2	2-inch Sch 80 PVC	0.02" Factory Slotted	18.4	5.0	Alluvium	7.91	2,790.32	4-Nov-2014

Table 2-7: 2014 Installed Piezometer Construction Details

			Coordinates		Piezometer Construction Information									Groundwater Measurements		
Drill Hole ID	Location	Piezometer ID	Northing (ft)	Easting (ft)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Casing Stickup Above Ground Surface (ft)	Drill Hole Total Depth (ft bgs)	Type	Slot Size (inch)	Bottom of Screened Interval (ft bgs)	Screened Length (ft)	Geologic Material	Depth to Ground Water (ft btoc)	Ground Water Elevation (ft amsl)	Ground Water Measurement Date
BH-07A	Downstream Toe, Center	BH-07A-1	1,582,425.3	531,698.2	2796.9	2799.4	2.6	118	2-inch Sch 80 PVC	0.02" Factory Slotted	117.0	5.0	Bedrock	46.06	2,753.38	4-Nov-2014
		BH-07A-2	1,582,425.4	531,697.9	2796.9	2799.6	2.7	118	2-inch Sch 80 PVC	0.02" Factory Slotted	57.0	10.0	Glacial Till	51.08	2,748.47	4-Nov-2014
BH-07B		BH-07B-1	1,582,421.5	531,700.3	2796.6	2799.3	2.7	28	6-inch Sch 80 PVC	0.04" Continuous "Vee-Type" Wire Wrap	27.0	15.0	Alluvium	8.33	2,790.99	4-Nov-2014
BH-08	Downstream Toe, Right Side	BH-08-1	1,582,555.2	531,605.4	2796.6	2799.1	2.4	116	2-inch Sch 80 PVC	0.02" Factory Slotted	105	5.0	Bedrock	45.19	2,753.88	4-Nov-2014
		BH-08-2	1,582,555.1	531,605.7	2796.6	2799.1	2.5	116	2-inch Sch 80 PVC	0.02" Factory Slotted	16	5.0	Alluvium	7.88	2,791.27	4-Nov-2014
BH-09	Downstream	BH-09-1	1,582,084.7	531,400.8	2797.6	2797.4	-0.3	130	2-inch Sch 80 PVC	0.02" Factory Slotted	35.0	10.0	Alluvium	10.54	2,786.84	4-Nov-2014

Notes:

amsl	above mean sea level
bgs	below ground surface
btoc	below top of casing
ft	feet
ID	Identification
KDID	Kootenai Development Impoundment Dam
PVC	polyvinyl chloride

Table 2-8: OU3 Study Area ISCO Station Surface Water Discharges 2008-2015

CC-02								
Year	Spring				Fall			
	Number of Flow Measurements Collected	Min of Flow (gpm)	Average of Flow (gpm)	Max of Flow (gpm)	Number of Flow Measurements Collected	Min of Flow (gpm)	Average of Flow (gpm)	Max of Flow (gpm)
2008	6796	29.06	178.62	490.08	4906	50.36	81.90	124.71
2009	6379	24.08	199.93	1380.11	1135	50.36	57.89	64.37
2010	6019	45.92	131.73	558.95	3956	48.07	82.55	202.38
2011	6647	66.42	547.37	2112.63	2881	66.42	104.69	220.45
2012	7733	68.85	354.47	1491.62	408	66.42	79.87	103.14
2013	7497	54.71	235.13	723.24	2908	54.71	105.94	191.80
2014	8189	92.09	375.39	3409.32	5252	126.52	207.92	925.64
2015	7456	43.81	186.29	937.72	2030	50.25	70.89	103.14
LRC-02								
Year	Spring				Fall			
	Number of Flow Measurements Collected	Min of Flow (gpm)	Average of Flow (gpm)	Max of Flow (gpm)	Number of Flow Measurements Collected	Min of Flow (gpm)	Average of Flow (gpm)	Max of Flow (gpm)
2008	5537	75.40	711.48	1255.33	4829	254.40	303.86	604.22
2009	2481	871.39	1737.84	3090.46	Battery down in ISCO unit, no data collected for fall 2009.			
2010	7073	299.57	624.99	1216.09	3956	275.65	365.41	610.10
2011	7225	673.08	3408.00	8703.63	2687	467.90	589.75	784.89
2012	7902	731.54	2764.50	8260.88	408	692.38	757.28	812.05
2013	7498	407.17	1484.02	3436.32	2908	364.85	455.37	597.77
2014	7918	543.33	2243.61	7024.05	5255	324.15	567.24	1319.50
2015	6620	275.65	987.76	2205.84	1974	266.28	296.45	334.17
LRC-06								
Year	Spring				Fall			
	Number of Flow Measurements Collected	Min of Flow (gpm)	Average of Flow (gpm)	Max of Flow (gpm)	Number of Flow Measurements Collected	Min of Flow (gpm)	Average of Flow (gpm)	Max of Flow (gpm)
2008	5272	291.62	1105.70	4516.20	4784	385.53	512.58	692.82
2009	6373	12.87	1468.60	4960.18	1135	341.31	391.55	431.56
2010	7074	354.52	727.51	1417.49	3957	375.28	493.13	832.62
2011	7226	798.43	3585.05	10175.91	2481	635.04	1207.31	3571.61
2012	7902	812.05	3004.03	9740.37	408	771.43	851.98	959.71
2013	7498	543.33	1663.74	3571.61	2588	531.47	655.90	895.39
2014	7905	261.64	2371.81	5446.09	5248	537.39	800.95	2082.01
2015	7258	314.24	1073.30	2632.54	2168	314.24	345.29	439.94

gpm = gallons per minute
Spring months = March to August
Fall months = September to November. ISCO samplers are typically removed in November and re-deployed in March so that they will not become damaged or frozen over the winter months.

Table 2-9: OU3 Study Area Ponds

Pond	Creek Location	Site ID	Approximate Area (acres)	Perennial	Potential Overflow Location	Use/Features
Carney Pond[(a)]	Carney Creek	CC-POND	2	Yes	Tributary to Carney Creek	Formed when waste rock piles dammed drainage channels for Carney Creek.
Fleetwood Pond	Fleetwood Creek	FC UPPER POND	<1	Yes	Tributary to Fleetwood Creek	Formed when coarse tailings filled original drainage for Fleetwood Creek.
Tailings Impoundment	Rainy Creek	TP	70	Yes	Tributary to Rainy Creek	Formed from the tailings impoundment dam construction.
Mill Pond	Rainy Creek	MP	6	Yes	Tributary to Rainy Creek	Presumed use as water supply for milling operations.

[(a)] A smaller pond is located on Carney Creek northwest of Carney Pond. There also are several other small (less than one acre in size) minor ponds located within the Former Mine Area and these smaller ponds were not sampled as part of the RI and thus are not detailed in this table.

Table 3-1: OU3 Study Area Asbestos Analytical Methods

Analysis Group	Analytical Method	Groundwater	Surface Water	Soil and Mine Waste	Sediment	Forested Areas: Tree Bark & Duff	Ash	Ambient Air	ABS Air
Asbestos (Libby Amphibole Asbestos - LAA)	TEM EPA 100.2		X						
	TEM ISO 10312	X	X			X	X	X	X
	PLM-VE			X	X				
	PLM-Grav			X	X				

ABS – activity based air sampling
TEM (transmission electron microscopy) – in accordance with International Organization for Standardization (ISO) 10312.1995(E); hereafter referred to as TEM ISO
TEM EPA 100.2 – See Section 3.5.2 below for a complete description
PLM-Grav (polarized light microscopy, gravimetric) Gravimetric (hereafter referred to as PLM-Grav)
PLM-VE (polarized light microscopy, visual area estimation) using visual area estimation (hereafter referred to as PLM-VE)

TABLE 3-2: OU3 Study Area Non-Asbestos Analytical Methods

Analysis Method	Analytical Procedure
Water Quality Parameters	
310.1	Bicarbonate as HCO3: An unaltered sample is titrated to an electrometrically determined end point of pH 4.5.
A2320 B	Alkalinity, Total as CaCO3, Bicarbonate as HCO3, Carbonate as CO3: Hydroxyl ions present in a sample as a result of dissociation or hydrolysis of solutes react with additions of standard acid. Alkalinity thus depends on the end-point pH used.
A2340 B	Hardness as CaCO3: Determine hardness by computing the results of separate determinations of calcium and magnesium.
A2540 C	Solids, Total Dissolved TDS @ 180 C: A well-mixed sample is filtered through a standard glass fiber filter, and the filtrate is evaporated to dryness in a weighed dish and dried to constant weight at 180°C. The increase in dish weight represents the total dissolved solids.
A2540 D	Solids, Total Suspended TSS @ 105 C: A well-mixed sample is filtered through a weighed standard glass-fiber filter and the residue retained on the filter is dried to a constant weight at 103 to 105°C. The increase in weight of the filter represents the total suspended solids. To obtain an estimate of total suspended solids, calculate the difference between total dissolved solids and total solids.
A5310 C	Organic Carbon, Dissolved (DOC): The organic carbon in water and wastewater is composed of a variety of organic compounds in various oxidation states. Some of these carbon compounds can be oxidized further by biological or chemical processes. A5310 C describes the persulfate-ultraviolet or heated-persulfate oxidation method.
Sediment/Soil Quality Parameters	
A2540 G	Solids, Total: This method is applicable to the determination of total solids and its fixed and volatile fractions in such solid and semisolid samples as river and lake sediments, sludges separated from water and wastewater treatment processes, and sludge cakes from vacuum filtration, centrifugation, or other sludge dewatering processes.
ASA10-3	pH: Uses pH meter to measure pH
ASA29-3, Leco	Organic Carbon: Uses Spectrophotometer to measure organic matter content
ASAM10-3.2	pH, sat. paste: Soluble Constituents in Soil Waters and Aqueous Extracts
SW3550A	(SW 3550C): Low concentration procedure -- The sample is mixed with anhydrous sodium sulfate to form a free-flowing powder. The mixture is extracted with solvent three times, using ultrasonic extraction. The extract is separated from the sample by vacuum filtration or centrifugation. The extract is ready for final concentration, cleanup, and/or analysis. Medium/high concentration procedure -- The sample is mixed with anhydrous sodium sulfate to form a free-flowing powder. This is extracted with solvent once, using ultrasonic extraction. A portion of the extract is collected for cleanup and/or analysis.
Anions	
E300.0	Chloride, Sulfate, Fluoride: A small volume of sample, usually 2-5 ml is introduced into an ion-chromatograph. The anions of interest are separated and measured, using a system comprised of a guard column, separator column, suppressor device and conductivity detector. Concentrations are calculated by comparing the response of the target analyte to the calibration curve based on either peak height or peak area.

TABLE 3-2: OU3 Study Area Non-Asbestos Analytical Methods

Analysis Method	Analytical Procedure
E365.1	Phosphorus, Orthophosphate as P, Phosphorus, Total: Ammonium molybdate and antimony tartate react in an acid medium with dilute solutions of phosphorus to form and antimony-phospho-molybate complex. This complex is reduced to an intensely blue-colored complex by ascorbic acid. The color is proportional to the phosphorus concentration.
Nitrogen Compounds	
ASA33-7	Ammonia as N, KCL Extract: Ammonium by colorimetric methods
E350.1	Nitrogen, Ammonia as N: The sample is buffered at a pH of 9.5 with a borate buffer in order to decrease hydrolysis of cyanates and organic nitrogen compounds, and is distilled into a solution of boric acid. Alkaline phenol and hypochlorite react with ammonia to form indophenol blue that is proportional to the ammonia concentration. The blue color formed is intensified with sodium nitroprusside and measured colorimetrically.
E351.2	Nitrogen, Kjeldahl, Total as N: The sample is heated in the presence of sulfiric acid, H_2S0_4 for two and one half hours. The residue is cooled, diluted to 25 ml and analyzed for ammonia. This digested sample may also be used for phosphorus determination.
E353.2	Nitrogen, Nitrate, Nitrite, Nitrate+Nitrite as N: A filtered sample is passed through a column containing granulated copper-cadmium to reduce nitrate to nitrite. The nitrite (that was originally present plus reduced nitrate) is determined by diazotizing with sulfanilamide and coupling with N-(1-naphtyl)-ethylenediamine dihydrochloride to form a highly colored azo dye which is measured colorimetricallly. Separate, rather than combined nitrate-nitrite, values are readily obtained by carrying out the procedure first with, and then without, the Cu-Cd reduction step.
Acid Volatile Sulfide	
AVS/TTR	Acid Volatile Sulfide: The AVS in the sample is first converted to hydrogen sulfide (H_2S) by acidification with hydrochloric acid at room temperature. The H_2S is then purged from the sample and trapped in aqueous solution. The amount of sulfide that has been trapped is then determined.
Cyanide	
SW9012, Kelada mod	(9012B) Cyanide, Total: The cyanide, as hydrocyanic acid (HCN), is released from samples containing cyanide by means of a reflux-distillation operation under acidic conditions and absorbed in a scrubber containing sodium hydroxide solution. The cyanide ion in the absorbing solution is then determined by automated UV colorimetry.
Metals	
SW6010B	This method describes multi-element determinations by inductively coupled plasma-optical emission spectometry (ICP-OES) using sequential or simultaneous optical systems, and axial or radial viewing of the plasma. The ICP-OES instrument measures characteristic emission spectra by optical spectroscopy.
SW6020	Prior to analysis, aqueous and solid samples are solubized or digested using the appropriate sample preparation methods. This method describes multi-element determination using ICP-MS in environmental samples. The method measures ions produced by a radio-frequency inductively coupled plasma.
SW7196A	Chromium, Hexavalent - Soluble: Dissolved hexavalent chromium, in the absence of interfering amounts of substances such as molybdenum, vanadium, and mercury, may be determined colorimetrically by reaction with diphenylcarbazide in acid solution.

TABLE 3-2: OU3 Study Area Non-Asbestos Analytical Methods

Analysis Method	Analytical Procedure
SW7470A, SW7471A	Mercury: A cold-vapor atomic absorption technique, is based on the absorption of radiation at 253.7-nm by mercury vapor. The mercury is reduced to the elemental state and aerated from solution in a closed system. The mercury vapor passes through a cell positioned in the light path of an atomic absorption spectrophotometer. Absorbance (peak height) is measured as a function of mercury concentration.
Organophosphorus Pesticides	
SW8141A	This method provides gas chromatographic conditions for the determination of part-per-billion concentrations of organophosphorus compounds. Prior to the use of this method, a measured volume or weight of liquid or solid sample is extracted using the appropriate matrix-specific sample extraction technique.
Pesticides	
SW8081A	A measured volume or weight of liquid or solid sample is extracted using the appropriate matrix-specific sample extraction technique.
SW8151A	This method provides extraction, derivatization, and gas chromatographic conditions for the analysis of chlorinated acid herbicides in water, soil, and waste samples. An option for the hydrolysis of esters is also described.
PCBs	
SW8082	A measured volume or weight of sample is extracted using the appropriate matrixs specific sample extraction technique.
Radionuclides	
E900.0	Gross Alpha, Gross Beta: An aliquot of a preserved drinking water sample is evaporated to a small volume and transferred quantitatively to a tared 2-inch stainless steel counting planchet. The sample residue is dried to constant weight, reweighed to determine dry residue weight, then counted for alpha and/or beta radioactivity.
E903.0	Radium 226: The radium in the drinking water sample is collected by coprecipitation with barium and lead sulfate, and purified by reprecipitation from EDTA solution. Citric acid is added to the drinking water sample to assure that complete interchange occurs before the first precipitation step. The final BaSO4 precipitate which includes radium-226, radium-224 and radium-223 is alpha counted to determine the total disintegration rate of the radium isotopes.
RA-05	Radium 228: Radiochemical precipitation; count for beta in a low background proportional counter.
A7500-RA	Test for Radium 226 and Radium 228
SVOCs or PAHs	
SW8151A	This method provides extraction, derivatization, and gas chromatographic conditions for the analysis of chlorinated acid herbicides in water, soil, and waste samples. An option for the hydrolysis of esters is also described.
SW8270C	The semivolatile compounds are introduced into the GC/MS by injecting the sample extract into a GC equipped with a narrow-bore fused-silica capillary column. The GC column is temperature-programmed to separate the analytes, which are then detected with an MS connected to the GC. Analytes eluted from the capillary column are introduced into the MS via a jet separator or a direct connection. Identification of target analytes is accomplished by comparing their mass spectra with the electron impact (or electron impact like) spectra of authentic standards. Quantitation is accomplished by comparing the response of a major (quantitation) ion relative to an internal standard using an appropriate calibration curve for the intended application.

TABLE 3-2: OU3 Study Area Non-Asbestos Analytical Methods

Analysis Method	Analytical Procedure
VOCs	
SW8260B	The samples are prepared for analysis by GC/MS using the appropriate sample preparation (refer to Method 3500) and, if necessary, sample cleanup procedures (refer to Method 3600).
SW8270C	The semivolatile compounds are introduced into the GC/MS by injecting the sample extract into a GC equipped with a narrow-bore fused-silica capillary column. The GC column is temperature-programmed to separate the analytes, which are then detected with an MS connected to the GC. Analytes eluted from the capillary column are introduced into the MS via a jet separator or a direct connection. Identification of target analytes is accomplished by comparing their mass spectra with the electron impact (or electron impact like) spectra of authentic standards. Quantitation is accomplished by comparing the response of a major (quantitation) ion relative to an internal standard using an appropriate calibration curve for the intended application.
Petroleum Hydrocarbons	
SW8015B	Diesel Range Organics (DRO), Gasoline Range Organics (GRO): This method provides gas chromatographic conditions for the detection of certain nonhalogenated volatile and semivolatile organic compounds. This method is based on a purge-and-trap, gas chromatograph (GC) procedure using photoionization and flame Ionization Detectors (PID/FID).
Volatile Hydrocarbons	
MA-VPH	This method is used to determine Volatile Petroleum Hydrocarbons, including aliphatic and aromatic compounds, in water and soil/sediment matrices
SW8015B	This method provides gas chromatographic conditions for the detection of certain nonhalogenated volatile and semivolatile organic compounds. This method is based on a purge-and-trap, gas chromatograph (GC) procedure using photoionization and flame Ionization Detectors (PID/FID).
Extractable Hydrocarbons	
MA-EPH	This method is designed to measure the collective concentrations of extractable aliphatic and aromatic petroleum hydrocarbons in water and soil/sediment matrices. This method is based on a solvent extraction, silica gel solid-phase extraction (SPE)/fractionation process, and gas chromatography (GC) analysis using a flame ionization detector (FID).
SW8015B, SW8015M	This method provides gas chromatographic conditions for the detection of certain nonhalogenated volatile and semivolatile organic compounds. This method is based on a purge-and-trap, gas chromatograph (GC) procedure using photoionization and flame Ionization Detectors (PID/FID).

Sources:

EPA Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846), (U.S. EPA Third Edition, September 1986; Final Update III, December 1996).
EPA 100-400 Series - Methods for the Determination of Inorganic Substances in Environmental Samples (EPA/600R-93/100, August 1993).
Methods of Soil Analysis, American Society of Agronomy, 1982.
EPA, EMSL. 1980. “Method 900.0: Gross Alpha and Gross Beta Radioactivity in Drinking Water.” Prescribed Procedures for Measurement of Radioactivity in Drinking Water, EPA/600/4/80/032.
EPA, EMSL. 1980. “Method 903.0: Alpha-Emitting Radium Isotopes in Drinking Water”
Standard Methods for the Examination of Water and Wastewater American Public Health Association, American Water Works Association, Water Environment Federation, 1999

Table 4-1: Summary of Samples Collected and Analyzed from 2007 to 2015 for the OU3 Study Area

Panel A: Libby Amphibole Asbestos (LAA)

Phase	Description	Completed In Year	Total Number of Samples [a]	Surface Water	Surface Water (Pore Water & Free Fiber)	Groundwater	ABS Air	Perimeter Air	Ambient Air	Duff	Tree Bark	Tree Core	Ash	Sediment	Soil	Forest Soil	Mine Waste
I	Phase I	2007	351	24					32	73	74	12		24		74	38
IIA	Phase II Part A	2008	325	209										116			
IIB	Phase II Part B	2008	79			14			65								
IIC	Phase II Part C	2008	14	2										12			
III	Phase III	2009	227				227										
IVA	Phase IV Part A	2010	256				252				4						
IVB	Phase IV Part B	2011	92	82	10												
VA	Phase V Part A	2012	78	72			2							4			
VB	Phase V Part B	2012	210	109	47									54			
AMP	Amphitheatre Removal	2012/2013	15												15		
CL-2012	Commercial Logging	2012	23				13			5	5						
N&E-2012a	Nature & Extent [b] (surface water & sediment)	2012	18	6										12			
N&E-2012b	Nature & Extent (tee bark & duff material)	2012	102							51	51						
WSA	Woodstove Ash	2012	33				9	6			9		9				
VB-2013	Phase VB-2013	2013	78	40	38												
CONST	Souse Gulch Construction	2013	17				5			6	6						
FIRE	Souse Gulch Fire	2013	21				16	2					3				
TEST PIT	Geotechnical Test Pit	2014	81												81		
N&E-2014	Nature & Extent (ABS - fireline)	2014	60				60										
CL-2014	Commercial Logging	2014	39				29			5	5						
WT-2015	Spring Water Sampling	2015	187	167		20											
SP-2015	Slash Pile Burn	2015	79				18	44		5	3		3			6	
UB-2015	Prescribed Understory Burn	2015	67				16	33		5	4		3			6	
MT-2015	Mine-site Trespasser	2015	97				60								37		
WFM-2015	Wildfire Monitoring	2015	15							6						9	
Total Asbestos Samples			2564	711	95	34	707	85	97	156	161	12	18	222	133	95	38

Panel B: Non-asbestos

Phase	Description	Completed In Year	Total Number of Samples [a]	Surface Water	Pore Water	Ground-water	Air ABS	Perimeter Air	Ambient Air	Duff	Tree Bark	Tree Core	Ash	Sediment	Soil	Forest Soil	Mine Waste
I	Phase I	2007	98	24[c]										24		12	38
IIA	Phase II Part A	2008	164	56[c]										108			
IIB	Phase II Part B	2008	13			13											
IIC	Phase II Part C	2008	14	2										12			
III	Phase III	2009	0	[c]													
IVB	Phase IV Part B	2011	0	[c]													
VB	Phase V Part B	2012	12											12			
TEST PIT/GEO	Geotechnical Testing	2014	149												149*		
WT-2015	Spring Water Sampling	2015	38	28[c]		10											
Total Non-Asbestos Samples			488	110	0	23	0	0	0	0	0	0	0	156	149	12	38

NOTES:

[a] Excludes field and laboratory Quality Control samples/analyses

[b] Nature and Extent sampling for sediment and surface water within the Kootenai River and various tributaries. Tributary samples are not included in the sample count.

[c] Field-based water quality measurements collected

* Samples were collected during the TEST PIT and GEO sampling events and analyzed for geotechnical parameters only.

Burn Chamber sample counts are not included in this summary count table. Analytical results are presented in Appendix E-1m.

ABS - Activity Based Sampling

Table 4-2: Remedial Investigation Station Descriptions, Sampling Phase / Event, and Analyses Performed

Media & Sub-media	Station ID	Station Description	Libby Amphibole Asbestos (LAA) Analysis by Phase / Event																								WFM-2015	Non-Asbestos Analysis by Phase / Event							Water Quality by Phase / Event					
			I	IIA	IIB	IIC	III	IVA	IVB	VA	VB	AMP	CL-2012	N&E-2012a	N&E-2012b	WSA	VB-2013	CONST	FIRE	TEST PIT	N&E-2014	CL-2014	WT-2015	SP-2015	UB-2015	MT-2015		I	IIA	IIB	IIC	VB	GEO/TEST PIT	WT-2015	I	IIA	IIB	IIC	IVB	WT-2015
Surface Water																																								
Creek	CC-1	Carney Creek just east of Carney Creek Pond	X	X																								X	X						X	X				
	CC-2	Carney Creek just above confluence with Rainy Creek	X	X					X														X					X	X					X	X	X			X	X
	CC-3A	Upstream Carney Creek location where a number of springs confluence.																					X											X						X
	CC-3B	Upstream Carney Creek location, in upper where a number of springs confluence.																					X																	X
	FC-1	Fleetwood Creek above Mine Area	X	X																			X					X	X					X	X	X				X
	FC-2	Fleetwood Creek above Tailings Impoundment	X	X																								X	X						X	X				
	LRC-1	Lower Rainy Creek above confluence with Carney Creek	X	X																								X	X						X	X		X		
	LRC-2	Lower Rainy Creek below confluence with Carney Creek	X	X					X		X						X						X					X	X					X	X	X			X	X
	LRC-2A	Lower Rainy Creek location between LRC-2 and LRC-3.																					X											X						X
	LRC-3	Lower Rainy Creek 3/4 mile below confluence with Carney Creek	X	X																			X					X	X					X	X	X				X
	LRC-4	Lower Rainy Creek approx. 1 mile below confluence with Carney Creek	X	X							X						X						X					X	X					X	X	X				X
	LRC-5	Lower Rainy Creek approx. 3/4 mile above confluence with Kootenai River	X	X							X						X						X					X	X					X	X	X				X
	LRC-6	Lower Rainy Creek just above confluence with the Kootenai River	X	X					X	X													X					X	X					X	X	X			X	X
	East-TGC	Culvert where East Tub Gulch enters Lower Rainy Creek.																					X											X						X
	TP-TOE1	Toe drain of Tailings Pond Impoundment	X	X																								X	X						X	X				
	TP-TOE2	Toe drain flow to Rainy Creek below diversion	X	X																								X	X						X	X				
	TP-TOE1A	Kurt's Flume (LRC-01 location) south of the toe drains.																					X											X						X
	URC-1	Upper Rainy Creek above Mine Area	X	X																			X					X	X					X	X	X				X
	URC-1A	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Road		X																									X							X		X		
	URC-2	Upper Rainy Creek above Mine Area	X	X							X						X											X	X						X	X				
	BTT-R1	Location in a tributary near Bobtail Creek, approximately 1 mile north of the Kootenai River				X																									X						X		
	NSY-R1	Near the confluence of Noisy Creek and Pipe Creek, west of OU3 Study Area				X					X						X														X						X		
	TP-OVERFLOW-A	Tailings Pond Overflow; North end of the KDID spillway.																					X											X						X
	TP-OVERFLOW	Tailings Pond Overflow		X																																	X				
Seep	CCS-1	Spring from base of west waste rock pile	X	X																								X	X						X	X				
	CCS-6	Spring below west waste rock pile	X	X																								X	X						X	X				
	CCS-8	Spring below west waste rock pile	X	X																								X	X						X	X				
	CCS-9	Spring discharging to lower Carney Creek	X	X																								X	X						X	X				
	CCS-11	Spring below central waste rock pile	X	X																								X	X						X	X				
	CCS-14	Spring between central and east waste rock pile	X	X																								X	X						X	X				
	CCS-16	Spring below east waste rock pile	X	X																								X	X						X	X				
River	KR-1	Kootenai River parallel to the northern river bank downstream of the mouth of Rainy Creek		X						X																									X					
	KR-2	Kootenai River parallel to the northern river bank downstream of the mouth of Rainy Creek		X																															X					
	KR-3	Kootenai River parallel to the northern river bank downstream of the mouth of Rainy Creek		X																															X					
	KR-4	Kootenai River along a perpendicular transect downstream of Rainy Creek		X						X																									X					
	KR-5	Kootenai River along a perpendicular transect downstream of Rainy Creek		X						X																									X					
	KR-6	Kootenai River along a perpendicular transect downstream of Rainy Creek		X																															X					
	KR-7	Kootenai River along a perpendicular transect downstream of Rainy Creek		X																															X					
	KR-8	Kootenai River along a perpendicular transect downstream of Rainy Creek		X																															X					
	NER-20	Location #20 downstream of confluence with Quartz Creek												X																										
	NER-24	Location #24 immediately upstream of Troy												X																										
	NER-25	Location #25 immediately downstream of Troy sediment												X																										
	UKR	Kootenai River upstream of Rainy Creek		X																															X					
	UKR-0	From the north bank of the Kootenai River, immediately upstream of the confluence of Rainy Creek and the Kootenai River								X																														
	UKR-1	From the north bank of the Kootenai River, approximately three miles upstream of the confluence of Rainy Creek and the Kootenai River								X																														
	UKR-3	From the north bank of the Kootenai River, near the confluence of the Fisher River and the Kootenai River								X																														
	KR-14	From the north bank of the Kootenai River approximately 1 mile downstream of the confluence of Rainy Creek and the Kootenai River								X																														
	KR-15	From the north bank of the Kootenai River approximately 2 miles downstream of the confluence of Rainy Creek and the Kootenai River								X																														
	KR-16	From the north bank of the Kootenai River near the town of Libby, just east of the confluence of Libby Creek and the Kootenai River								X																														
	UKR-2	From the north bank of the Kootenai River, near the confluence of the Fisher River and the Kootenai River								X																											X				
Pond	CC-POND	Carney Creek Pond		X							X																		X											
	FC-Pond	Fleetwood Creek Upper Pond	X	X							X																	X	X					X	X					
	TP (resample)	Tailings Pond Impoundment																										X						X					
	UTP	Upper Tailings Impoundment		X																			X						X					X	X				
	MP	Southwest edge of Mill Pond	X	X							X												X					X	X					X	X	X				
	Tepee Pond 1	Tepee Pond (4 miles up road)									X																													
	TP	Tailings Pond Impoundment	X	X					X		X												X						X					X	X	X			X	X
	Bobtail Pond	Bobtail Pond									X																													
	East-TGP	Lower East Tub Gulch pond next to Lower Rainy Creek road.																					X											X						X
Lake	Banana Lake	Banana Lake									X																													

Table 4-2: Remedial Investigation Station Descriptions, Sampling Phase / Event, and Analyses Performed

Media & Sub-media	Station ID	Station Description	Libby Amphibole Asbestos (LAA) Analysis by Phase / Event																							Non-Asbestos Analysis by Phase / Event							Water Quality by Phase / Event						
			I	IIA	IIB	IIC	III	IVA	IVB	VA	VB	AMP	CL-2012	N&E-2012a	N&E-2012b	WSA	VB-2013	CONST	FIRE	TEST PIT	N&E-2014	CL-2014	WT-2015	SP-2015	UB-2015	MT-2015	WFM-2015	I	IIA	IIB	IIC	VB	GEO/ TEST PIT	WT-2015	I	IIA	IIB	IIC	IVB	WT-2015
Toe Drains	D1	Toe Drain 1 at base of KDID																					X										X						X
	D2	Toe Drain 2 at base of KDID																					X										X						X
	D3	Toe Drain 3 at base of KDID																					X										X						X
	D4	Toe Drain 4 at base of KDID																					X										X						X
	D5	Toe Drain 5 at base of KDID																					X										X						X
	D6	Toe Drain 6 at base of KDID																					X										X						X
	D7	Toe Drain 7 at base of KDID																					X										X						X
	D8	Toe Drain 8 at base of KDID																					X																X
	D9	Toe Drain 9 at base of KDID																					X										X						X
	D10	Toe Drain 10 at base of KDID																					X										X						X
	D11	Toe Drain 11 at base of KDID																					X										X						X
	D12	Toe Drain 12 at base of KDID																					X										X						X
Groundwater																																							
Well / Piezometer	Well A	In Carney Creek drainage, upstream of Carney Creek pond at the base of the fine tailings pile			X																								X						X			
	Well C	In an open grassy area 1000 feet downstream from the Amphitheater south of tailings dam and upstream of watergate			X																	X							X				X		X			X
	Well D	In pump house above (east of) tailings pond dam (potable supply well) near the former mill area			X																								X						X			
	Well E	Just off a haul road near the center of the mine in an open flat area			X																								X						X			
	Well H	Along a haul road about halfway up the slope east of Rainy Creek below the former mill area.			X																								X						X			
	BH-01A-1	Piezometer installed in KDID Impoundment in 2014																					X										X						X
	BH-01A-2	Piezometer installed in KDID Impoundment in 2014																					X										X						X
	BH-03A-1	Piezometer installed in KDID Crest in 2014																					X										X						X
	BH-05A-1	Piezometer installed in KDID Mid-slope bench in 2014																					X										X						X
	BH-05A-2	Piezometer installed in KDID Mid-slope bench in 2014																					X										X						X
	BH-07A-1	Piezometer installed in center of downstream toe of KDID in 2014																					X										X						X
	BH-07A-2	Piezometer installed in center of downstream toe of KDID in 2014																					X										X						X
	BH-07B-1	Piezometer installed in center of downstream toe of KDID in 2014																					X										X						X
	BH-09-1	Piezometer installed downstream toe of KDID in 2014																					X										X						X
Sediment																																							
Creek	CC-1	Carney Creek just east of Carney Creek Pond	X	X		X					X																	X	X		X	X			X					
	CC-2	Carney Creek just above confluence with Rainy Creek	X	X																								X	X						X					
	FC-1	Fleetwood Creek above Mine Area	X	X																								X	X						X					
	FC-2	Fleetwood Creek above Tailings Impoundment	X	X		X																						X	X		X				X					
	LRC-1	Lower Rainy Creek above confluence with Carney Creek	X	X																								X	X						X					
	LRC-2	Lower Rainy Creek below confluence with Carney Creek	X	X		X																						X	X		X				X					
	LRC-3	Lower Rainy Creek 3/4 mile below confluence with Carney Creek	X	X		X																						X	X		X				X					
	LRC-4	Lower Rainy Creek approx. 1 mile below confluence with Carney Creek	X	X																								X	X						X					
	LRC-5	Lower Rainy Creek approx. 3/4 mile above confluence with Kootenai River	X	X		X																						X	X		X				X					
	LRC-6	Lower Rainy Creek just above confluence with the Kootenai River	X	X																								X	X						X					
	TP-TOE1	Toe drain of Tailings Pond Impoundment	X	X																								X	X						X					
	TP-TOE2	Toe drain flow to Rainy Creek below diversion	X	X		X					X																	X	X		X	X			X					
	URC-1	Upper Rainy Creek above Mine Area	X	X																								X	X						X					
	URC-1A	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Road		X		X																							X		X								
	URC-2	Upper Rainy Creek above Mine Area	X	X		X																						X	X		X				X					
	BTT-R1	Location in a tributary near Bobtail Creek, approximately 1 mile north of the Kootenai River				X																									X								
	NSY-R1	Near the confluence of Noisy Creek and Pipe Creek, west of OU3 Study Area				X																									X								
Seep	CCS-1	Spring from base of west waste rock pile	X	X																								X	X						X					
	CCS-6	Spring below west waste rock pile	X	X																								X	X						X					
	CCS-8	Spring below west waste rock pile	X	X																								X	X						X					
	CCS-9	Spring discharging to lower Carney Creek	X	X																								X	X						X					
	CCS-11	Spring below central waste rock pile	X	X																								X	X						X					
	CCS-14	Spring between central and east waste rock pile	X	X																								X	X						X					
	CCS-16	Spring below east waste rock pile	X	X																								X	X						X					
River	KR-9	Located on bank of gravel bar located in the center of the river about 0.5 mile downstream from the mouth of Rainy Creek		X																															X				
	KR-10	Located on bank of gravel bar located in the center of the river about 0.5-mile downstream from the mouth of Rainy Creek		X																															X				
	KR-11	Depositional areas located along the north bank of the Kootenai downstream of, but within a distance of 0.5 mile downstream from the mouth of Rainy Creek		X																															X				
	KR-12	Depositional areas located along the north bank of the Kootenai downstream of, but within a distance of 0.5 mile downstream from the mouth of Rainy Creek		X																															X				
	KR-13	Depositional area located along the north bank of the Kootenai near the confluence of Rainy Creek and the Kootenai River		X																															X				
	KR-20	Located on an exposed sand bar island downstream of the confluence of Rainy Creek and the Kootenai River								X																														
	KR-21	Located on an exposed sand bar island downstream of the confluence of Rainy Creek and the Kootenai River								X																														
	NER-15	Location #15 confluence of Libby Creek and Kootenai River												X																										
	NER-16	Location #16 over banks across river from Riverfront Park												X																										
	NER-17	Location #17 near end of four lane												X																										
	NER-18	Location #18 about the 4 mile marker on Kootenai River Rd at sharp turn next to high wall												X																										
	NER-19	Location #19 near confluence with Cedar Creek												X																										
	NER-20	Location #20 downstream of confluence with Quartz Creek												X																										
	NER-21	Location #21 end of Kootenai River Rd												X																										
	NER-22	Location #22 approx. 1 3/4 mile from trailhead at end of Kootenai River Rd												X																										
	NER-23	Location #23 below Kootenai Falls												X																										
	NER-24	Location #24 immediately upstream of Troy												X																										
	NER-25	Location #25 immediately downstream of Troy sediment												X																										
	NER-26	Location #26 confluence of Yaak and Kootenai Rivers												X																										
	UKR-2	From the north bank of the Kootenai River, near the confluence of the Fisher River and the Kootenai River		X																																			

Table 4-2: Remedial Investigation Station Descriptions, Sampling Phase / Event, and Analyses Performed

Media & Sub-media	Station ID	Station Description	Libby Amphibole Asbestos (LAA) Analysis by Phase / Event																								Non-Asbestos Analysis by Phase / Event							Water Quality by Phase / Event						
			I	IIA	IIB	IIC	III	IVA	IVB	VA	VB	AMP	CL-2012	N&E-2012a	N&E-2012b	WSA	VB-2013	CONST	FIRE	TEST PIT	N&E-2014	CL-2014	WT-2015	SP-2015	UB-2015	MT-2015	WFM-2015	I	IIA	IIB	IIC	VB	GEO/ TEST PIT	WT-2015	I	IIA	IIB	IIC	IVB	WT-2015
Pond	Bobtail Pond 1	Bobtail Pond									X																				X								
	Bobtail Pond 2	Bobtail Pond									X																				X								
	CC-POND	Carney Creek Pond									X																				X								
	CC-POND-1	Carney Creek Pond		X																								X										
	CC-POND-2	Carney Creek Pond		X																								X										
	CC-POND-3	Carney Creek Pond		X																								X										
	CC-POND-4	Carney Creek Pond		X																								X										
	CC-POND-5	Carney Creek Pond		X																								X										
	CC-POND-5D	Carney Creek Pond		X																																			
	FC-Pond	Fleetwood Creek Upper Pond	X								X																	X				X			X					
	FC-POND-1	Fleetwood Creek Upper Pond		X																								X										
	FC-POND-2	Fleetwood Creek Upper Pond		X																								X										
	FC-POND-3	Fleetwood Creek Upper Pond		X																								X										
	FC-POND-4	Fleetwood Creek Upper Pond		X																								X										
	FC-POND-4D	Fleetwood Creek Upper Pond		X																																		
	FC-POND-5	Fleetwood Creek Upper Pond		X																								X										
	MP	Southwest edge of Mill Pond	X								X																	X				X			X					
	MP-1	Located in Mill Pond		X																								X										
	MP-2	Located in Mill Pond		X																								X										
	MP-3	Located in Mill Pond		X																								X										
	MP-4	Located in Mill Pond		X																								X										
	MP-5	Located in Mill Pond		X																								X										
	Tepee Pond 1	Tepee Pond (4 miles up road)									X																				X								
	Tepee Pond 2	Tepee Pond (6 miles up road)									X																				X								
	TP	Tailings Pond Impoundment	X								X																	X				X			X					
	TP-1	Tailings Pond Impoundment		X																								X										
	TP-2	Tailings Pond Impoundment		X																								X										
	TP-3	Tailings Pond Impoundment		X																								X										
	TP-4	Tailings Pond Impoundment		X																								X										
	TP-5	Tailings Pond Impoundment		X																								X										
	TP-6	Tailings Pond Impoundment		X																								X										
	TP-7	Tailings Pond Impoundment		X																								X										
	TP-8	Tailings Pond Impoundment		X																								X										
	TP-9	Tailings Pond Impoundment		X																								X										
	TP-10	Tailings Pond Impoundment		X																								X										
	TP-10D	Tailings Pond Impoundment		X																																			
	TP-11	Tailings Pond Impoundment		X																								X										
	TP-12	Tailings Pond Impoundment		X																								X										
	TP-13	Tailings Pond Impoundment		X																								X										
	TP-14	Tailings Pond Impoundment		X																								X										
	TP-15	Tailings Pond Impoundment		X																								X										
	TP-16	Tailings Pond Impoundment		X																								X										
	TP-17	Tailings Pond Impoundment		X																								X										
Lake	Banana Lake	Banana Lake									X																				X								
	Schrieber Lake	Schrieber Lake									X																				X								
	LK-1	Located on the west bank of Lake Koocanusa at McGillivary Beach								X																													
	LK-2	Located on the east bank of Lake Koocanusa, near the Lake Koocanusa Marina Boat Launch								X																													
Soil/Mine Waste																																							
Road Material	MS-1	Rainy Creek road material	X																								X											
	MS-2	Rainy Creek road material	X																								X											
	MS-3	Rainy Creek road material	X																								X											
Tailings	MS-4	Tailings Impoundment	X																								X											
	MS-5	Tailings Impoundment	X																								X											
	MS-6	Coarse Tailings Disposal Area	X																								X											
	MS-7	Coarse Tailings Disposal Area	X																								X											
	MS-8	Coarse Tailings Disposal Area	X																								X											
	MS-9	Coarse Tailings Disposal Area	X																								X											
	CT-01*	Coarse Tailings																														*							
	CT-02*	Coarse Tailings																														*							
	CT-03*	Coarse Tailings																														*							
	CT-04*	Coarse Tailings																														*							
Cover Material	MS-10	Cover Material	X																								X											
	MS-11	Cover Material	X																								X											
	MS-12	Cover Material	X																								X											
	MS-13	Cover Material	X																								X											
	MS-21	Cover Material	X																								X											
	MS-22	Cover Material	X																								X											
	MS-23	Cover Material	X																								X											
	MS-24	Cover Material	X																								X											
Waste Rock	MS-14	Waste Rock Pile (central)	X																								X											
	MS-15	Waste Rock Pile (west)	X																								X											
	MS-16	Waste Rock Pile (west)	X																								X											
	MS-17	Waste Rock Pile (central)	X																								X											
	MS-18	Waste Rock Pile (central)	X																								X											
	MS-19	Waste Rock Pile (east)	X																								X											
	MS-20	Waste Rock Pile (east)	X																								X											
	MS-26	Waste Rock Pile (west)	X																								X											
	MS-27	Waste Rock Pile (west)	X																								X											
	MS-28	Waste Rock Pile (west)	X																								X											
	MS-29	Waste Rock Pile (west)	X																								X											
	MS-30	Waste Rock Pile (east)	X																								X											
	MS-32	Waste Rock Pile (east)	X																								X											
	WR-1	Waste Rock Sample																														*							
	WR-2	Waste Rock Sample																														*							
	WR-3	Waste Rock Sample																														*							
	WR-4	Waste Rock Sample																														*							
	WR-5	Waste Rock Sample																														*							
	WR-6	Waste Rock Sample																														*							
	WR-7	Waste Rock Sample																														*							
	WR-8	Waste Rock Sample																														*							
	WR-9	Waste Rock Sample																														*							
	WR-10	Waste Rock Sample																														*							
	WR-11	Waste Rock Sample																														*							

Table 4-2: Remedial Investigation Station Descriptions, Sampling Phase / Event, and Analyses Performed

Media & Sub-media	Station ID	Station Description	Libby Amphibole Asbestos (LAA) Analysis by Phase / Event																							Non-Asbestos Analysis by Phase / Event							Water Quality by Phase / Event						
			I	IIA	IIB	IIC	III	IVA	IVB	VA	VB	AMP	CL-2012	N&E-2012a	N&E-2012b	WSA	VB-2013	CONST	FIRE	TEST PIT	N&E-2014	CL-2014	WT-2015	SP-2015	UB-2015	MT-2015	WFM-2015	I	IIA	IIB	IIC	VB	GEO/ TEST PIT	WT-2015	I	IIA	IIB	IIC	IVB	WT-2015
Outcrop	MS-25	Outcrop	X																								X											
	MS-31	Outcrop	X																								X											
	MS-33	Outcrop	X																								X											
	MS-34	Outcrop	X																								X											
	MS-35	Outcrop	X																								X											
	MS-36	Outcrop	X																								X											
	MS-37	Outcrop	X																								X											
	MS-38	Outcrop	X																								X											
Test Pit*	GT-01	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-02	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-03	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-04	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-05	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-06	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-07	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-07A	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-08	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-09	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-10	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-11	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-12	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-13	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-14	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-15	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-16	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-17	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-18	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-19	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-20	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-21	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-22	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-23	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-24	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-25	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-26	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
	GT-27	Test Pit sample from the initial geotechnical investigation (6/2014)																		X												*						
Borehole*	BH-01A	Tailing Impoundment																														*						X
	BH-01B	Tailing Impoundment																														*						X
	BH-02	Left Abutment and Principal Spillway Intake																														*						X
	BH-03A	Embankment Crest and Max Section																														*						X
	BH-04	Right Abutment																														*						X
	BH-05A	Downstream Embankment Slope																														*						X
	BH-06	Embankment Toe and Downstream																														*						X
	BH-07A	Embankment Toe and Downstream																														*						X
	BH-08	Embankment Toe and Downstream																														*						X
	BH-09-1	Embankment Toe and Downstream																														*						X
Reconnaissance	PT-184	Rainy Creek, NW of the creek in the flat terrace area, and SE of the paved main access road																		X																		
	PT-185	Rainy Creek, NW of the creek, adjacent to the creek (3-4 ft. from the creek bank and 2-3 ft. above the creek)																		X																		
	PT-190	Rainy Creek, NW of creek																		X																		
	PT-198	Southeast side of main paved Rainy Creek access road, and northwest of Rainy Creek																		X																		
Soil	VW-1-01	30 point composite sample on North side of Rainy Creek										X																										
	VW-1-02	31 point composite sample on North side of Rainy Creek										X																										
	VW-1-03	32 point composite sample on North side of Rainy Creek										X																										
	VW-1-04	33 point composite sample on North side of Rainy Creek										X																										
	VW-1-05	34 point composite sample on North side of Rainy Creek										X																										
	VW-1-06	35 point composite sample on North side of Rainy Creek										X																										
	VW-1-07	36 point composite sample on North side of Rainy Creek										X																										
	VW-1-08	37 point composite sample on North side of Rainy Creek										X																										
	VW-1-09	30 point composite sample on South side of Rainy Creek										X																										
	VW-1-10	30 point composite sample on South side of Rainy Creek										X																										
	VW-1-11	30 point composite sample on South side of Rainy Creek										X																										
	VW-1-12	30 point composite sample on South side of Rainy Creek										X																										
	VW-1-13	30 point composite sample on South side of Rainy Creek										X																										
	VW-1-14	37 point composite sample on North side of Rainy Creek										X																										
	VW-1-15	37 point composite sample on North side of Rainy Creek										X																										
	VW-1-18	Field duplicate sample of VW-1-013										X																										
	TS-A-01 to TS-A-13	13 soil samples collected on dirt road Route A.																								X												
	TS-B-01 to TS-B-08	8 soil samples collected on dirt road Route B.																								X												
	TS-C-01 to TS-C-16	16 soil samples collected on dirt road Route C.																								X												

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			I	IIA	IIB	IIC	III	IVA	IVB	VA	VB	AMP	CL-2012	N&E-2012a	N&E-2012b	WSA	VB-2013	CONST	FIRE	TEST PIT	N&E-2014	CL-2014	WT-2015	SP-2015	UB-2015	MT-2015	WFM-2015	I	IIA	IIB	IIC	VB	GEO/ TEST PIT	WT-2015	I	IIA	IIB	IIC	IVB	WT-2015
Forest Soil, Duff Material, Tree Bark and Ash from Forested Areas																																						
Forest	SL15-02	SL15: Forest Materials Transect - 30 degrees counter clockwise from approximate primary downwind direction. Sample at half mile intervals along 8 mile transect	X																																			
	SL15-03		X																																			
	SL15-04		X																																			
	SL15-05		X																																			
	SL15-06		X																																			
	SL15-07		X																																			
	SL15-08		X																																			
	SL15-09		X																																			
	SL15-10		X																																			
	SL15-11		X																																			
	SL15-12		X																																			
	SL15-13		X																																			
	SL15-14		X																																			
	SL15-15		X																								X											
	SL15-16		X																								X											
	SL45-01	SL45: Forest Materials Transect - Approximate downwind direction. Sample at half mile intervals along 8 mile transect	X																																			
	SL45-02		X																																			
	SL45-03		X																																			
	SL45-04		X																																			
	SL45-05		X																																			
	SL45-06		X																																			
	SL45-07		X																																			
	SL45-08		X																																			
	SL45-09		X																																			
	SL45-10		X																																			
	SL45-11		X																																			
	SL45-12		X																																			
	SL45-13		X																																			
	SL45-14		X																																			
	SL45-15		X																								X											
	SL45-16		X																								X											
	SL75-02	SL75: Forest Materials Transect - 30 degrees clockwise from approximate primary downwind direction. Sample at half mile intervals along 8 mile transect	X																																			
	SL75-03		X																																			
	SL75-04		X																																			
	SL75-05		X																																			
	SL75-06		X																																			
	SL75-07		X																																			
	SL75-08		X																																			
	SL75-09		X																																			
	SL75-13		X																																			
	SL75-14		X																																			
	SL75-15		X																								X											
	SL75-16		X																								X											
	SL135-01	SL135: Forest Materials Transect - Across gradient from primary downwind direction. Sample at half mile intervals along 4 mile transect	X																																			
	SL135-02		X																																			
	SL135-03		X																																			
	SL135-04		X																																			
	SL135-05		X																																			
	SL135-06		X																																			
	SL135-07		X																								X											
	SL135-08		X																								X											
	SL195-02	SL195: Forest Materials Transect - Generally upwind of mine area/possibly downwind from Screening Plant. Sample at half mile intervals along 6 mile transect	X																																			
	SL195-03		X																																			
	SL195-04		X																																			
	SL195-05		X																																			
	SL195-06		X																																			
	SL195-07		X																																			
	SL195-08		X																																			
	SL195-10		X																																			
	SL195-11		X																								X											
	SL195-12		X																								X											
	SL255-02	SL255: Forest Materials Transect - Approximate upwind direction from mine area. Sample at half mile intervals along 6 mile transect	X																																			
	SL255-03		X																																			
	SL255-04		X																																			
	SL255-05		X																																			
	SL255-06		X																																			
	SL315-01	SL315: Forest Materials Transect - Across gradient from primary downwind direction. Sample at half mile intervals along 4 mile transect	X																																			
	SL315-02		X																																			
	SL315-03		X																																			
	SL315-04		X																																			
	SL315-05		X																																			
	SL315-06		X																																			
	SL315-07		X																								X											
	SL315-08		X																								X											

Table 4-2: Remedial Investigation Station Descriptions, Sampling Phase / Event, and Analyses Performed

Media & Sub-media	Station ID	Station Description	Libby Amphibole Asbestos (LAA) Analysis by Phase / Event																							Non-Asbestos Analysis by Phase / Event							Water Quality by Phase / Event						
			I	IIA	IIB	IIC	III	IVA	IVB	VA	VB	AMP	CL-2012	N&E-2012a	N&E-2012b	WSA	VB-2013	CONST	FIRE	TEST PIT	N&E-2014	CL-2014	WT-2015	SP-2015	UB-2015	MT-2015	WFM-2015	I	IIA	IIB	IIC	VB	GEO/ TEST PIT	WT-2015	I	IIA	IIB	IIC	IVB	WT-2015
Forest	Slash Pile-2010	2 Tree Bark samples from Slash Pile A and 2 from Slash Pile B						X																														
	CL-A	Location represents both bark and duff sample area. Composited from tree locations CL-A1, CL-A2, CL-A3, CL-A4, and CL-A5.											X																									
	CL-B	Location represents both bark and duff sample area. Composited from tree locations CL-B1, CL-B2, CL-B3, CL-B4, and CL-B5.											X																									
	CL-C	Location represents both bark and duff sample area. Composited from tree locations CL-C1, CL-C2, CL-C3, CL-C4, and CL-C5.											X																									
	CL-D	Location represents both bark and duff sample area. Composited from tree locations CL-D1, CL-D2, CL-D3, CL-D4, and CL-D5.											X																									
	CL-E	Location represents both bark and duff sample area. Composited from tree locations CL-E1, CL-E2, CL-E3, CL-E4, and CL-E5.											X																									
	CL-F-1	Location represents both bark and duff sample area.																				X																
	CL-F-2	Location represents both bark and duff sample area.																				X																
	CL-F-3	Location represents both bark and duff sample area.																				X																
	CL-F-4	Location represents both bark and duff sample area.																				X																
	CL-F-5	Location represents both bark and duff sample area.																				X																
	NE-01 to NE-51	Nature and Extent duff and bark samples collected at 51 unique locations within and around the OU3 Study Area.													X																							
	SG-DB1	Souse Gulch duff sample.																X																				
	SG-DB2	Souse Gulch bark sample.																X																				
	SG-DB3	Souse Gulch duff and bark samples.																X																				
	SG-DB4	Souse Gulch duff and bark samples.																X																				
	SG-DB5	Souse Gulch duff and bark samples.																X																				
	SG-DB6	Souse Gulch duff and bark samples.																X																				
	SG-DB7	Souse Gulch duff and bark samples.																X																				
	WA-Bark-1 to WA-Bark-9	9 samples collected for wood-stove ash study burning														X									X												
	SP15-Duff1 to SP15-Duff5	Duff samples collected pre-burn (5 samples collected from the slash pile).																						X													
	SP15-Pre-S1 to SP15-Pre-S3	Soil composite sample collected pre-burn (3 samples collected from the slash pile).																						X													
	SP15-TBark1 to SP15-TBark3	Tree Bark samples collected pre-burn (3 samples collected from the slash pile).																						X													
	SP15-Post-S1 to SP15-Post-S3	Soil composite sample collected post-burn (3 samples collected from the slash pile).																						X													
	B15-Duff1 to B15-Duff5	Duff samples collected pre-burn (5 samples collected from the burn area).																							X												
	B15-Pre-S1 to B15-Pre-S3	Soil composite sample collected pre-burn (3 samples collected from the burn area).																							X												
	B15-B1-T1 to B15-B4-T1	Tree Bark samples collected pre-burn (4 samples collected from the burn area).																							X												
	B15-Post-S1 to B15-Post-S3	Soil composite sample collected post-burn (3 samples collected from the burn area).																							X												
	LSF-12-1, -2 and LSF-13-2, -3, -6, -7	6 Duff Samples collected post-burn																								X											
	LSF-12-1, -2 and LSF-13-1 to LSF-13-7	9 soil samples collected post burn														X									X	X											
Ash	Souse Gulch1 to Souse Gulch3	3 samples collected for Souse Gulch Ash																	X						X												
	SP15-Ash1 to SP15-Ash3	Ash composite sample collected post-burn (divided into 3 unique samples)																						X													
	B15-Ash1 to B15-Ash3	Ash composite sample collected post-burn (divided into 3 unique samples)																							X												
	WA-Ash-1 to WA-Ash-9	9 samples collected for wood-stove ash study burning														X									X												
Ambient & Perimeter Air																																						
Ambient Air	A-1	North of mine area	X																																			
	A-2	Northeast of mine area (general downwind direction)	X																																			
	A-3	East of mine area	X																																			
	A-4	Adjacent to coarse tailings disposal area (general downwind direction)	X		X																																	
	A-5	Adjacent to central portion of mine area (general downwind direction)	X		X																																	
	A-6	Adjacent to southern portion of mine area (general downwind direction)	X		X																																	
	A-7	Southwest of mine area (general upwind direction)	X																																			
	A-8	Adjacent to mine waste areas (general upwind direction)	X		X																																	
	A-9	Adjacent to mine waste areas (general upwind direction)			X																																	
	A-10	Adjacent to mine waste areas (general upwind direction)			X																																	
	A-11	Adjacent to southern portion of mine area (general downwind direction)			X																																	
	A-12	Adjacent to coarse tailings disposal area (general downwind direction)			X																																	
Perimeter Air	M1 - Souse Gulch - Mobile	Downwind of Souse Gulch																	X																			
	F1 - McGillivary Campground	McGillivray campground on the banks of Lake Koocanusa																	X																			
	SB-50-S	The south 50 foot perimeter station (Pre-burn and Burn)																						X													
	SB-100-S	The south 100 foot perimeter station																						X													
	SB-200-S	The south 200 foot perimeter station																						X													
	SB-50-W	The west 50 foot perimeter station (Pre-burn and Burn)																						X													
	SB-100-W	The west 100 foot perimeter station																						X													
	SB-200-W	The west 200 foot perimeter station																						X													
	SB-50-N	The north 50 foot perimeter station (Pre-burn and Burn)																						X													
	SB-100-N	The north 100 foot perimeter station																						X													
	SB-200-N	The north 200 foot perimeter station																						X													
	SB-50-E	The east 50 foot perimeter station (Pre-burn and Burn)																						X													
	SB-100-E	The east 100 foot perimeter station																						X													
	SB-200-E	The east 200 foot perimeter station																						X													
	UB-50-S	The south 50 foot perimeter station (Pre-burn and Burn)																							X												
	UB-100-S	The south 100 foot perimeter station																							X												
	UB-200-S	The south 200 foot perimeter station																							X												
	UB-50-W	The west 50 foot perimeter station (Pre-burn and Burn)																							X												
	UB-100-W	The west 100 foot perimeter station																							X												

Table 4-2: Remedial Investigation Station Descriptions, Sampling Phase / Event, and Analyses Performed

Media & Sub-media	Station ID	Station Description	Libby Amphibole Asbestos (LAA) Analysis by Phase / Event																							Non-Asbestos Analysis by Phase / Event							Water Quality by Phase / Event					
			I	IIA	IIB	IIC	III	IVA	IVB	VA	VB	AMP	CL-2012	N&E-2012a	N&E-2012b	WSA	VB-2013	CONST	FIRE	TEST PIT	N&E-2014	CL-2014	WT-2015	SP-2015	UB-2015	MT-2015	WFM-2015	I	IIA	IIB	IIC	VB	GEO/ TEST PIT	WT-2015	I	IIA	IIB	IIC	IVB	WT-2015
Perimeter Air	UB-200-W	The west 200 foot perimeter station																							X													
	UB-50-N	The north 50 foot perimeter station (Pre-burn and Burn)																							X													
	UB-100-N	The north 100 foot perimeter station																							X													
	UB-200-N	The north 200 foot perimeter station																							X													
	UB-50-E	The east 50 foot perimeter station (Pre-burn and Burn)																							X													
	UB-100-E	The east 100 foot perimeter station																							X													
	UB-200-E	The east 200 foot perimeter station																							X													
	Woodstove-PERIM	Perimeter air sampling during wood-stove burning														X									X													
Activity Based Sampling (ABS) Air																																						
Air	#2, #6, #19, #20, #22, #25, #32, #35, #40, #46	Nature and Extent ABS locations surrounding Libby National Priorities List Boundary.																			X																	
	ABS Area 1	Located at the end of Forest Materials Transect SL15					X																															
	ABS Area 2	Located at the end of Forest Materials Transect SL45					X	X																														
	ABS Area 3	Located in the center of Forest Materials Transect SL15					X																															
	ABS Area 5	Located in the center of Forest Materials Transect SL45					X																															
	ABS Area 6	Located approx. 2 miles north from the start of Forest Materials Transect SL15					X	X																														
	ABS Area 7	Located approx. 3 miles northeast from the start of Forest Materials Transect SL45					X	X																														
	ABS Area 8	Located at the end of Forest Materials Transect SL75, on the east side of Lake Koocanusa					X																															
	ABS Area 10	Located approx. 1 mile north from the start of Forest Materials Transect SL15. This sampling area spans east into SL45.					X	X																														
	ABS Area 10'	Located west of ABS-10, approx.. 1 mile north of the mine.					X																															
	ABS Area 11	Located approx. 3 miles northeast from the start of Forest Materials Transect SL45					X																															
	ABS Area 13	Located approx. 3 miles east from the start of Forest Materials Transect SL75, on the west side of Lake Koocanusa					X																															
	ABS Area 14	Located approx. 1 mile east from the start of Forest Materials Transect SL75, on the west side of Lake Koocanusa					X																															
	RAINY	Lower Rainy Creek						X																															
	ISLAND	Island in the Kootenai River								X																													
	SB-Pile	ABS during pile construction.																						X														
	SB-Burn	ABS during pile burn.																						X														
	SB-DryMop	ABS during dry mop up after pile burn.																						X														
	SB-WetMop	ABS during wet mop up after pile burn.																						X														
	UB-Burn	ABS during burn.																							X													
	UB-DryMop	ABS during dry mop up after burn.																							X													
	UB-WetMop	ABS during wet mop up after burn.																							X													
	TS-Rock Hound	ABS during Rock Hounding.																								X												
	TS-Mine-Off-Road	ABS during ATV riding on the mine site.																								X												
	TS-A-On-Road	ABS during ATV riding on dirt road Route A.																								X												
	TS-B-On-Road	ABS during ATV riding on dirt road Route B.																								X												
	TS-C-On-Road	ABS during ATV riding on dirt road Route C.																								X												
Forest Logging	CL-F (Logging Area 2014)	Location represents ABS sample area.																				X																
	Comm Log (Commercial Logging 2012)	Location represents commercial logging activities for air sampling (26 total samples)											X																										
Woodstove	Woodstove-ABS	9 ABS samples collected during wood-stove burning scenario (3 from Near, 3 from Flower Creek, 3 from Bear Creek)														X																						
Fire	Souse Gulch-ABS	Souse Gulch Air																	X																			
	Souse Gulch-ABS Helicopter	Souse Gulch Air																	X																			
Construction	Souse Gulch-Construction	Souse Gulch Air Samples using street sweepers																X																				

NOTES:
LAA - Libby Amphibole Asbestos
* Locations where geotechnical index testing samples were collected.
Burn Chamber sample counts are not included in this summary count table. Analytical results are presented in Appendix E-1m.

PHASE	PHASE NAME
I	Phase I, 2007
IIA	Phase II, Part A, 2008
IIB	Phase II, Part B, 2008/2009
IIC	Phase II, Part C, 2008
III	Phase III, 2009
IVA	Phase IV, Part A, 2010
IVB	Phase IV, Part B, 2011
VA	Phase V, Part A, 2012
VB	Phase V, Part B, 2012
AMP	Amphitheater Removal, 2012, 2013
CL-2012	Commercial Logging, 2012
N&E-2012a	Nature & Extent (surface water & sediment), 2012
N&E-2012b	Nature & Extent (tee bark & duff material), 2012
WSA	Woodstove Ash, 2012
VB-2013	Phase VB-2013, 2013
CONST	Souse Gulch Construction, 2013
FIRE	Souse Gulch Fire, 2013
TEST PIT	Geotechnical Test Pit, 2014
GEO	Geotechnical Testing, 2014
N&E-2014	Nature & Extent (ABS - fireline), 2014
CL-2014	Commercial Logging, 2014
WT-2015	Spring Water Sampling, 2015
SP-2015	Slash Pile Burn, 2015
UB-2015	Prescribed Understory Burn, 2015
MT-2015	Mine-site Trespasser, 2015
WFM-2015	Wildfire Monitoring, 2015

Table 5-1: Summary of OU3 Study Area Surface Water Stations, Non-Asbestos Analyses, and Sample Counts

Location	Station ID	Metals (Dissolved)			Metals (Total)			Anions			Nitrogen Compounds			Organophosphorus Pesticides	Pesticides	Polychlorinated Biphenyls (PCBs)	Volatile Organic Compounds (VOCs) / Hydrocarbons				Semi-Volatile Organic Compounds (SVOCs) / Polycyclic Aromatic Hydrocarbons (PAHs)		Radionuclides				Water Quality Parameters					
		SW6010B	SW6020	SW7470A	SW6010B	SW6020	SW7470A	Kelada mod	E300.0	E365.1	E350.1	E351.2	E353.2	SW8141A	SW8081A	SW8082	MA-EPH	MA-VPH	SW8015M	SW8260B	SW8151A	SW8270C	A7500-RA	E900.0	E903.0	RA-05	A2320 B	A2340 B	A2540 C	A2540 D	A5310 C	310.1
Off-Site[a]	BTT-R1	1	1	1	1	1	1						1		1						1	1					1	1	1	1	1	
	NSY-R1	1	1	1	1	1	1						1		1						1	1					1	1	1	1	1	
Upper Rainy Creek[a]	URC-1	3	3	3	4	3	3		4	3	3	3	3					3	3								4	2	3	3	3	1
	URC-1A	2	2	2	2	2	2		2	2	2	2	2					2	2								2	2	2	2	2	
	URC-2	3	3	3	3	3	3		3	3	3	3	3					3	3								3	2	3	3	3	
Fleetwood Creek	FC-1	3	3	3	4	3	3		4	3	3	3	3					3	3								4	3	3	3	3	1
	FC-2	3	3	3	3	3	3		3	3	3	3	3					3	3								3	3	3	3	3	
Fleetwood Creek Pond	FC-POND	3	3	3	3	3	3		3	3	3	3	3				1	3	3			1					3	3	3	3	3	
Tailings Pond	UTP	2	2	2	3	2	2		3	2	2	2	2					2	2								3	2	2	2	2	1
	TP	3	3	3	3	3	3		4	3	3	3	3					3	2								4	3	3	3	3	1
	TP-Overflow-A				1				1																		1					1
KDID Toe Drains[b]	D1				1				1																		1					1
	D10				1				1																		1					1
	D11				1				1																		1					1
	D12				1				1																		1					1
	D2				1				1																		1					1
	D3				1				1																		1					1
	D4				1				1																		1					1
	D5				1				1																		1					1
	D6				1				1																		1					1
	D7				1				1																		1					1
	D9				1				1																		1					1
Carney Creek	CC-1	3	3	3	3	3	3		3	3	2	2	3					3	3								3	2	3	3	3	
	CC-2	3	3	3	4	3	3		4	3	2	2	3					3	3								4	3	3	3	3	1
	CC-3A				1				1																		1					1
Carney Creek Pond	CC-POND	2	2	2	2	2	2		2	2	2	2	2					2	2								2	2	2	2	2	
Lower Rainy Creek	TP-TOE1	3	3	3	3	3	3	3	3	3	3	3	3	1	3	2		3	3	3	3	3	1	3	1	1	3	3	3	3	3	
	TP-TOE2	3	3	3	3	3	3		3	3	3	3	3					3	3								3	3	3	3	3	
	TP-TOE1A				1				1																		1					1
	LRC-1	3	3	3	3	3	3		3	3	3	3	3					3	3								3	3	3	3	3	
	LRC-2	3	3	3	4	3	3	3	4	3	3	3	3	1	3	3		3	3	3	3	3	1	3	1	1	4	3	3	3	3	1
	LRC-3	3	3	3	4	3	3		4	3	3	3	3					3	3								4	3	3	3	3	1
	LRC-4	3	3	3	4	3	3		4	3	3	3	3					3	3								4	3	3	3	3	1
	LRC-5	3	3	3	4	3	3		4	3	3	3	3					3	3								4	3	3	3	3	1
	LRC-6	3	3	3	4	3	3		4	3	3	3	3					3	3								4	3	3	3	2	1
	LRC-2A				1				1																		1					1
Mill Pond	MP	3	3	3	4	3	3		4	3	2	2	3					3	3								4	3	3	3	3	1
East Tub Gulch[b]	East-TGC				1				1																		1					1
	East-TGP				1				1																		1					1
Seeps	CCS-1	3	3	2	3	3	2		3	3	3	3	3					3	3								3	2	3	3	3	
	CCS-11	3	3	3	3	3	3		3	3	2	2	3					3	3								3	3	3	3	3	
	CCS-14	3	3	3	3	3	3		3	3	2	2	3				1	3	3			1					3	3	3	3	3	
	CCS-16	3	3	3	3	3	3		3	3	2	2	3					3	3								3	3	3	3	3	
	CCS-6	3	3	3	3	3	3		3	3	2	2	3					3	3								3	3	3	3	3	
	CCS-8	3	3	3	3	3	3		3	3	2	2	3				1	3	3			1					3	3	3	3	3	
	CCS-9	3	3	3	3	3	3		3	3	2	2	3					3	3								3	3	3	3	3	

Notes:

[a] The stations at "Off-Site" and "Upper Rainy Creek" are reference locations (i.e., assumed to not be impacted by previous mining activities or existing mine waste).

[b] The "East Tub Gulch" and "Toe Drains" were only sampled for water chemistry metals (Ca, Na, Mg, K), and water quality parameters in spring 2015. No other non-asbestos constituents were sampled.

See Table 3-2 for a list of the OU3 Study Area non-asbestos analytical methods and corresponding analytical procedures.

Table 5-2a: Data Summary for All Detected Analytes in OU3 Study Area Surface Water[a]

Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[b]	Maximum Detected Result
Metals (Total)	Aluminum	µg/L	28	20	80	25%	99.3	1080
	Barium	µg/L	28	80	80	100%	423	1000
	Calcium	µg/L	45	108	108	100%	72750	141000
	Chromium	µg/L	28	4	80	5%	5.3	10
	Copper	µg/L	28	6	80	8%	1.4	16
	Iron	µg/L	28	47	80	59%	178	1830
	Lead	µg/L	28	6	80	8%	0.42	5.1
	Magnesium	µg/L	45	108	108	100%	20487	47000
	Manganese	µg/L	28	33	80	41%	74.1	940
	Nickel	µg/L	28	2	80	3%	2.6	8
	Potassium	µg/L	45	108	108	100%	11279	34000
	Sodium	µg/L	45	108	108	100%	6592	16000
	Vanadium	µg/L	28	6	80	8%	5.4	10
	Zinc	µg/L	28	2	80	3%	5.4	20
Metals (Dissolved)	Aluminum	µg/L	28	1	80	1%	45.8	110
	Barium	µg/L	28	80	80	100%	426	1000
	Calcium	µg/L	28	80	80	100%	74725	153000
	Copper	µg/L	28	1	80	1%	1.0	4
	Iron	µg/L	28	6	80	8%	66.6	1410
	Lead	µg/L	28	1	80	1%	0.25	0.5
	Magnesium	µg/L	28	80	80	100%	21613	49000
	Manganese	µg/L	28	16	80	20%	53.0	980
	Potassium	µg/L	28	80	80	100%	11950	33000
	Sodium	µg/L	28	80	80	100%	6663	15000
	Vanadium	µg/L	28	4	80	5%	5.3	10
Anions	Chloride	µg/L	45	94	108	87%	3344	10000
	Fluoride	µg/L	28	78	80	98%	429	1100
	Phosphorus, Orthophosphate as P	µg/L	28	80	80	100%	224	1160
	Sulfate	µg/L	45	108	108	100%	15471	64000
Nitrogen Compounds	Nitrogen, Kjeldahl, Total as N	µg/L	28	7	71	10%	342	3100
	Nitrogen, Nitrate as N	µg/L	28	28	71	39%	117	1510
	Nitrogen, Nitrate+Nitrite as N	µg/L	28	31	71	44%	135	1510
	Nitrogen, Nitrite as N	µg/L	28	6	80	8%	6.8	80
Radionuclides	Gross Alpha	pCi/L	2	6	6	100%	1.8	2.6
	Gross Beta	pCi/L	2	4	4	100%	6.6	9

Table 5-2a: Data Summary for All Detected Analytes in OU3 Study Area Surface Water[a]

Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[b]	Maximum Detected Result
Water Quality Parameters	Alkalinity, Total as CaCO3	µg/L	45	108	108	100%	264574	516000
	Bicarbonate as HCO3	µg/L	45	108	108	100%	306648	630000
	Carbonate as CO3	µg/L	28	8	80	10%	2625	17000
	Hardness as CaCO3	µg/L	28	76	76	100%	276895	537000
	Organic Carbon, Dissolved (DOC)	µg/L	28	79	79	100%	3862	15400
	Solids, Total Dissolved TDS @ 180 C	µg/L	28	80	80	100%	335625	592000
	Solids, Total Suspended TSS @ 105 C	µg/L	28	9	80	11%	6438	36000
Volatile Organic Compounds (VOCs) / Hydrocarbons	Benzene	µg/L	28	1	86	1%	0.25	0.65
	C5 to C8 Aliphatics	µg/L	28	2	80	3%	10.9	62
	Total Extractable Hydrocarbons	µg/L	28	3	84	4%	161	571
	Total Purgeable Hydrocarbons	µg/L	28	2	80	3%	10.8	53

Notes:

[a] Only analytes that have one or more detections in the OU3 Study Area samples are shown on this table (including Seeps and Upper Rainy Creek samples). Reference sample location data (BTT-R1 and NSY-R1) from outside the OU3 Study Area are not included.

[b] Non-detections are evaluated at 1/2 of the Practical Quantitation Limit (PQL)

Field and lab quality control samples are not included in the summary statistics.

µg/L - micrograms per Liter

pCI/L - picocuries per Liter

Table 5-2b: Data Summary for All Detected Analytes in Off-Site Reference Location Surface Water[a]

Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[b]	Maximum Detected Result
Metals (Total)	Barium	µg/L	2	1	2	50%	125	200
	Calcium	µg/L	2	2	2	100%	31000	45000
	Iron	µg/L	2	1	2	50%	68	120
	Magnesium	µg/L	2	2	2	100%	10500	17000
	Manganese	µg/L	2	1	2	50%	25	40
	Potassium	µg/L	2	2	2	100%	1500	2000
	Sodium	µg/L	2	2	2	100%	3500	4000
Metals (Dissolved)	Barium	µg/L	2	1	2	50%	125	200
	Cadmium	µg/L	2	1	2	50%	0.125	0.2
	Calcium	µg/L	2	2	2	100%	31000	46000
	Magnesium	µg/L	2	2	2	100%	10500	17000
	Potassium	µg/L	2	2	2	100%	1500	2000
	Sodium	µg/L	2	2	2	100%	3000	3000
Water quality parameters	Alkalinity, Total as CaCO3	µg/L	2	2	2	100%	127500	190000
	Bicarbonate as HCO3	µg/L	2	2	2	100%	155500	232000
	Hardness as CaCO3	µg/L	2	2	2	100%	121000	185000
	Organic Carbon, Dissolved (DOC)	µg/L	2	2	2	100%	2200	2400
	Solids, Total Dissolved TDS @ 180 C	µg/L	2	2	2	100%	138000	194000

Notes:

[a] Only analytes that have one or more detections at the off-site reference sample locations (BTT-R1 and NSY-R1) are shown on this table.

[b] Non-detections are evaluated at 1/2 of the Practical Quantitation Limit (PQL)

Field and lab quality control samples are not included in the summary statistics.

µg/L - micrograms per Liter

Table 5-3a: Data Summary and DEQ-7 Exceedances for Detected Analytes in OU3 Study Area Surface Water[a]

Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[b]	Maximum Detected Result	DEQ-7 Human Health Standards[c]	DEQ-7 Aquatic Life ACUTE Standards[c]	DEQ-7 Aquatic Life CHRONIC Standards[c]
Metals (Total)	Aluminum	µg/L	28	20	80	25%	99	1080	NE	NE	NE
	Barium	µg/L	28	80	80	100%	423	1000	1000	NE	NE
	Calcium	µg/L	45	108	108	100%	72750	141000	NE	NE	NE
	Chromium	µg/L	28	4	80	5%	5.3	10	100	NE	NE
	Copper*	µg/L	28	6	80	8%	1.4	16	1300	**	**
	Iron*	µg/L	28	47	80	59%	178	1830	NE	NE	1000
	Lead*	µg/L	28	6	80	8%	0.42	5.1	15	**	**
	Magnesium	µg/L	45	108	108	100%	20487	47000	NE	NE	NE
	Manganese	µg/L	28	33	80	41%	74	940	NE	NE	NE
	Potassium	µg/L	45	108	108	100%	11279	34000	NE	NE	NE
	Sodium	µg/L	45	108	108	100%	6592	16000	NE	NE	NE
	Barium	µg/L	28	80	80	100%	426	1000	NE	NE	NE
	Calcium	µg/L	28	80	80	100%	74725	153000	NE	NE	NE
	Copper	µg/L	28	1	80	1%	1	4	NE	NE	NE
	Iron	µg/L	28	6	80	8%	67	1410	NE	NE	NE
	Magnesium	µg/L	28	80	80	100%	21613	49000	NE	NE	NE
	Manganese	µg/L	28	16	80	20%	53	980	NE	NE	NE
	Potassium	µg/L	28	80	80	100%	11950	33000	NE	NE	NE
	Sodium	µg/L	28	80	80	100%	6663	15000	NE	NE	NE
Anions	Chloride	µg/L	45	94	108	87%	3344	10000	NE	NE	NE
	Fluoride	µg/L	28	78	80	98%	429	1100	4000	NE	NE
	Phosphorus, Orthophosphate as P	µg/L	28	80	80	100%	224	1160	NE	NE	NE
	Sulfate	µg/L	45	108	108	100%	15471	64000	NE	NE	NE
Nitrogen Compounds	Nitrogen, Kjeldahl, Total as N	µg/L	28	7	71	10%	342	3100	10000	NE	NE
	Nitrogen, Nitrate as N	µg/L	28	28	71	39%	117	1510	NE	NE	NE
	Nitrogen, Nitrate+Nitrite as N	µg/L	28	31	71	44%	135	1510	10000	NE	NE
	Nitrogen, Nitrite as N	µg/L	28	6	80	8%	6.8	80	1000	NE	NE
Radionuclides	Gross Alpha	pCi/L	2	6	6	100%	1.8	2.6	15	NE	NE
	Gross Beta	pCi/L	2	4	4	100%	6.6	9	[d]	NE	NE

Table 5-3a: Data Summary and DEQ-7 Exceedances for Detected Analytes in OU3 Study Area Surface Water[a]

Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[b]	Maximum Detected Result	DEQ-7 Human Health Standards[c]	DEQ-7 Aquatic Life ACUTE Standards[c]	DEQ-7 Aquatic Life CHRONIC Standards[c]
Water Quality Parameters	Alkalinity, Total as CaCO3	µg/L	45	108	108	100%	264574	516000	NE	NE	NE
	Bicarbonate as HCO3	µg/L	45	108	108	100%	306648	630000	NE	NE	NE
	Carbonate as CO3	µg/L	28	8	80	10%	2625	17000	NE	NE	NE
	Hardness as CaCO3	µg/L	28	76	76	100%	276895	537000	NE	NE	NE
	Organic Carbon, Dissolved (DOC)	µg/L	28	79	79	100%	3862	15400	NE	NE	NE
	Solids, Total Dissolved TDS @ 180 C	µg/L	28	80	80	100%	335625	592000	NE	NE	NE
	Solids, Total Suspended TSS @ 105 C	µg/L	28	9	80	11%	6438	36000	NE	NE	NE
Volatile Organic Compounds (VOCs) / Hydrocarbons	Total Extractable Hydrocarbons	µg/L	28	3	84	4%	161	571	NE	NE	NE

Notes:

Maximum detected value exceeded the applicable DEQ-7 standard.

[a] Only analytes that have one or more detections in the OU3 Study Area samples are shown on this table (including Upper Rainy Creek and Seep samples). Reference sample location data (BTT-R1 and NSY-R1) from outside the OU3 Study Area are not included.

[b] Non-detections are evaluated at 1/2 of the Practical Quantitation Limit (PQL).

[c] Source: Circular DEQ-7 Montana Numeric Water Quality Standards. Water Quality Planning Bureau, Water Quality Standards Section, October 2012.

[d] Gross Beta was not compared to the DEQ-7 standard because the reported units are in picocuries per liter (pCi/L), and the DEQ-7 standard units are in millirem per year (mrem/yr).

[*] See Tables 5-3b and 5-3c for specific samples that exceeded the DEQ-7 standards for these constituents.

[**] Aquatic Life Standards were calculated using location- and date-specific hardness results, where available, for Total Metals Cd, Cu, Cr III, Pb, Ni, Ag, and Zn. Ag and Cd were not detected in any samples and Cr III was not reported. See Table 5-2b for detailed results and exceedances.

Field and lab quality control samples are not included in the summary statistics.

NE - Not Established

µg/L - micrograms per Liter

pCI/L - picocuries per Liter

Table 5-3b: Summary of the Detected Total Metals that Exceeded DEQ-7 Aquatic Life Standards as a Function of Hardness in Surface Water[a]

Detected Analyte[b]	Units	Hardness (mg/L)	LN (hardness)	M_A	B_A	M_C	B_C	Detected Result	Calculated DEQ-7 Aquatic Life ACUTE Standards[c]	Calculated DEQ-7 Aquatic Life CHRONIC Standards[c]
Copper	µg/L	124	4.82	0.9422	-1.7	0.8545	-1.702	2	17.1	11.2
Copper	µg/L	144	4.97	0.9422	-1.7	0.8545	-1.702	16	19.7	12.7
Copper	µg/L	223	5.41	0.9422	-1.7	0.8545	-1.702	4	29.9	18.6
Copper	µg/L	157	5.06	0.9422	-1.7	0.8545	-1.702	6	21.5	13.8
Lead	µg/L	124	4.82	1.273	-1.46	1.273	-4.75	5.1	107.3	4
Lead	µg/L	113	4.73	1.273	-1.46	1.273	-4.75	1	95.7	3.6
Lead	µg/L	157	5.06	1.273	-1.46	1.273	-4.75	4.3	145.7	5.4

Notes:

Detected result exceeded the applicable DEQ-7 standard.

[a] Aquatic Life Standards were calculated using location- and date-specific hardness results, where available, (milligrams per Liter, CaCO3) for Total Metals Cd, Cu, Cr III, Pb, Ni, Ag, and Zn per DEQ-7 guidance. If the hardness was <25 mg/L, the number 25 was used in the calculation. If the hardness was ≥400 mg/L then the number 400 was be used in the calculation. If the hardness was any value between 25 mg/L and 400 mg/L then the calculated hardness value was used. The formulas are as follows:

ACUTE = $EXP\{M_A[LN(hardness)]+B_A\}$ where M_A and B_A are hardness coefficients, and LN is the natural logarithm.

CHRONIC = $EXP\{M_C[LN(hardness)]+B_C\}$ where M_C and B_C are hardness coefficients, and LN is the natural logarithm.

[b] Only the Total Metals Cu, Pb, Ni, and Zn that had one or more detections are shown on this table with the exception of seeps and the reference sample location data (BTT-R1 and NSY-R1) from outside the OU3 Study Area. Cr III was not analyzed.

[c] Source: Circular DEQ-7 Montana Numeric Water Quality Standards. Water Quality Planning Bureau, Water Quality Standards Section, October 2012.

Field and lab quality control samples are not included in the summary statistics.

µg/L - micrograms per Liter

Table 5-3c: Summary of OU3 Study Area Surface Water Stations where DEQ-7 Standards Exceeded[a]

Station ID[a]	Phase	Media	Index ID	Sample Date	Analysis Method	Filtered	Analyte Group	Analyte	Detected Result	Detected Result Units	DEQ-7 Aquatic Life CHRONIC Standards (µg/L)[c]
URC-1A[b]	IIA	Surface Water	P2-00422	6/26/2008	SW6020	TOT	Metals	Copper	16	µg/L	12.7
FC-POND	I	Surface Water	P1-00266	10/13/2007	SW6020	TOT	Metals	Lead	5.1	µg/L	4
FC-POND	IIA	Surface Water	P2-00902	9/12/2008	SW6010B	TOT	Metals	Iron	1760	µg/L	1000

Notes:

[a] Seep data are excluded from this table because they are not viable aquatic habitat. Reference sample location data (BTT-R1 and NSY-R1) from outside the OU3 Study Area also are excluded.

[b] URC-1A is a reference location (i.e., assumed to not be impacted by previous mining activities or existing mine waste) located within the OU3 Study Area.

[c] Source: Circular DEQ-7 Montana Numeric Water Quality Standards. Water Quality Planning Bureau, Water Quality Standards Section, October 2012.

TOT - Total Metals

µg/L - micrograms per Liter

Table 5-4: Summary of OU3 Study Area Groundwater Stations, Non-Asbestos Analyses, and Sample Counts

Station ID[a]	Material Screened In	Metals (Dissolved)			Metals (Total)			Anions		Nitrogen Compounds	Radionuclides	Semi-Volatile Organic Compounds (SVOCs) / Polycyclic Aromatic Hydrocarbons (PAHs)	Volatile Organic Compounds (VOCs) / Hydrocarbons			Water Quality Parameters				
		SW6010B	SW6020	SW7470A	SW6010B	SW6020	SW7470A	Kelada mod	E300.0	E353.2	E900.0	SW8270C	MA-EPH	MA-VPH	SW8015M	A2320 B	A2340 B	A2540 C	A2540 D	310.1
Well A	Overburden (Alluvial or Glacial)	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	
Well C	Overburden (Glacial)	2	2	2	3	2	2	2	3	2	2			2	2	3	2	2	2	1
Well D	Bedrock	3	3	3	3	3	3	3	3	3	3			3	3	3	3	3	3	
Well E	Bedrock	3	3	3	3	3	3	3	3	3	3	1	1	3	3	3	3	3	3	
Well H	Bedrock	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	
BH-01A-1	Bedrock				1				1							1				1
BH-01A-2	Alluvium				1				1							1				1
BH-03A-1	Alluvium				1				1							1				1
BH-05A-1	Bedrock				1				1							1				1
BH-05A-2	Alluvium				1				1							1				1
BH-07A-1	Bedrock				1				1							1				1
BH-07A-2	Glacial Till				1				1							1				1
BH-07B-1	Alluvium				1				1							1				1
BH-09-1	Alluvium				1				1							1				1

Notes:

[a] The borehole stations (i.e., BH-) were only sampled for water chemistry metals (Ca, Na, Mg, K), and water quality parameters in spring 2015. No other non-asbestos constituents were sampled.

See Table 3-2 for a list of the OU3 Study Area non-asbestos analytical methods and corresponding analytical procedures.

Table 5-5: Data Summary and DEQ-7 Exceedances for Detected Analytes in OU3 Study Area Groundwater[a]

Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[b]	Maximum Detected Result	DEQ-7 Human Health Standards[c]
Metals (Total)	Aluminum	µg/L	5	5	13	38%	762	4500	NE
	Barium	µg/L	5	9	13	69%	292	800	1000
	Cadmium	µg/L	5	5	13	38%	0.34	1	5
	Calcium	µg/L	14	23	23	100%	69522	101000	NE
	Chromium	µg/L	5	2	13	15%	8.1	30	100
	Copper	µg/L	5	8	13	62%	10.3	69	1300
	Iron	µg/L	5	11	13	85%	5497	17800	NE
	Lead	µg/L	5	7	13	54%	2.0	8.5	15
	Magnesium	µg/L	14	23	23	100%	21913	45000	NE
	Manganese	µg/L	5	9	13	69%	277	1220	NE
	Nickel	µg/L	5	3	13	23%	4.7	21	100
	Potassium	µg/L	14	22	23	96%	9796	20000	NE
	Selenium	µg/L	5	1	13	8%	2.8	6	50
	Sodium	µg/L	14	23	23	100%	7517	22000	NE
	Vanadium	µg/L	5	2	13	15%	8.8	40	NE
	Zinc	µg/L	5	5	13	38%	122	1130	2000
Metals (Dissolved)	Barium	µg/L	5	9	13	69%	315	900	NE
	Cadmium	µg/L	5	6	13	46%	0.42	1.4	NE
	Calcium	µg/L	5	13	13	100%	66385	96000	NE
	Copper	µg/L	5	3	13	23%	1.6	4	NE
	Iron	µg/L	5	6	13	46%	1737	10300	NE
	Magnesium	µg/L	5	13	13	100%	26615	45000	NE
	Manganese	µg/L	5	7	13	54%	256	1200	NE
	Potassium	µg/L	5	11	13	85%	10000	19000	NE
	Sodium	µg/L	5	13	13	100%	6923	12000	NE
	Vanadium	µg/L	5	1	13	8%	5.4	10	NE
	Zinc	µg/L	5	3	13	23%	33.8	350	NE
Anions	Chloride	µg/L	14	23	23	100%	11109	45000	NE
	Fluoride	µg/L	5	6	13	46%	169	600	4000
	Sulfate	µg/L	14	22	23	96%	29635	146000	NE
Nitrogen Compounds	Nitrogen, Nitrate as N	µg/L	5	9	13	69%	1196	4590	NE
	Nitrogen, Nitrate+Nitrite as N	µg/L	5	11	13	85%	1236	5030	10000
	Nitrogen, Nitrite as N	µg/L	5	6	13	46%	45.8	440	1000

Table 5-5: Data Summary and DEQ-7 Exceedances for Detected Analytes in OU3 Study Area Groundwater[a]

Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[b]	Maximum Detected Result	DEQ-7 Human Health Standards[c]
Radionuclides	Gross Alpha*	pCi/L	5	11	13	85%	5.7	15.7	15
	Gross Beta	pCi/L	5	13	13	100%	9.5	26.2	[d]
Water Quality Parameters	Alkalinity, Total as CaCO3	µg/L	14	23	23	100%	236348	339000	NE
	Bicarbonate as HCO3	µg/L	14	23	23	100%	264304	413000	NE
	Hardness as CaCO3	µg/L	5	13	13	100%	277154	414000	NE
	Solids, Total Dissolved TDS @ 180 C	µg/L	5	13	13	100%	343538	524000	NE
	Solids, Total Suspended TSS @ 105 C	µg/L	5	5	13	38%	41077	326000	NE
Volatile Organic Compounds (VOCs) / Hydrocarbons	Toluene	µg/L	5	2	13	15%	0.34	0.86	1000
	Total Extractable Hydrocarbons	µg/L	5	4	17	24%	275	1130	NE

Notes:

Maximum detected value exceeded the applicable DEQ-7 standard.

[a]Only analytes that have one or more detections are shown on this table.

[b]Non-detections are evaluated at 1/2 of the Practical Quantitation Limit (PQL).

[c]Source: Circular DEQ-7 Montana Numeric Water Quality Standards. Water Quality Planning Bureau, Water Quality Standards Section. October 2012.

[d]Gross Beta was not compared to the DEQ-7 standard because the reported units are in picocuries per liter (pCi/L), and the DEQ-7 standard units are in millirem per year (mrem/yr).

* See Table 5-6 for specific samples that exceeded the DEQ-7 standards for these constituents.

Field and lab quality control samples are not included in the summary statistics.

NE - Not Established

µg/L - micrograms per Liter

pCi/L - picocuries per Liter

Table 5-6: Summary of OU3 Study Area Groundwater Stations where DEQ-7 Standards Exceeded

Station ID	Material Screened In	Phase	Media	Index ID	Sample Date	Analysis Method	Analyte Group	Analyte	Detected Result	Detected Result Units	DEQ-7 Groundwater Standard (pCi/L)[a]
Well E	Bedrock	IIB	Groundwater	P2-01133	6/9/2009	E900.0	Radionuclides	Gross Alpha	15.7	pCi/L	15

Notes:

[a] Source: Circular DEQ-7 Montana Numeric Water Quality Standards. Water Quality Planning Bureau, Water Quality Standards Section. October 2012.

pCi/L - picocuries per Liter

Table 5-7: Summary of OU3 Study Area Sediment Stations, Non-Asbestos Analyses, and Sample Counts

Location	Station ID	Metals				Anions		Nitrogen compounds	Acid Volatile Sulfide	Cyanide	Organophosphorus Pesticides	Pesticides	Polychlorinated Biphenyls (PCBs)	Volatile Organic Compounds (VOCs) / Hydrocarbons					Semi-Volatile Organic Compounds (SVOCs) / Polycyclic Aromatic Hydrocarbons (PAHs)		Sediment / Soil Quality Parameters				
		SW6010B	SW6020	SW7196A	SW7471A	E300.0	E365.1	ASA33-7	AVS/TTR	SW9012	SW8141A	SW8081A	SW8082	MA-EPH	MA-VPH	SW8015B	SW8015M	SW8260B	SW8151A	SW8270C	A2540 G	ASA10-3	ASA29-3	ASAM10-3.2	Leco	SW3550A
Off-Site[a]	Banana Lake	1	1		1			1	1			1	1			1			1	1		1	1			1
	Bobtail Pond 1	1	1		1			1	1			1	1			1			1	1		1	1			1
	Bobtail Pond 2	1	1		1			1	1			1	1			1			1	1		1	1			1
	BTT-R1	1	1		1							1							1	1	1			1	1	
	NSY-R1	1	1		1							1							1	1	1			1	1	
	Schrieber Lake	1	1		1			1	1			1	1			1			1	1		1	1			1
	Tepee Pond 1	1	1		1			1	1			1	1			1			1	1		1	1			1
	Tepee Pond 2	1	1		1			1	1			1	1			1			1	1		1	1			1
Upper Rainy Creek[a]	URC-1	3	3	1	3	3	3							1	3		3			1	2			3	3	1
	URC-1A	3	3	1	2	2	2								2		2				3			3	3	
	URC-2	4	4	1	3	3	3							3	3		3			3	3			4	4	1
Fleetwood Creek	FC-1	3	3	1	3	3	3							2	3		3			2	2			3	3	1
	FC-2	4	4	1	3	3	3							3	3		3			3	3			4	4	1
Fleetwood Creek Pond	FC-POND	2	2		2	1	1	1	1			1	1	1	1	1	1		1	2		1	1	1	1	2
	FC-POND-1	2	2	1	2	2	2							1	2		2			1	2			2	2	
	FC-POND-2	2	2	1	2	2	2							1	2		2			1	2			2	2	
	FC-POND-3	2	2	1	2	2	2							2	2		2			2	2			2	2	
	FC-POND-4	2	2	1	2	2	2							2	2		2			2	2			2	2	
	FC-POND-5	2	2	1	2	2	2							2	2		2			2	2			2	2	
Tailings Pond	TP	2	2		2	1	1	1	1			1	1	1	1	1	1		1	2		1	1	1	1	2
	TP-1	2	2	1	2	2	2								2		2				2			2	2	
	TP-10	2	1	1	2	2	2							2	2		2			2	2			2	2	
	TP-11	2	1	1	2	2	2							2	2		2			2	2			2	2	
	TP-12	2	1	1	2	2	2							1	2		2			1	2			2	2	
	TP-13	2	1	1	2	2	2							2	2		2			2	2			2	2	
	TP-14	2	1	1	2	2	2							1	2		2			1	2			2	2	
	TP-15	2	1	1	2	2	2							1	2		2			1	2			2	2	
	TP-16	2	1	1	2	2	2							2	2		2			2	2			2	2	
	TP-17	2	1	1	2	2	2							1	2		2			1	2			2	2	
	TP-2	2	2	1	2	2	2								2		2				2			2	2	
	TP-3	2	2	1	2	2	2								2		2				2			2	2	
	TP-4	2	2	1	2	2	2							1	2		2			1	2			2	2	
	TP-5	2	2	1	2	2	2							1	2		2			1	2			2	2	1
	TP-6	2	1	1	2	2	2							2	2		2			2	2			2	2	
	TP-7	2	1	1	2	2	2							2	2		2			2	2			2	2	
	TP-8	2	1	1	2	2	2							2	2		2			2	2			2	2	
	TP-9	2	1	1	2	2	2							2	2		2			2	2			2	2	
Carney Creek	CC-1	6	6	1	4	3	3	1	1			1	1	1	3	1	3		1	2	4	1	1	5	5	2
	CC-2	3	3	1	3	3	3								3		3				2			3	3	1
Carney Creek Pond	CC-POND	1	1		1			1	1			1	1			1			1	1		1	1			1
	CC-POND-1	2	1	1	2	2	2								2		2				2			2	2	
	CC-POND-2	2	1	1	2	2	2								2		2				2			2	2	
	CC-POND-3	2	1	1	2	2	2							1	2		2			1	2			2	2	
	CC-POND-4	2	1	1	2	2	2							1	2		2			1	2			2	2	
	CC-POND-5	2	1	1	2	2	2							1	2		2			1	2			2	2	
Lower Rainy Creek	TP-TOE1	3	3	1	3	3	3								3		3				2			3	3	1
	TP-TOE2	6	6	1	4	3	3	1	1	3	1	4	4		3	1	3	3	4	4	4	1	1	5	5	2
	LRC-1	3	3	1	3	3	3					1	3		3		3		1		2			3	3	1
	LRC-2	4	4	1	3	3	3			3	1	3	3		3		3	3	3	3	3			4	4	1
	LRC-3	4	4	1	3	3	3					1	3	1	3		3		1	1	3			4	4	1
	LRC-4	3	3	1	3	3	3					1	3		3		3		1		2			3	3	1
	LRC-5	4	4	1	3	3	3					1	3		3		3		1		3			4	4	1
	LRC-6	3	3	1	3	3	3					1	3	1	3		3		1	1	2			3	3	1
Mill Pond	MP	2	2		2	1	1	1	1			1	1	1	1	1	1		1	2		1	1	1	1	2
	MP-1	2	1	1	2	2	2							2	2		2			2	2			2	2	
	MP-2	2	1	1	2	2	2							2	2		2			2	2			2	2	
	MP-3	2	1	1	2	2	2							2	2		2			2	2			2	2	
	MP-4	2	1	1	2	2	2							1	2		2			1	2			2	2	
	MP-5	2	1	1	2	2	2							2	2		2			2	2			2	2	
Seeps	CCS-1	3	3	1	3	3	3								3		3				2			3	3	1
	CCS-11	3	3	1	3	3	3							3	3		3			3	2			3	3	1
	CCS-14	3	3	1	3	3	3							1	3		3			1	2			3	3	1
	CCS-16	3	3	1	3	3	3							1	3		3			1	2			3	3	1
	CCS-6	3	3	1	3	3	3							1	3		3			1	2			3	3	1
	CCS-8	3	3	1	3	3	3							3	3		3			3	2			3	3	1
	CCS-9	3	3	1	3	3	3								3		3				2			3	3	1

Notes:

[a] The stations at "Off-Site" and "Upper Rainy Creek" are reference locations (i.e., assumed to not be impacted by previous mining activities or existing mine waste).

See Table 3-2 for a list of the OU3 Study Area non-asbestos analytical methods and corresponding analytical procedures.

Table 5-8a: Data Summary for All Detected Analytes in OU3 Study Area Sediment[a]

Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[b]	Maximum Detected Result
Metals	Aluminum	mg/kg-dry	58	147	148	99%	18372	40700
	Antimony	mg/kg-dry	36	4	113	4%	0.89	5
	Arsenic	mg/kg-dry	58	53	148	36%	1.7	7
	Barium	mg/kg-dry	58	147	148	99%	1090	4930
	Boron	mg/kg-dry	57	10	142	7%	2.9	11
	Cadmium	mg/kg-dry	58	4	148	3%	0.46	1
	Chromium	mg/kg-dry	58	147	148	99%	239	988
	Cobalt	mg/kg-dry	58	140	148	95%	28.5	75
	Copper	mg/kg-dry	58	148	148	100%	47.2	175
	Iron	mg/kg-dry	58	148	148	100%	28801	62900
	Lead	mg/kg-dry	58	142	148	96%	31.1	100
	Magnesium	mg/kg-dry	6	6	6	100%	34183	59500
	Manganese	mg/kg-dry	58	148	148	100%	1141	12700
	Mercury	mg/kg-dry	58	2	138	1%	0.11	0.1
	Nickel	mg/kg-dry	58	146	148	99%	59	226
	Selenium	mg/kg-dry	52	4	142	3%	2.1	1.4
	Strontium	mg/kg-dry	6	6	6	100%	194	316
	Thallium	mg/kg-dry	57	46	142	32%	0.5	4.3
	Vanadium	mg/kg-dry	58	147	148	99%	50.1	105
	Zinc	mg/kg-dry	58	146	148	99%	40.2	219
Anions	Fluoride	mg/kg-dry	57	61	132	46%	1.6	18
	Phosphorus, Total	mg/kg-dry	57	132	132	100%	2381.5	10200
Nitrogen Compounds	Ammonia as N, KCL Extract	mg/kg-dry	6	6	6	100%	5	8
Acid Volatile Sulfide	Acid Volatile Sulfide	mg/kg-dry	6	2	6	33%	72	203
Sediment / Soil Quality Parameters	Moisture	wt%	58	149	149	100%	46.9	86
	Organic Carbon, Total (TOC)	wt%	63	147	148	99%	1.3	15.4
	pH	s.u.	6	6	6	100%	7.1	7.7
	pH, sat. paste	s.u.	57	141	142	99%	7.1	8.3
	Solids, Total	wt%	54	117	118	99%	50.3	92.2

Table 5-8a: Data Summary for All Detected Analytes in OU3 Study Area Sediment[a]

Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[b]	Maximum Detected Result
Semi-Volatile Organic Compounds (SVOCs) / Polycyclic Aromatic Hydrocarbons (PAHs)	2-Methylnaphthalene	mg/kg-dry	45	1	78	1%	0.42	0.02
	Benzo(a)anthracene	mg/kg-dry	45	1	78	1%	0.42	0.018
	Benzo(a)pyrene	mg/kg-dry	45	1	78	1%	0.42	0.012
	Benzo(b)fluoranthene	mg/kg-dry	45	2	78	3%	0.42	0.039
	Benzo(k)fluoranthene	mg/kg-dry	45	2	78	3%	0.42	0.033
	Dibenzo(a,h)anthracene	mg/kg-dry	45	1	78	1%	0.42	0.0056
	Fluoranthene	mg/kg-dry	45	1	78	1%	0.42	0.01
	Indeno(1,2,3-cd)pyrene	mg/kg-dry	45	1	78	1%	0.42	0.01
	Phenanthrene	mg/kg-dry	45	1	78	1%	0.4	0.29
	Pyrene	mg/kg-dry	45	4	78	5%	0.4	0.37
Volatile Organic Compounds (VOCs) / Hydrocarbons	C11 to C22 Aromatics	mg/kg-dry	42	54	66	82%	94.4	507
	C19 to C36 Aliphatics	mg/kg-dry	42	51	66	77%	144.9	739
	C9 to C10 Aromatics	mg/kg-dry	57	14	132	11%	5	63
	C9 to C12 Aliphatics	mg/kg-dry	57	23	132	17%	5.9	58
	C9 to C18 Aliphatics	mg/kg-dry	42	35	66	53%	88.9	590
	Diesel Range Organics (DRO)	mg/kg-dry	6	3	6	50%	40.6	131
	Methyl acetate	mg/kg-dry	2	4	6	67%	0.5	1.4
	Naphthalene	mg/kg-dry	24	3	132	2%	0.2	2.8
	Toluene	mg/kg-dry	57	1	138	1%	0.07	0.1
	Total Extractable Hydrocarbons	mg/kg-dry	58	188	204	92%	352	2360
	Total Purgeable Hydrocarbons	mg/kg-dry	58	35	138	25%	14.4	276

Notes:

a Only analytes that have one or more detections in the OU3 Study Area samples are shown on this table (including Seeps and Upper Rainy Creek samples). Reference sample location data (Banana Lake, Bobtail Pond, BTT-R1, NSY-R1, Schrieber Lake, and Tepee Pond) from outside the OU3 Study Area are not included.

[b] Non-detections are evaluated at 1/2 of the Practical Quantitation Limit (PQL).

from outside the OU3 Study Area are not included.

Field and lab quality control samples are not included in the summary statistics.

mg/kg-dry - milligrams per kilogram dry weight

wt% - % weight

s.u. - standard unit

Table 5-8b: Data Summary for All Detected Analytes in Off-Site Reference Location Sediment[a]

Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[b]	Maximum Detected Result
Metals	Aluminum	mg/kg-dry	8	8	8	100%	20920	57700
	Arsenic	mg/kg-dry	8	8	8	100%	4	5
	Barium	mg/kg-dry	8	8	8	100%	649	3210
	Chromium	mg/kg-dry	8	8	8	100%	114	642
	Cobalt	mg/kg-dry	8	8	8	100%	18	85
	Copper	mg/kg-dry	8	8	8	100%	30	87
	Iron	mg/kg-dry	8	8	8	100%	26850	86000
	Lead	mg/kg-dry	8	8	8	100%	23	78
	Magnesium	mg/kg-dry	6	6	6	100%	25790	109000
	Manganese	mg/kg-dry	8	8	8	100%	571	1810
	Nickel	mg/kg-dry	8	8	8	100%	34	167
	Selenium	mg/kg-dry	8	2	8	25%	1	2
	Strontium	mg/kg-dry	6	6	6	100%	154	581
	Tin	mg/kg-dry	6	2	6	33%	1.8	5
	Vanadium	mg/kg-dry	8	8	8	100%	33	121
	Zinc	mg/kg-dry	8	8	8	100%	100	450
Nitrogen compounds	Ammonia as N, KCL Extract	mg/kg-dry	6	6	6	100%	16	57
Acid Volatile Sulfide	Acid Volatile Sulfide	mg/kg-dry	6	1	6	17%	98	524
Sediment/soil quality parameters	Moisture	wt%	8	8	8	100%	51	71
	Organic Carbon, Total (TOC)	wt%	8	8	8	100%	2.3	4.2
	pH	s.u.	6	6	6	100%	6.4	6.9
	pH, sat. paste	s.u.	2	2	2	100%	7.3	7.8
	Solids, Total	wt%	2	2	2	100%	67	75.2
VOCs (Volatile Hydrocarbons)	Diesel Range Organics (DRO)	mg/kg-dry	6	6	6	100%	85	160
	Total Extractable Hydrocarbons	mg/kg-dry	6	6	6	100%	332	650

Notes:

a Only analytes that have one or more detections at the off-site reference sample locations (Banana Lake, Bobtail Pond, BTT-R1, NSY-R1, Schrieber Lake, and Tepee Pond) are shown on this table.

[b] Non-detections are evaluated at 1/2 of the Practical Quantitation Limit (PQL).
from outside the OU3 Study Area are not included.

Field and lab quality control samples are not included in the summary statistics.

mg/kg-dry - milligrams per kilogram dry weight

wt% - % weight

s.u. - standard unit

Table 5-9: Summary of OU3 Study Area Soil/Mine Waste Stations, Non-Asbestos Analyses, and Sample Counts

Material Type	Station ID	Metals			Anions		Cyanide	Organophosphorus Pesticides	Pesticides	Polychlorinated Biphenyls (PCBs)	Semi-Volatile Organic Compounds (SVOCs) / Polycyclic Aromatic Hydrocarbons (PAHs)		Volatile Organic Compounds (VOCs) / Hydrocarbons				Sediment / Soil Quality Parameters		
		SW6010B	SW6020	SW7471A	E300.0	E365.1	SW9012	SW8141A	SW8081A	SW8082	SW8151A	SW8270C	MA-EPH	MA-VPH	SW8015M	SW8260B	ASAM10-3.2	Leco	SW3550A
Forest Soil[a]	SL15-15	1	1	1															
	SL15-16	1	1	1															
	SL45-15	1	1	1															
	SL45-16	1	1	1															
	SL75-15	1	1	1															
	SL75-16	1	1	1															
	SL135-07	1	1	1															
	SL135-08	1	1	1															
	SL195-11	1	1	1															
	SL195-12	1	1	1															
	SL315-07	1	1	1															
	SL315-08	1	1	1															
Road Material	MS-1	1	1	1	1	1				1		1	1	1	1		1	1	1
	MS-2	1	1	1	1	1				1		1	1	1	1		1	1	1
	MS-3	1	1	1	1	1				1		1	1	1	1		1	1	1
Cover/Fill Material	MS-10	1	1	1	1	1								1	1		1	1	1
	MS-11	1	1	1	1	1								1	1		1	1	1
	MS-12	1	1	1	1	1								1	1		1	1	1
	MS-13	1	1	1	1	1								1	1		1	1	1
	MS-21	1	1	1	1	1								1	1		1	1	1
	MS-22	1	1	1	1	1								1	1		1	1	1
	MS-23	1	1	1	1	1								1	1		1	1	1
	MS-24	1	1	1	1	1								1	1		1	1	1
Waste Rock Pile (central)	MS-14	1	1	1	1	1								1	1		1	1	1
	MS-17	1	1	1	1	1								1	1		1	1	1
	MS-18	1	1	1	1	1								1	1		1	1	1
Waste Rock Pile (west)	MS-15	1	1	1	1	1								1	1		1	1	1
	MS-16	1	1	1	1	1								1	1		1	1	1
	MS-26	1	1	1	1	1								1	1		1	1	1
	MS-27	1	1	1	1	1								1	1		1	1	1
	MS-28	1	1	1	1	1								1	1		1	1	1
	MS-29	1	1	1	1	1								1	1		1	1	1
Waste Rock Pile (east)	MS-19	1	1	1	1	1								1	1		1	1	1
	MS-20	1	1	1	1	1						1	1	1	1		1	1	1
	MS-30	1	1	1	1	1								1	1		1	1	1
	MS-32	1	1	1	1	1								1	1		1	1	1
Bedrock (Outcrop)	MS-25	1	1	1	1	1											1	1	1
	MS-31	1	1	1	1	1											1	1	1
	MS-33	1	1	1	1	1											1	1	1
	MS-34	1	1	1	1	1											1	1	1
	MS-35	1	1	1	1	1											1	1	1
	MS-36	1	1	1	1	1											1	1	1
	MS-37	1	1	1	1	1											1	1	1
	MS-38	1	1	1	1	1											1	1	1
Fine Tailings	MS-4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MS-5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Coarse Tailings	MS-6	1	1	1	1	1								1	1		1	1	1
	MS-7	1	1	1	1	1								1	1		1	1	1
	MS-8	1	1	1	1	1								1	1		1	1	1
	MS-9	1	1	1	1	1								1	1		1	1	1

Notes:

[a] Forest Soil stations are reference locations (i.e., assumed to not be impacted by previous mining activities or existing mine waste).

See Table 3-2 for a list of the OU3 Study Area non-asbestos analytical methods and corresponding analytical procedures.

Table 5-10: Data Summary and Montana Soil Background Threshold Exceedances for Detected Analytes in OU3 Study Area Soil/Mine Waste

Material Type	Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[a]	Maximum Detected Result	Montana Soil Background Threshold[b]
Forest Soil[c]	Metals	Aluminum	mg/kg	12	12	12	100%	8964	26100	25941
		Arsenic	mg/kg	12	6	12	50%	4.3	7	22.5
		Barium	mg/kg	12	12	12	100%	99.8	225	429
		Boron	mg/kg	12	2	12	17%	2.9	5	NE
		Cadmium	mg/kg	12	1	12	8%	0.54	1	0.7
		Chromium	mg/kg	12	12	12	100%	22.6	49	41.7
		Cobalt	mg/kg	12	9	12	75%	7.9	26	10
		Copper	mg/kg	12	12	12	100%	19.4	48	165
		Iron	mg/kg	12	12	12	100%	16892	30700	24400
		Lead	mg/kg	12	12	12	100%	17	27	29.8
		Manganese	mg/kg	12	12	12	100%	443	1250	880
		Nickel	mg/kg	12	12	12	100%	16.5	42	31.4
		Vanadium	mg/kg	12	12	12	100%	26.3	119	52.6
		Zinc	mg/kg	12	12	12	100%	56.9	71	118
Road Material	Metals	Aluminum	mg/kg-dry	3	3	3	100%	15233	24400	25941
		Arsenic	mg/kg-dry	3	3	3	100%	2.7	3	22.5
		Barium	mg/kg-dry	3	3	3	100%	368	694	429
		Chromium	mg/kg-dry	3	3	3	100%	56.6	107	41.7
		Cobalt	mg/kg-dry	3	3	3	100%	15	28	10
		Copper	mg/kg-dry	3	3	3	100%	52	109	165
		Iron	mg/kg-dry	3	3	3	100%	22200	32800	24400
		Lead	mg/kg-dry	3	3	3	100%	25	50	29.8
		Manganese	mg/kg-dry	3	3	3	100%	365	542	880
		Nickel	mg/kg-dry	3	3	3	100%	25.7	51	31.4
		Vanadium	mg/kg-dry	3	3	3	100%	42.7	58	52.6
		Zinc	mg/kg-dry	3	3	3	100%	42.3	70	118
	Anions	Phosphorus, Total	mg/kg-dry	3	3	3	100%	2837	3970	NE
	Sediment / Soil Quality Parameters	Moisture	wt%	3	3	3	100%	11.4	20	NE
		pH, sat. paste	s.u.	3	3	3	100%	7.2	7.6	NE
		Organic Carbon, Total (TOC)	wt%	3	3	3	100%	1.1	1.32	NE
	Volatile Organic Compounds (VOCs) / Hydrocarbons	C11 to C22 Aromatics	mg/kg-dry	3	3	3	100%	30.3	40	NE
		C19 to C36 Aliphatics	mg/kg-dry	3	3	3	100%	57	82	NE
		Total Extractable Hydrocarbons	mg/kg-dry	3	6	6	100%	160	291	NE
Cover/Fill Material	Metals	Aluminum	mg/kg-dry	8	8	8	100%	16670	29400	25941
		Antimony	mg/kg-dry	8	1	8	13%	0.17	0.3	0.4
		Arsenic	mg/kg-dry	8	1	8	13%	1.1	2	22.5
		Barium	mg/kg-dry	8	8	8	100%	732	1130	429
		Chromium	mg/kg-dry	8	8	8	100%	151	338	41.7
		Cobalt	mg/kg-dry	8	8	8	100%	26.4	35	10
		Copper	mg/kg-dry	8	8	8	100%	32.9	82	165
		Iron	mg/kg-dry	8	8	8	100%	26813	36900	24400
		Lead	mg/kg-dry	8	8	8	100%	15.6	22	29.8
		Manganese	mg/kg-dry	8	8	8	100%	352	500	880
		Nickel	mg/kg-dry	8	8	8	100%	49.5	85	31.4
		Vanadium	mg/kg-dry	8	8	8	100%	49	114	52.6
		Zinc	mg/kg-dry	8	8	8	100%	31.5	63	118
	Anions	Phosphorus, Total	mg/kg-dry	8	8	8	100%	3811	11700	NE
	Sediment / Soil Quality Parameters	Moisture	wt%	8	8	8	100%	8.6	11	NE
		pH, sat. paste	s.u.	8	8	8	100%	7.3	7.9	NE
		Organic Carbon, Total (TOC)	wt%	8	8	8	100%	0.90	1.67	NE
	Volatile Organic Compounds (VOCs) / Hydrocarbons	Total Extractable Hydrocarbons	mg/kg-dry	8	8	8	100%	26	40	NE
Waste Rock Pile (central)	Metals	Aluminum	mg/kg-dry	3	3	3	100%	11900	13300	25941
		Barium	mg/kg-dry	3	3	3	100%	668	756	429
		Chromium	mg/kg-dry	3	3	3	100%	190	223	41.7
		Cobalt	mg/kg-dry	3	3	3	100%	28.7	39	10
		Copper	mg/kg-dry	3	3	3	100%	43.3	69	165
		Iron	mg/kg-dry	3	3	3	100%	21167	25000	24400
		Lead	mg/kg-dry	3	3	3	100%	30.3	47	29.8
		Manganese	mg/kg-dry	3	3	3	100%	347	367	880
		Nickel	mg/kg-dry	3	3	3	100%	61.7	80	31.4
		Vanadium	mg/kg-dry	3	3	3	100%	27	29	52.6
		Zinc	mg/kg-dry	3	3	3	100%	24.3	30	118
	Anions	Phosphorus, Total	mg/kg-dry	3	3	3	100%	2510	3370	NE
	Sediment / Soil Quality Parameters	Moisture	wt%	3	3	3	100%	7.2	7.9	NE
		pH, sat. paste	s.u.	3	3	3	100%	8.2	8.5	NE
		Organic Carbon, Total (TOC)	wt%	3	3	3	100%	0.54	1.06	NE
	Volatile Organic Compounds (VOCs) / Hydrocarbons	C5 to C8 Aliphatics	mg/kg-dry	3	1	3	33%	0.93	1.4	NE
		C9 to C10 Aromatics	mg/kg-dry	3	1	3	33%	5.8	16	NE
		Toluene	mg/kg-dry	3	1	3	33%	0.03	0.066	NE
		Total Extractable Hydrocarbons	mg/kg-dry	3	2	3	67%	19.8	34	NE
		Total Purgeable Hydrocarbons	mg/kg-dry	3	2	3	67%	6.9	17	NE
Waste Rock Pile (west)	Metals	Aluminum	mg/kg-dry	6	6	6	100%	16567	24700	25941
		Barium	mg/kg-dry	6	6	6	100%	941	1150	429
		Chromium	mg/kg-dry	6	6	6	100%	249	353	41.7
		Cobalt	mg/kg-dry	6	6	6	100%	27.7	31	10
		Copper	mg/kg-dry	6	6	6	100%	33.8	49	165
		Iron	mg/kg-dry	6	6	6	100%	23417	25800	24400
		Lead	mg/kg-dry	6	6	6	100%	23.5	32	29.8
		Manganese	mg/kg-dry	6	6	6	100%	380	447	880
		Nickel	mg/kg-dry	6	6	6	100%	63.5	84	31.4
		Vanadium	mg/kg-dry	6	6	6	100%	37.5	42	52.6
		Zinc	mg/kg-dry	6	6	6	100%	24.3	28	118
	Anions	Phosphorus, Total	mg/kg-dry	6	6	6	100%	1905	3590	NE
	Sediment / Soil Quality Parameters	Moisture	wt%	6	6	6	100%	7.1	8.8	NE
		pH, sat. paste	s.u.	6	6	6	100%	7.6	8.1	NE
		Organic Carbon, Total (TOC)	wt%	6	6	6	100%	1	2.86	NE
	Volatile Organic Compounds (VOCs) / Hydrocarbons	Total Extractable Hydrocarbons	mg/kg-dry	6	4	6	67%	17.3	37	NE
		Total Purgeable Hydrocarbons	mg/kg-dry	6	1	6	17%	1.3	3.2	NE

Table 5-10: Data Summary and Montana Soil Background Threshold Exceedances for Detected Analytes in OU3 Study Area Soil/Mine Waste

Material Type	Analyte Group	Detected Analyte	Units	Total No. of Stations	Total No. of Detects	Total No. of Samples	Detection Frequency	Mean[a]	Maximum Detected Result	Montana Soil Background Threshold[b]
Waste Rock Pile (east)	Metals	Aluminum	mg/kg-dry	4	4	4	100%	12050	14400	25941
		Barium	mg/kg-dry	4	4	4	100%	740	836	429
		Chromium	mg/kg-dry	4	4	4	100%	136	228	41.7
		Cobalt	mg/kg-dry	4	4	4	100%	23	26	10
		Copper	mg/kg-dry	4	4	4	100%	32.3	41	165
		Iron	mg/kg-dry	4	4	4	100%	24575	28700	24400
		Lead	mg/kg-dry	4	4	4	100%	26	43	29.8
		Manganese	mg/kg-dry	4	4	4	100%	316	369	880
		Nickel	mg/kg-dry	4	4	4	100%	39.8	61	31.4
		Vanadium	mg/kg-dry	4	4	4	100%	39.5	48	52.6
		Zinc	mg/kg-dry	4	4	4	100%	22.8	25	118
	Anions	Phosphorus, Total	mg/kg-dry	4	4	4	100%	3265	5030	NE
	Sediment / Soil Quality Parameters	Moisture	wt%	4	4	4	100%	6.6	8.6	NE
		pH, sat. paste	s.u.	4	4	4	100%	8	8.2	NE
		Organic Carbon, Total (TOC)	wt%	4	4	4	100%	0.65	0.98	NE
	Volatile Organic Compounds (VOCs) / Hydrocarbons	C11 to C22 Aromatics	mg/kg-dry	1	1	1	100%	78	78	NE
		C19 to C36 Aliphatics	mg/kg-dry	1	1	1	100%	154	154	NE
		Total Extractable Hydrocarbons	mg/kg-dry	4	4	5	80%	179	474	NE
Bedrock (Outcrop)	Metals	Aluminum	mg/kg-dry	8	8	8	100%	23258	50900	25941
		Barium	mg/kg-dry	8	8	8	100%	1325	3200	429
		Chromium	mg/kg-dry	8	8	8	100%	304	881	41.7
		Cobalt	mg/kg-dry	8	8	8	100%	29.5	58	10
		Copper	mg/kg-dry	8	7	8	88%	19.4	87	165
		Iron	mg/kg-dry	8	8	8	100%	23863	47500	24400
		Lead	mg/kg-dry	8	6	8	75%	8.5	12	29.8
		Manganese	mg/kg-dry	8	8	8	100%	332	549	880
		Mercury	mg/kg-dry	8	1	8	13%	0.08	0.3	NE
		Nickel	mg/kg-dry	8	8	8	100%	69.8	115	31.4
		Thallium	mg/kg-dry	8	1	8	13%	0.34	0.6	0.41
		Vanadium	mg/kg-dry	8	8	8	100%	31.9	67	52.6
		Zinc	mg/kg-dry	8	8	8	100%	21.3	35	118
	Anions	Phosphorus, Total	mg/kg-dry	8	8	8	100%	922	1960	NE
	Sediment / Soil Quality Parameters	Moisture	wt%	8	8	8	100%	5.8	10	NE
		pH, sat. paste	s.u.	8	8	8	100%	8	8.4	NE
		Organic Carbon, Total (TOC)	wt%	8	8	8	100%	0.08	0.12	NE
Fine Tailings	Metals	Aluminum	mg/kg-dry	2	2	2	100%	42800	45500	25941
		Barium	mg/kg-dry	2	2	2	100%	2200	2210	429
		Chromium	mg/kg-dry	2	2	2	100%	575	673	41.7
		Cobalt	mg/kg-dry	2	2	2	100%	62.5	63	10
		Copper	mg/kg-dry	2	2	2	100%	50.5	57	165
		Iron	mg/kg-dry	2	2	2	100%	51700	51900	24400
		Lead	mg/kg-dry	2	2	2	100%	42.5	48	29.8
		Manganese	mg/kg-dry	2	2	2	100%	776	808	880
		Nickel	mg/kg-dry	2	2	2	100%	127	135	31.4
		Thallium	mg/kg-dry	2	2	2	100%	0.85	0.9	0.41
		Vanadium	mg/kg-dry	2	2	2	100%	71.5	72	52.6
		Zinc	mg/kg-dry	2	2	2	100%	54	55	118
	Anions	Fluoride	mg/kg-dry	2	2	2	100%	4.9	5.3	NE
		Phosphorus, Total	mg/kg-dry	2	2	2	100%	5695	6370	NE
	Sediment / Soil Quality Parameters	Moisture	wt%	2	2	2	100%	27.5	33	NE
		pH, sat. paste	s.u.	2	2	2	100%	7.9	8	NE
		Organic Carbon, Total (TOC)	wt%	2	2	2	100%	0.39	0.41	NE
	Semi-Volatile Organic Compounds (SVOCs) / Polycyclic Aromatic Hydrocarbons (PAHs)	Benzo(a)anthracene	mg/kg-dry	2	2	2	100%	0.01	0.021	NE
		Benzo(a)pyrene	mg/kg-dry	2	1	2	50%	0.01	0.019	NE
		Benzo(b)fluoranthene	mg/kg-dry	2	1	2	50%	0.02	0.03	NE
		Benzo(g,h,i)perylene	mg/kg-dry	2	1	2	50%	0.01	0.016	NE
		Benzo(k)fluoranthene	mg/kg-dry	2	1	2	50%	0.01	0.0096	NE
		Chrysene	mg/kg-dry	2	2	2	100%	0.01	0.0074	NE
		Indeno(1,2,3-cd)pyrene	mg/kg-dry	2	1	2	50%	0.02	0.038	NE
		Pentachlorophenol	mg/kg-dry	2	1	4	25%	0.13	0.039	NE
		Pyrene	mg/kg-dry	2	2	2	100%	0.03	0.029	NE
	Volatile Organic Compounds (VOCs) / Hydrocarbons	C11 to C22 Aromatics	mg/kg-dry	2	1	2	50%	13.8	21	NE
		C19 to C36 Aliphatics	mg/kg-dry	2	2	2	100%	77.5	89	NE
		C9 to C18 Aliphatics	mg/kg-dry	2	2	2	100%	40.5	53	NE
		Methyl acetate	mg/kg-dry	2	2	2	100%	1.1	1.7	NE
		Total Extractable Hydrocarbons	mg/kg-dry	2	4	4	100%	157	170	NE
Coarse Tailings	Metals	Aluminum	mg/kg-dry	4	4	4	100%	11300	12000	25941
		Barium	mg/kg-dry	4	4	4	100%	570	605	429
		Chromium	mg/kg-dry	4	4	4	100%	178	191	41.7
		Cobalt	mg/kg-dry	4	4	4	100%	17.5	18	10
		Copper	mg/kg-dry	4	4	4	100%	13	17	165
		Iron	mg/kg-dry	4	4	4	100%	17175	20000	24400
		Lead	mg/kg-dry	4	4	4	100%	8.3	9	29.8
		Manganese	mg/kg-dry	4	4	4	100%	218	268	880
		Nickel	mg/kg-dry	4	4	4	100%	39.5	43	31.4
		Vanadium	mg/kg-dry	4	4	4	100%	29	39	52.6
		Zinc	mg/kg-dry	4	4	4	100%	14	15	118
	Anions	Phosphorus, Total	mg/kg-dry	4	4	4	100%	3515	4360	NE
	Sediment / Soil Quality Parameters	Moisture	wt%	4	4	4	100%	8.9	13	NE
		pH, sat. paste	s.u.	4	4	4	100%	7.8	8	NE
		Organic Carbon, Total (TOC)	wt%	4	4	4	100%	0.09	0.13	NE

Notes:

Maximum detected value exceeded the background threshold value.

[a] Non-detections are evaluated at 1/2 of the Practical Quantitation Limit (PQL).

[b] Source: Hydrometrics, Inc. 2013. Background Concentrations of Inorganic Constituents In Montana Surface Soils. Prepared for MDEQ, Remediation Division. September 2012.

[c] Forest Soil stations are reference locations (i.e., assumed to not be impacted by previous mining activities or existing mine waste).

See Table 5-11 for specific samples that exceeded the DEQ-7 standards for these constituents.

Only analytes that have one or more detections are shown on this table.

Field and lab quality control samples are not included in the summary statistics.

NE - Not Established

mg/kg - milligrams per kilogram

mg/kg-dry - milligrams per kilogram dry weight

wt% - % weight

s.u. - standard unit

Table 5-11: Summary of OU3 Study Area Soil/Mine Waste Stations where Montana Soil Background Threshold Exceeded

Station ID	Station Description[a]	Index ID	Sample Date	Metals Analysis Method	Analyte	Detected Result	Detected Result Units	Montana Soil Background Threshold (mg/kg)[b]
SL195-11	Forest Soil	P1-00112	10/7/2007	SW6020	Cobalt	18	mg/kg	10
		P1-00112	10/7/2007	SW6020	Vanadium	99	mg/kg	52.6
SL195-12		P1-00149	10/7/2007	SW6020	Chromium	43	mg/kg	41.7
SL315-08		P1-00158	10/6/2007	SW6020	Cadmium	1	mg/kg	0.7
		P1-00158	10/6/2007	SW6010B	Manganese	1250	mg/kg	880
SL75-16		P1-00130	10/5/2007	SW6010B	Aluminum	26100	mg/kg	25941
		P1-00130	10/5/2007	SW6020	Chromium	49	mg/kg	41.7
		P1-00130	10/5/2007	SW6020	Cobalt	26	mg/kg	10
		P1-00130	10/5/2007	SW6010B	Iron	30700	mg/kg	24400
		P1-00130	10/5/2007	SW6020	Nickel	42	mg/kg	31.4
		P1-00130	10/5/2007	SW6020	Vanadium	119	mg/kg	52.6
MS-1	Road Material	P1-00370	10/11/2007	SW6010B	Chromium	42.9	mg/kg-dry	41.7
MS-2		P1-00371	10/11/2007	SW6010B	Barium	694	mg/kg-dry	429
		P1-00371	10/11/2007	SW6010B	Chromium	107	mg/kg-dry	41.7
		P1-00371	10/11/2007	SW6010B	Cobalt	28	mg/kg-dry	10
		P1-00371	10/11/2007	SW6010B	Iron	32800	mg/kg-dry	24400
		P1-00371	10/11/2007	SW6010B	Lead	50	mg/kg-dry	29.8
		P1-00371	10/11/2007	SW6020	Nickel	51	mg/kg-dry	31.4
		P1-00371	10/11/2007	SW6010B	Vanadium	58	mg/kg-dry	52.6
MS-10	Cover/Fill Material	P1-00366	10/12/2007	SW6010B	Barium	744	mg/kg-dry	429
		P1-00366	10/12/2007	SW6010B	Chromium	143	mg/kg-dry	41.7
		P1-00366	10/12/2007	SW6010B	Cobalt	22	mg/kg-dry	10
		P1-00366	10/12/2007	SW6010B	Nickel	44	mg/kg-dry	31.4
MS-11		P1-00367	10/12/2007	SW6010B	Aluminum	29400	mg/kg-dry	25941
		P1-00367	10/12/2007	SW6010B	Barium	1130	mg/kg-dry	429
		P1-00367	10/12/2007	SW6010B	Chromium	95.6	mg/kg-dry	41.7
		P1-00367	10/12/2007	SW6010B	Cobalt	35	mg/kg-dry	10
		P1-00367	10/12/2007	SW6010B	Iron	31000	mg/kg-dry	24400
		P1-00367	10/12/2007	SW6010B	Nickel	63	mg/kg-dry	31.4
MS-12		P1-00369	10/12/2007	SW6010B	Barium	795	mg/kg-dry	429
		P1-00369	10/12/2007	SW6010B	Chromium	204	mg/kg-dry	41.7
		P1-00369	10/12/2007	SW6010B	Cobalt	25	mg/kg-dry	10
		P1-00369	10/12/2007	SW6010B	Nickel	53	mg/kg-dry	31.4
MS-13		P1-00365	10/12/2007	SW6010B	Barium	826	mg/kg-dry	429
		P1-00365	10/12/2007	SW6010B	Chromium	146	mg/kg-dry	41.7
		P1-00365	10/12/2007	SW6010B	Cobalt	25	mg/kg-dry	10
		P1-00365	10/12/2007	SW6010B	Iron	26700	mg/kg-dry	24400
		P1-00365	10/12/2007	SW6010B	Nickel	44	mg/kg-dry	31.4
MS-21		P1-00378	10/13/2007	SW6010B	Barium	459	mg/kg-dry	429
		P1-00378	10/13/2007	SW6010B	Chromium	141	mg/kg-dry	41.7
		P1-00378	10/13/2007	SW6010B	Cobalt	23	mg/kg-dry	10
		P1-00378	10/13/2007	SW6010B	Iron	25500	mg/kg-dry	24400
		P1-00378	10/13/2007	SW6010B	Nickel	43	mg/kg-dry	31.4
MS-22		P1-00379	10/13/2007	SW6010B	Barium	852	mg/kg-dry	429
		P1-00379	10/13/2007	SW6010B	Chromium	130	mg/kg-dry	41.7
		P1-00379	10/13/2007	SW6010B	Cobalt	27	mg/kg-dry	10
		P1-00379	10/13/2007	SW6010B	Iron	27500	mg/kg-dry	24400
		P1-00379	10/13/2007	SW6010B	Nickel	53	mg/kg-dry	31.4
MS-23		P1-00340	10/13/2007	SW6010B	Cobalt	22	mg/kg-dry	10
		P1-00340	10/13/2007	SW6010B	Iron	36900	mg/kg-dry	24400
		P1-00340	10/13/2007	SW6010B	Vanadium	114	mg/kg-dry	52.6

Table 5-11: Summary of OU3 Study Area Soil/Mine Waste Stations where Montana Soil Background Threshold Exceeded

Station ID	Station Description[a]	Index ID	Sample Date	Metals Analysis Method	Analyte	Detected Result	Detected Result Units	Montana Soil Background Threshold (mg/kg)[b]
MS-24	Cover/Fill Material	P1-00353	10/14/2007	SW6010B	Barium	800	mg/kg-dry	429
		P1-00353	10/14/2007	SW6010B	Chromium	338	mg/kg-dry	41.7
		P1-00353	10/14/2007	SW6010B	Cobalt	32	mg/kg-dry	10
		P1-00353	10/14/2007	SW6010B	Iron	24600	mg/kg-dry	24400
		P1-00353	10/14/2007	SW6010B	Nickel	85	mg/kg-dry	31.4
MS-14	Waste Rock Pile (central)	P1-00345	10/13/2007	SW6010B	Barium	756	mg/kg-dry	429
		P1-00345	10/13/2007	SW6010B	Chromium	223	mg/kg-dry	41.7
		P1-00345	10/13/2007	SW6010B	Cobalt	39	mg/kg-dry	10
		P1-00345	10/13/2007	SW6010B	Iron	25000	mg/kg-dry	24400
		P1-00345	10/13/2007	SW6010B	Nickel	80	mg/kg-dry	31.4
MS-17		P1-00343	10/13/2007	SW6010B	Barium	611	mg/kg-dry	429
		P1-00343	10/13/2007	SW6010B	Chromium	159	mg/kg-dry	41.7
		P1-00343	10/13/2007	SW6010B	Cobalt	22	mg/kg-dry	10
		P1-00343	10/13/2007	SW6010B	Lead	47	mg/kg-dry	29.8
		P1-00343	10/13/2007	SW6010B	Nickel	43	mg/kg-dry	31.4
MS-18		P1-00352	10/14/2007	SW6010B	Barium	636	mg/kg-dry	429
		P1-00352	10/14/2007	SW6010B	Chromium	187	mg/kg-dry	41.7
		P1-00352	10/14/2007	SW6010B	Cobalt	25	mg/kg-dry	10
		P1-00352	10/14/2007	SW6010B	Nickel	62	mg/kg-dry	31.4
MS-15	Waste Rock Pile (west)	P1-00206	10/17/2007	SW6010B	Barium	1150	mg/kg-dry	429
		P1-00206	10/17/2007	SW6010B	Chromium	260	mg/kg-dry	41.7
		P1-00206	10/17/2007	SW6010B	Cobalt	31	mg/kg-dry	10
		P1-00206	10/17/2007	SW6010B	Iron	25600	mg/kg-dry	24400
		P1-00206	10/17/2007	SW6010B	Nickel	84	mg/kg-dry	31.4
MS-16		P1-00205	10/17/2007	SW6010B	Barium	1070	mg/kg-dry	429
		P1-00205	10/17/2007	SW6010B	Chromium	353	mg/kg-dry	41.7
		P1-00205	10/17/2007	SW6010B	Cobalt	27	mg/kg-dry	10
		P1-00205	10/17/2007	SW6010B	Lead	30	mg/kg-dry	29.8
		P1-00205	10/17/2007	SW6010B	Nickel	66	mg/kg-dry	31.4
MS-26		P1-00292	10/15/2007	SW6010B	Barium	953	mg/kg-dry	429
		P1-00292	10/15/2007	SW6010B	Chromium	229	mg/kg-dry	41.7
		P1-00292	10/15/2007	SW6010B	Cobalt	27	mg/kg-dry	10
		P1-00292	10/15/2007	SW6010B	Iron	25800	mg/kg-dry	24400
		P1-00292	10/15/2007	SW6010B	Nickel	55	mg/kg-dry	31.4
MS-27		P1-00299	10/15/2007	SW6010B	Barium	632	mg/kg-dry	429
		P1-00299	10/15/2007	SW6010B	Chromium	206	mg/kg-dry	41.7
		P1-00299	10/15/2007	SW6010B	Cobalt	28	mg/kg-dry	10
		P1-00299	10/15/2007	SW6010B	Lead	32	mg/kg-dry	29.8
		P1-00299	10/15/2007	SW6010B	Nickel	65	mg/kg-dry	31.4
MS-28		P1-00290	10/15/2007	SW6010B	Barium	698	mg/kg-dry	429
		P1-00290	10/15/2007	SW6010B	Chromium	212	mg/kg-dry	41.7
		P1-00290	10/15/2007	SW6010B	Cobalt	25	mg/kg-dry	10
		P1-00290	10/15/2007	SW6010B	Nickel	51	mg/kg-dry	31.4
MS-29		P1-00298	10/15/2007	SW6010B	Barium	1140	mg/kg-dry	429
		P1-00298	10/15/2007	SW6010B	Chromium	233	mg/kg-dry	41.7
		P1-00298	10/15/2007	SW6010B	Cobalt	28	mg/kg-dry	10
		P1-00298	10/15/2007	SW6010B	Nickel	60	mg/kg-dry	31.4

Table 5-11: Summary of OU3 Study Area Soil/Mine Waste Stations where Montana Soil Background Threshold Exceeded

Station ID	Station Description[a]	Index ID	Sample Date	Metals Analysis Method	Analyte	Detected Result	Detected Result Units	Montana Soil Background Threshold (mg/kg)[b]
MS-19	Waste Rock Pile (east)	P1-00341	10/13/2007	SW6010B	Barium	679	mg/kg-dry	429
		P1-00341	10/13/2007	SW6010B	Chromium	97.7	mg/kg-dry	41.7
		P1-00341	10/13/2007	SW6010B	Cobalt	24	mg/kg-dry	10
		P1-00341	10/13/2007	SW6010B	Iron	28700	mg/kg-dry	24400
MS-20		P1-00350	10/14/2007	SW6010B	Barium	672	mg/kg-dry	429
		P1-00350	10/14/2007	SW6010B	Chromium	103	mg/kg-dry	41.7
		P1-00350	10/14/2007	SW6010B	Cobalt	20	mg/kg-dry	10
		P1-00350	10/14/2007	SW6010B	Lead	43	mg/kg-dry	29.8
		P1-00350	10/14/2007	SW6010B	Nickel	38	mg/kg-dry	31.4
MS-30		P1-00342	10/13/2007	SW6010B	Barium	773	mg/kg-dry	429
		P1-00342	10/13/2007	SW6010B	Chromium	114	mg/kg-dry	41.7
		P1-00342	10/13/2007	SW6010B	Cobalt	22	mg/kg-dry	10
		P1-00342	10/13/2007	SW6010B	Iron	25700	mg/kg-dry	24400
		P1-00342	10/13/2007	SW6010B	Nickel	32	mg/kg-dry	31.4
MS-32		P1-00351	10/14/2007	SW6010B	Barium	836	mg/kg-dry	429
		P1-00351	10/14/2007	SW6010B	Chromium	228	mg/kg-dry	41.7
		P1-00351	10/14/2007	SW6010B	Cobalt	26	mg/kg-dry	10
		P1-00351	10/14/2007	SW6010B	Lead	30	mg/kg-dry	29.8
		P1-00351	10/14/2007	SW6010B	Nickel	61	mg/kg-dry	31.4
MS-25	Bedrock (Outcrop)	P1-00362	10/12/2007	SW6010B	Barium	3200	mg/kg-dry	429
		P1-00362	10/12/2007	SW6010B	Chromium	162	mg/kg-dry	41.7
		P1-00362	10/12/2007	SW6010B	Cobalt	19	mg/kg-dry	10
		P1-00362	10/12/2007	SW6010B	Nickel	41	mg/kg-dry	31.4
MS-31		P1-00389	10/13/2007	SW6010B	Barium	877	mg/kg-dry	429
		P1-00389	10/13/2007	SW6010B	Chromium	250	mg/kg-dry	41.7
		P1-00389	10/13/2007	SW6010B	Cobalt	24	mg/kg-dry	10
		P1-00389	10/13/2007	SW6010B	Nickel	52	mg/kg-dry	31.4
MS-33		P1-00364	10/12/2007	SW6010B	Aluminum	50900	mg/kg-dry	25941
		P1-00364	10/12/2007	SW6010B	Barium	2320	mg/kg-dry	429
		P1-00364	10/12/2007	SW6010B	Chromium	167	mg/kg-dry	41.7
		P1-00364	10/12/2007	SW6010B	Cobalt	58	mg/kg-dry	10
		P1-00364	10/12/2007	SW6010B	Iron	47500	mg/kg-dry	24400
		P1-00364	10/12/2007	SW6010B	Nickel	114	mg/kg-dry	31.4
		P1-00364	10/12/2007	SW6020	Thallium	0.6	mg/kg-dry	0.41
		P1-00364	10/12/2007	SW6010B	Vanadium	67	mg/kg-dry	52.6
MS-34		P1-00344	10/13/2007	SW6010B	Aluminum	33500	mg/kg-dry	25941
		P1-00344	10/13/2007	SW6010B	Barium	1440	mg/kg-dry	429
		P1-00344	10/13/2007	SW6010B	Chromium	360	mg/kg-dry	41.7
		P1-00344	10/13/2007	SW6010B	Cobalt	38	mg/kg-dry	10
		P1-00344	10/13/2007	SW6010B	Iron	31400	mg/kg-dry	24400
		P1-00344	10/13/2007	SW6010B	Nickel	92	mg/kg-dry	31.4
MS-35		P1-00363	10/12/2007	SW6010B	Barium	601	mg/kg-dry	429
		P1-00363	10/12/2007	SW6010B	Chromium	306	mg/kg-dry	41.7
		P1-00363	10/12/2007	SW6010B	Cobalt	23	mg/kg-dry	10
		P1-00363	10/12/2007	SW6010B	Nickel	65	mg/kg-dry	31.4
MS-36		P1-00375	10/12/2007	SW6010B	Chromium	209	mg/kg-dry	41.7
		P1-00375	10/12/2007	SW6010B	Cobalt	18	mg/kg-dry	10
		P1-00375	10/12/2007	SW6010B	Nickel	52	mg/kg-dry	31.4
MS-37		P1-00376	10/12/2007	SW6010B	Chromium	95.4	mg/kg-dry	41.7
		P1-00376	10/12/2007	SW6010B	Cobalt	14	mg/kg-dry	10
MS-38		P1-00377	10/12/2007	SW6010B	Aluminum	36100	mg/kg-dry	25941
		P1-00377	10/12/2007	SW6010B	Barium	1650	mg/kg-dry	429
		P1-00377	10/12/2007	SW6010B	Chromium	881	mg/kg-dry	41.7
		P1-00377	10/12/2007	SW6010B	Cobalt	42	mg/kg-dry	10
		P1-00377	10/12/2007	SW6010B	Iron	37100	mg/kg-dry	24400
		P1-00377	10/12/2007	SW6010B	Nickel	115	mg/kg-dry	31.4

Table 5-11: Summary of OU3 Study Area Soil/Mine Waste Stations where Montana Soil Background Threshold Exceeded

Station ID	Station Description[a]	Index ID	Sample Date	Metals Analysis Method	Analyte	Detected Result	Detected Result Units	Montana Soil Background Threshold (mg/kg)[b]
MS-4	Fine Tailings	P1-00332	10/18/2007	SW6010B	Aluminum	45500	mg/kg-dry	25941
		P1-00332	10/18/2007	SW6010B	Barium	2210	mg/kg-dry	429
		P1-00332	10/18/2007	SW6010B	Chromium	673	mg/kg-dry	41.7
		P1-00332	10/18/2007	SW6010B	Cobalt	62	mg/kg-dry	10
		P1-00332	10/18/2007	SW6010B	Iron	51900	mg/kg-dry	24400
		P1-00332	10/18/2007	SW6010B	Lead	37	mg/kg-dry	29.8
		P1-00332	10/18/2007	SW6010B	Nickel	135	mg/kg-dry	31.4
		P1-00332	10/18/2007	SW6020	Thallium	0.9	mg/kg-dry	0.41
		P1-00332	10/18/2007	SW6010B	Vanadium	71	mg/kg-dry	52.6
MS-5		P1-00357	10/17/2007	SW6010B	Aluminum	40100	mg/kg-dry	25941
		P1-00357	10/17/2007	SW6010B	Barium	2190	mg/kg-dry	429
		P1-00357	10/17/2007	SW6010B	Chromium	476	mg/kg-dry	41.7
		P1-00357	10/17/2007	SW6010B	Cobalt	63	mg/kg-dry	10
		P1-00357	10/17/2007	SW6010B	Iron	51500	mg/kg-dry	24400
		P1-00357	10/17/2007	SW6010B	Lead	48	mg/kg-dry	29.8
		P1-00357	10/17/2007	SW6010B	Nickel	118	mg/kg-dry	31.4
		P1-00357	10/17/2007	SW6020	Thallium	0.8	mg/kg-dry	0.41
		P1-00357	10/17/2007	SW6010B	Vanadium	72	mg/kg-dry	52.6
MS-6	Coarse Tailings	P1-00355	10/16/2007	SW6010B	Barium	508	mg/kg-dry	429
		P1-00355	10/16/2007	SW6010B	Chromium	180	mg/kg-dry	41.7
		P1-00355	10/16/2007	SW6010B	Cobalt	18	mg/kg-dry	10
		P1-00355	10/16/2007	SW6010B	Nickel	43	mg/kg-dry	31.4
MS-7		P1-00294	10/16/2007	SW6010B	Barium	577	mg/kg-dry	429
		P1-00294	10/16/2007	SW6010B	Chromium	170	mg/kg-dry	41.7
		P1-00294	10/16/2007	SW6010B	Cobalt	18	mg/kg-dry	10
		P1-00294	10/16/2007	SW6010B	Nickel	39	mg/kg-dry	31.4
MS-8		P1-00330	10/16/2007	SW6010B	Barium	591	mg/kg-dry	429
		P1-00330	10/16/2007	SW6010B	Chromium	191	mg/kg-dry	41.7
		P1-00330	10/16/2007	SW6010B	Cobalt	17	mg/kg-dry	10
		P1-00330	10/16/2007	SW6010B	Nickel	38	mg/kg-dry	31.4
MS-9		P1-00356	10/16/2007	SW6010B	Barium	605	mg/kg-dry	429
		P1-00356	10/16/2007	SW6010B	Chromium	169	mg/kg-dry	41.7
		P1-00356	10/16/2007	SW6010B	Cobalt	17	mg/kg-dry	10
		P1-00356	10/16/2007	SW6010B	Nickel	38	mg/kg-dry	31.4

Notes:

[a] Forest Soil stations are reference locations (i.e., assumed to not be impacted by previous mining activities or existing mine waste).

[b] Source: Hydrometrics, Inc. 2013. Background Concentrations of Inorganic Constituents In Montana Surface Soils. Prepared for MDEQ, Remediation Division. September 2012.

mg/kg-dry - milligrams per kilogram dry weight

mg/kg - milligrams per kilogram

Table 5-12a: Data Summary of Forest Soil LAA Results by Distance from the Former Mine Area Center

Panel A: Fine Fraction (PLM-VE)

			Number of Samples by Bin						
Distance From Former Mine Area Center [a]	Number of Stations	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Number of Detections	Frequency of Detections	Mean (% Mass)[b]
Near	30	30	15	12	2	1	15	50%	0.5
Intermediate	45	45	45	0	0	0	0	0%	0.03
Far	14	14	14	0	0	0	0	0%	0.03

Panel B: Coarse Fraction (PLM-Grav)

			Number of Samples					
Distance From Former Mine Area Center [a]	Number of Stations	Number of Samples	Non-Detect	Trace	>Trace	Number of Detections	Frequency of Detections	Mean (% Mass)[b]
Near	22	24	14	9	1	10	42%	0.4
Intermediate	38	38	36	2	0	2	5%	0.02
Far	12	12	12	0	0	0	0%	0.02

Notes:

[a]Near: within two miles from the center of the former mine area; Intermediate: between two and six miles from the center of the former mine area; Far: greater than or equal to six miles from the center of the former mine area. Refer to Figures 1-3 and 4-5 for the location used as the mine center.

[b]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f).

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-12b: Data Summary of Forest Soil LAA Results by Station

Panel A: Fine Fraction (PLM-VE)

			Number of Samples by Bin							
Distance From Former Mine Area Center[a]	Station ID[b]	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Maximum Bin C Result (% Mass)[c]	Number of Detections	Frequency of Detections	Mean (% Mass)[d]
Near	SL135-01	1				1	6	1	100%	--
	SL135-02	1		1				1	100%	--
	SL135-03	1	1					0	0%	--
	SL135-04	1	1					0	0%	--
	SL15-02	1		1				1	100%	--
	SL15-03	1		1				1	100%	--
	SL15-04	1	1					0	0%	--
	SL195-02	1	1					0	0%	--
	SL195-03	1	1					0	0%	--
	SL195-04	1	1					0	0%	--
	SL255-02	1	1					0	0%	--
	SL255-03	1	1					0	0%	--
	SL315-01	1		1				1	100%	--
	SL315-02	1	1					0	0%	--
	SL315-03	1	1					0	0%	--
	SL315-04	1	1					0	0%	--
	SL45-01	1			1			1	100%	--
	SL45-02	1	1					0	0%	--
	SL45-03	1		1				1	100%	--
	SL45-04	1	1					0	0%	--
	SL75-02	1		1				1	100%	--
	SL75-03	1	1					0	0%	--
	SL75-04	1		1				1	100%	--
	SP15-Pre-S1	1		1				3	100%	--
	SP15-Pre-S2	1		1				3	100%	--
	SP15-Pre-S3	1		1				3	100%	--
	B15-Pre-S1	1		1				1	100%	--
	B15-Pre-S2	1		1				1	100%	--
	B15-Pre-S3	1			1			1	100%	--
	LSF-13-5	1	1					0	0%	--
Intermediate	SL135-05	1	1					0	0%	--
	SL135-06	1	1					0	0%	--
	SL135-07	1	1					0	0%	--
	SL135-08	1	1					0	0%	--
	SL15-05	1	1					0	0%	--
	SL15-06	1	1					0	0%	--
	SL15-07	1	1					0	0%	--
	SL15-08	1	1					0	0%	--
	SL15-09	1	1					0	0%	--
	SL15-10	1	1					0	0%	--
	SL15-11	1	1					0	0%	--
	SL195-05	1	1					0	0%	--
	SL195-06	1	1					0	0%	--
	SL195-07	1	1					0	0%	--
	SL195-08	1	1					0	0%	--
	SL195-10	1	1					0	0%	--
	SL195-11	1	1					0	0%	--
	SL255-04	1	1					0	0%	--
	SL255-05	1	1					0	0%	--
	SL255-06	1	1					0	0%	--
	SL315-05	1	1					0	0%	--
	SL315-06	1	1					0	0%	--
	SL315-07	1	1					0	0%	--
	SL315-08	1	1					0	0%	--
	SL45-05	1	1					0	0%	--
	SL45-06	1	1					0	0%	--
	SL45-07	1	1					0	0%	--
	SL45-08	1	1					0	0%	--
	SL45-09	1	1					0	0%	--
	SL45-10	1	1					0	0%	--
	SL45-11	1	1					0	0%	--
	SL45-12	1	1					0	0%	--
	SL75-05	1	1					0	0%	--
	SL75-06	1	1					0	0%	--
	SL75-07	1	1					0	0%	--
	SL75-08	1	1					0	0%	--
	SL75-09	1	1					0	0%	--
	LSF-12-1	1	1					0	0%	--
	LSF-12-2	1	1					0	0%	--
	LSF-13-1	1	1					0	0%	--
	LSF-13-2	1	1					0	0%	--
	LSF-13-3	1	1					0	0%	--
	LSF-13-4	1	1					0	0%	--
	LSF-13-6	1	1					0	0%	--
	LSF-13-7	1	1					0	0%	--
Far	SL15-12	1	1					0	0%	--
	SL15-13	1	1					0	0%	--
	SL15-14	1	1					0	0%	--
	SL15-15	1	1					0	0%	--
	SL15-16	1	1					0	0%	--
	SL195-12	1	1					0	0%	--
	SL45-13	1	1					0	0%	--
	SL45-14	1	1					0	0%	--
	SL45-15	1	1					0	0%	--
	SL45-16	1	1					0	0%	--
	SL75-13	1	1					0	0%	--
	SL75-14	1	1					0	0%	--
	SL75-15	1	1					0	0%	--
	SL75-16	1	1					0	0%	--

Table 5-12b: Data Summary of Forest Soil LAA Results by Station

Panel B: Coarse Fraction (PLM-Grav)

			Number of Samples						
Distance From Former Mine Area Center[a]	Station ID	Number of Samples	Non detected	Trace	>Trace	Maximum >Trace Result (% Mass)	Number of Detections	Frequency of Detections	Mean (% Mass)[c]
Near	SL135-01	1			1	13	1	100%	--
	SL135-02	1		1			1	100%	--
	SL135-03	1	1				0	0%	--
	SL135-04	1	1				0	0%	--
	SL15-02	1	1				0	0%	--
	SL15-03	1		1			1	100%	--
	SL15-04	1	1				0	0%	--
	SL195-02	1	1				0	0%	--
	SL195-03	1	1				0	0%	--
	SL195-04	1	1				0	0%	--
	SL255-02	1		1			1	100%	--
	SL255-03	1	1				0	0%	--
	SL315-02	1	1				0	0%	--
	SL315-03	1	1				0	0%	--
	SL315-04	1	1				0	0%	--
	SL45-01	1		1			1	100%	--
	SL45-02	1		1			1	100%	--
	SL45-03	1		1			1	100%	--
	SL45-04	1	1				0	0%	--
	SL75-03	1	1				0	0%	--
	SL75-04	1	1				0	0%	--
	SP15-Pre-S1	1		1			1	100%	--
	SP15-Pre-S2	1		1			1	100%	--
	SP15-Pre-S3	1		1			1	100%	--
Intermediate	SL135-05	1	1				0	0%	--
	SL135-06	1	1				0	0%	--
	SL135-07	1	1				0	0%	--
	SL135-08	1	1				0	0%	--
	SL15-06	1	1				0	0%	--
	SL15-07	1	1				0	0%	--
	SL15-08	1	1				0	0%	--
	SL15-09	1	1				0	0%	--
	SL15-10	1	1				0	0%	--
	SL15-11	1	1				0	0%	--
	SL195-05	1	1				0	0%	--
	SL195-06	1	1				0	0%	--
	SL195-07	1		1			1	100%	--
	SL195-08	1	1				0	0%	--
	SL195-11	1	1				0	0%	--
	SL255-04	1	1				0	0%	--
	SL255-05	1	1				0	0%	--
	SL255-06	1		1			1	100%	--
	SL315-05	1	1				0	0%	--
	SL315-06	1	1				0	0%	--
	SL315-07	1	1				0	0%	--
	SL315-08	1	1				0	0%	--
	SL45-05	1	1				0	0%	--
	SL45-06	1	1				0	0%	--
	SL45-07	1	1				0	0%	--
	SL45-08	1	1				0	0%	--
	SL45-09	1	1				0	0%	--
	SL45-10	1	1				0	0%	--
	SL45-12	1	1				0	0%	--
	SL75-05	1	1				0	0%	--
	SL75-06	1	1				0	0%	--
	SL75-07	1	1				0	0%	--
	SL75-08	1	1				0	0%	--
	SL75-09	1	1				0	0%	--
	LSF-13-1	1	1				0	0%	--
	LSF-13-2	1	1				0	0%	--
	LSF-13-4	1	1				0	0%	--
	LSF-13-6	1	1				0	0%	--
Far	SL15-12	1	1				0	0%	--
	SL15-14	1	1				0	0%	--
	SL15-15	1	1				0	0%	--
	SL15-16	1	1				0	0%	--
	SL195-12	1	1				0	0%	--
	SL45-13	1	1				0	0%	--
	SL45-14	1	1				0	0%	--
	SL45-15	1	1				0	0%	--
	SL45-16	1	1				0	0%	--
	SL75-14	1	1				0	0%	--
	SL75-15	1	1				0	0%	--
	SL75-16	1	1				0	0%	--

Notes:

[a]Near: within two miles from the center of the former mine area; Intermediate: between two and six miles from the center of the former mine area; Far: greater than or equal to six miles from the center of the former mine area. Refer to Figures 1-3 and 4-5 for the location used as the mine center.

[b]Soils collected during post-burn events are not summarized in this table since they do not represent native forest soil conditions, rather post-burn soil summary results are presented in Table 5-24.

[c]Maximum value only provided for samples ≥1%.

[d]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f).

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-13a: Data Summary of Former Mine Area Soil LAA Results by Material Type

Panel A: Fine Fraction (PLM-VE)

			Number of Samples by Bin						
Material Type	Number of Stations	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Road Material	41	41	2	14	12	13	39	95%	2
Cover/Fill Material	22	24	1	3	8	12	23	96%	1
Alluvium/Other Material	29	40		23	12	5	40	100%	0.4
Glacial Material	14	24	1	17	5	1	23	96%	0.2

Panel B: Coarse Fraction (PLM-Grav)

			Number of Samples					
Material Type	Number of Stations	Number of Samples	Non-Detect	Trace	>Trace	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Road Material	41	41	5	29	7	36	88%	2
Cover/Fill Material	13	13	2	5	6	11	85%	6
Alluvium/Other Material	13	15	2	11	2	13	87%	0.2
Glacial	11	19	8	11		11	58%	0.1

Notes:

[a]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f).

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

See Appendix E for all individual sample results.

Table 5-13b: Data Summary of Former Mine Area Soil LAA Results by Station

Panel A: Fine Fraction (PLM-VE)

			Number of Samples by Bin							
Material	Station ID	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Maximum Bin C Result (% Mass)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Road Material	MS-1	1			1			1	100%	--
	MS-2	1			1			1	100%	--
	MS-3	1		1				1	100%	--
	LRC-198	1				1	1	1	100%	--
	TS-A-01	1		1				1	100%	--
	TS-A-02	1		1				1	100%	--
	TS-A-03	1		1				1	100%	--
	TS-A-04	1		1				1	100%	--
	TS-A-05	1			1			1	100%	--
	TS-A-06	1		1				1	100%	--
	TS-A-07	1		1				1	100%	--
	TS-A-08	1			1			1	100%	--
	TS-A-09	1		1				1	100%	--
	TS-A-10	1		1				1	100%	--
	TS-A-11	1	1					0	0%	--
	TS-A-12	1		1				1	100%	--
	TS-A-13	1	1					0	0%	--
	TS-B-01	1			1			1	100%	--
	TS-B-02	1			1			1	100%	--
	TS-B-03	1		1				1	100%	--
	TS-B-04	1				1	1	1	100%	--
	TS-B-05	1			1			1	100%	--
	TS-B-06	1				1	2	1	100%	--
	TS-B-07	1				1	3	1	100%	--
	TS-B-08	1				1	2	1	100%	--
	TS-C-01	1		1				1	100%	--
	TS-C-02	1		1				1	100%	--
	TS-C-03	1				1	1	1	100%	--
	TS-C-04	1				1	1	1	100%	--
	TS-C-05	1				1	2	1	100%	--
	TS-C-06	1				1	10	1	100%	--
	TS-C-07	1		1				1	100%	--
	TS-C-08	1			1			1	100%	--
	TS-C-09	1			1			1	100%	--
	TS-C-10	1			1			1	100%	--
	TS-C-11	1				1	25	1	100%	--
	TS-C-12	1			1			1	100%	--
	TS-C-13	1				1	2	1	100%	--
	TS-C-14	1			1			1	100%	--
	TS-C-15	1				1	5	1	100%	--
	TS-C-16	1				1	5	1	100%	--
Cover/Fill Material	GT-07	1		1				1	100%	--
	GT-07A	1		1				1	100%	--
	GT-12	2				2	2	2	100%	--
	GT-13	1				1	2	1	100%	--
	GT-14	1				1	3	1	100%	--
	GT-15	1				1	3	1	100%	--
	GT-16	1			1			1	100%	--
	GT-17	1			1			1	100%	--
	GT-18	1			1			1	100%	--
	GT-19	1				1	1	1	100%	--
	GT-20	2				2	1	2	100%	--
	GT-26	1				1	3	1	100%	--
	GT-27	1				1	2	1	100%	--
	MS-10	1			1			1	100%	--
	MS-11	1			1			1	100%	--
	MS-12	1			1			1	100%	--
	MS-13	1		1				1	100%	--
	MS-21	1			1			1	100%	--
	MS-22	1			1			1	100%	--
	MS-23	1	1					0	0%	--
	MS-24	1				1	2	1	100%	--
	LRC-185	1				1	1	1	100%	--
Alluvium/Other Material	GT-01	3		3				3	100%	0.1
	GT-02	1		1				1	100%	--
	GT-03	3		2	1			3	100%	0.3
	GT-06	2		2				2	100%	--
	GT-12	2		1	1			2	100%	--
	GT-13	1		1				1	100%	--
	GT-14	1		1				1	100%	--
	GT-15	1		1				1	100%	--
	GT-23	1		1				1	100%	--
	GT-24	3		3				3	100%	0.1
	GT-25	3		3				3	100%	0.1
	GT-26	2		2				2	100%	--
	GT-27	1		1				1	100%	--
	LRC-190	1				1	1	1	100%	--
	VW-1-01	1			1			1	100%	--
	VW-1-02	1			1			1	100%	--
	VW-1-03	1			1			1	100%	--
	VW-1-04	1			1			1	100%	--
	VW-1-05	1		1				1	100%	--
	VW-1-06	1			1			1	100%	--
	VW-1-07	1				1	1	1	100%	--
	VW-1-08	1			1			1	100%	--
	VW-1-09	1			1			1	100%	--
	VW-1-10	1				1	2	1	100%	--
	VW-1-11	1			1			1	100%	--
	VW-1-12	1			1			1	100%	--
	VW-1-13	1			1			1	100%	--
	VW-1-14	1				1	2	1	100%	--
	VW-1-15	1				1	2	1	100%	--
Glacial	GT-02	1	1					0	0%	--
	GT-05	1		1				1	100%	--
	GT-06	1		1				1	100%	--
	GT-07	1		1				1	100%	--
	GT-08	2		2				2	100%	--
	GT-09	3		2	1			3	100%	0.3
	GT-13	1			1			1	100%	--
	GT-15	2		2				2	100%	--
	GT-16	1				1	1	1	100%	--
	GT-20	1			1			1	100%	--
	GT-21	3		3				3	100%	0.1
	GT-22	3		3				3	100%	0.1
	GT-23	3		1	2			3	100%	0.4
	LRC-184	1		1				1	100%	--

Table 5-13b: Data Summary of Former Mine Area Soil LAA Results by Station

Panel B: Coarse Fraction (PLM-Grav)

			Number of Samples						
Material	Station ID	Number of Samples	Non detected	Trace	>Trace	Maximum >Trace Result (% Mass)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Road Material	MS-1	1		1			1	100%	--
	MS-2	1		1			1	100%	--
	MS-3	1		1			1	100%	--
	LRC-198	1		1			1	100%	--
	TS-A-01	1		1			1	100%	--
	TS-A-02	1		1			1	100%	--
	TS-A-03	1		1			1	100%	--
	TS-A-04	1		1			1	100%	--
	TS-A-05	1		1			1	100%	--
	TS-A-06	1		1			1	100%	--
	TS-A-07	1	1				0	0%	--
	TS-A-08	1			1	28	1	100%	--
	TS-A-09	1		1			1	100%	--
	TS-A-10	1	1				0	0%	--
	TS-A-11	1	1				0	0%	--
	TS-A-12	1	1				0	0%	--
	TS-A-13	1	1				0	0%	--
	TS-B-01	1		1			1	100%	--
	TS-B-02	1		1			1	100%	--
	TS-B-03	1		1			1	100%	--
	TS-B-04	1		1			1	100%	--
	TS-B-05	1		1			1	100%	--
	TS-B-06	1		1			1	100%	--
	TS-B-07	1			1	6.1	1	100%	--
	TS-B-08	1		1			1	100%	--
	TS-C-01	1		1			1	100%	--
	TS-C-02	1		1			1	100%	--
	TS-C-03	1		1			1	100%	--
	TS-C-04	1			1	4.5	1	100%	--
	TS-C-05	1		1			1	100%	--
	TS-C-06	1			1	18	1	100%	--
	TS-C-07	1		1			1	100%	--
	TS-C-08	1		1			1	100%	--
	TS-C-09	1		1			1	100%	--
	TS-C-10	1		1			1	100%	--
	TS-C-11	1			1	11	1	100%	--
	TS-C-12	1		1			1	100%	--
	TS-C-13	1			1	31	1	100%	--
	TS-C-14	1		1			1	100%	--
	TS-C-15	1		1			1	100%	--
	TS-C-16	1			1	9.7	1	100%	--
Cover/Fill Material	GT-07	1	1				0	0%	--
	GT-07A	1	1				0	0%	--
	GT-15	1			1	19	1	100%	--
	GT-17	1		1			1	100%	--
	GT-18	1		1			1	100%	--
	MS-10	1			1	0.86	1	100%	--
	MS-11	1			1	0.66	1	100%	--
	MS-12	1			1	26	1	100%	--
	MS-13	1		1			1	100%	--
	MS-21	1		1			1	100%	--
	MS-22	1			1	4.3	1	100%	--
	MS-23	1		1			1	100%	--
	MS-24	1			1	14	1	100%	--
Alluvium/Other Material	GT-01	1		1			1	100%	--
	GT-02	1		1			1	100%	--
	GT-03	1		1			1	100%	--
	GT-06	1		1			1	100%	--
	GT-12	1		1			1	100%	--
	GT-14	1		1			1	100%	--
	GT-23	1		1			1	100%	--
	GT-24	2	1		1	1.4	1	50%	--
	GT-25	2	1	1			1	50%	--
	GT-26	1		1			1	100%	--
	VW-1-01	1			1	0.073	1	100%	--
	VW-1-02	1		1			1	100%	--
	VW-1-15	1		1			1	100%	--
Glacial	GT-02	1	1				0	0%	--
	GT-05	1		1			1	100%	--
	GT-06	1	1				0	0%	--
	GT-07	1		1			1	100%	--
	GT-08	2	2				0	0%	--
	GT-09	1		1			1	100%	--
	GT-13	1		1			1	100%	--
	GT-15	2		2			2	100%	--
	GT-21	3	2	1			1	33%	0.04
	GT-22	3	2	1			1	33%	0.04
	GT-23	3		3			3	100%	0.1

Notes:

[a]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f).

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-14a: Data Summary of Bedrock Material LAA Results

Panel A: Fine Fraction (PLM-VE)

		Number of Samples by Bin						
Number of Stations	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
15	18	1	3	9	5	17	94%	1

Panel B: Coarse Fraction (PLM-Grav)

		Number of Samples					
Number of Stations	Number of Samples	Non-Detect	Trace	>Trace	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
12	15	1	6	8	14	93%	3

Notes:

[a]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f).

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

See Appendix E for all individual sample resutls.

Table 5-14b: Data Summary of Bedrock Material LAA Results by Station

Panel A: Fine Fraction (PLM-VE)

			Number of Samples by Bin							
Screened Area	Station ID	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Maximum Bin C Result (% Mass)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Bedrock	GT-04	1				1	2	1	100%	--
	GT-05	3		1	1	1	2	3	100%	0.9
	GT-06	2			1	1	2	2	100%	--
	GT-17	1		1				1	100%	--
	GT-18	1			1			1	100%	--
	GT-19	1	1					0	0%	--
	GT-20	1				1	1	1	100%	--
Outcrop	MS-25	1				1	8	1	100%	--
	MS-31	1			1			1	100%	--
	MS-33	1			1			1	100%	--
	MS-34	1			1			1	100%	--
	MS-35	1		1				1	100%	--
	MS-36	1			1			1	100%	--
	MS-37	1			1			1	100%	--
	MS-38	1			1			1	100%	--

Panel B: Coarse Fraction (PLM-Grav)

			Number of Samples						
Screened Area	Station ID	Number of Samples	Non detected	Trace	>Trace	Maximum >Trace Result (% Mass)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Bedrock	GT-05	3	1	2			2	67%	0.1
	GT-06	2		2			2	100%	--
	GT-18	1		1			1	100%	--
	GT-20	1		1			1	100%	--
Outcrop	MS-25	1			1	17	1	100%	--
	MS-31	1			1	7.5	1	100%	--
	MS-33	1			1	1.6	1	100%	--
	MS-34	1			1	5.4	1	100%	--
	MS-35	1			1	0.065	1	100%	--
	MS-36	1			1	3.4	1	100%	--
	MS-37	1			1	2.1	1	100%	--
	MS-38	1			1	3.9	1	100%	--

Notes:

[a]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f)

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-15a: Data Summary of Mine Waste LAA Results by Material Type

Panel A: Fine Fraction (PLM-VE)

			Number of Samples by Bin						
Former Mine Area Materials	Number of Stations	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Coarse Tailings	7	9			4	5	9	100%	1
Fine Tailings	2	2			2		2	100%	0.6
Waste Rock Pile (central)	3	3			3		3	100%	0.6
Waste Rock Pile (east)	4	4			4		4	100%	0.6
Waste Rock Pile (west)	6	6			2	4	6	100%	2

Panel B: Coarse Fraction (PLM-Grav)

			Number of Samples					
Former Mine Area Materials	Number of Stations	Number of Samples	Non-Detect	Trace	>Trace	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Coarse Tailings	4	4		1	3	4	100%	6
Fine Tailings	2	2		2		2	100%	0.1
Waste Rock Pile (central)	3	3			3	3	100%	17
Waste Rock Pile (east)	4	4		1	3	4	100%	6
Waste Rock Pile (west)	6	6		1	5	6	100%	13

Notes:

[a]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f).

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

See Appendix E for all individual sample results.

Table 5-15b: Data Summary of Mine Waste LAA Results by Station

Panel A: Fine Fraction (PLM-VE)

			Number of Samples by Bin							
Former Mine Area Materials	Station ID	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Maximum Bin C Result (% Mass)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Coarse Tailings	GT-07	1			1			1	100%	--
	GT-10	2				2	2	2	100%	--
	GT-11	2				2	4	2	100%	--
	MS-6	1			1			1	100%	--
	MS-7	1				1	2	1	100%	--
	MS-8	1			1			1	100%	--
	MS-9	1			1			1	100%	--
Fine Tailings	MS-4	1			1			1	100%	--
	MS-5	1			1			1	100%	--
Waste Rock Pile (central)	MS-14	1			1			1	100%	--
	MS-17	1			1			1	100%	--
	MS-18	1			1			1	100%	--
Waste Rock Pile (east)	MS-19	1			1			1	100%	--
	MS-20	1			1			1	100%	--
	MS-30	1			1			1	100%	--
	MS-32	1			1			1	100%	--
Waste Rock Pile (west)	MS-15	1				1	5	1	100%	--
	MS-16	1				1	2	1	100%	--
	MS-26	1				1	3	1	100%	--
	MS-27	1			1			1	100%	--
	MS-28	1			1			1	100%	--
	MS-29	1				1	2	1	100%	--

Panel B: Coarse Fraction (PLM-Grav)

			Number of Samples						
Former Mine Area Materials	Station ID	Number of Samples	Non detected	Trace	>Trace	Maximum >Trace Result (% Mass)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Coarse Tailings	MS-6	1			1	2.7	1	100%	--
	MS-7	1			1	10	1	100%	--
	MS-8	1		1			1	100%	--
	MS-9	1			1	5.8	1	100%	--
Fine Tailings	MS-4	1		1			1	100%	--
	MS-5	1		1			1	100%	--
Waste Rock Pile (central)	MS-14	1			1	37	1	100%	--
	MS-17	1			1	11	1	100%	--
	MS-18	1			1	19	1	100%	--
Waste Rock Pile (east)	MS-19	1			1	8.2	1	100%	--
	MS-20	1		1			1	100%	--
	MS-30	1			1	2.8	1	100%	--
	MS-32	1			1	17	1	100%	--
Waste Rock Pile (west)	MS-15	1		1			1	100%	--
	MS-16	1			1	5.2	1	100%	--
	MS-26	1			1	2.1	1	100%	--
	MS-27	1			1	19	1	0%	--
	MS-28	1			1	33	1	100%	--
	MS-29	1			1	13	1	100%	--

Notes:

[a]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f)

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-16a: Data Summary of Groundwater LAA Results by Screened Area

Location Information			LAA Concentration > 10 µm in length					Total LAA Concentration (MFL)[a]		
Screened Area	Number of Stations	Number of Samples	Minimum	Maximum	Mean	Number of MCL Exceedances[b]	Frequency of MCL Exceedances	Minimum	Maximum	Mean
Shallow	8	20	0	12	1.7	2	10%	0	140	18
Bedrock	6	14	0	3	0.66	0	0%	0	62	11

Notes:

[a]Includes all asbestos fibers counted regardless of length. Total LAA concentrations are not compared to any standards and are for informational purposes only.

[b]Number of samples that exceeded the National Primary Drinking Water Regulation (NPDWR) Maximum Contaminant Level (MCL) for asbestos of 7 million fibers longer than 10 µm per liter of water.

LAA = Libby amphibole asbestos

MCL = Maximum Contaminant Level

µm = micrometers

MFL = million fibers per liter

See Appendix E for all individual sample results.

Table 5-16b: Data Summary of Groundwater LAA Results by Station

Location Information			LAA Concentration > 10 µm in length				Total LAA Concentration (MFL)[a]	
Screened Area	Station ID	Number of Samples	Minimum	Maximum	Number of Exceedances[b]	Frequency of Exceedances	Minimum	Maximum
Shallow	BH-01A-2	2	1.4	7.7*	1	50%	27	51
	BH-03A-1	2	1.5	12*	1	50%	19	139
	BH-05A-2	2	0.19	0.92	0	0%	5.8	15
	BH-07A-2	2	1.6	4.7	0	0%	8.1	20
	BH-07B-1	2	0	0	0	0%	0	0.20
	BH-09-1	2	0.30	0.72	0	0%	3.8	9.5
	Well A	3	0	2.5	0	0%	0	65
	Well C	5	0	0	0	0%	0	0.10
Bedrock	BH-01A-1	2	0.58	0.83	0	0%	2.6	3.5
	BH-05A-1	2	0	0	0	0%	0	0
	BH-07A-1	2	0	0	0	0%	0	0
	Well D	3	0	0	0	0%	0	0
	Well E	3	0.15	3.0	0	0%	0.90	62
	Well H	2	0.20	2.7	0	0%	5.4	41

Notes:

Where one or more samples exceeded the NPDWR standard (see footnote 'b' below).

Concentration values from the 2015 sampling event reflect the equipment rinsate blank adjusted concenctration, per LFM-OU3-02. Structure counts were derived based on the adjusted concentration.

[a]Includes all asbestos fibers counted regardless of length. Total LAA concentrations are not compared to any standards and are for informational purposes only.

[b]Number of samples that exceeded the National Primary Drinking Water Regulation (NPDWR) Maximum Contaminant Level (MCL) for asbestos of 7 million fibers longer than 10 µm per liter of water.

*Elevated LAA levels are thought to be related to suspended sediment in the water at the time of sampling, given that the other samples collected from both piezometers had significantly lower LAA levels. In addition, sampling pump issues were noted during the April 2015 sampling in BH-03A-1.

No mean calculated for any locations because there are less than 3 samples
LAA = Libby amphibole asbestos
MCL = Maximum Contaminant Level
µm = micrometers
MFL = million fibers per liter
See Appendix E for all individual sample results.

Table 5-17a: Data Summary of Surface Water LAA Results by Surface Water Area

Location Information			LAA Concentration > 10 µm in length					Total LAA Concentration[c]		
Surface Water Area	Number of Stations	Number of Samples[a]	Minimum (MFL)	Maximum (MFL)	Mean (MFL)	Number of MCL Exceedances[b]	Frequency of MCL Exceedances	Minimum (MFL)	Maximum (MFL)	Mean (MFL)
Upper Rainy Creek	3	48	0	6.6	0.21	0	0%	0	130	3.3
Fleetwood Creek	3	46	0	289*	8.7***	6	13%	0	1100	42
Tailings Pond Area	4	74	0	50	4.8	11	15%	0	1200	45
KDID Toe Drains	12	70	0	0.41	0.022	0	0%	0	2.7	0.15
Carney Creek	5	72	0	26**	1.9***	3	4%	0	270	22
Seeps[d]	7	21	0	32[d]	3.4	3[d]	14%[d]	0	220	24
Lower Rainy Creek	11	263	0	66	3.0	25	10%	0	420	19
East Tub Gulch	2	12	0	0.78	0.17	0	0%	0.15	7.7	3.9
Kootenai River	19	73	0	0.098	0.0063	0	0%	0	1.3	0.066

Notes:

[a] Samples within the OU3 Study Area collected using standard sampling methods are included in this data summary. Samples excluded from this data summary include those collected to support the ecological risk assessment from VB and VB-2013 (Pore Water [In] and (Pore Water [Out]) and samples collected using a syringe and field filtering method during Phase IV, Part B (free fiber samples).

[b] Number of samples that exceeded the National Primary Drinking Water Regulation (NPDWR) Maximum Contaminant Level (MCL) for asbestos of 7 million fibers longer than 10 µm per liter of water.

[c] Includes all asbestos fibers counted regardless of length. Total LAA concentrations are not compared to any standards and are for informational purposes only.

[d] Although the MCL is not applicable because the seeps are not defined as surface water, comparison is included to help understand LAA contributions to surface water in Carney Creek.

*Result is suspected to not be representative of true maximum concentration in Fleetwood Creek. The elevated result in the FC-Pond sample (collected on 9/12/2008) could be attributed to higher amounts of sediment in this sample as a consequence of sample collection methods (CDM Smith, 2015b). The next highest detection at FC-Pond is 28 MFL (collected on 6/15/2012).

**Result is suspected to not be representative of true maximum concentration in Carney Creek. CC-2, which had the maximum concentration was resampled on 11/9/2011 with a result of 0 MFL (CDM Smith, 2015b; this "opportunistic" sample is not reported in the OU3 Database). The next highest detection is at CC-2 is 7.5 MFL (collected on 5/17/2011).

***Mean is calculated using the suspect maximum result in the previous column.

LAA = Libby amphibole asbestos

MCL = Maximum Contaminant Level

µm = micrometers

MFL = million fibers per liter

See Appendix E for all individual sample results.

Table 5-17b: Data Summary of Surface Water LAA Results by Station

Location Information			LAA Concentration > 10 µm in length					Total LAA Concentration[c]		
Surface Water Area	Station ID	Number of Samples[a]	Minimum (MFL)	Maximum (MFL)	Mean (MFL)	Number of MCL Exceedances[b]	Frequency of MCL Exceedances	Minimum (MFL)	Maximum (MFL)	Mean (MFL)
Upper Rainy Creek	URC-1	9	0	0	0	0	0%	0	0	0
	URC-1A	13	0	0.050	0.0038	0	0%	0	0.050	0.015
	URC-2	26	0	6.6	0.39	0	0%	0	130	6.1
Fleetwood Creek	FC-1	9	0	0.92	0.19	0	0%	0	8	2.2
	FC-2	14	0	3.1	0.45	0	0%	0	20	3.4
	FC-Pond	23	0	289*	17***	6	26%	0.092	1100	81
Tailings Pond Area	UTP	10	0	4.5	1.4	0	0%	0.40	27	9.4
	TP	56	0	50	6.1	11	20%	0	1200	57
	TP-Overflow	7	0	0.79	0.19	0	0%	0.050	6.6	2.7
	TP-Overflow-A	1	0	0	--	0	0%	0.049	0.049	--
KDID Toe Drains	D1	6	0	0	0	0	0%	0	0.25	0.075
	D2	6	0	0.10	0.025	0	0%	0	0.55	0.16
	D3	6	0	0	0	0	0%	0	0.10	0.041
	D4	6	0	0.049	0.008	0	0%	0	0.050	0.041
	D5	6	0	0.049	0.008	0	0%	0	0.099	0.017
	D6	6	0	0	0	0	0%	0	0.049	0.0082
	D7	6	0	0	0	0	0%	0	0.49	0.19
	D8	4	0	0.20	0.087	0	0%	0	1.2	0.56
	D9	6	0	0.050	0.0083	0	0%	0	0.15	0.049
	D10	6	0	0.31	0.060	0	0%	0	2.7	0.47
	D11	6	0	0.10	0.017	0	0%	0	0.40	0.075
	D12	6	0	0.41	0.068	0	0%	0	1.7	0.30
Carney Creek	CC-1	3	0	0.44	0.26	0	0%	0	1.7	0.88
	CC-2	39	0	26**	2.4***	3	8%	0	270	30
	CC-3A	4	0.16	1.9	0.69	0	0%	1.5	12	4.3
	CC-3B	2	0	0.12	--	0	0%	1.4	2.4	--
	CC-Pond	24	0	6.6	1.8	0	0%	0	45	15
Seeps[d]	CCS-1	3	0.43	32[d]	12	1[d]	33%[d]	7.5	220	80
	CCS-6	3	1.3	12[d]	5.8	1[d]	33%[d]	11	100	54
	CCS-8	3	0	0.050	0.017	0	0%	0	0.16	0.10
	CCS-9	3	0	0.050	0.017	0	0%	0	0.10	0.033
	CCS-11	3	0.35	3.3	2.2	0	0%	1.1	17	9.4
	CCS-14	3	0	8[d]	3.2	1[d]	33%[d]	11	52	25
	CCS-16	3	0	1.2	0.43	0	0%	0	1.8	0.63
Lower Rainy Creek	TP-TOE1	14	0	1.6	0.35	0	0%	0	25	3.6
	TP-TOE1A	6	0	0.25	0.074	0	0%	0.097	0.89	0.29
	TP-TOE2	3	0	1.2	0.40	0	0%	0	2	0.68
	MP	38	0	10	1.1	2	5%	0	52	7.4
	LRC-1	14	0	7.5	1.1	1	7%	0	31	8.5
	LRC-2	61	0	9.0	1.7	3	5%	0	66	14
	LRC-2A	6	0.69	4.2	2.9	0	0%	7.8	33	17
	LRC-3	9	0	2.6	1.2	0	0%	0.20	21	12
	LRC-4	28	0.15	8.3	3.4	3	11%	0.85	58	21
	LRC-5	28	0.050	13	3.9	5	18%	0.60	59	24
	LRC-6	56	0	66	6.9	11	20%	0	420	42
East Tub Gulch	East-TGC	6	0	0.78	0.13	0	0%	1.1	7.7	4.8
	East-TGP	6	0	0.44	0.20	0	0%	0.15	6.1	3.1
Kootenai River	20-Kootenai River	2	0	0	--	0	0%	0	0.022	--
	24-Kootenai River	2	0	0	--	0	0%	0	0	--
	25-Kootenai River	2	0	0.022	--	0	0%	0	0.022	--
	KR-1	10	0	0.049	0.0049	0	0%	0	1.3	0.22
	KR-14	11	0	0	0	0	0%	0	0.10	0.014
	KR-15	2	0	0	--	0	0%	0	0	--
	KR-16	10	0	0	0	0	0%	0	0.050	0.0050
	KR-2	1	0	0	--	0	0%	0	0	--
	KR-3	1	0	0	--	0	0%	0	0	--
	KR-4	10	0	0.095	0.015	0	0%	0	1.2	0.13
	KR-5	8	0	0.098	0.019	0	0%	0	0.25	0.043
	KR-6	1	0	0	--	0	0%	0	0	--
	KR-7	1	0	0	--	0	0%	0	0	--
	KR-8	1	0	0	--	0	0%	0	0	--
	UKR	1	0	0	--	0	0%	0	0	--
	UKR-0	6	0	0.049	0.016	0	0%	0	0.65	0.12
	UKR-1	2	0	0	--	0	0%	0	0	--
	UKR-2	1	0	0	--	0	0%	0	0	--
	UKR-3	1	0	0	--	0	0%	0	0	--

Notes:

Where one or more samples in a surface water area exceeded the NPDWR standard (see footnote 'b' below).

[a] Samples within the OU3 Study Area collected using standard sampling methods are included in this data summary. Samples excluded from this data summary include those collected to support the ecological risk assessment from VB and VB-2013 (Pore Water [In] and (Pore Water [Out]) and samples collected using a syringe and field filtering method during Phase IV, Part B (free fiber samples).

[b] Number of samples that exceeded the National Primary Drinking Water Regulation (NPDWR) Maximum Contaminant Level (MCL) for asbestos of 7 million fibers longer than 10 µm per liter of water.

[c] Includes all asbestos fibers counted regardless of length. Total LAA concentrations are not compared to any standards and are for informational purposes only.

[d] Although the MCL is not applicable because the seeps are not defined as surface water, comparison is included to help understand LAA contributions to surface water in Carney Creek.

*Result is suspected to not be representative of true concentration at FC-Pond. The elevated result in this sample (collected on 9/12/2008) could be attributed to higher amounts of sediment in this sample as a consequence of sample collection methods (CDM Smith, 2015b). The next highest detection at FC-Pond is 28 MFL (collected on 6/15/2012).

**Result is suspected to not be representative of true concentration at CC-2. This station was resampled on 11/9/2011 with a result of 0 MFL (CDM Smith, 2015b; this "opportunistic" sample is not reported in the OU3 Database). The next highest detection is at CC-2 is 7.5 MFL (collected on 5/17/2011).

***Mean is calculated using the suspect maximum result in the previous column.

LAA = Libby amphibole asbestos

MCL = Maximum Contaminant Level

µm = micrometers

MFL = million fibers per liter

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-18a: Data Summary of Sediment LAA Results by Surface Water Area

Panel A: Fine Fraction (PLM-VE)

			Number of Samples by Bin						
Surface Water Area	Number of Stations	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Upper Rainy Creek	3	10	5	4	1	0	5	50%	0.1
Fleetwood Creek	9	22	1	8	9	4	21	95%	0.7
Tailings Pond Area	19	38	0	14	19	5	38	100%	0.5
Carney Creek	9	37	0	8	6	23	37	100%	3
Seeps	7	21	0	2	7	12	21	100%	2
Lower Rainy Creek	14	58	0	11	17	30	58	100%	2
Kootenai River	20	20	3	10	7	0	17	85%	0.3
Lake Koocanusa	2	2	2	0	0	0	0	0%	--

Panel B: Coarse Fraction (PLM-Grav)

			Number of Samples					
Surface Water Area	Number of Stations	Number of Samples	Non-Detect	Trace	>Trace	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Upper Rainy Creek	2	4	3	1	0	1	25%	0.05
Fleetwood Creek	4	7	4	1	2	3	43%	0.5
Tailings Pond Area	1	2	0	1	1	2	100%	--
Carney Creek	4	10	2	3	5	8	80%	3
Seeps	7	12	1	7	4	11	92%	3
Lower Rainy Creek	6	14	0	9	5	14	100%	1
Kootenai River	5	5	5	0	0	0	0%	0.02

Notes:

[a]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f).

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-18b: Data Summary of Sediment LAA Results by Station

Panel A: Fine Fraction (PLM-VE)

			Number of Samples by Bin							
Surface Water Area	Station ID	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Maximum Bin C Result (% Mass)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Upper Rainy Creek	URC-1	3	3					0	0%	0.03
	URC-1A	3	2	1				1	33%	0.1
	URC-2	4		3	1			4	100%	0.3
Fleetwood Creek	FC-1	3	1	2				2	67%	0.1
	FC-2	4		4				4	100%	0.1
	FC-Pond	4			1	3	4	4	100%	2
	FC-POND-1	2			1	1	2	2	100%	--
	FC-POND-2	2			2			2	100%	--
	FC-POND-3	2		1	1			2	100%	--
	FC-POND-4	2			2			2	100%	--
	FC-POND-4D	1		1				1	100%	--
	FC-POND-5	2			2			2	100%	--
Tailings Pond Area	TP	4			3	1	1.5	4	100%	0.9
	TP-1	2			2			2	100%	--
	TP-2	2			2			2	100%	--
	TP-3	2			1	1	2	2	100%	--
	TP-4	2		1		1	2	2	100%	--
	TP-5	1			1			1	100%	--
	TP-6	2		1	1			2	100%	--
	TP-7	2		1		1	2	2	100%	--
	TP-8	2		1	1			2	100%	--
	TP-9	2		1	1			2	100%	--
	TP-10	2		1		1	1	2	100%	--
	TP-10D	1		1				1	100%	--
	TP-11	2		1	1			2	100%	--
	TP-12	2		1	1			2	100%	--
	TP-13	2			2			2	100%	--
	TP-14	2		1	1			2	100%	--
	TP-15	2		2				2	100%	--
	TP-16	2		1	1			2	100%	--
	TP-17	2		1	1			2	100%	--
Carney Creek	CC-1	20			1	19	7	20	100%	4
	CC-2	3		1	2			3	100%	0.5
	CC-Pond	3				3	10	3	100%	6
	CC-POND-1	2			1	1	2	2	100%	--
	CC-POND-2	2		1	1			2	100%	--
	CC-POND-3	2		1	1			2	100%	--
	CC-POND-4	2		2				2	100%	--
	CC-POND-5	2		2				2	100%	--
	CC-POND-5D	1		1				1	100%	--
Seeps	CCS-1	3				3	3	3	100%	2
	CCS-6	3			1	2	2	3	100%	2
	CCS-8	3			1	2	6	3	100%	2
	CCS-9	3				3	7	3	100%	4
	CCS-11	3		1	2			3	100%	0.5
	CCS-14	3		1	2			3	100%	0.5
	CCS-16	3			1	2	4	3	100%	2
Lower Rainy Creek	TP-TOE1	3			1	2	2	3	100%	1
	TP-TOE2	20				20	10	20	100%	3
	MP	4		1	3			4	100%	0.5
	MP-1	2		1		1	1	2	100%	--
	MP-2	2		1		1	1	2	100%	--
	MP-3	2		2				2	100%	--
	MP-4	2		1		1	1	2	100%	--
	MP-5	2		1		1	2	2	100%	--
	LRC-1	3			3			3	100%	0.6
	LRC-2	4		1	2	1	2	4	100%	0.8
	LRC-3	4		1	1	2	2	4	100%	1
	LRC-4	3		1	2			3	100%	0.4
	LRC-5	4		1	2	1	2	4	100%	0.8
	LRC-6	3			3			3	100%	0.6
Kootenai River	15-Kootenai River	1	1					0	0%	--
	16-Kootenai River	1			1			1	100%	--
	17-Kootenai River	1		1				1	100%	--
	18-Kootenai River	1			1			1	100%	--
	19-Kootenai River	1			1			1	100%	--
	20-Kootenai River	1		1				1	100%	--
	21-Kootenai River	1			1			1	100%	--
	22-Kootenai River	1		1				1	100%	--
	23-Kootenai River	1		1				1	100%	--
	24-Kootenai River	1			1			1	100%	--
	25-Kootenai River	1		1				1	100%	--
	26-Kootenai River	1		1				1	100%	--
	KR-9	1		1				1	100%	--
	KR-10	1		1				1	100%	--
	KR-11	1		1				1	100%	--
	KR-12	1	1					0	0%	--
	KR-13	1		1				1	100%	--
	KR-20	1			1			1	100%	--
	KR-21	1			1			1	100%	--
	UKR-2	1	1					0	0%	--
Lake Koocanusa	LK-1	1	1					0	0%	--
	LK-2	1	1					0	0%	--

Table 5-18b: Data Summary of Sediment LAA Results by Station

Panel B: Coarse Fraction (PLM-Grav)

			Number of Samples						
Surface Water Area	Station ID	Number of Samples	Non detected	Trace	>Trace	Maximum >Trace Result (% Mass)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Upper Rainy Creek	URC-1A	3	3				0	0%	0.02
	URC-2	1		1			1	100%	--
Fleetwood Creek	FC-1	1	1				0	0%	--
	FC-2	3	3				0	0%	0.02
	FC-Pond	2		1	1	4.8	2	100%	--
	FC-POND-2	1			1	0.39	1	100%	--
Tailings Pond Area	TP	2		1	1	0.018	2	100%	--
Carney Creek	CC-1	4		2	2	11	4	100%	4
	CC-2	2		1	1	2	2	100%	--
	CC-Pond	2			2	18	2	100%	--
	CC-POND-2	2	2				0	0%	--
Seeps	CCS-1	1		1			1	100%	--
	CCS-11	3	1	1	1	2	2	67%	1
	CCS-14	2		2			2	100%	--
	CCS-16	1		1			1	100%	--
	CCS-6	1		1			1	100%	--
	CCS-8	1			1	4.1	1	100%	--
	CCS-9	3		1	2	19	3	100%	11
Lower Rainy Creek	TP-TOE1	1			1	3.8	1	100%	--
	TP-TOE2	3		2	1	0.34	3	100%	0.3
	MP	2		2			2	100%	--
	LRC-1	2		1	1	1.3	2	100%	--
	LRC-2	3		1	2	5	3	100%	2
	LRC-5	3		3			3	100%	0.1
Kootenai River	15-Kootenai River	1	1				0	0%	--
	26-Kootenai River	1	1				0	0%	--
	KR-9	1	1				0	0%	--
	KR-10	1	1				0	0%	--
	KR-11	1	1				0	0%	--

Notes:

[a]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f).

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-19a: Data Summary of Tree Bark LAA Results by Distance from the Former Mine Area

Location Information			PCME LAA Concentration (Ms/cm^2)					Total LAA Concentration (Ms/cm^2)[b]		
Distance From Former Mine Site[a]	Number of Stations	Number of Analyses	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections	Minimum	Maximum	Mean
Near	38	62	0	4.9	0.74	54	87%	0	32	3.7
Intermediate	57	65	0	1.9	0.22	52	80%	0	8.8	0.88
Far	56	66	0	0.77	0.049	17	26%	0	2.6	0.17
Near Flower Creek[c]	1	9	0	0.11	0.013	2	22%	0	0.53	0.076
Near Bear Creek[c]	1	9	0	0.025	0.0036	2	22%	0	0.050	0.0088

Notes:

[a]Near: within two miles from the center of the former mine area; Intermediate: between two and six miles from the center of the former mine area; Far: greater than or equal to six miles from the center of the former mine area. Refer to Figures 1-3 and 4-5 for the location used as the mine center.

[b]Includes all asbestos fibers counted regardless of length.

[c]The Flower Creek and Bear Creek locations are not within the OU3 Study Area, but are included in the RI for the purposes of comparison to the location near the Former Mine Area.

PCME = phase contrast microscopy - equivalent

LAA = Libby amphibole asbestos

Ms/cm^2 = million structures per square centimeter

See Appendix E for all individual sample results.

Table 5-19b: Data Summary of Tree Bark LAA Results by Station

Location Information				PCME LAA Concentration (Ms/cm^2)					Total LAA Concentration (Ms/cm^2)[b]		
Distance From Former Mine Site[a]	Station ID	Number of Samples	Number of Analyses	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections	Minimum	Maximum	Mean
Near	CL-A	1*	3	1.7	2.8	2.1	3	100%	10	15	12
	CL-B	1*	3	0	0.11	0.067	2	67%	0.28	0.61	0.43
	CL-C	1*	3	0.093	0.18	0.13	3	100%	0.47	0.63	0.57
	CL-D	1*	3	0.073	0.30	0.21	3	100%	0.72	2.0	1.4
	CL-E	1*	3	0.22	0.26	0.23	3	100%	0.88	1.5	1.3
	SL135-01	1	1	2.1	2.1	--	1	100%	7.8	7.8	--
	SL135-02	1	1	1.7	1.7	--	1	100%	7.4	7.4	--
	SL135-03	1	1	0.81	0.81	--	1	100%	5.4	5.4	--
	SL135-04	1	1	0.41	0.41	--	1	100%	4.2	4.2	--
	SL15-02	1*	3	0.39	0.75	0.57	3	100%	1.1	3.4	2.0
	SL15-03	1	1	0.37	0.37	--	1	100%	1.2	1.2	--
	SL15-04	1	1	4.9	4.9	--	1	100%	16	16	--
	SL195-02	1	1	1.5	1.5	--	1	100%	5.7	5.7	--
	SL195-03	1	1	0.77	0.77	--	1	100%	2.2	2.2	--
	SL195-04	1	1	0.0087	0.0087	--	1	100%	0	0.018	--
	SL255-02	1	1	0.42	0.42	--	1	100%	3.2	3.2	--
	SL255-03	1	1	0.058	0.058	--	1	100%	0.21	0.21	--
	SL315-01	1	1	4.2	4.2	--	1	100%	10	10	--
	SL315-02	1	1	0.39	0.39	--	1	100%	1.8	1.8	--
	SL315-03	1	1	0.31	0.31	--	1	100%	1.3	1.3	--
	SL315-04	1	1	0.15	0.15	--	1	100%	0.59	0.59	--
	SL45-01	1	1	0.42	0.42	--	1	100%	4.2	4.2	--
	SL45-02	1*	3	0.098	0.21	0.16	3	100%	0.41	0.86	0.56
	SL45-03	1	1	0.29	0.29	--	1	100%	1.6	1.6	--
	SL45-04	1	1	1.3	1.3	--	1	100%	3.8	3.8	--
	SL75-02	1	1	0	0	--	0	0%	0.044	0.044	--
	SL75-03	1	1	3.1	3.1	--	1	100%	13	13	--
	SL75-04	1	1	0.061	0.061	--	1	100%	0.38	0.38	--
	WA-Near	3*	9	0	3.3	0.92	6	67%	0	32	6.1
	B15-B1-T1	1	1	0	0	--	0	0%	0	0	--
	B15-B2-T1	1	1	0.066	0.066	--	1	100%	0.066	0.066	--
	B15-B3-T1	1	1	0	0	--	0	0%	0.026	0.026	--
	B15-B4-T1	1	1	0	0	--	0	0%	0.67	0.67	--
	SP15-TBark1	1	1	0.19	0.19	--	1	100%	1.9	1.9	--
	SP15-TBark2	1	1	0.78	0.78	--	1	100%	5.5	5.5	--
	SP15-TBark3	1	1	0.68	0.68	--	1	100%	4.7	4.7	--
	Slash Pile A	2	2	0.36	0.47	--	2	100%	2.9	2.9	--
	Slash Pile B	2	2	0.52	0.98	--	2	100%	4.4	8.1	--
Intermediate	CL-F-1	1	1	0	0	--	0	0%	0	0	--
	CL-F-2	1	1	0.054	0.054	--	1	100%	0	0	--
	CL-F-3	1	1	0	0	--	0	0%	0	0	--
	CL-F-4	1	1	0.025	0.025	--	1	100%	0	0	--
	CL-F-5	1	1	0	0	--	0	0%	0	0	--
	Location #10	1	1	0.17	0.17	--	1	100%	0.35	0.35	--
	Location #11	1	1	0.22	0.22	--	1	100%	0.99	0.99	--
	Location #12	1	1	0	0	--	0	0%	0	0	--
	Location #14	1*	3	0	0.028	0.019	2	67%	0.085	0.11	0.094
	Location #15	1	1	0	0	--	0	0%	0.013	0.013	--
	Location #16	1	1	0.013	0.013	--	1	100%	0.08	0.08	--
	Location #17	1	1	0.053	0.053	--	1	100%	0.17	0.17	--
	Location #51	1	1	0	0	--	0	0%	0.0045	0.0045	--
	Location #9	1*	3	0	0	0	0	0%	0	0.029	0.0098
	SL135-05	1	1	0.090	0.090	--	1	100%	0.30	0.30	--
	SL135-06	1	1	0.89	0.89	--	1	100%	2.4	2.4	--
	SL135-07	1	1	0.018	0.018	--	1	100%	0.12	0.12	--
	SL135-08	1	1	0.019	0.019	--	1	100%	0.18	0.18	--
	SL15-05	1	1	0.18	0.18	--	1	100%	1.0	1.0	--
	SL15-06	1	1	0.21	0.21	--	1	100%	1.6	1.6	--
	SL15-07	1	1	0.29	0.29	--	1	100%	1.6	1.6	--
	SL15-08	1	1	0.054	0.054	--	1	100%	0.14	0.14	--
	SL15-09	1	1	0.054	0.054	--	1	100%	0.090	0.090	--
	SL15-10	1	1	0.018	0.018	--	1	100%	0.036	0.036	--
	SL15-11	1	1	0	0	--	0	0%	0	0	--
	SL195-05	1	1	0.37	0.37	--	1	100%	1.0	1.0	--
	SL195-06	1	1	0.23	0.23	--	1	100%	0.78	0.78	--
	SL195-07	1	1	0.015	0.015	--	1	100%	0.061	0.061	--
	SL195-08	1	1	0.038	0.038	--	1	100%	0.16	0.16	--
	SL195-10	1	1	0.10	0.10	--	1	100%	0.31	0.31	--
	SL195-11	1	1	0.084	0.084	--	1	100%	0.53	0.53	--
	SL255-04	1	1	1.4	1.4	--	1	100%	6.6	6.6	--
	SL255-05	1	1	0.078	0.078	--	1	100%	0.50	0.50	--
	SL255-06	1	1	1.9	1.9	--	1	100%	8.8	8.8	--
	SL315-05	1	1	0.038	0.038	--	1	100%	0.22	0.22	--
	SL315-06	1	1	0.21	0.21	--	1	100%	1.5	1.5	--
	SL315-07	1	1	0.009	0.009	--	1	100%	0.018	0.018	--
	SL315-08	1	1	0.026	0.026	--	1	100%	0.044	0.044	--
	SL45-05	1	1	0.0051	0.0051	--	1	100%	0.041	0.041	--
	SL45-06	1	1	0.54	0.54	--	1	100%	1.7	1.7	--
	SL45-07	1*	3	0.94	1.7	1.3	3	100%	2.9	5.6	4.4
	SL45-08	1*	3	0.11	0.18	0.16	3	100%	0.40	0.55	0.47
	SL45-09	1	1	0.085	0.085	--	1	100%	0.30	0.30	--
	SL45-10	1	1	0	0	--	0	0%	0	0	--
	SL45-11	1	1	0.14	0.14	--	1	100%	0.32	0.32	--
	SL45-12	1	1	0.11	0.11	--	1	100%	0.80	0.80	--
	SL75-05	1	1	0.79	0.79	--	1	100%	4.0	4.0	--
	SL75-06	1	1	0.84	0.84	--	1	100%	4.4	4.4	--
	SL75-07	1	1	0.017	0.017	--	1	100%	0.052	0.052	--
	SL75-08	1	1	0.10	0.10	--	1	100%	0.24	0.24	--

Table 5-19b: Data Summary of Tree Bark LAA Results by Station

Location Information				PCME LAA Concentration (Ms/cm^2)					Total LAA Concentration (Ms/cm^2)[b]		
Distance From Former Mine Site[a]	Station ID	Number of Samples	Number of Analyses	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections	Minimum	Maximum	Mean
Intermediate	SL75-09	1	1	0.10	0.10	--	1	100%	0.34	0.34	--
	SG-DB2	1	1	0.030	0.030	--	1	100%	0.091	0.091	--
	SG-DB3	1	1	0.024	0.024	--	1	100%	0.17	0.17	--
	SG-DB4	1	1	0.007	0.007	--	1	100%	0.06	0.06	--
	SG-DB5	1	1	0	0	--	0	0%	0.022	0.022	--
	SG-DB6	1	1	0.018	0.018	--	1	100%	0.20	0.20	--
	SG-DB7	1	1	0.037	0.037	--	1	100%	0.16	0.16	--
Far	Location #1	1	1	0	0	--	0	0%	0	0	--
	Location #13	1	1	0	0	--	0	0%	0.0067	0.0067	--
	Location #18	1	1	0	0	--	0	0%	0	0	--
	Location #19	1	1	0	0	--	0	0%	0.036	0.036	--
	Location #2	1	1	0.049	0.049	--	1	100%	0.32	0.32	--
	Location #20	1*	3	0.60	0.77	0.71	3	100%	2.0	2.6	2.4
	Location #21	1	1	0	0	--	0	0%	0	0	--
	Location #22	1	1	0	0	--	0	0%	0	0	--
	Location #23	1	1	0	0	--	0	0%	0	0	--
	Location #24	1	1	0	0	--	0	0%	0	0	--
	Location #25	1	1	0	0	--	0	0%	0	0	--
	Location #26	1	1	0	0	--	0	0%	0.012	0.012	--
	Location #27	1	1	0.021	0.021	--	1	100%	0.042	0.042	--
	Location #28	1	1	0	0	--	0	0%	0	0	--
	Location #29	1	1	0	0	--	0	0%	0	0	--
	Location #3	1	1	0	0	--	0	0%	0.027	0.027	--
	Location #30	1	1	0	0	--	0	0%	0	0	--
	Location #31	1	1	0	0	--	0	0%	0	0	--
	Location #32	1	1	0	0	--	0	0%	0	0	--
	Location #33	1	1	0	0	--	0	0%	0	0	--
	Location #34	1	1	0	0	--	0	0%	0.042	0.042	--
	Location #35	1	1	0	0	--	0	0%	0	0	--
	Location #36	1*	3	0	0	0	0	0%	0	0	0
	Location #37	1	1	0	0	--	0	0%	0	0	--
	Location #38	1	1	0	0	--	0	0%	0	0	--
	Location #39	1	1	0	0	--	0	0%	0	0	--
	Location #4	1	1	0.12	0.12	--	1	100%	0.35	0.35	--
	Location #40	1*	3	0	0.46	0.19	2	67%	0.013	0.83	0.53
	Location #41	1	1	0	0	--	0	0%	0	0	--
	Location #42	1	1	0.030	0.030	--	1	100%	0.059	0.059	--
	Location #43	1	1	0	0	--	0	0%	0.042	0.042	--
	Location #44	1	1	0	0	--	0	0%	0	0	--
	Location #45	1	1	0	0	--	0	0%	0	0	--
	Location #46	1	1	0	0	--	0	0%	0	0	--
	Location #47	1	1	0	0	--	0	0%	0	0	--
	Location #48	1	1	0	0	--	0	0%	0.037	0.037	--
	Location #49	1	1	0.15	0.15	--	1	100%	0.59	0.59	--
	Location #5	1	1	0	0	--	0	0%	0	0	--
	Location #50	1	1	0	0	--	0	0%	0.034	0.034	--
	Location #6	1	1	0	0	--	0	0%	0	0	--
	Location #7	1	1	0	0	--	0	0%	0	0	--
	Location #8	1	1	0	0	--	0	0%	0.0067	0.0067	--
	SL15-12	1	1	0	0	--	0	0%	0	0	--
	SL15-13	1	1	0	0	--	0	0%	0	0	--
	SL15-14	1	1	0	0	--	0	0%	0	0	--
	SL15-15	1	1	0	0	--	0	0%	0	0	--
	SL15-16	1	1	0	0	--	0	0%	0	0	--
	SL195-12	1	1	0.017	0.017	--	1	100%	0.026	0.026	--
	SL45-13	1	1	0.019	0.019	--	1	100%	0.078	0.078	--
	SL45-14	1	1	0	0	--	0	0%	0.010	0.010	--
	SL45-15	1*	3	0	0.019	0.0063	1	33%	0	0.028	0.0093
	SL45-16	1*	3	0	0.010	0.0034	1	33%	0	0.010	0.0034
	SL75-13	1	1	0.027	0.027	--	1	100%	0.054	0.054	--
	SL75-14	1	1	0.026	0.026	--	1	100%	0.11	0.11	--
	SL75-15	1	1	0.035	0.035	--	1	100%	0.26	0.26	--
	SL75-16	1	1	0	0	--	0	0%	0.085	0.085	--
Near Flower Creek[c]	WA-FC	3*	9	0	0.11	0.013	2	22%	0	0.53	0.076
Near Bear Creek[c]	WA-BC	3*	9	0	0.025	0.0036	2	22%	0	0.050	0.0088

Notes:

* Replicate analysis was performed on these samples; one sample was collected at each station and multiple analysis were performed. Each analysis was counted as a unique result in the statistical summary table.

[a] Near: within two miles from the center of the former mine area; Intermediate: between two and six miles from the center of the former mine area; Far: greater than or equal to six miles from the center of the former

[b] Includes all asbestos fibers counted regardless of length.

[c] The Flower Creek and Bear Creek locations are not within the OU3 Study Area, but are included in the RI for the purposes of comparison to the location near the Former Mine Area.

PCME = phase contrast microscopy - equivalent

LAA = Libby amphibole asbestos

Ms/cm^2 = million structures per square centimeter

-- = no mean calculated when less than 3 analysis

See Appendix E for all individual sample results.

Table 5-20a: Data Summary of Duff Material LAA Results by Distance from the Former Mine Area

Location Information			PCME LAA Concentration (Ms/g, dry weight)					Total LAA Concentration (Ms/g, dry weight)[b]		
Distance From Former Mine Area[a]	Number of Stations	Number of Samples	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections	Minimum	Maximum	Mean
Near	38	52	0	572	141	48	92%	5.8	3200	733.7
Intermediate	63	83	0	505	18	43	52%	0	2200	78.8
Far	55	65	0	10	1.2	9	14%	0	64	6.8

Notes:

[a]Near: within two miles from the center of the former mine area; Intermediate: between two and six miles from the center of the former mine area; Far: greater than or equal to six miles from the center of the former mine area. Refer to Figures 1-3 and 4-5 for the location used as the mine center.

[b]Includes all asbestos fibers counted regardless of length.

PCME = phase contrast microscopy - equivalent

LAA = Libby amphibole asbestos

Ms/g = million structures per gram

See Appendix E for all individual sample results.

Table 5-20b: Data Summary of Duff Material LAA Results by Station

Location Information			PCME LAA Concentration (Ms/g, dry weight)					Total LAA Concentration (Ms/g, dry weight)[b]		
Distance From Former Mine Site[a]	Station ID	Number of Samples	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections	Minimum	Maximum	Mean
Near	CL-A	1*	103	174	132	3	100%	600	690	637
	CL-B	1*	139	194	161	3	100%	450	610	533
	CL-C	1*	17	94	54	3	100%	210	260	230
	CL-D	1*	36	59	48	3	100%	110	180	147
	CL-E	1*	84	130	103	3	100%	330	440	377
	SL135-01	1	347	347	--	1	100%	1900	1900	--
	SL135-02	1	113	113	--	1	100%	790	790	--
	SL135-03	1	8.2	8.2	--	1	100%	33	33	--
	SL135-04	1	0	0	--	0	0%	7.4	7.4	--
	SL15-02	1*	223	331	277	3	100%	1015	2200	1484
	SL15-03	1	114	114	--	1	100%	790	790	--
	SL15-04	1	95	95	--	1	100%	610	610	--
	SL195-02	1	139	139	--	1	100%	1800	1800	--
	SL195-03	1	16	16	--	1	100%	100	100	--
	SL195-04	1	8.9	8.9	--	1	100%	27	27	--
	SL255-02	1	43	43	--	1	100%	740	740	--
	SL255-03	1	52	52	--	1	100%	360	360	--
	SL315-01	1	499	499	--	1	100%	2800	2800	--
	SL315-02	1	57	57	--	1	100%	750	750	--
	SL315-03	1	0	0	--	0	0%	220	220	--
	SL315-04	1	29	29	--	1	100%	39	39	--
	SL45-01	1	412	412	--	1	100%	3200	3200	--
	SL45-02	1*	429	558	501	3	100%	1302	3100	1930
	SL45-03	1	398	398	--	1	100%	2600	2600	--
	SL45-04	1	59	59	--	1	100%	300	300	--
	SL75-02	1	281	281	--	1	100%	1000	1000	--
	SL75-03	1	572	572	--	1	100%	3100	3100	--
	SL75-04	1	33	33	--	1	100%	100	100	--
	B15-Duff1	1	0	0	--	0	0%	24	24	--
	B15-Duff2	1	48	48	--	1	100%	135	135	--
	B15-Duff3	1	6.4	6.4	--	1	100%	38	38	--
	B15-Duff4	1	5.7	5.7	--	1	100%	5.7	5.7	--
	B15-Duff5	1	9.0	9.0	--	1	100%	54	54	--
	SP15-Duff1	1	0	0	--	0	0%	12	12	--
	SP15-Duff2	1	62	62	--	1	100%	150	150	--
	SP15-Duff3	1	9.2	9.2	--	1	100%	83	83	--
	SP15-Duff4	1	19	19	--	1	100%	106	106	--
	SP15-Duff5	1	58	58	--	1	100%	269	269	--
Intermediate	CL-F-1	1	0	0	--	0	0%	0	0	--
	CL-F-2	1	0	0	--	0	0%	0	0	--
	CL-F-3	1	0	0	--	0	0%	1.0	1.0	--
	CL-F-4	1	0	0	--	0	0%	0	0	--
	CL-F-5	1	0.29	0.29	--	0	0%	0	0	--
	LSF-12-1	1*	0	0	0	0	0%	0	0	0
	LSF-12-2	1*	0	0	0	0	0%	0	9.8	6.5
	LSF-13-2	1*	0	0	0	0	0%	0	0	0
	LSF-13-3	1*	0	0	0	0	0%	0	0	0
	LSF-13-6	1*	0	0	0	0	0%	0	10	3.3
	LSF-13-7	1*	0	0	0	0	0%	0	0	0
	Location #10	1	0	0	--	0	0%	15	15	--
	Location #11	1	0	0	--	0	0%	2.3	2.3	--
	Location #12	1*	0	2.0	0.82	2	67%	0	2.9	1.6
	Location #14	1	0	0	--	0	0%	0	0	--
	Location #15	1	2.8	2.8	--	1	100%	5.6	5.6	--
	Location #16	1*	0	3.6	1.4	2	67%	0.54	25	9.0
	Location #17	1	0	0	--	0	0%	20	20	--
	Location #51	1	0	0	--	0	0%	5.4	5.4	--
	Location #9	1	0	0	--	0	0%	2.0	2.0	--
	SL135-05	1	7.7	7.7	--	1	100%	31	31	--
	SL135-06	1	0	0	--	0	0%	40	40	--
	SL135-07	1	15	15	--	1	100%	61	61	--
	SL135-08	1	9.0	9.0	--	1	100%	18	18	--
	SL15-05	1	9.4	9.4	--	1	100%	42	42	--
	SL15-06	1	25	25	--	1	100%	50	50	--
	SL15-07	1	0	0	--	0	0%	37	37	--
	SL15-08	1	0	0	--	0	0%	59	59	--
	SL15-09	1	17	17	--	1	100%	34	34	--
	SL15-10	1	0	0	--	0	0%	0	0	--
	SL15-11	1	10	10	--	1	100%	35	35	--
	SL195-05	1	14	14	--	1	100%	93	93	--
	SL195-06	1	36	36	--	1	100%	220	220	--
	SL195-07	1	8.5	8.5	--	1	100%	8.5	8.5	--
	SL195-08	1	0	0	--	0	0%	0	0	--
	SL195-10	1	18	18	--	1	100%	19	19	--
	SL195-11	1	8.7	8.7	--	1	100%	35	35	--
	SL255-04	1	505	505	--	1	100%	2200	2200	--
	SL255-05	1	9.1	9.1	--	1	100%	36	36	--
	SL255-06	1	19	19	--	1	100%	20	20	--
	SL315-05	1	25	25	--	1	100%	51	51	--
	SL315-06	1	0	0	--	0	0%	42	42	--
	SL315-07	1	0	0	--	0	0%	0	0	--
	SL315-08	1	12	12	--	1	100%	18	18	--
	SL45-05	1	61	61	--	1	100%	240	240	--
	SL45-06	1	24	24	--	1	100%	100	100	--
	SL45-07	1*	62	73	69	3	100%	231	440	313
	SL45-08	1*	19	47	31	3	100%	112	410	214
	SL45-09	1	27	27	--	1	100%	150	150	--
	SL45-10	1	9.5	9.5	--	1	100%	86	86	--
	SL45-11	1	9.5	9.5	--	1	100%	100	100	--
	SL45-12	1	75	75	--	1	100%	130	130	--
	SL75-05	1	162	162	--	1	100%	550	550	--
	SL75-06	1	11	11	--	1	100%	82	82	--
	SL75-07	1	18	18	--	1	100%	56	56	--
	SL75-08	1	9.2	9.2	--	1	100%	55	55	--
	SL75-09	1	29	29	--	1	100%	100	100	--
	SG-DB1	1	0	0	--	0	0%	4.7	4.7	--
	SG-DB3	1	0	0	--	0	0%	5.3	5.3	--
	SG-DB4	1	2.0	2.0	--	1	100%	8.0	8.0	--
	SG-DB5	1	0	0	--	0	0%	1.5	1.5	--
	SG-DB6	1	5.7	5.7	--	1	100%	20	20	--
	SG-DB7	1	3.0	3.0	--	1	100%	8.9	8.9	--

Table 5-20b: Data Summary of Duff Material LAA Results by Station

Location Information			PCME LAA Concentration (Ms/g, dry weight)					Total LAA Concentration (Ms/g, dry weight)[b]		
Distance From Former Mine Site[a]	Station ID	Number of Samples	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections	Minimum	Maximum	Mean
Far	Location #1	1	0	0	--	0	0%	0	0	--
	Location #2	1	0	0	--	0	0%	0	0	--
	Location #3	1*	0	0	0	0	0%	0	0.43	0.25
	Location #4	1	0	0	--	0	0%	1.4	1.4	--
	Location #5	1	0	0	--	0	0%	0	0	--
	Location #6	1*	0	0	0	0	0%	9.9	9.9	9.9
	Location #7	1	0	0	--	0	0%	9.6	9.6	--
	Location #8	1	0	0	--	0	0%	1.2	1.2	--
	Location #13	1	0	0	--	0	0%	0	0	--
	Location #18	1	0	0	--	0	0%	0	0	--
	Location #19	1	10	10	--	1	100%	20	20	--
	Location #20	1	0	0	--	0	0%	0	0	--
	Location #21	1	0	0	--	0	0%	8.8	8.8	--
	Location #22	1	0	0	--	0	0%	0	0	--
	Location #23	1	0	0	--	0	0%	0	0	--
	Location #24	1	0	0	--	0	0%	0	0	--
	Location #25	1*	0	0	0	0	0%	0	0	0
	Location #26	1	4.4	4.4	--	1	100%	4.4	4.4	--
	Location #27	1	0	0	--	0	0%	0	0	--
	Location #28	1	0	0	--	0	0%	0	0	--
	Location #29	1	0	0	--	0	0%	0	0	--
	Location #30	1	0	0	--	0	0%	0	0	--
	Location #31	1	9.7	9.7	--	1	100%	9.7	9.7	--
	Location #32	1	9.7	9.7	--	1	100%	9.7	9.7	--
	Location #33	1	0	0	--	0	0%	0	0	--
	Location #34	1	0	0	--	0	0%	0	0	--
	Location #35	1	0	0	--	0	0%	0	0	--
	Location #36	1	0	0	--	0	0%	0	0	--
	Location #37	1	0	0	--	0	0%	0	0	--
	Location #38	1	0	0	--	0	0%	0	0	--
	Location #39	1	0	0	--	0	0%	0	0	--
	Location #40	1	0	0	--	0	0%	0	0	--
	Location #41	1	0	0	--	0	0%	0	0	--
	Location #42	1	0	0	--	0	0%	0	0	--
	Location #43	1	0	0	--	0	0%	0	0	--
	Location #44	1	0	0	--	0	0%	0	0	--
	Location #45	1	0	0	--	0	0%	0	0	--
	Location #46	1	0	0	--	0	0%	0	0	--
	Location #47	1	0	0	--	0	0%	0	0	--
	Location #48	1	0	0	--	0	0%	5.6	5.6	--
	Location #49	1	0	0	--	0	0%	1.5	1.5	--
	Location #50	1	0	0	--	0	0%	0	0	--
	SL15-12	1	0	0	--	0	0%	8.8	8.8	--
	SL15-13	1	0	0	--	0	0%	0	0	--
	SL15-14	1	0	0	--	0	0%	0	0	--
	SL15-15	1	0	0	--	0	0%	19	19	--
	SL15-16	1	0	0	--	0	0%	0	0	--
	SL195-12	1	0	0	--	0	0%	10	10	--
	SL45-13	1	8.9	8.9	--	1	100%	54	54	--
	SL45-14	1	8.3	8.3	--	1	100%	34	34	--
	SL45-15	1*	0	8.7	5.7	2	67%	8.7	43	23
	SL45-16	1*	0	9.8	3.3	1	33%	0	29	16
	SL75-13	1	0	0	--	0	0%	0	0	--
	SL75-14	1	0	0	--	0	0%	34	34	--
	SL75-15	1	0	0	--	0	0%	64	64	--

Notes:

* Replicate analysis was performed on these samples; one sample was collected at each station and multiple analysis were performed. Each analysis was counted as a unique result in the statistical summary table.

[a]Near: within two miles from the center of the former mine area; Intermediate: between two and six miles from the center of the former mine area; Far: greater than or equal to six miles from the center of the former mine area. Refer to Figures 1-3 and 4-5 for the location used as the mine center.

[b]Includes all asbestos fibers counted regardless of length.

PCME = phase contrast microscopy - equivalent

LAA = Libby amphibole asbestos

Ms/g = million structures per gram

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

TABLE 5-21a: Data Summary of Ambient Air LAA Results by Season

Location Information			PCME LAA Concentration (s/cc)				
Season[a]	Number of Stations	Number of Samples	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections
Summer	8	40	0	0.0056	0.00034	7	18%
Fall	12	57	0	0.0015	0.000053	3	5%

Notes:

[a] Summer includes the months of July and August; Fall includes the months of September and October; Other includes ambient air samples from Souse Gulch wildfire

LAA = Libby amphibole asbestos

PCME = Phase Contrast Microscopy Equivalent

s/cc = structures per cubic centimeter

See Appendix E for all individual sample results.

Table 5-21b: Data Summary of Ambient Air LAA Results by Season and Station

Location Information			PCME LAA Concentration (s/cc)				
Season[a]	Number of Stations	Number of Samples	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections
Summer	A-4	5	0	0	0	0	0%
	A-5	5	0	0.0026	0.00085	3	60%
	A-6	5	0	0.00051	0.00010	1	20%
	A-8	5	0	0	0	0	0%
	A-9	5	0	0.0056	0.0012	2	40%
	A-10	5	0	0	0	0	0%
	A-11	5	0	0.0026	0.00052	1	20%
	A-12	5	0	0	0	0	0%
Fall	A-1	4	0	0	0	0	0%
	A-2	4	0	0	0	0	0%
	A-3	4	0	0	0	0	0%
	A-4	7	0	0	0	0	0%
	A-5	8	0	0.00051	0.000064	1	13%
	A-6	7	0	0	0	0	0%
	A-7	4	0	0	0	0	0%
	A-8	7	0	0	0	0	0%
	A-9	3	0	0.0015	0.00050	1	33%
	A-10	3	0	0	0	0	0%
	A-11	3	0	0.0010	0.00033	1	33%
	A-12	3	0	0	0	0	0%

Notes:

[a] Summer includes the months of July and August; Fall includes the months of September and October; Other includes ambient air samples from Souse Gulch wildfire

LAA = Libby amphibole asbestos

PCME = Phase Contrast Microscopy Equivalent

s/cc = structures per cubic centimeter

See Appendix E for all individual sample results.

Table 5-22a: Data Summary of ABS Air LAA Results by Distance from the Former Mine Area Center and ABS Scenario

Location Information				PCME LAA Concentration (s/cc)[b]					
ABS Scenario Event	ABS Scenario Description	Distance From Former Mine Area Center[a]	No. of Stations	No. of Samples	No. of Detections	Min of PCME Air (s/cc)	Max of PCME Air (s/cc)	Mean of PCME Air (s/cc)	Frequency of Detections
Recreational Hiking in the Forested Area	Hiking	Near	2	12	1	0	0.0060	0.00050	8%
		Intermediate	5	37	3	0	0.012	0.00065	8%
		Far	4	26	1	0	0.0060	0.00023	4%
Lower Rainy Creek Hiking and Antler Hunting[c]	1 Recreational visitor hiking, Rainy Creek	Intermediate	1	10	7	0	0.046	0.0093	70%
Recreational ATV Riding in the Forested Area	ATV Riding	Near	2	13	2	0	0.012	0.0014	15%
		Intermediate	5	36	2	0	0.012	0.00050	6%
		Far	4	27	1	0	0.0060	0.00022	4%
Recreational Camp Fire Building	Fire Building/Burning	Near	2	10	2	0	0.012	0.0024	20%
		Intermediate	6	40	12	0	0.012	0.0022	30%
		Far	4	26	2	0	0.0060	0.00046	8%
Residential Wood Harvester	2a Residential wood harvester driving	Intermediate	2	20	1	0	0.0027	0.00013	5%
	2b Residential wood harvester cutting	Intermediate	2	4	3	0	0.0030	0.0015	75%
	2B.1 Felling and limbing	Intermediate	2	20	7	0	0.0060	0.0015	35%
	2B.2 Cutting and stacking	Intermediate	2	16	3	0	0.0056	0.00070	19%
	2a Residential wood harvester driving	Far	1	10	0	0	0	0	0%
	2b Residential wood harvester cutting	Far	1	2	0	0	0	--	0%
	2B.1 Felling and limbing	Far	1	12	1	0	0.0030	0.00025	8%
	2B.2 Cutting and stacking	Far	1	8	0	0	0	0	0%
USFS Worker Activities	3a USFS worker trail maintenance	Intermediate	2	20	2	0	0.0030	0.00030	10%
	3b USFS worker thinning trees	Intermediate	2	20	1	0	0.0030	0.00015	5%
	3c USFS worker stand exam	Intermediate	2	20	2	0	0.0064	0.00051	10%
	3d Cutting firelines by hand	Intermediate	2	20	8	0	0.038	0.0069	40%
	3e Cutting firelines with heavy equipment	Intermediate	2	20	10	0	0.012	0.0025	50%
	3a USFS worker trail maintenance	Far	1	10	1	0	0.0030	0.00030	10%
	3b USFS worker thinning trees	Far	1	10	1	0	0.0030	0.00030	10%
	3c USFS worker stand exam	Far	1	10	0	0	0	0	0%
	3d Cutting firelines by hand	Far	1	10	6	0	0.013	0.0045	60%
	3e Cutting firelines with heavy equipment	Far	1	10	2	0	0.014	0.0016	20%
Recreational Fishing	Fishing	Intermediate	1	2	0	0	0	--	0%
Commercial Logging	Hand Felling	Near	1	3	3	0.00089	0.0050	0.0034	100%
	Skidding/hooking of timber	Near	1	5	5	0.0044	0.16	0.10	100%
	Simulated Milling - Stationary/10 ft.	Near	1	1	1	0.0047	0.0047	--	100%
	Simulated Milling - Stationary/30 ft.	Near	1	1	1	0.0090	0.0090	--	100%
	Mechanical processing	Near	1	1	1	0.0015	0.0015	--	100%
	Site restoration	Near	1	2	2	0.0097	0.055	--	100%
	CL Site Preparation	Intermediate	1	2	1	0	0.0079	--	50%
	CL Hand Felling	Intermediate	1	3	1	0	0.0065	0.0022	33%
	CL Skidding/Hooking	Intermediate	1	4	1	0	0.0026	0.00065	25%
	Cutting slabs pre CL Milling	Intermediate	1	8	0	0	0	0	0%
	CL Milling	Intermediate	1	8	0	0	0	0	0%
	CL Mechanical Processing	Intermediate	1	4	0	0	0	0	0%
Wood-burning Stove Ash	Woodstove Burning	Near	1	3	3	0.016	0.34	0.14	100%
		Near Flower Creek	1	3	3	0.0023	0.018	0.0074	100%
		Near Bear Creek	1	3	1	0	0.0087	0.0029	33%
Souse Gulch Campground Street Sweeper	Street Sweeper Personal/Bobcat	Intermediate	1	1	0	0	0	--	0%
	Street Sweeper Personal/Tennant	Intermediate	1	1	0	0	0	--	0%
	Street Sweeper Personal/Tymco Regenrat	Intermediate	1	3	1	0	0.0015	0.00051	33%
Souse Gulch and McGillivray Campground Wildfire	Wildfire monitoring, fire line	Intermediate	1	15	2	0	0.0031	0.00031	13%
	Wildfire monitoring, Helicopter cockpit	Intermediate	1	1	0	0	0	--	0%
Nature and Extent Fire Line	N&E 2014 Fire Line	Far	10	60	7	0	0.0023	0.00017	12%
Slash Pile Burn	SP - During Pile Construction	Near	1	2	2	0.051	0.19	--	100%
	SP - During Burn	Near	1	10	8	0	0.028	0.011	80%
	SP - During Mop-up, Dry	Near	1	2	2	0.076	0.17	--	100%
	SP - During Mop-up, Wet	Near	1	4	4	0.040	0.14	0.068	100%
Low-Intensity Prescribed Understory Burn	UB - During burn	Near	1	8	8	0.024	0.15	0.078	100%
	UB - During Mop-up, Dry	Near	1	4	4	0.15	1.5	0.75	100%
	UB - During Mop-up, Wet	Near	1	4	4	0.036	0.41	0.18	100%
Mine Site Trespasser	Rock hound	Near	1	18	18	0.0080	0.32	0.14	100%
	Off-Road ATV Riding	Near	1	18	15	0	0.066	0.022	83%
	On-Road ATV Riding - Route A	Near	1	6	2	0	0.012	0.0030	33%
	On-Road ATV Riding - Route B	Near	1	10	4	0	0.0060	0.0024	40%
	On-Road ATV Riding - Route C	Near	1	8	6	0	0.048	0.022	75%

Notes:

[a]Near: within two miles from the center of the former mine area; Intermediate: between two and six miles from the center of the former mine area; Far: greater than or equal to six miles from the center of the former mine area. Refer to Figures 1-3 and 4-5 for the location used as the mine center.

[b]PCME results have been adjusted for all samples prepared indirectly.

[c]Hiking along Lower Rainy Creek was categorized as intermediate since a majority of the scenario occurred greater than two miles from the mine center.

ABS activities were performed in an area west of ABS-10 (north of the mine, but within 2 miles); changed ABS Area from ABS-10 to ABS-10'. ABS area was changed from ABS-10 to ABS-06'; ABS-10 was moved closer to ABS-06 during the study.

LAA = Libby amphibole asbestos

ABS = activity-based sampling

PCME = Phase Contrast Microscopy Equivalent

s/cc = structures per cubic centimeter

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-22b: Data Summary of ABS Air LAA Results by Distance from the Former Mine Area Center and ABS Scenario and ABS Area

Location Information					PCME LAA Concentration (s/cc)[b]					
ABS Scenario Event	ABS Scenario Description	Distance From Former Mine Area Center[a]	ABS Area	No. of Stations	No. of Samples	No. of Detections	Min of PCME Air (s/cc)	Max of PCME Air (s/cc)	Mean of PCME Air (s/cc)	Frequency of Detections
Recreational Hiking in the Forested Area	Hiking	Near	ABS-10	1	6	0	0	0	0	0%
		Near	ABS-14	1	6	1	0	0.0060	0.0010	17%
		Intermediate	ABS-03	1	7	1	0	0.0060	0.00086	14%
		Intermediate	ABS-05	1	8	1	0	0.0060	0.00075	13%
		Intermediate	ABS-06	1	7	0	0	0	0	0%
		Intermediate	ABS-07	1	8	1	0	0.012	0.0015	13%
		Intermediate	ABS-13	1	7	0	0	0	0	0%
		Far	ABS-01	1	6	0	0	0	0	0%
		Far	ABS-02	1	8	0	0	0	0	0%
		Far	ABS-08	1	6	0	0	0	0	0%
		Far	ABS-11	1	6	1	0	0.0060	0.0010	17%
Lower Rainy Creek Hiking and Antler Hunting[c]	1 Recreational visitor hiking, Rainy Creek	Intermediate	RAINY	1	10	7	0	0.046	0.0093	70%
Recreational ATV Riding in the Forested Area	ATV Riding	Near	ABS-10'	1	6	2	0	0.012	0.0030	33%
		Near	ABS-14	1	7	0	0	0	0	0%
		Intermediate	ABS-03	1	7	1	0	0.012	0.0017	14%
		Intermediate	ABS-05	1	7	0	0	0	0	0%
		Intermediate	ABS-06	1	7	0	0	0	0	0%
		Intermediate	ABS-07	1	8	1	0	0.0060	0.00075	13%
		Intermediate	ABS-13	1	7	0	0	0	0	0%
		Far	ABS-01	1	7	0	0	0	0	0%
		Far	ABS-02	1	8	0	0	0	0	0%
		Far	ABS-08	1	6	0	0	0	0	0%
		Far	ABS-11	1	6	1	0	0.0060	0.0010	17%
Recreational Camp Fire Building	Fire Building/Burning	Near	ABS-10'	1	3	2	0	0.012	0.0080	67%
		Near	ABS-14	1	7	0	0	0	0	0%
		Intermediate	ABS-03	1	7	3	0	0.0060	0.0026	43%
		Intermediate	ABS-05	1	8	3	0	0.012	0.0030	38%
		Intermediate	ABS-06	1	7	2	0	0.012	0.0025	29%
		Intermediate	ABS-06'	1	3	1	0	0.0060	0.0020	33%
		Intermediate	ABS-07	1	8	1	0	0.0060	0.00075	13%
		Intermediate	ABS-13	1	7	2	0	0.012	0.0026	29%
		Far	ABS-01	1	7	1	0	0.0060	0.00085	14%
		Far	ABS-02	1	7	1	0	0.0060	0.00085	14%
		Far	ABS-08	1	6	0	0	0	0	0%
		Far	ABS-11	1	6	0	0	0	0	0%
Residential Wood Harvester	2a Residential wood harvester driving	Intermediate	ABS-06'	1	10	1	0	0.0027	0.00027	10%
	2a Residential wood harvester driving	Intermediate	ABS-07	1	10	0	0	0	0	0%
	2b Residential wood harvester cutting	Intermediate	ABS-06'	1	2	2	0.0019	0.0019	--	100%
	2b Residential wood harvester cutting	Intermediate	ABS-07	1	2	1	0	0.0030	--	50%
	2B.1 Felling and limbing	Intermediate	ABS-06'	1	10	0	0	0	0	0%
	2B.1 Felling and limbing	Intermediate	ABS-07	1	10	7	0	0.0060	0.0030	70%
	2B.2 Cutting and stacking	Intermediate	ABS-06'	1	8	0	0	0	0	0%
	2B.2 Cutting and stacking	Intermediate	ABS-07	1	8	3	0	0.0056	0.0014	38%
	2a Residential wood harvester driving	Far	ABS-02	1	10	0	0	0	0	0%
	2b Residential wood harvester cutting	Far	ABS-02	1	2	0	0	0	--	0%
	2B.1 Felling and limbing	Far	ABS-02	1	12	1	0	0.0030	0.00025	8%
	2B.2 Cutting and stacking	Far	ABS-02	1	8	0	0	0	0	0%
USFS Worker Activities	3a USFS worker trail maintenance	Intermediate	ABS-06'	1	10	0	0	0	0	0%
	3a USFS worker trail maintenance	Intermediate	ABS-07	1	10	2	0	0.0030	0.00060	20%
	3b USFS worker thinning trees	Intermediate	ABS-06'	1	10	0	0	0	0	0%
	3b USFS worker thinning trees	Intermediate	ABS-07	1	10	1	0	0.0030	0.00030	10%
	3c USFS worker stand exam	Intermediate	ABS-06'	1	10	0	0	0	0	0%
	3c USFS worker stand exam	Intermediate	ABS-07	1	10	2	0	0.006	0.0010	20%
	3d Cutting firelines by hand	Intermediate	ABS-06'	1	10	0	0	0	0	0%
	3d Cutting firelines by hand	Intermediate	ABS-07	1	10	8	0	0.038	0.014	80%
	3e Cutting firelines with heavy equipment	Intermediate	ABS-06'	1	10	4	0	0.0077	0.0021	40%
	3e Cutting firelines with heavy equipment	Intermediate	ABS-07	1	10	6	0	0.012	0.0029	60%
	3a USFS worker trail maintenance	Far	ABS-02	1	10	1	0	0.0030	0.00030	10%
	3b USFS worker thinning trees	Far	ABS-02	1	10	1	0	0.0030	0.00030	10%
	3c USFS worker stand exam	Far	ABS-02	1	10	0	0	0	0	0%
	3d Cutting firelines by hand	Far	ABS-02	1	10	6	0	0.013	0.0045	60%
	3e Cutting firelines with heavy equipment	Far	ABS-02	1	10	2	0	0.014	0.0016	20%
Recreational Fishing	Fishing	Intermediate	ISLAND	1	2	0	0	0	--	0%
Commercial Logging	Hand Felling	Near	Comm Log (2012)	1	3	3	0.00089	0.0050	0.0034	100%
	Skidding/hooking of timber	Near	Comm Log (2012)	1	5	5	0.0044	0.16	0.10	100%
	Simulated Milling - Stationary/10 ft.	Near	Comm Log (2012)	1	1	1	0.0047	0.0047	--	100%
	Simulated Milling - Stationary/30 ft.	Near	Comm Log (2012)	1	1	1	0.0090	0.0090	--	100%
	Mechanical processing	Near	Comm Log (2012)	1	1	1	0.0015	0.0015	--	100%
	Site restoration	Near	Comm Log (2012)	1	2	2	0.0097	0.055	--	100%
	CL Site Preparation	Intermediate	Comm Log (2014)	1	2	1	0	0.0079	--	50%
	CL Hand Felling	Intermediate	Comm Log (2014)	1	3	1	0	0.0065	0.0022	33%
	CL Skidding/Hooking	Intermediate	Comm Log (2014)	1	4	1	0	0.0026	0.00065	25%
	Cutting slabs pre CL Milling	Intermediate	Comm Log (2014)	1	8	0	0	0	0	0%
	CL Milling	Intermediate	Comm Log (2014)	1	8	0	0	0	0	0%
	CL Mechanical Processing	Intermediate	Comm Log (2014)	1	4	0	0	0	0	0%
Wood-burning Stove Ash	Woodstove Burning	Near	WA-Near	1	3	3	0.016	0.34	0.14	100%
		Near Flower Creek	WA-FC	1	3	3	0.0023	0.018	0.0074	100%
		Near Bear Creek	WA-BC	1	3	1	0	0.0087	0.0029	33%
Souse Gulch Campground Street Sweeper	Street Sweeper Personal/Bobcat	Intermediate	Souse Gulch Campground	1	1	0	0	0	--	0%
	Street Sweeper Personal/Tennant	Intermediate	Souse Gulch Campground	1	1	0	0	0	--	0%
	Street Sweeper Personal/Tymco Regenrat	Intermediate	Souse Gulch Campground	1	3	1	0	0.0015	0.00051	33%
Souse Gulch and McGillivray Campground Wildfire	Wildfire monitoring, fire line	Intermediate	Souse Gulch-ABS	1	15	2	0	0.0031	0.00031	13%
	Wildfire monitoring, Helicopter cockpit	Intermediate	Souse Gulch-ABS Helicopter	1	1	0	0	0	--	0%

Table 5-22b: Data Summary of ABS Air LAA Results by Distance from the Former Mine Area Center and ABS Scenario and ABS Area

Location Information					PCME LAA Concentration (s/cc)[b]					
ABS Scenario Event	ABS Scenario Description	Distance From Former Mine Area Center[a]	ABS Area	No. of Stations	No. of Samples	No. of Detections	Min of PCME Air (s/cc)	Max of PCME Air (s/cc)	Mean of PCME Air (s/cc)	Frequency of Detections
Nature and Extent Fire Line	N&E 2014 Fire Line	Far	NE Fire Line; Location #19	1	6	0	0	0	0	0%
		Far	NE Fire Line; Location #2	1	6	0	0	0	0	0%
		Far	NE Fire Line; Location #20	1	6	0	0	0	0	0%
		Far	NE Fire Line; Location #22	1	6	0	0	0	0	0%
		Far	NE Fire Line; Location #25	1	6	2	0	0.0020	0.00049	33%
		Far	NE Fire Line; Location #32	1	6	1	0	0.00098	0.00016	17%
		Far	NE Fire Line; Location #35	1	6	1	0	0.0019	0.00032	17%
		Far	NE Fire Line; Location #40	1	6	1	0	0.0012	0.00020	17%
		Far	NE Fire Line; Location #46	1	6	2	0	0.0023	0.00057	33%
		Far	NE Fire Line; Location #6	1	6	0	0	0	0	0%
Slash Pile Burn	SP - During Pile Construction	Near	Slash Pile Burn	1	2	2	0.051	0.19	--	100%
	SP - During Burn	Near	Slash Pile Burn	1	10	8	0	0.028	0.011	80%
	SP - During Mop-up, Dry	Near	Slash Pile Burn	1	2	2	0.076	0.17	--	100%
	SP - During Mop-up, Wet	Near	Slash Pile Burn	1	4	4	0.040	0.14	0.068	100%
Low-Intensity Prescribed Understory Burn	UB - During burn	Near	Understory Burn	1	8	8	0.024	0.15	0.078	100%
	UB - During Mop-up, Dry	Near	Understory Burn	1	4	4	0.15	1.5	0.75	100%
	UB - During Mop-up, Wet	Near	Understory Burn	1	4	4	0.036	0.41	0.18	100%
Mine Site Trespasser	Rock hound	Near	TS-Rock Hound	1	18	18	0.0080	0.32	0.14	100%
	Off-Road ATV Riding	Near	TS-Mine-Off-Road	1	18	15	0	0.066	0.022	83%
	On-Road ATV Riding - Route A	Near	TS-A-On-Road	1	6	2	0	0.012	0.0030	33%
	On-Road ATV Riding - Route B	Near	TS-B-On-Road	1	10	4	0	0.0060	0.0024	40%
	On-Road ATV Riding - Route C	Near	TS-C-On-Road	1	8	6	0	0.048	0.022	75%

Notes:

[a]Near: within two miles from the center of the former mine area; Intermediate: between two and six miles from the center of the former mine area; Far: greater than or equal to six miles from the center of the former mine area. Refer to Figures 1-3 and 4-5 for the location used as the mine center.

[b]PCME results have been adjusted for all samples prepared indirectly.

[c]Hiking along Lower Rainy Creek was categorized as intermediate since a majority of the scenario occurred greater than two miles from the mine center.

ABS activities were performed in an area west of ABS-10 (north of the mine, but within 2 miles); changed ABS Area from ABS-10 to ABS-10'. ABS area was changed from ABS-10 to ABS-06'; ABS-10 was moved closer to ABS-06 during the study.

LAA = Libby amphibole asbestos

ABS = activity-based sampling

PCME = Phase Contrast Microscopy Equivalent

s/cc = structures per cubic centimeter

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-23: Data Summary of Ash Material LAA Results by Distance from the Former Mine Area and Station

Location Information				PCME LAA Concentration (Ms/g)					Total LAA Concentration (Ms/g)[c]		
Distance From Former Mine Area[a]	Station ID	Number of Samples	Number of Analyses[b]	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections	Minimum	Maximum	Mean
Near	SP15-Ash1	1	3	599	698	632	3	100%	2594	3392	3026
	SP15-Ash2	1	3	69	499	328	3	100%	1729	2241	1992
	SP15-Ash3	1	3	100	698	487	3	100%	2158	3292	2648
	B15-Ash1	1	3	67	342	190	3	100%	724	1026	863
	B15-Ash2	1	3	54	418	213	3	100%	362	1742	943
	B15-Ash3	1	3	87	179	135	3	100%	453	725	616
	WA-Near	3	9	0	49	15	6	67%	0	109	35
Intermediate	Souse Gulch1	1	3	0	34	15	2	67%	34	75	51
	Souse Gulch2	1	3	23	34	26	3	100%	57	90	75
	Souse Gulch3	1	3	22	23	22	3	100%	43	79	60
Near Flower Creek[d]	WA-FC	3	9	0	0	0	0	0%	0	6.1	0.67
Near Bear Creek[d]	WA-BC	3	9	0	10	1.8	2	22%	0	10	1.8

Notes:

[a]Near: within two miles from the center of the former mine area; Intermediate: between two and six miles from the center of the former mine area; Far: greater than or equal to six miles from the center of the former mine area. Refer to Figures 1-3 and 4-5 for the location used as the mine center.

[b]Each sample was split and analyzed in triplicate.

[c]Includes all asbestos fibers counted regardless of length.

[d]The Flower Creek and Bear Creek locations are not within the OU3 Study Area, but are included in the RI for the purposes of comparison to the location near the Former Mine Area.

NA = PCME results were not available from the data source

PCME = phase contrast microscopy - equivalent

LAA = Libby amphibole asbestos

Ms/g = million structures per gram

See Appendix E for all individual sample results.

Table 5-24: Data Summary of Post-Burn Forest Soil LAA Results

Panel A: Fine Fraction (PLM-VE)

			Number of Samples by Bin						
Event	Station ID	Number of Samples	Bin A (ND)	Bin B1 (>ND <0.2%)	Bin B2 (≥0.2% <1%)	Bin C (≥1%)	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Slash Pile Burn 2015	SP15-Post-S1	1		1			1	100%	0.1
	SP15-Post-S2	1		1			1	100%	0.1
	SP15-Post-S3	1		1			1	100%	0.1
Low-intensity Understory Burn 2015	B15-Post-S1	1		1			1	100%	0.1
	B15-Post-S2	1		1			1	100%	0.1
	B15-Post-S3	1		1			1	100%	0.1

Panel B: Coarse Fraction (PLM-Grav)

			Number of Samples					
Event	Number of Stations	Number of Samples	Non-Detect	Trace	>Trace	Number of Detections	Frequency of Detections	Mean (% Mass)[a]
Slash Pile Burn 2015	SP15-Post-S1	1		1		1	100%	0.1
	SP15-Post-S2	1		1		1	100%	0.1
	SP15-Post-S3	1		1		1	100%	0.1

Notes:

[a]The mean value for both fractions was derived by using the reference semi-quantitative values (surrogate values) provided in Technical Memo 8 (USEPA, 2008f).

Only post-burn soils collected during both the slash pile and understory burn sampling are summarized in this table since they do not represent native forest soil conditions. Pre-burn soil data is included in Tables 5-12a,b to represent native forest soil conditions.

Units are expressed as percent (%) mass for both PLM-VE and PLM-Grav.

LAA = Libby Amphibole Asbestos

ND = Non-Detect

PLM-VE = polarized light microscopy, visual area estimation; fine fraction of soil sample

PLM-Grav = polarized light microscopy, gravimetric; coarse fraction of soil sample

See Appendix E for all individual sample results.

Table 5-25a: Data Summary of Perimeter Air LAA Results by Sampling Event and ABS Scenario

Location Information				PCME LAA Concentration (s/cc)[a]				
Sampling Event	ABS Scenario Description	Number of Stations	Number of Samples	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections
2015 Slash Pile Burn	Pre-burn; 50 feet	4	4	0	0	0	0	0%
	During burn; 50 feet	4	8	0	0.071	0.011	3	38%
	During burn; 100 feet	4	8	0	0.026	0.0038	2	25%
	During burn; 200 feet	4	8	0	0.0038	0.00047	1	13%
	Post-burn; 50 feet	4	16	0	0.0038	0.00024	1	6%
2015 Perscribed Understory Burn	Pre-burn; 50 feet	4	4	0	0	0	0	0%
	During burn; 50 feet	4	6	0	0.0020	0.0012	4	67%
	During burn; 100 feet	4	4	0	0.0023	0.00058	1	25%
	During burn; 200 feet	3	3	0	0.0016	0.00052	1	33%
	Post-burn; 50 feet	4	16	0	0.0019	0.00012	1	6%
2012 Woodstove Ash Investigation	Downwind, During burn	3	3	0	0	0	0	0%
	Downwind, During ABS	3	3	0	0	0	0	0%
2013 Souse Gulch Fire	Wildfire Mobile Monitoring (F1, M1)	2	2	0	0	0	0	0%

Notes:

[a]Analysis was performed under low magnification; only PCME structures were recorded. PCME results have been adjusted for all samples prepared indirectly.

LAA = Libby amphibole asbestos

ABS = activity-based sampling

PCME = Phase Contrast Microscopy Equivalent

s/cc = structures per cubic centimeter

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

Table 5-25b: Data Summary of Perimeter Air LAA Results by ABS Scenario and Station

Location Information				PCME LAA Concentration (s/cc)[a]				
Sampling Event	ABS Scenario Description	ABS Station	Number of Samples	Minimum	Maximum	Mean	Number of Detections	Frequency of Detections
2015 Slash Pile Burn	Pre-burn; 50 feet	SB-50-E	1	0	0	--	0	0%
		SB-50-N	1	0	0	--	0	0%
		SB-50-S	1	0	0	--	0	0%
		SB-50-W	1	0	0	--	0	0%
	During burn; 50 feet	SB-50-E	2	0	0	--	0	0%
		SB-50-N	2	0	0.0077	--	1	50%
		SB-50-S	2	0	0.012	--	1	50%
		SB-50-W	2	0	0.071	--	1	50%
	During burn; 100 feet	SB-100-E	2	0	0.0039	--	1	50%
		SB-100-N	2	0	0	--	0	0%
		SB-100-S	2	0	0	--	0	0%
		SB-100-W	2	0	0.026	--	1	50%
	During burn; 200 feet	SB-200-E	2	0	0	--	0	0%
		SB-200-N	2	0	0	--	0	0%
		SB-200-S	2	0	0	--	0	0%
		SB-200-W	2	0	0.0038	--	1	50%
	Post-burn; 50 feet	SB-50-E	4	0	0	0	0	0%
		SB-50-N	4	0	0.0038	0.0010	1	25%
		SB-50-S	4	0	0	0	0	0%
		SB-50-W	4	0	0	0	0	0%
2015 Perscribed Understory Burn	Pre-burn; 50 feet	UB-50-W	1	0	0	--	0	0%
		UB-50-N	1	0	0	--	0	0%
		UB-50-E	1	0	0	--	0	0%
		UB-50-S	1	0	0	--	0	0%
	During burn; 50 feet	UB-50-W	1	0.0020	0.0020	--	1	100%
		UB-50-N	2	0.0016	0.0019	--	2	100%
		UB-50-E	2	0	0.0019	--	1	50%
		UB-50-S	1	0	0	--	0	0%
	During burn; 100 feet	UB-100-S	1	0	0	--	0	0%
		UB-100-W	1	0	0	--	0	0%
		UB-100-N	1	0.0023	0.0023	--	1	100%
		UB-100-E	1	0	0	--	0	0%
	During burn; 200 feet	UB-200-W	1	0	0	--	0	0%
		UB-200-N	1	0.0016	0.0016	--	1	100%
		UB-200-E	1	0	0	--	0	0%
	Post-burn; 50 feet	UB-50-W	4	0	0	0	0	0%
		UB-50-N	4	0	0.0019	0.00048	1	25%
		UB-50-E	4	0	0	0	0	0%
		UB-50-S	4	0	0	0	0	0%
2012 Woodstove Ash Investigation	Downwind, During burn	WS-PERIM	3	0	0	0	0	0%
	Downwind, During ABS	WS-PERIM	3	0	0	0	0	0%
2013 Souse Gulch Wildfire	Downwind, During burn	F1 - Souse Gulch	3	0	0	0	0	0%
		M1 - Souse Gulch	3	0	0	0	0	0%

Notes:

[a]Analysis was performed under low magnification; only PCME structures were recorded. PCME results have been adjusted for all samples prepared indirectly.

LAA = Libby amphibole asbestos

ABS = activity-based sampling

PCME = Phase Contrast Microscopy Equivalent

s/cc = structures per cubic centimeter

-- = no mean calculated when less than 3 samples

See Appendix E for all individual sample results.

PAULA'S NOTES

OK with change, verify results

Table 5-26: Data Summary of Fish and Deer Tissue LAA Results

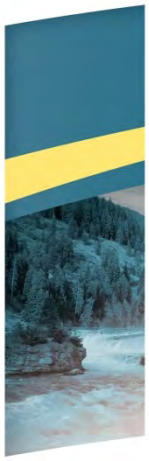
Index ID	Description	Length	Weight	Number of Structures	LAA Tissue Concentraiton > 10 s/g ww
FISH TISSUE					
TS-00001	Rainbow Trout	10	140	3	3.5.E+04
TS-00002	Cutbow Trout	11	280	0	0.0.E+00
TS-00003	Cutthroat Trout	15	540	2	2.3.E+04
TS-00004	Cutbow Trout	15	560	3	3.5.E+04
TS-00005	Rainbow Trout	14	550	4	1.9.E+05
TS-00006	Cutbow Trout	13	450	2	1.2.E+04
TS-00007	Cutbow Trout	15	595	0	0.0.E+00
	Mean	13	445		4.2E+04
DEER TISSUE					
TS-00010	Heart	N/A	N/A	0	0.0.E+00
TS-00012	Kidney, Sample #1	N/A	N/A	0	0.0.E+00
TS-00013	Kidney, Sample #2	N/A	N/A	0	0.0.E+00
TS-00015	Inside Shoulder Muscle	N/A	N/A	0	0.0.E+00
TS-00018	Diaphragm, Sample #2	N/A	N/A	0	0.0.E+00
TS-00019	Diaphragm, Sample #1	N/A	N/A	0	0.0.E+00
TS-00021	Backstrap Muscle, Sample #1	N/A	N/A	0	0.0.E+00
TS-00022	Backstrap Muscle, Sample #2	N/A	N/A	0	0.0.E+00
TS-00024	Lung, Sample #1	N/A	N/A	0	0.0.E+00
TS-00025	Lung, Sample #2	N/A	N/A	0	0.0.E+00
TS-00027	Liver, Sample #1	N/A	N/A	0	0.0.E+00
TS-00028	Liver, Sample #2	N/A	N/A	0	0.0.E+00
	Mean	N/A	N/A		0.0E+00

Notes

NA - not available

s/g ww = structures per gram of tissue (wet weight)

LAA>10 = Libby amphibole asbestos fibers longer than 10 microns



Figures

Legend

- Topographic Contour (Contour Interval 40 feet)
- Kootenai Development Company Property Boundary
- OU3 Former Libby Vermiculite Mine and Kootenai River (Study Area)

N
W E
S

0 2,250 4,500 9,000 Feet

0 0.5 1 2 Miles

Coordinate System: NAD 1983 UTM Zone 11N

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Basemap Reference:

USGS National Map 2014: USGS Topo is a topographic tile cache base map that combines the most current data (Boundaries, Names, Transportation, Elevation, Hydrography, Land Cover, and other themes) that make up The National Map. http://viewer.nationalmap.gov

FORMER MINE AREA

LIBBY DAM

LIBBY

LIBBY
Montana
Missoula
Billings
Boise

* Copyright:© 2014 Esr

* USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic N
National Land Cover Database, National Structures Dataset, and National Transportation Dataset

File Path: \\vebot1-svr2\GIS_Projects\Libby_Mine_MXD's\R1_Sec11_3\Libby_Mine_USGS_Topo_Fig_1_1_11x17_Landscape_01_05_16.mxd

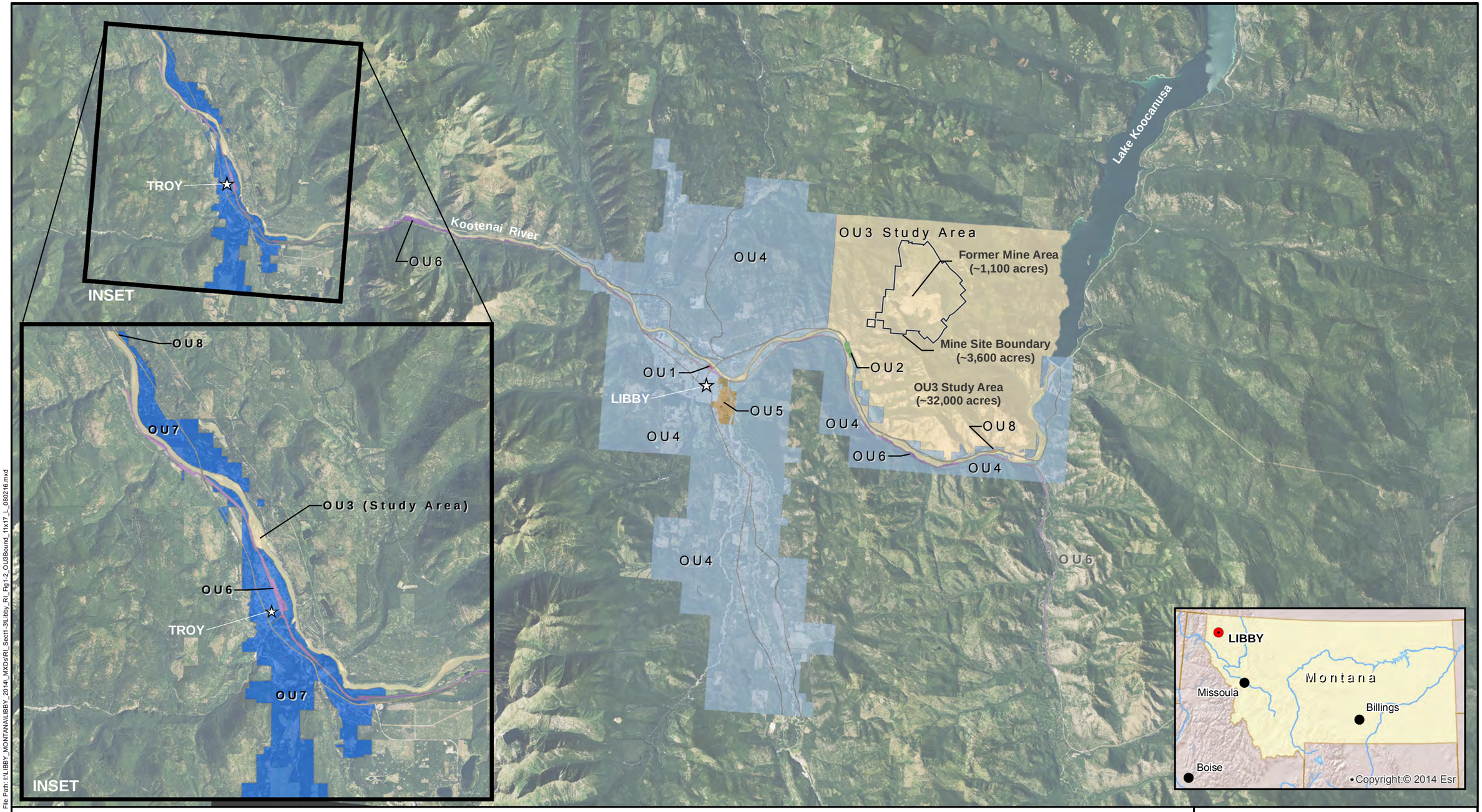
FIGURE 1-1

OU3 Study Area Site Location and Study Area Boundary

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co.-Conn.

MWH

Date Revised: 10/28/2016



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect1-3\Libby_RI_Fig1-2_OU3Bound_11x17_L_080216.mxd

Legend

- Property Boundary

Operable Unit

- OU1, Former Export Plant
- OU2, Former Screening Plant
- OU3, Mine and Kootenai River (Study Area)
- OU4, Libby
- OU5, Former Stimson Lumber
- OU6, BNSF Rail Corridor
- OU7, Troy
- OU8, State Highway Corridors
- Town

Notes:

EPA established the preliminary study area boundary for the purposes of planning and developing the scope of the RI/FS for OU3. This study boundary may be revised as data are obtained during the RI for OU3 on the nature and extent of environmental contamination associated with releases that may have occurred from the mine site and any area (including any structure, soil, air, water, sediment or receptor) impacted by the release and subsequent migration of hazardous substances and/or pollutants or contaminants from such property, including, but not limited to, the mine property, the Kootenai River and sediments therein, Rainy Creek, Rainy Creek Road and areas in which tree bark is contaminated with such hazardous substances and/or pollutants and contaminates. The final boundary of OU3 will be defined by the final EPA-approved RI/FS.

N
W E
S

0 1.5 3 6 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

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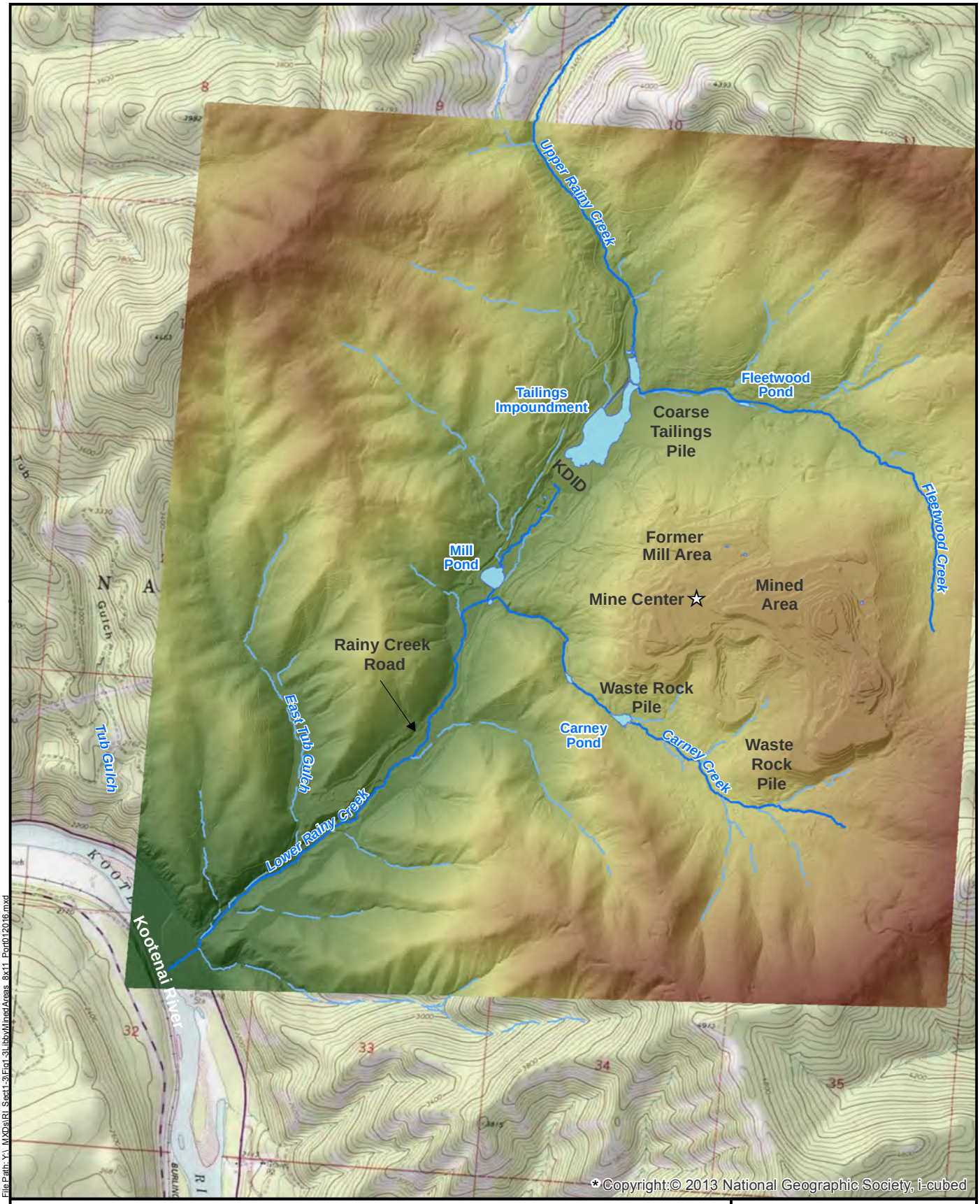
FIGURE 1-2

Operable Unit Boundaries

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 8/2/2016

MWH



File Path: Y:\ MXDs\RI_Sec1-3\Fig1-3Libby\MinedAreas_8x11_Port012016.mxd

Legend

- Pond
- Perennial Stream or River
- Intermittent Stream
- ☆ Location used as Mine Center
- KDID Kootenai Development Impoundment Dam
- **Note:** Mined Area consists of bedrock and mined benches

Light Detection and Ranging (LiDAR) Elevations
High : 4970.37
Low : 2070.78

N
W E
S

0 1,500 3,000 Feet

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

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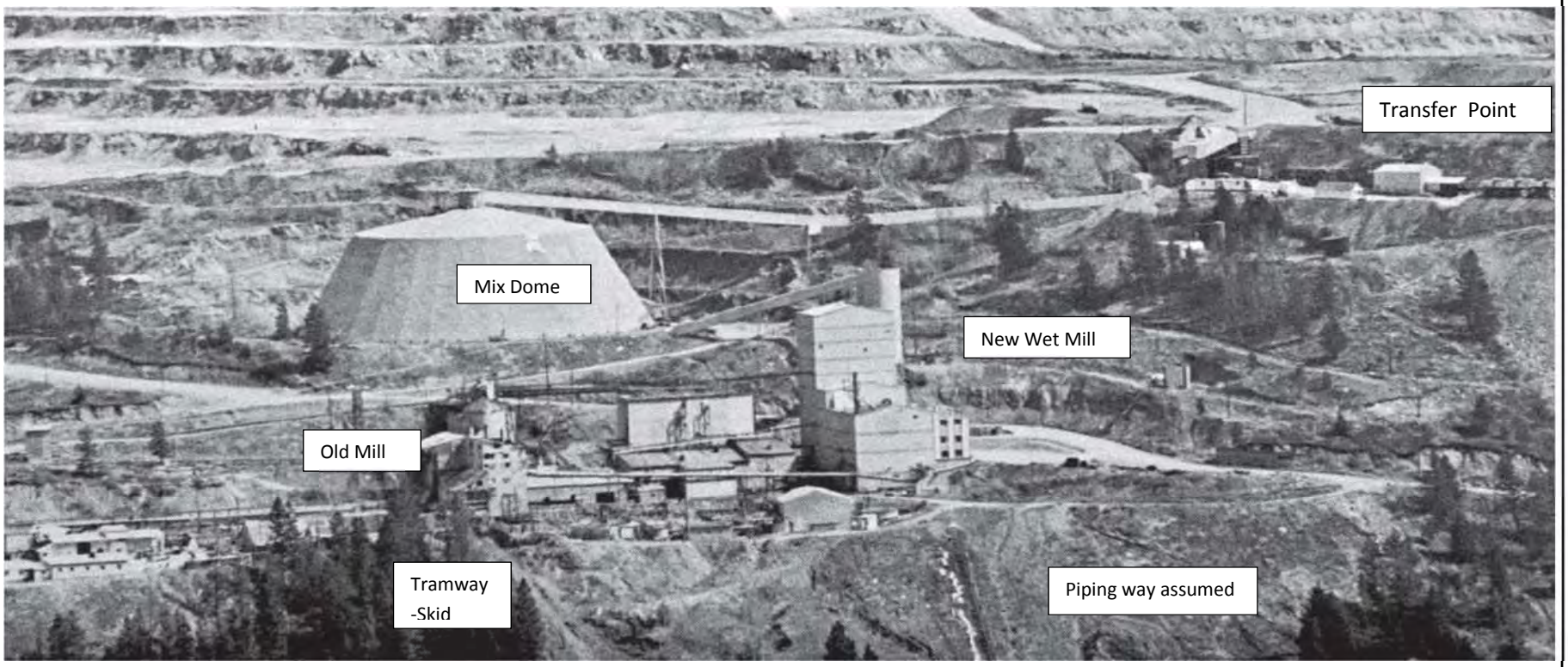
FIGURE 1-3

Mined Area Features

Libby Asbestos Superfund Site,
OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 9/1/2016

MWH





Historical Photo of Milling Area

Source: Photo credit 1981, Weekes and New Mill process detail credit Zucker, 2006

Aerial Photo of Mine Area

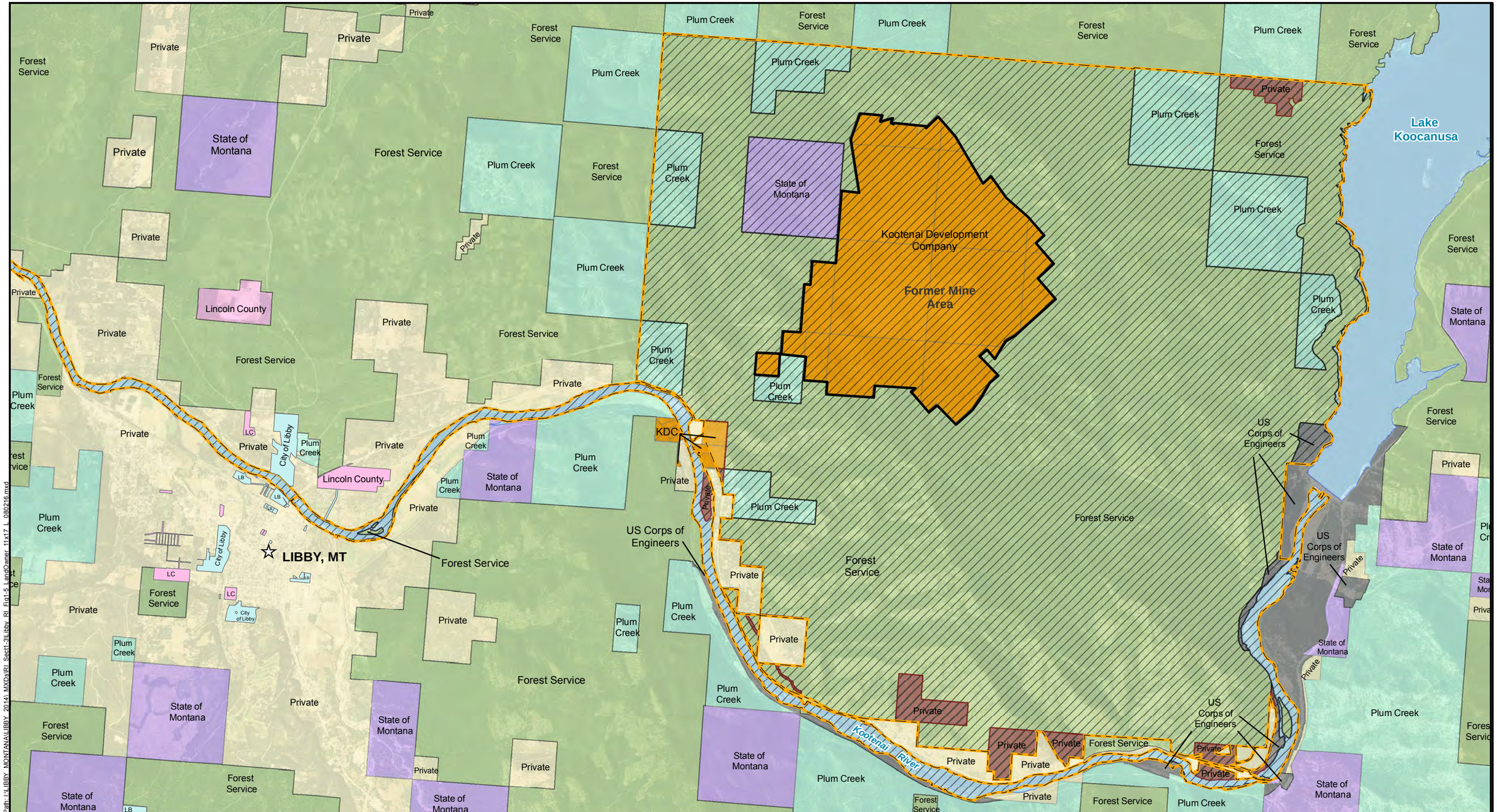
Source: http://www.ens-newswire.com/ens/jun2009/2009-06-17-093.html

FIGURE 1-4

Historical Photographs of Former Mine Area and On-Site Mill Area

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co.-Conn

MWH



Legend

- Property Boundary
- OU3 Study Area Boundary
- Areas Calculated in GIS
- Town

Land Ownership

- US Corp of Engineers
- Forest Service
- State of Montana
- Lincoln County (LC)
- City of Libby (LB)
- Kootenai Development Company (KDC) (Private)
- Plum Creek Timber Company (Private)
- Private - Other (Outside of the OU3 Study Area)
- Private - Other (Inside of the OU3 Study Area) If residential development occurs, these properties will be evaluated as part of OU4 (CDM Smith, 2013a)
- Open Water

Ownership boundaries acquired from the USDA Forest Service and Montana State Library
http://www.fs.usda.gov/main/kootenai/landmanagement/planning
ftp.geoinfo.msl.mt.gov/Data/Spatial/MSDI/Cadastral/Parcels

Approximate Ownership Acreage (AC) Within the OU3 Study Area

Acreages estimated by summing GIS polygon areas of the same name within the OU3 hatched area.

Forest Service	21,870 AC
Kootenai Development Company	3,625 AC
Plum Creek Property	2,630 AC
Private - Other	695 AC
State of Montana	641 AC
US Corp of Engineers	174 AC

N W E S

0 0.5 1 2 Miles

Base Image: National Agriculture Imager Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 1-5

Land Ownership

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 8/2/2016

MWH

File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect1-3\Libby_RI_Fig1-5_LandOwner_11x17_L_080216.mxd

Banfield Mountain | Ural Creek

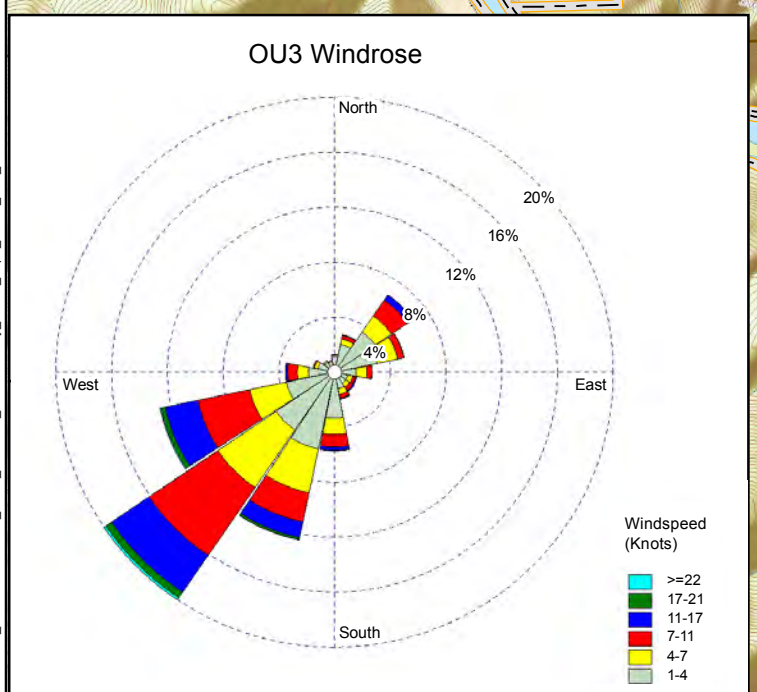
BLUE MOUNTAIN

VERMICULITE MOUNTAIN

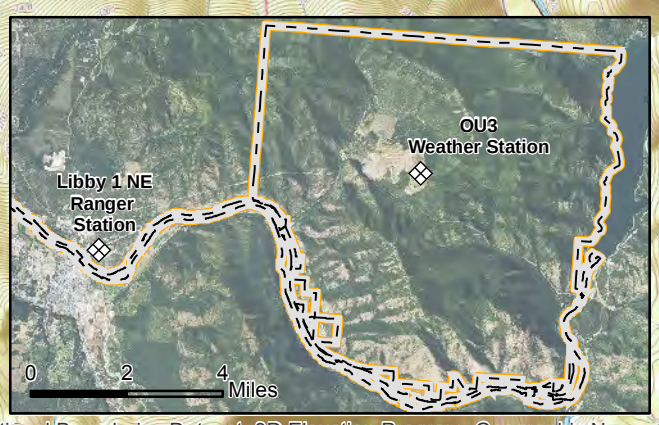
OU3 WEATHER STATION

Vermiculite Mountain | Alexander Mountain

Swede Mountain | Tony Peak



(Produced December 2013)



* USGS The National Map: National Boundaries Dataset, 3D Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGER/Line

Legend

- OU3 Weather Station
- Ground Surface Contour, Contour Interval 40 feet
- OU3 Study Area Boundary
- USGS Quadrangle Boundary

N W E S

0 0.5 1 Miles

Reference:
USGS National Map 2014: USGS Topo is a topographic tile cache base map that combines the most current data (Boundaries, Names, Transportation, Elevation, Hydrography, Land Cover, and other themes) that make up The National Map. http://viewer.nationalmap.gov

Coordinate System: NAD 1983 UTM Zone 11N

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FIGURE 2-1

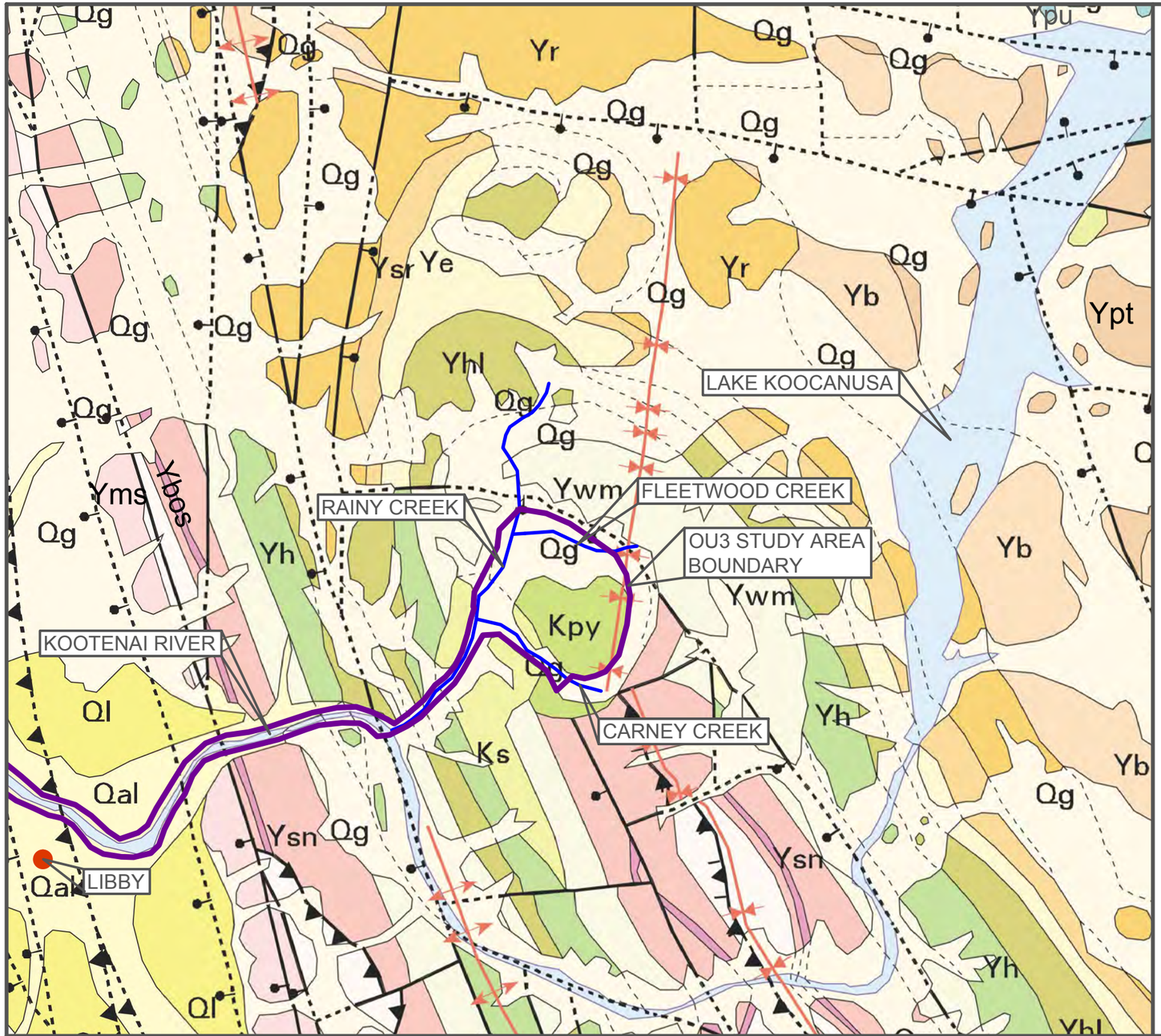
OU3 Study Area Boundary, Topographic Contour Map, and Windrose

Libby Asbestos Superfund Site,
OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/13/2016

MWH

File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect1-3\Libby_USGS_Topo_11x17_Port_01042016.mxd



Legend

Qal - Alluvial deposits (Holocene)

Qg- Glacial and fluvioglacial deposits (Pleistocene)

Ql - Lake sediments (Pleistocene)

Ks - Syenite (Cretaceous)

Kpy - Pyroxenite (Cretaceous)

Libby Formation (Middle Proterozoic)

Ybos - Siltite facies

Mount Shields Formation (Middle Proterozoic)

Yms - Mount Shields Formation, undivided

Ysn - Red and green facies

Wallace Formation (Middle Proterozoic)

Ywm - Middle member

Yh - Main body of the Helena Formation (Middle Proterozoic)

Yhl - Lower member

Ye - Empire Formation (Middle Proterozoic)

Ysr - St. Regis Formation (Middle Proterozoic)

Yr - Revett Formation (Middle Proterozoic)

Yb - Burke Formation (Middle Proterozoic)

Prichard Formation (Middle Proterozoic)

Ypt - Transition member

Ypu - Upper member

Contact; dotted where concealed

Fault, unknown offset; dotted where concealed.

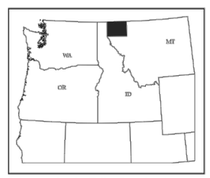
High-angle fault, known offset; dotted where concealed. Ball and bar on downthrown side.

Right-lateral strike-slip fault with vertical motion; dotted where concealed. Ball and bar on downthrown side

Backslid thrust fault. Thrust fault with later normal movement. Dotted where concealed. Sawteeth on upper plate; tics point in direction of backsliding.

Anticline

Syncline



Index map showing Kalispell quadrangle

Excerpt of USGS, Miscellaneous Investigations Series map I-2267:

Geologic and Structure Maps of the Kalispell 1 x 2 Quadrangle, Montana and Alberta and British Columbia

By J. E. Harrison, E. R. Cressman, and J. W. Whipple Map
Published in 1992

N
W E
S

0 5 10 15

Miles

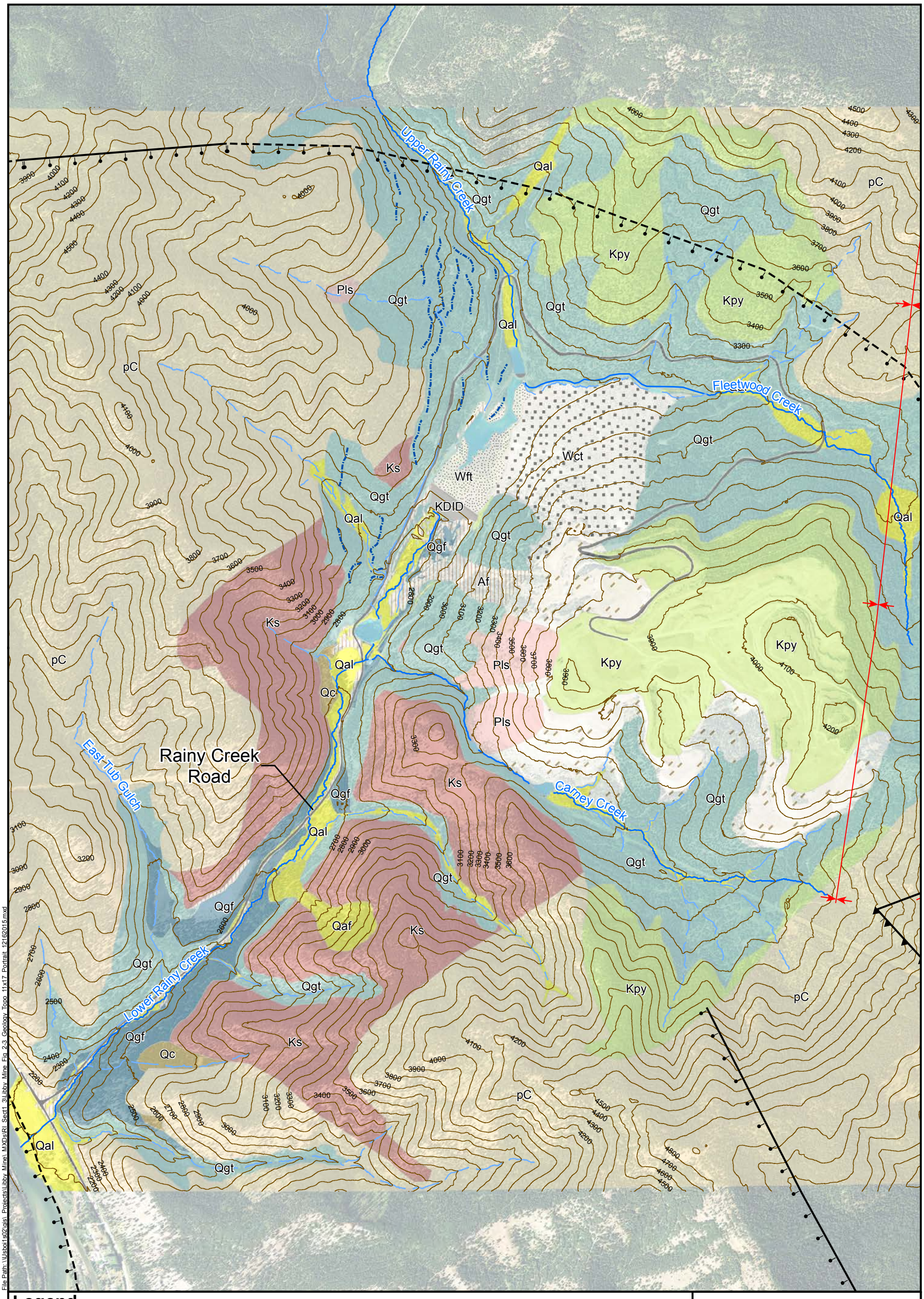
FIGURE 2-2

USGS Regional Geology Map

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 7/17/2015

MWH



Legend

- Topographic Contour (Contour Interval 100 feet)

Structural Features (USGS, 1992)

- High-Angle Fault, Known Offset; Dashed Where Concealed
- Backslid Thrust Fault; Dashed Where Concealed
- Fault, Unknown Offset; Dashed Where Concelaed
- Syncline

- Fill (Af)
- Embankment Fill
- Waste Rock Material
- Coarse Tailing (Wct)
- Fine Tailing (Wft)
- Potential Slump (Pls)
- Colluvium (Qc)

- Alluvial Deposits (Qal)
- Alluvial Fan (Qaf)
- Glacial Till (Qgt)
- Glacial Outwash (Qgf)
- Pyroxenite (Kpy)
- Syenite (Ks)
- Belt Supergroup Series (pC)

N W E S

0 0.125 0.25 0.5 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 UTM Zone 11N

FIGURE 2-3

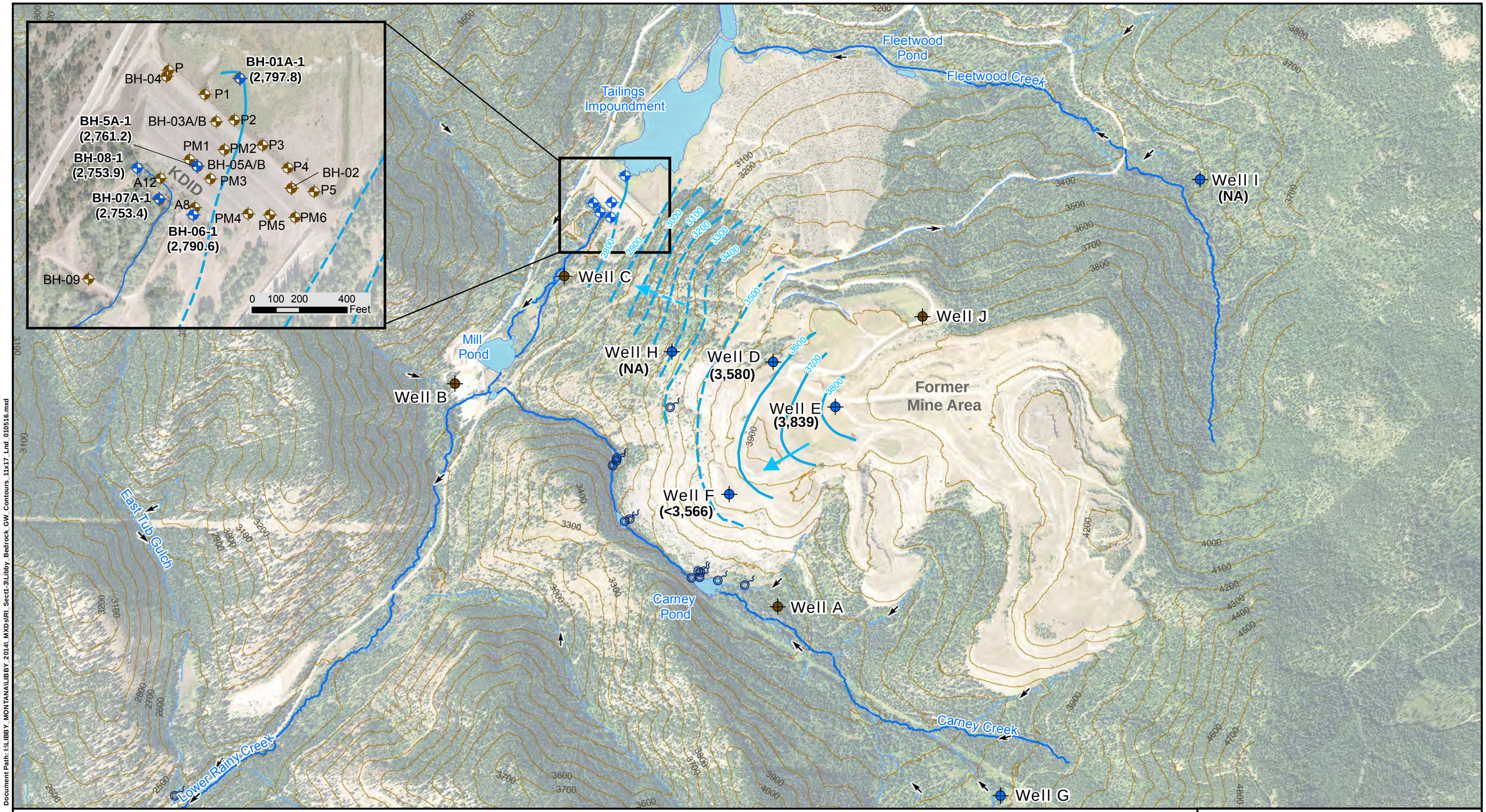
Former Mine Area Geology

Libby Asbestos Superfund Site,
OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/13/2016

MWH

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Document Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect1-3\Libby_Bedrock_GW_Contours_11x17_Lnd_010516.mxd

Legend

- Bedrock Groundwater Well
- Shallow Groundwater Well (Alluvial, Glacial)
- Bedrock Piezometer
- Shallow Piezometer (Alluvium, Glacial Till, Fill)
- Observed Seep (October, 2014)
- Topographic Contour (Contour Interval 100 feet)
- Perennial Stream or River
- Intermittent Stream
- Bedrock Potentiometric Contour (Contour Interval 100 feet)
- Bedrock Potentiometric Contour (Inferred, Contour Interval 100 feet)
- Pond
- Direction of Groundwater Flow (Dashed where Inferred)
- BH-01A-1 Well/Piezometer Name
- (2,797.8) Bedrock Groundwater Elevation
- KDID Kootenai Development Impoundment Dam
- NA Not Available

Notes:
1. Wells BH-01A,-05A,-06,-07A,-08 contain both bedrock & shallow piezometers.
2. Groundwater data from November 2014 in feet above mean sea level.
3. Bedrock groundwater elevations are shown only where wells/piezometers are screened in bedrock and data are available.

N
W E
S

0 0.125 0.25 0.5
Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

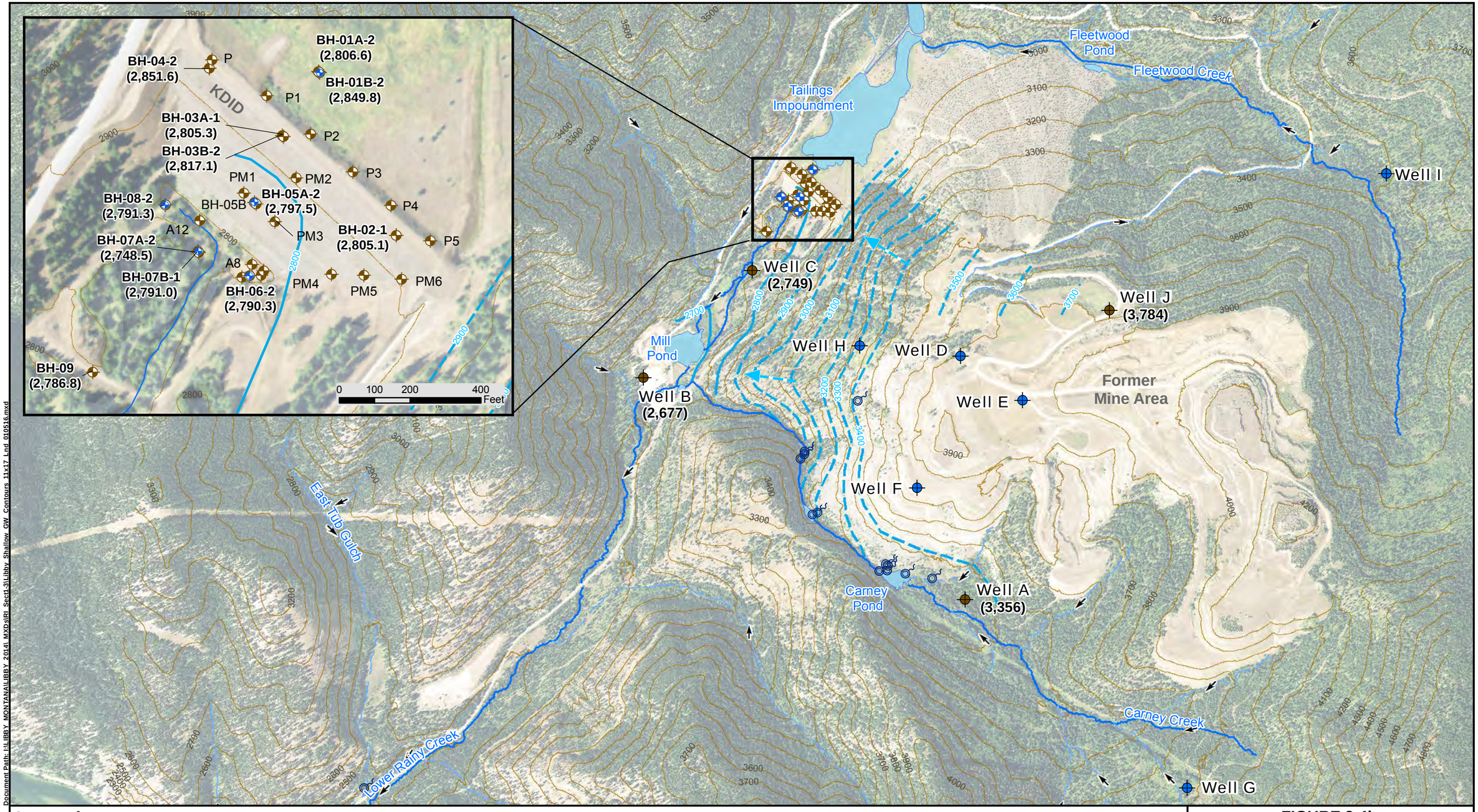
FIGURE 2-4a

Bedrock Groundwater Potentiometric Contour Map, Well, & Piezometer Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/5/2016

MWH



Document Path: I:\LIBBY MONTANA\LIBBY 2014\ MXDs\RI Sect-3\Libby_Shallow_GW_Contours_11x17_Lnd_010516.mxd

Legend

- Bedrock Groundwater Well
- Shallow Groundwater Well (Alluvial, Glacial)
- Bedrock Piezometer
- Shallow Piezometer (Alluvium, Embankment Fill, Glacial Till, Fill)
- Observed Seep (October, 2014)
- Topographic Contour (Contour Interval 100 feet)
- Perennial Stream or River
- Intermittent Stream
- Bedrock Potentiometric Contour (Contour Interval 100 feet)
- Bedrock Potentiometric Contour (Inferred, Contour Interval 100 feet)
- Pond
- Direction of Groundwater Flow (Dashed where Inferred)
- BH-01A-2 (2,806.6) Well/Piezometer Name Shallow Groundwater Elevation
- KDID Kootenai Development Impoundment Dam

Notes:
1. Wells BH-01A,-05A,-06,-07A,-08 contain both bedrock & shallow piezometers.
2. Groundwater data from November 2014 in feet above mean sea level.
3. Shallow groundwater elevations are shown only where wells/piezometers are screened in alluvium, glacial till or fill (tailings, waste rock, or embankment fill) and data are available.

N W E S

0 0.125 0.25 0.5 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

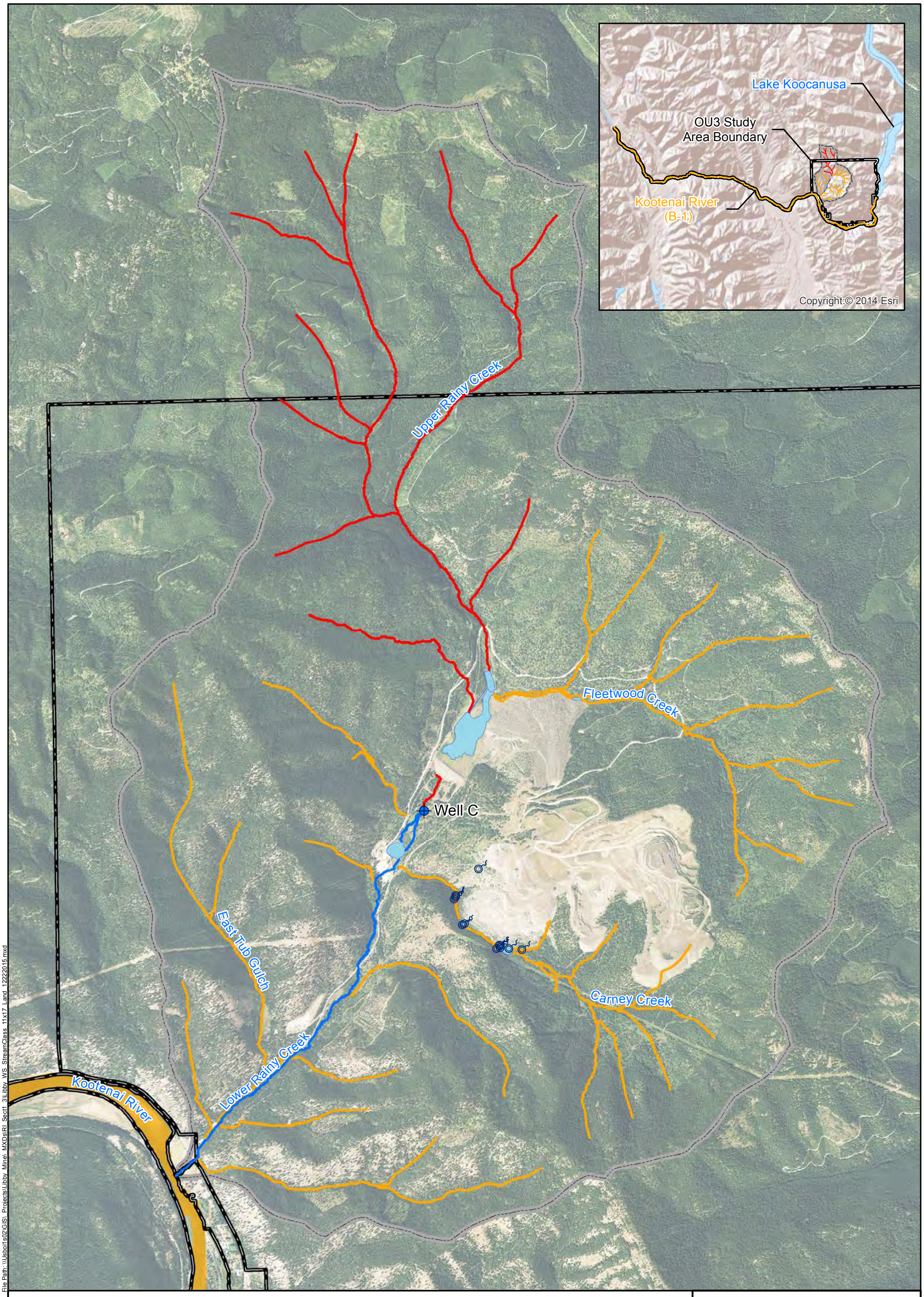
FIGURE 2-4b

Shallow Groundwater Potentiometric Contour Map, Well, & Piezometer Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/5/2016

MWH



File Path: \\Usbo1fs02\GIS_Projects\Libby_Mine_MXDs\RI_Sect1_3\Libby_WS_StreamClass_11x17_Land_12222015.mxd

Legend

Water-Use Classification

- A-1
- B-1
- C-1

Water-Use Reference:

ARM 17.30.609 with further clarification provided in EPA, 2015b.

- Well
- Observed Seep (October, 2014)
- Pond
- Rainy Creek Watershed
- OU3 Study Area Boundary

N
W E
S

0 0.25 0.5 1 Miles

Base Image: National Agriculture Imagery Program, 2013
Coordinate System: NAD 1983 UTM Zone 11N

FIGURE 2-5a

Water-Use Classification and Rainy Creek Watershed Location Map

Libby Asbestos Superfund Site,
OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/28/2016

MWH

Document Path: \\Ushou1s02\GIS\Projects\Libby Mine\ MXDs\RI Sect1 3\Libby Mine FEMA Flood 11x17 Landscape 02172016.mxd

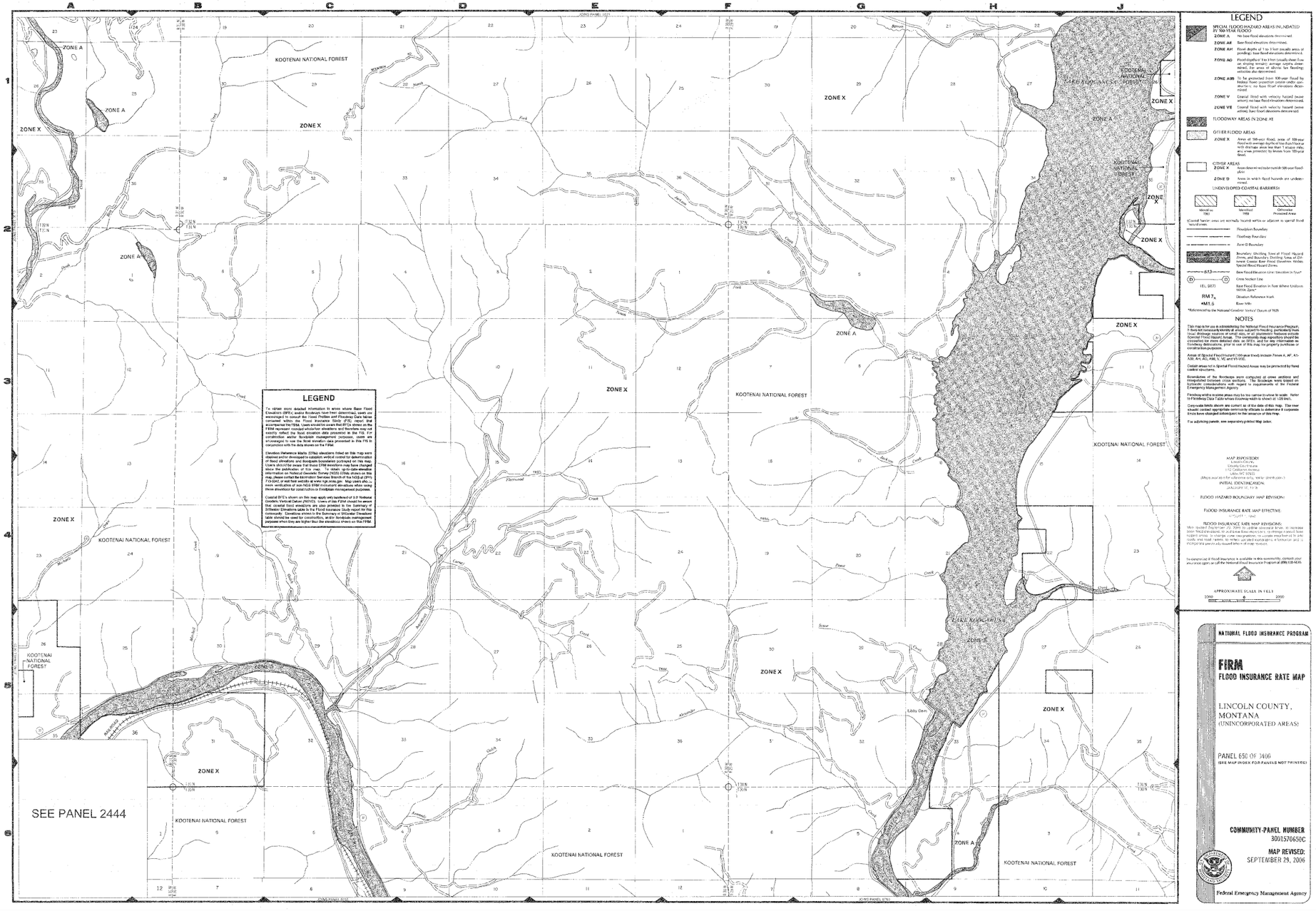


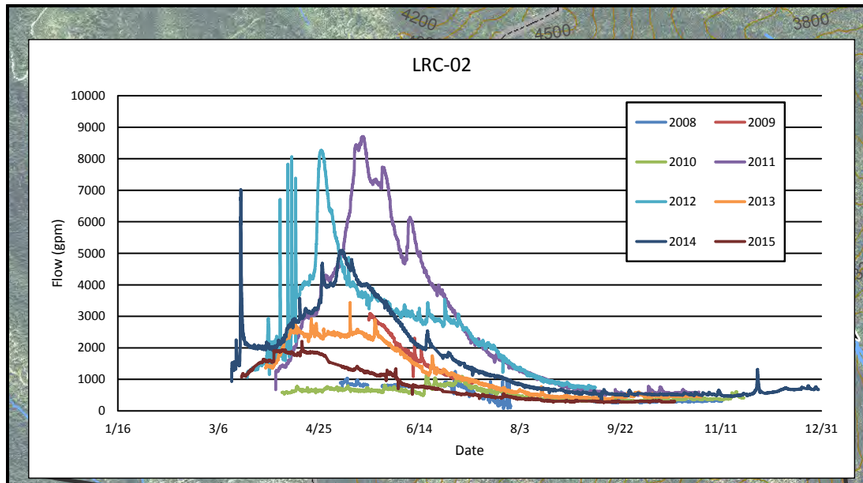
FIGURE 2-5b

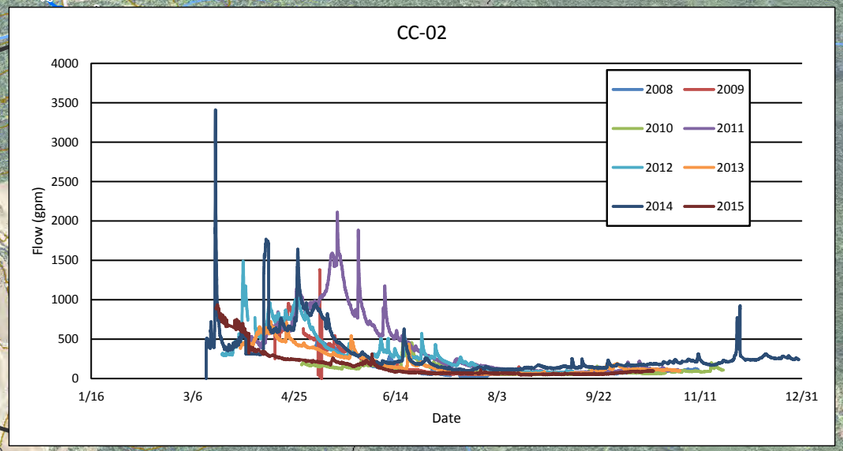
Federal Emergency Management Agency Floodplain Map for Lincoln County Montana

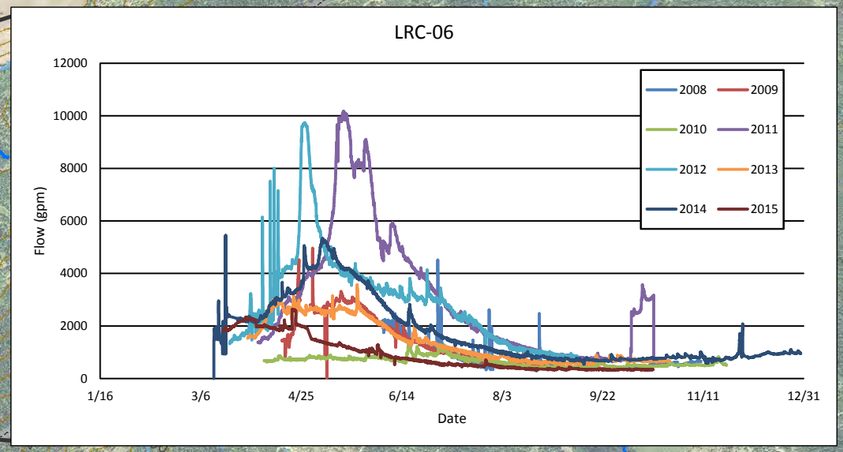
Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 2/17/2016

MWH







Upper Rainy Creek
Tailings Impoundment
Fleetwood Pond
Fleetwood Creek
Coarse Tailings Pile
KDID
Mill Pond
LRC-2
CC-2
Former Mine Area
Waste Rock Pile
East Tub Gulch
Carney Pond
Carney Creek
Waste Rock Pile
Lower Rainy Creek
Kootenai River
LRC-6

File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect1-3\Libby_SW_ISCOs_11x17_Lnd_123015.mxd

Legend

- ISCO Stations
- Observed Seep (October, 2014)
- Perennial Stream or River
- Intermittent Stream
- Topographic Contour (Contour Interval 100 feet)
- Pond
- Rainy Creek Watershed
- KDID Kootenai Development Impoundment Dam

Note:

gpm = gallons per minute

N
W E
S

0 0.25 0.5 1 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

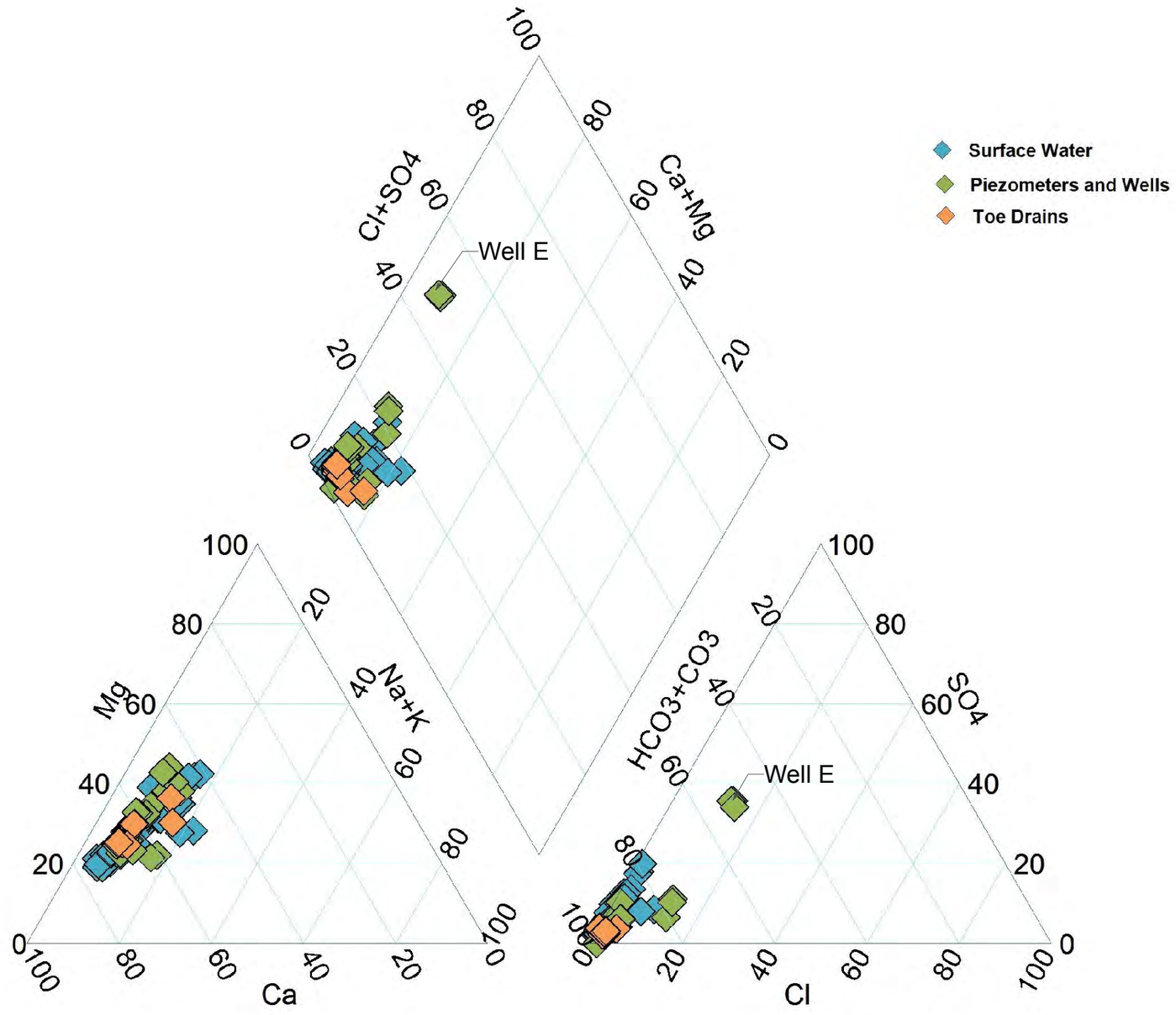
FIGURE 2-6

Surface Water Bodies and ISCO Flow Graphs Location Map

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/13/2016

MWH



Notes:

1. Na: Sodium
2. K: Potassium
3. Ca: Calcium
4. Mg: Magnesium
5. Cl: Chloride
6. HCO3: Bicarbonate
7. CO3: Carbonate
8. SO4: Sulfate

The most recent available data from 2007-2009 or 2015 were utilized to create this figure.

FIGURE 2-7

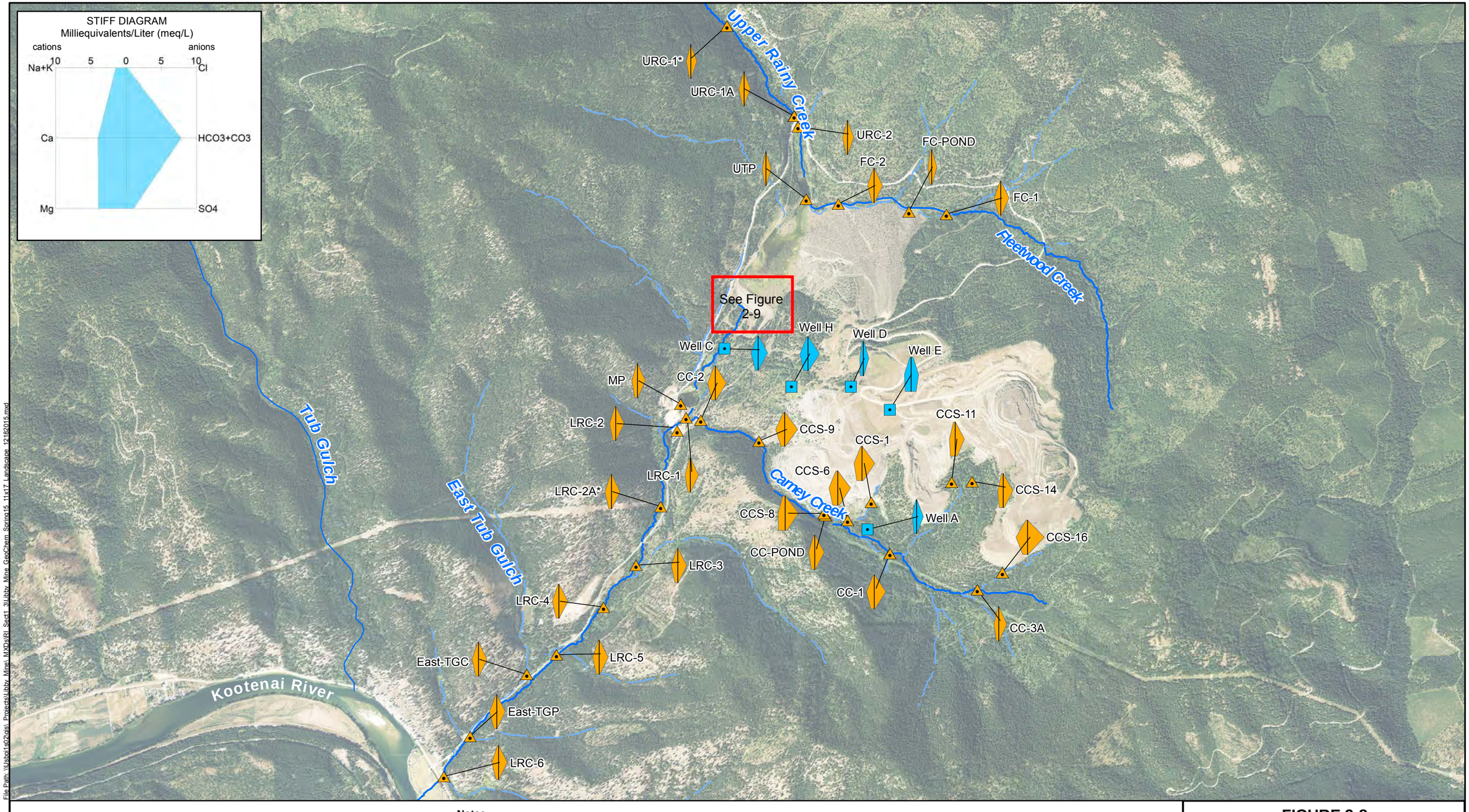
Piper Diagram for 2007-2009, 2015 Surface Water & Groundwater Sample Data at the OU3 Study Area

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co.-Conn.

Date Revised: 12/30/2015

MWH

File Path: \\Abbot1s02\gis_Projects\Libby_Mine_MXD's\RI_Sect1_3\Libby_Mine_Spring15_Piper_Diagrams_11x17_Landscape_12182015.mxd



File Path: \\vsbo1s92gis_Projects_Libby_Mine_MXDs\R1_Sec1_3\Libby_Mine_GeoChem_Spring15_11x17_Landscape_12182015.mxd

Legend

- Surface Water Quality Sample
- Groundwater Quality Sample
- Rivers / Streams
- Surface Water Stiff Diagram
- Groundwater Stiff Diagram

Notes:

1. Area within the diagram is proportional to sample Total Dissolved Solids (TDS).
2. *Indicates Stiff diagram based on the average of primary and duplicate sample concentrations.
3. The most recent available data from 2007-2009 or 2015 were utilized to create this figure.

4. Na: Sodium
5. K: Potassium
6. Ca: Calcium
7. Mg: Magnesium
8. Cl: Chloride
9. HCO3: Bicarbonate
10. CO3: Carbonate
11. SO4: Sulfate

N W E S

0 1,000 2,000 4,000 Feet

Base Image: National Agriculture Imagery Program, 2013
Coordinate System: NAD 1983 UTM zone 11N

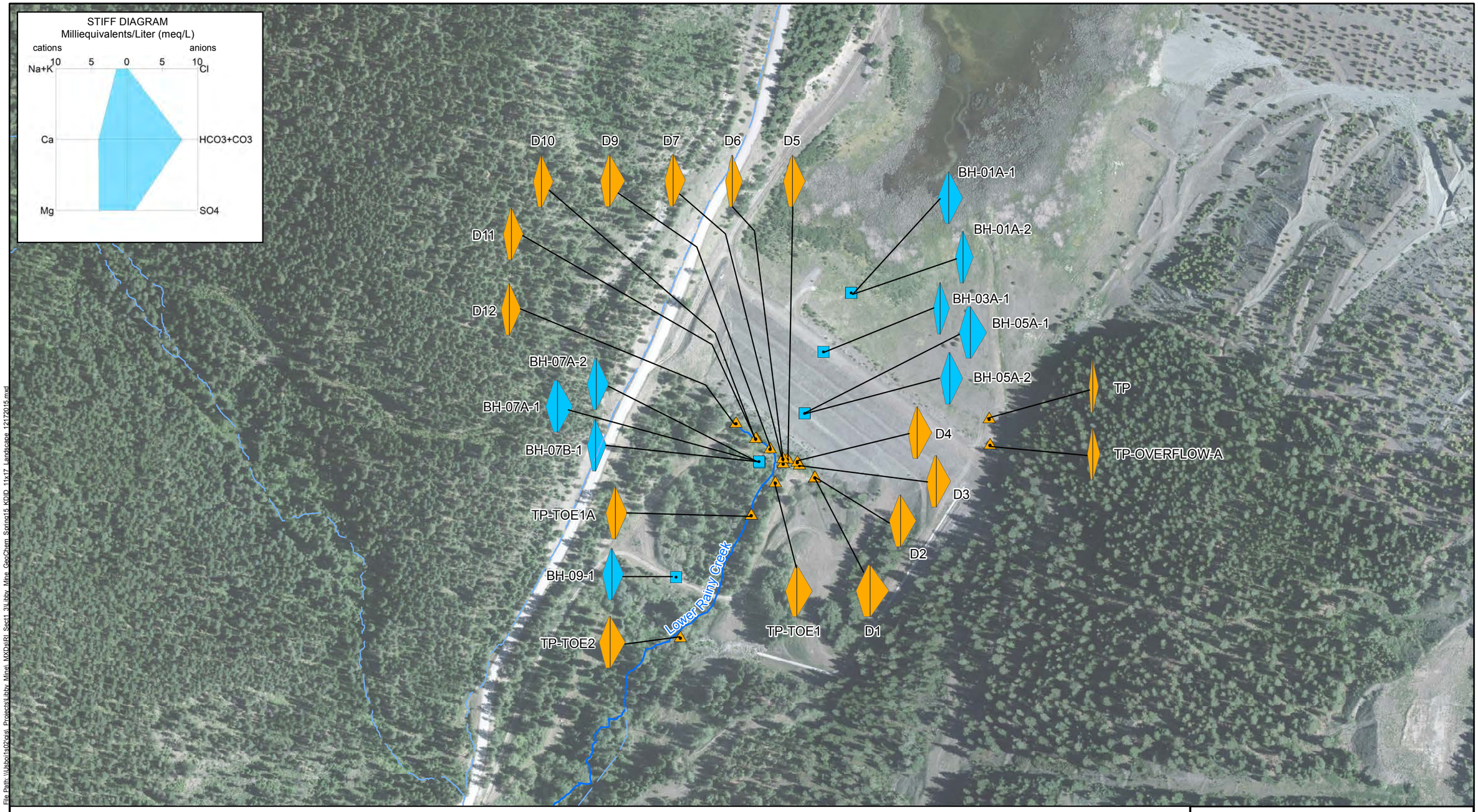
FIGURE 2-8

Stiff Diagrams for 2007-2009; 2015 Surface Water & Groundwater Sample Data at the OU3 Study Area (Excluding KDID)

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co.-Conn.

MWH

Date Revised: 12/30/2015



File Path: \\Sbo1ds02\gis_Projects\Libby_Mine_MXDs\RI_Sect_3\Libby_Mine_GeoChem_Spring15_KDID_11x17_Landscape_12172015.mxd

Legend

- Surface Water Quality Sample
- Groundwater Quality Sample
- Rivers / Streams
- Surface Water Stiff Diagram
- Groundwater Stiff Diagram

Notes:

1. Area within the diagram is proportional to sample Total Dissolved Solids (TDS).
2. *Indicates Stiff diagram based on the average of primary and duplicate sample concentrations.
3. The most recent available data from 2007-2009 or 2015 were utilized to create this figure.
4. Samples D1 - D12 collected from KDID toe drains.

5.	Na:	Sodium
6.	K:	Potassium
7.	Ca:	Calcium
8.	Mg:	Magnesium
9.	Cl:	Chloride
10.	HCO3:	Bicarbonate
11.	CO3:	Carbonate
12.	SO4:	Sulfate

N
W E
S

0 150 300 600 Feet

Base Image: LiDAR, 2015
Coordinate System: NAD 1983 UTM zone 11N

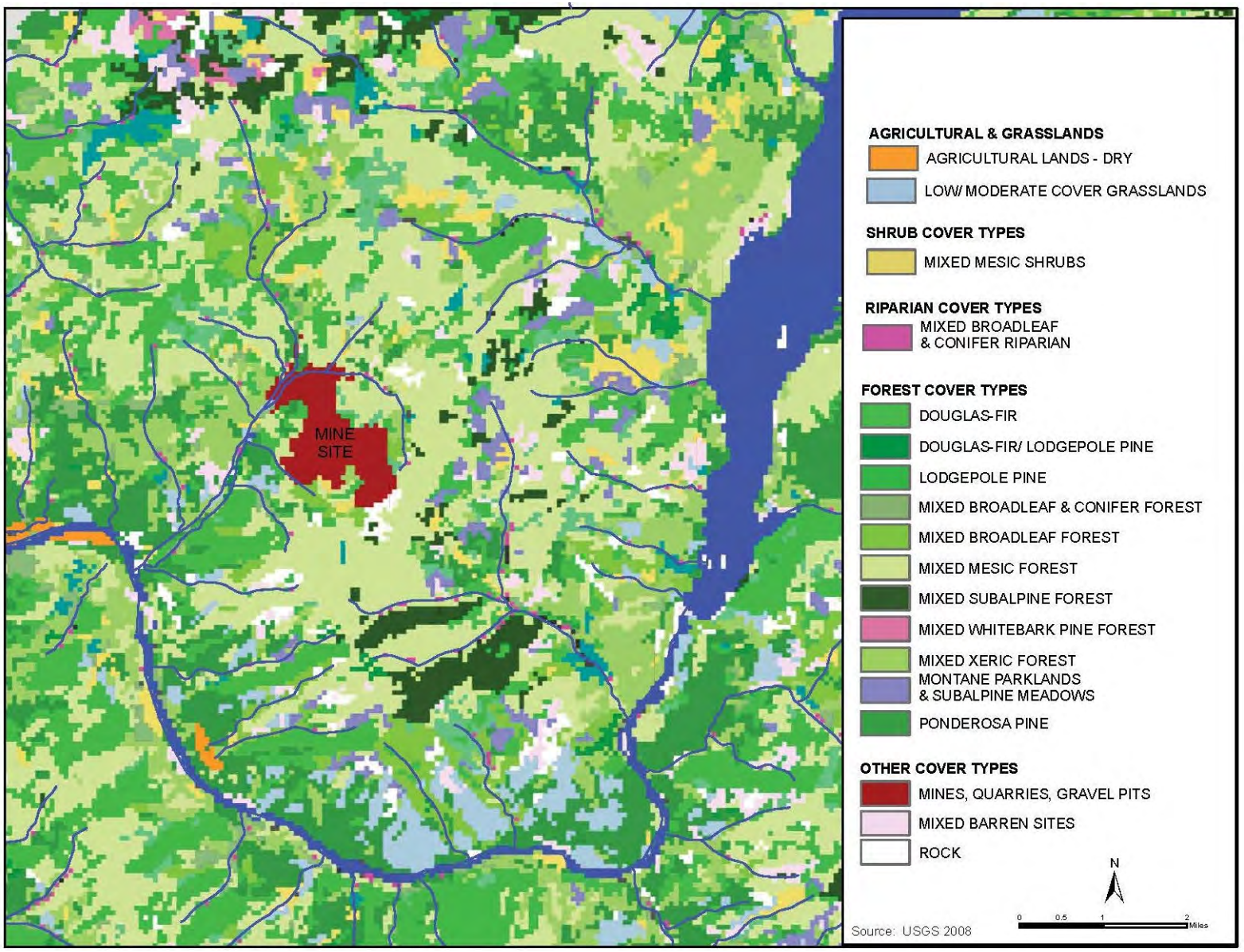
FIGURE 2-9

Stiff Diagrams for 2007-2009, 2015 Surface Water & Groundwater Sample Data at the OU3 Study Area - KDID

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co.-Conn.

MWH

Date Revised: 1/13/2016



File Path:\\Usboi1s02\gis_Projects\Libby_Mine_MXDs\RI_Sect1_3\Libby_Mine_Vegetation_Cover_8x11_Landscape_07_21_15.mxd

Figure originally presented in the Final OU3 Non-Asbestos BERA (CDM, 2013b); presented herein with permission from the EPA and CDM Smith.

FIGURE 2-10

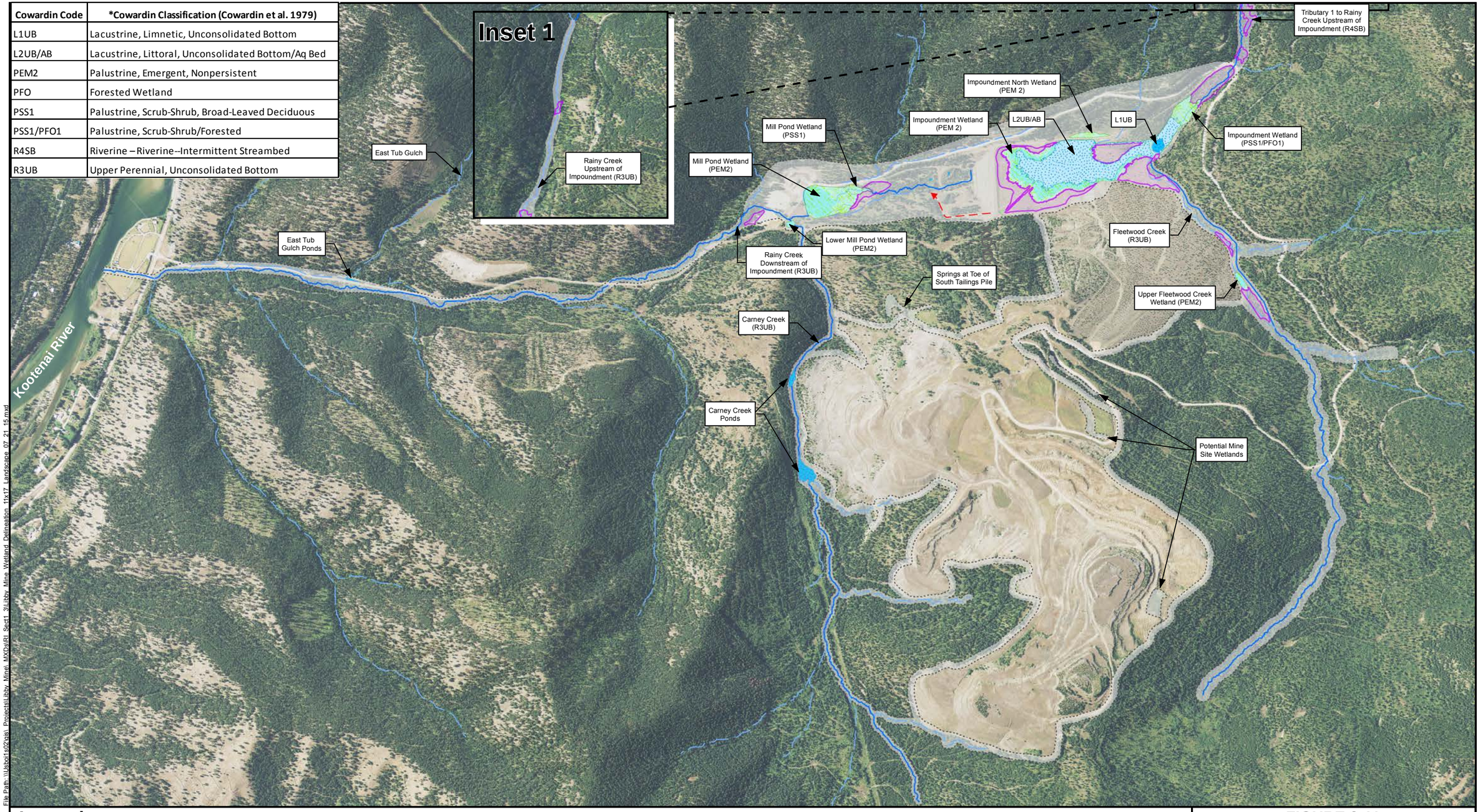
Site Vegetative Cover at the OU3 Study Area

Libby Asbestos Superfund Site, OU3 Study Area, W.R. Grace & Co.-Conn.

Date Revised: 12/18/2015

MWH

Cowardin Code	*Cowardin Classification (Cowardin et al. 1979)
L1UB	Lacustrine, Limnetic, Unconsolidated Bottom
L2UB/AB	Lacustrine, Littoral, Unconsolidated Bottom/Aq Bed
PEM2	Palustrine, Emergent, Nonpersistent
PFO	Forested Wetland
PSS1	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous
PSS1/PFO1	Palustrine, Scrub-Shrub/Forested
R4SB	Riverine – Riverine–Intermittent Streambed
R3UB	Upper Perennial, Unconsolidated Bottom



File Path: \\Sbo1fs02\gis_Projects\Libby_Mine_MXDs\RI_Sec1_3\Libby_Mine_Wetland_Delineation_11x17_Landscape_07_21_15.mxd

Legend

- Perennial Stream - Presumed to be Jurisdictional
- Intermittent Stream or Wash - Presumed to be Non-Jurisdictional
- Principal Spillway Chute
- Wetland Evaluation Area
- Potential Wetland
- Presumed Wetland (Jurisdictional) - Field Evaluation Required for Confirmation
- Open Water (deepwater > 6.6 feet deep)
- Open Water (shallow water < 6.6 feet deep)
- KDID Kootenai Development Impoundment Dam

*See Wetlands Delineation SAP/QAPP, 2015 for details.

N W E S

0 750 1,500 3,000 Feet

0 0.125 0.25 0.5 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

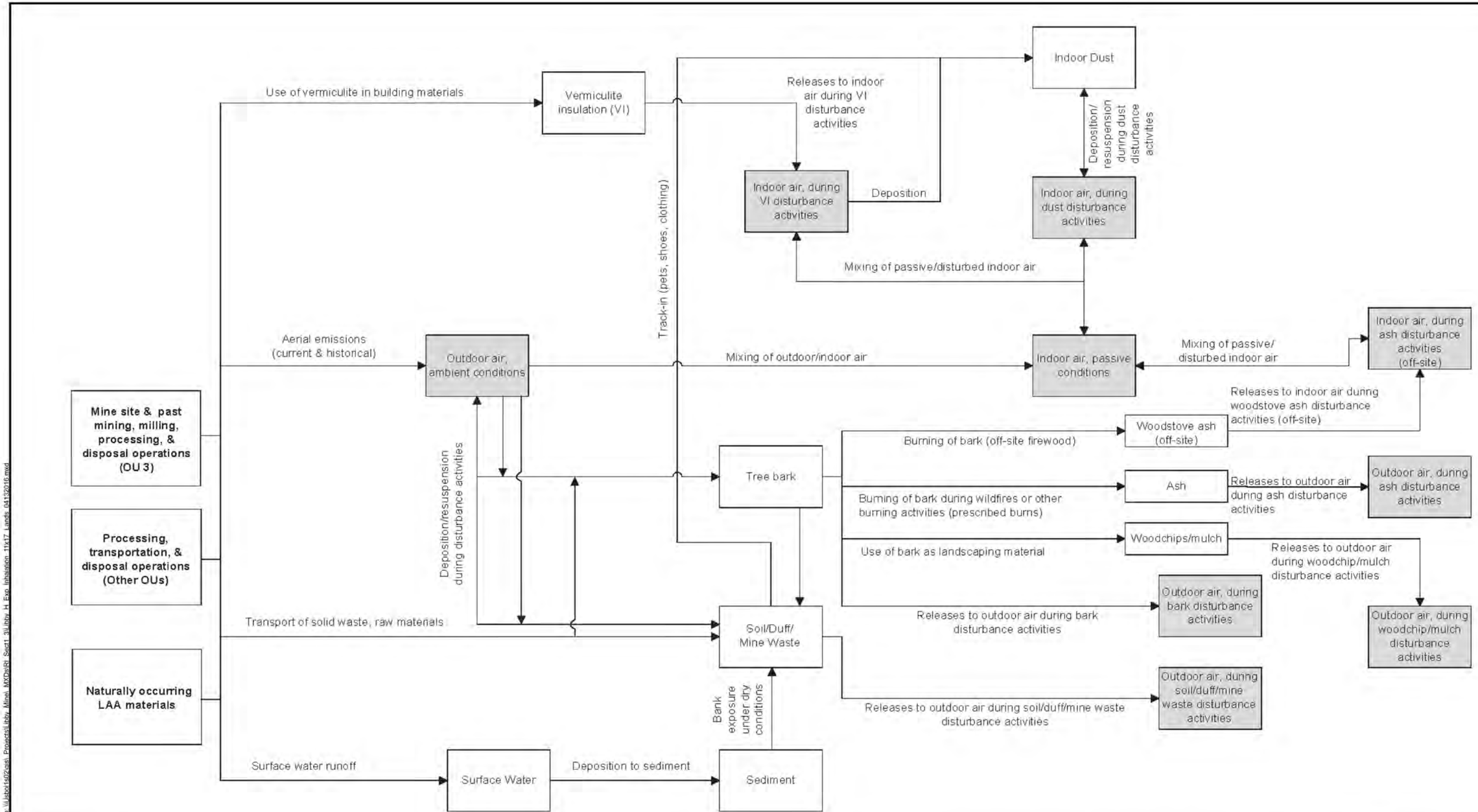
FIGURE 2-11

Preliminary Identification of Potential Wetland and Open Water Habitats at the OU3 Study Area

Libby Asbestos Superfund Site, OU3
W.R. Grace & Co. - Conn.

Date Revised: 12/18/2015

MWH



File Path: \\Libdc1s02\gis\Projects\Libby_Mine_MXD\RI_Sec11_3\Libby_HI_Exp_Inhalation_11x17_Lands_04132016.mxd

Legend

- Source Media
- Exposure Media

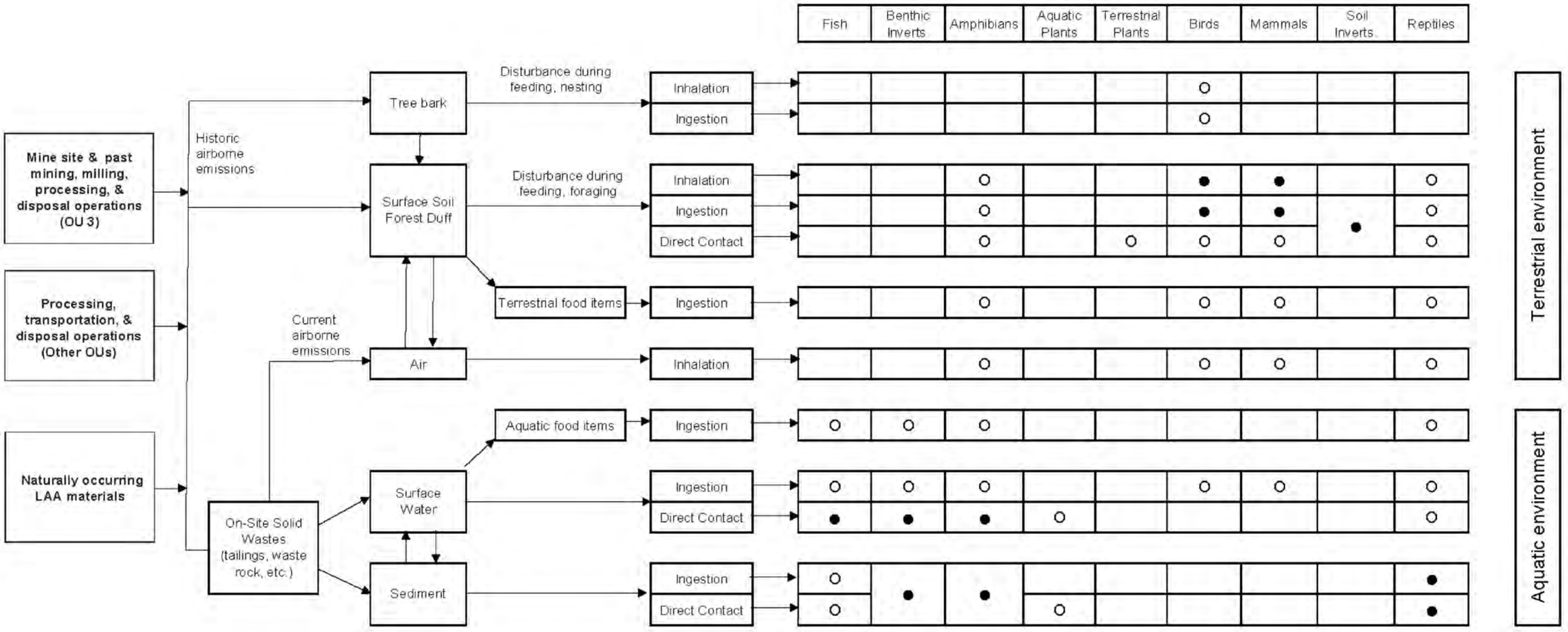
Exposure to building materials is not a complete pathway for the OU3 Study Area and has, therefore, not been included. No habitable buildings have been identified on site after a survey of available aerial imagery. A storage shed was identified within the mine area, however, this building does not contain building materials that contain LAA based on discussions with the site personnel (i.e., the structure has no insulation).

Adapted from Figure 2-1 of the Final LAA HHRA (EPA, 2015a) for exposures pertinent to the OU3 Study Area.

Figure 2-12
Conceptual Site Model for Human Inhalation Exposures at the OU3 Study Area
Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 4/13/2016

MWH



File Path: \\Jato\Projects\Libby_Mine_MXD\GIS_Sect1_3\Libby_H Exp_Asbestos_11x17_Lands_12302015.mxd

Legend

- ● Pathway is believed to be complete, and might be significant
- ○ Pathway is believed to be complete, but is probably minor, at least in comparison to other pathways
- Pathway is believed to be incomplete, negligible, or not applicable

Figure adapted from the Final Asbestos BERA (EPA, 2014a); presented herein with permission from EPA and CDM Smith.

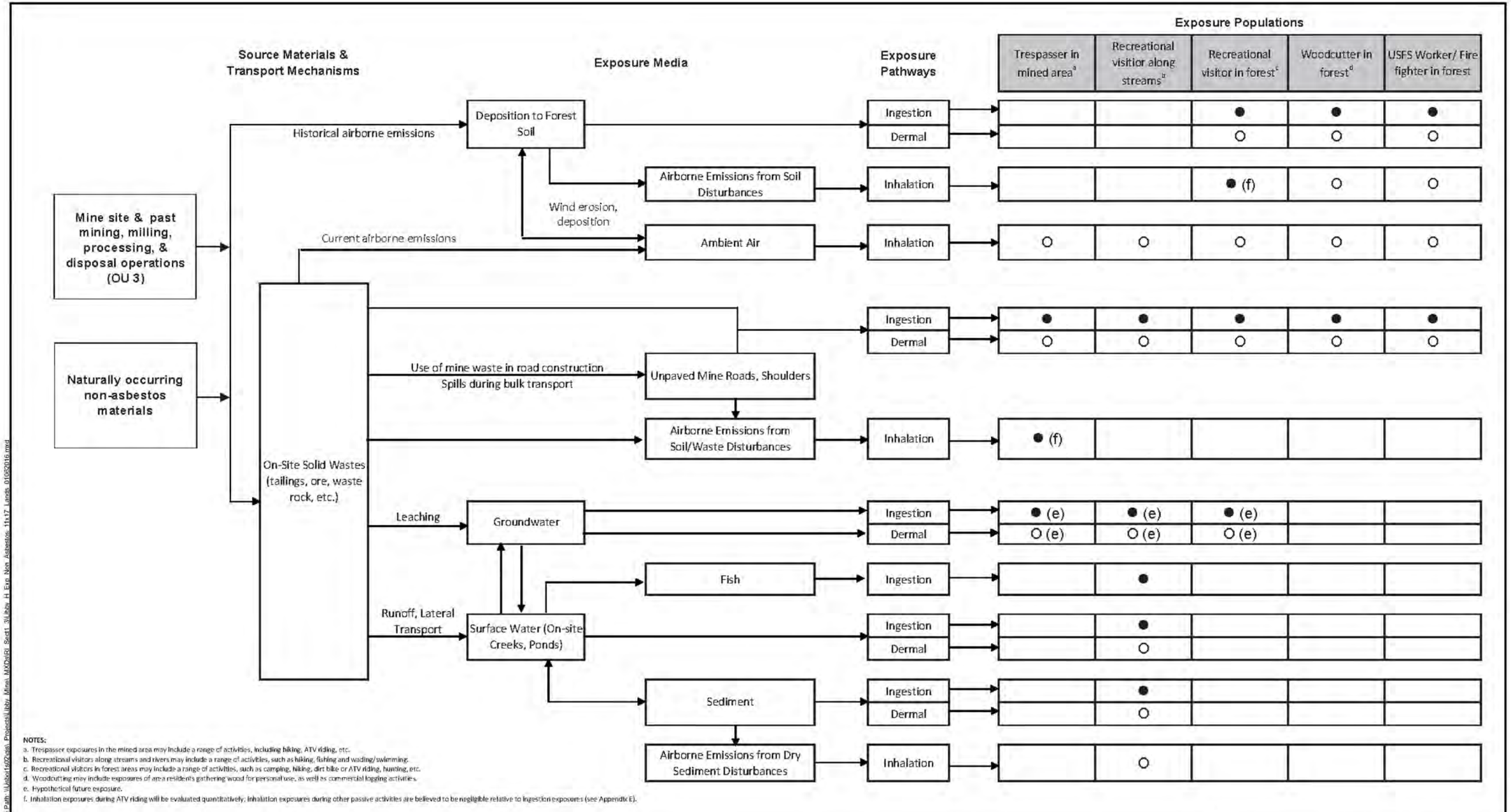
Figure 2-13

Conceptual Site Model for Ecological Exposure to LAA at the OU3 Study Area

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 12/31/2015

MWH



NOTES:
a. Trespasser exposures in the mined area may include a range of activities, including hiking, ATV riding, etc.
b. Recreational visitors along streams and rivers may include a range of activities, such as hiking, fishing and wading/swimming.
c. Recreational visitors in forest areas may include a range of activities, such as camping, hiking, dirt bike or ATV riding, hunting, etc.
d. Woodcutting may include exposures of area residents gathering wood for personal use, as well as commercial logging activities.
e. Hypothetical future exposure.
f. Inhalation exposures during ATV riding will be evaluated quantitatively; inhalation exposures during other passive activities are believed to be negligible relative to ingestion exposures (see Appendix E).

File Path: W:\Libby\Projects\Libby Mmrs MXD\ERI Sect 3\Libby_H Exp_Non-Asbestos_11x17_Lands_01092016.mxd

Legend

- ● Pathway is complete and exposure may be significant
- ○ Pathway is complete but is believed to be minor in comparison to other pathways
- Pathway is incomplete or believed to be negligible

Figure adapted from the Final Non-Asbestos HHRA (CDM Smith, 2013a); presented herein with permission from EPA and CDM Smith.

Figure 2-14
Conceptual Site Model for Human Exposure to Non-Asbestos Contaminants at the OU3 Study Area
Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/20/2016

MWH

	Fish	Aquatic Invertebrates	Amphibians	Plants	Soil Invertebrates	Reptiles	Birds	Mammals
Mine site & past mining, milling, processing, & disposal operations (OU 3)								
Historic airborne emissions → Tree bark, other foliar surfaces → Disturbance during feeding, nesting → Ingestion							O	O
Historic airborne emissions → Tree bark, other foliar surfaces → Disturbance during feeding, nesting → Inhalation							O	O
Historic airborne emissions → Tree bark, other foliar surfaces → Disturbance during feeding, nesting → Direct Contact				O				
Historic airborne emissions → Ambient air → Inhalation			O			O	O	O
Historic airborne emissions → Surface soil → Disturbance during feeding → Inhalation			O				O	O
Historic airborne emissions → Surface soil → Disturbance during feeding → Ingestion			O		●		●	●
Historic airborne emissions → Surface soil → Disturbance during feeding → Direct Contact			O	●			O	O
Historic airborne emissions → Surface soil → uptake into tissues → Terrestrial Prey Items *(Plants, Invertebrates, Birds, Mammals)* → Ingestion			O				●	●
Naturally occurring non-asbestos materials								
Current airborne emissions → On-Site Solid Wastes (tailings, waste rock, etc) → Disturbance during feeding → Inhalation							O	O
Current airborne emissions → On-Site Solid Wastes (tailings, waste rock, etc) → Disturbance during feeding → Ingestion					●		●	●
Current airborne emissions → On-Site Solid Wastes (tailings, waste rock, etc) → Disturbance during feeding → Direct Contact				●			O	O
On-Site Solid Wastes (tailings, waste rock, etc) → Surface Water → Ingestion	●	●	●			●	●	●
On-Site Solid Wastes (tailings, waste rock, etc) → Surface Water → Direct Contact						●	O	O
Surface Water → Aquatic Prey Items *(Fish, BMI)* → Ingestion	O	O	O			●	●	●
Surface Water → Sediment → Ingestion	O	O	O			●	●	●
Surface Water → Sediment → Direct Contact	O	●	O			●	O	O
Surface Water → Sediment → Disturbance of dry sediment → Inhalation			O			O	O	O

Legend

- ● Pathway is believed to be complete and may be an important contribution to the toal risk to the receptor
- O Pathway is complete but is unlikely to be a major contributor to the total risk to the receptor (In comparison to one or more other pathways that are evaluated)
- Pathway is incomplete or believed to be negligible.

Figure adapted from the Final Non-Asbestos BERA (CDM Smith, 2013b); presented herein with permission from EPA and CDM Smith.

Figure 2-15

Conceptual Site Model for Exposure of Ecological Receptors to Non-Asbestos Contaminants at the OU3 Study Area

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/20/2016

MWH

File Path: \\Jabo1s02\gis_Projects\Libby_Mine_MXD\RI_Sect1_3\Libby_f1_Exp_Ecological_Receptors_11x17_Landis_01052016.mxd



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Legend

- Landfarm (MWH, 2013a)
- Historic Landfill (W.R. Grace, 1986)
- Stockpile
- Perennial Stream or River
- Intermittent Stream
- Pond
- KDID Kootenai Development Impoundment Dam

N
W E
S

0 675 1,350 Feet

0 0.125 0.25 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

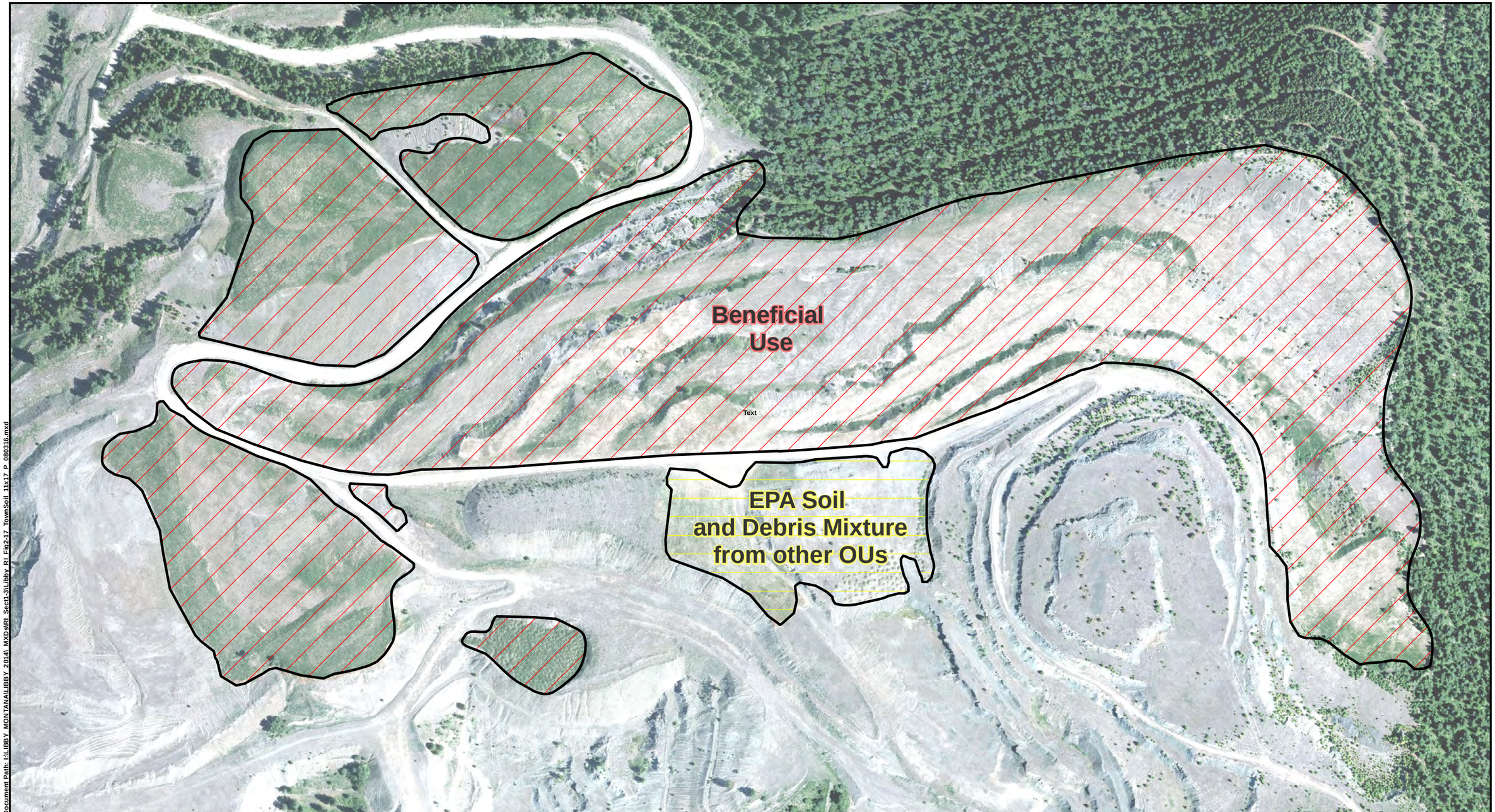
FIGURE 2-16

Landfarm and Historic Landfill Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/7/2016

MWH



Document Path: I:\LIBBY_MONTANA\LIBBY 2014\ MXDs\RI_Sect4-3\Libby_RI_Fig2-17_TownSoil_11x17_P_080316.mxd

Legend

- Beneficial Use Areas for Soil from other Operable Units (OUs)
- EPA Soil and Debris Mixture from other OUs

N
W E
S

0 175 350 700 Feet

Base Image: GeoTerra, 2015

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

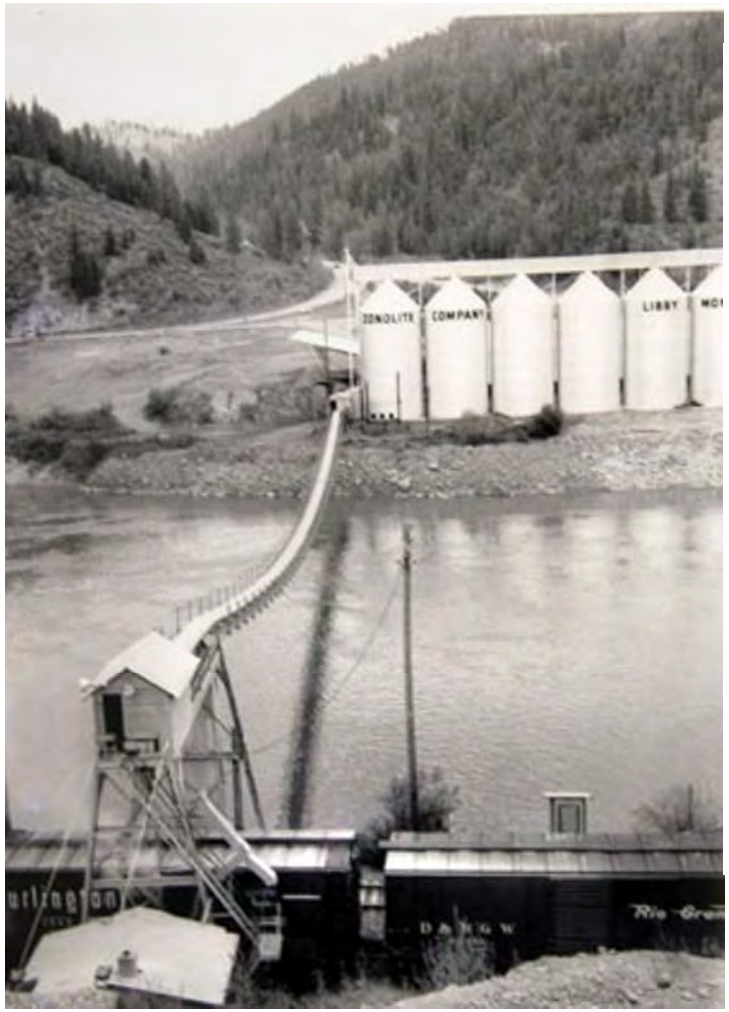
FIGURE 2-17

Beneficial Use, Soil and Debris Area

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

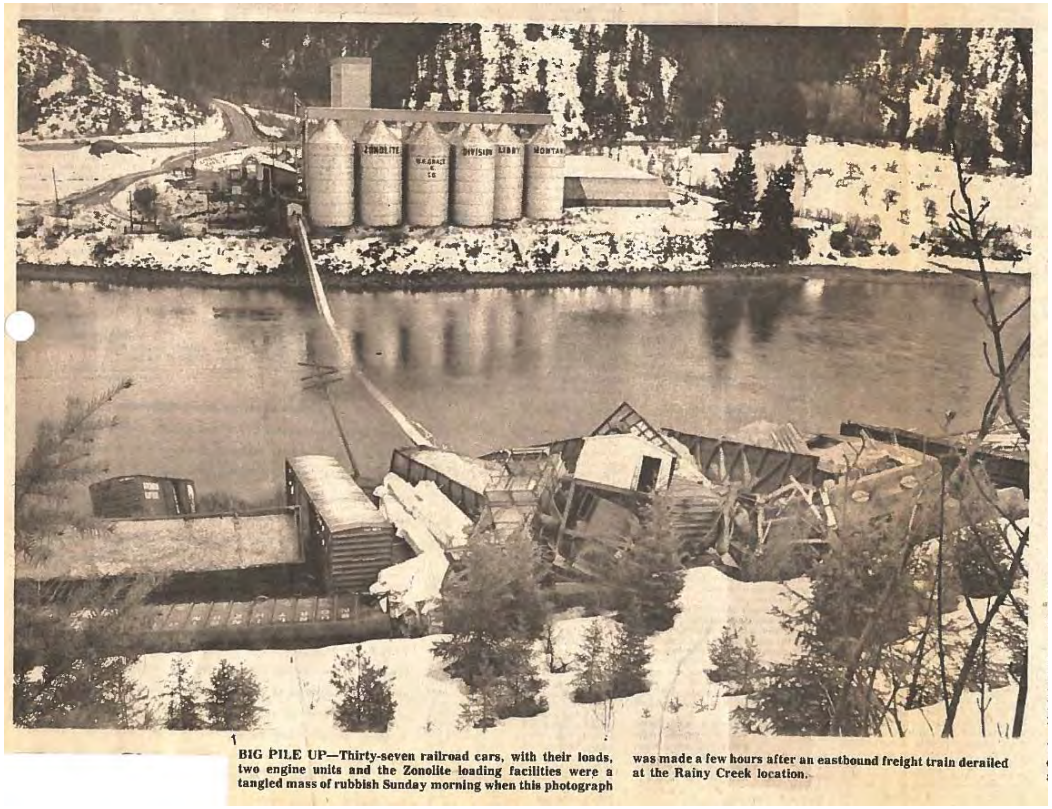
Date Revised: 8/3/2016

MWH



Conveyor Belt System before Train Derailment

Source: Klemz, P., 2008, December 18. Saving Grace. Missoula Independent.



Conveyor Belt System after Train Derailment

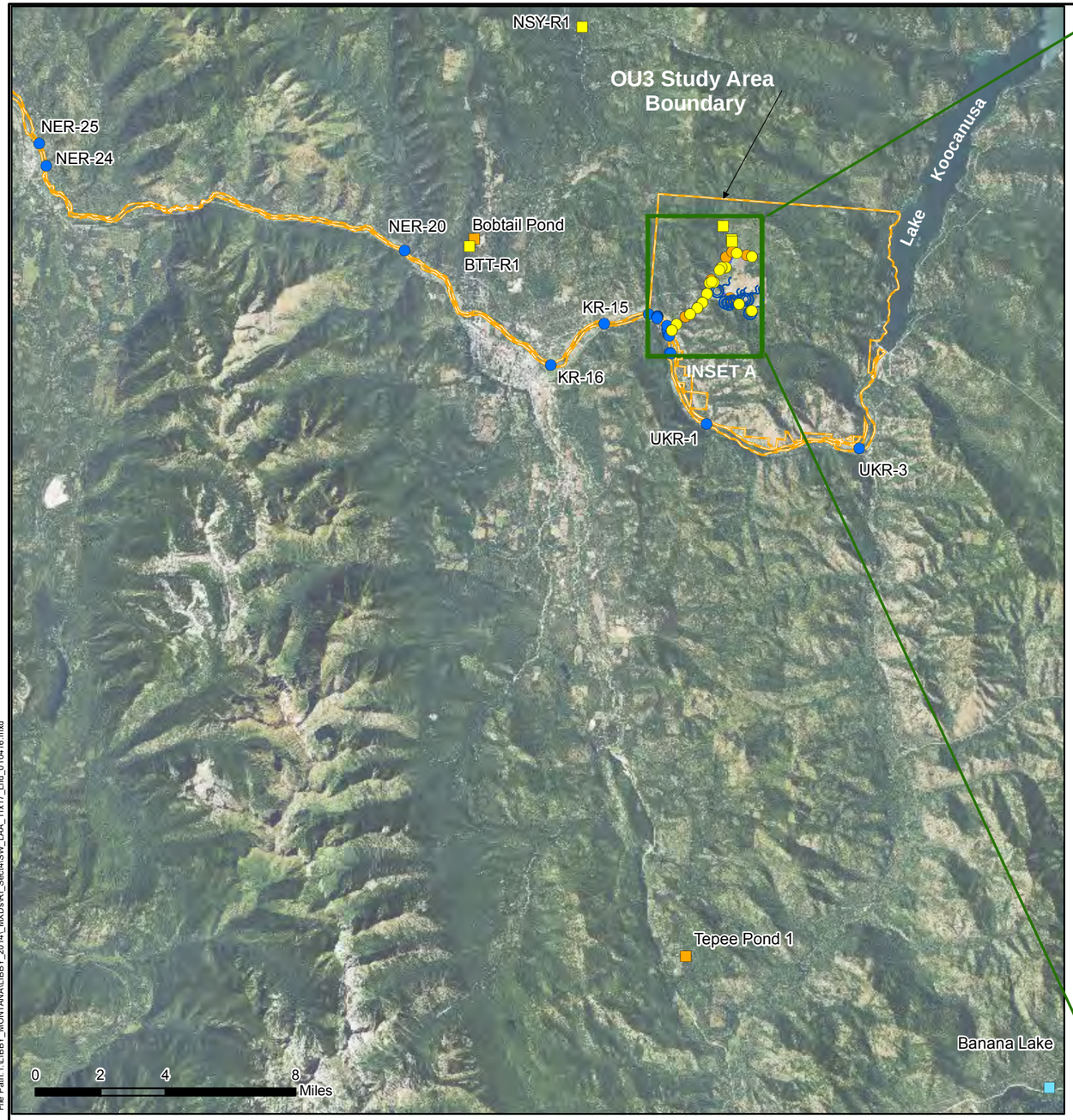
Source: 1979, February 22. Wreck Demolishes Loading Facilities. Western News.

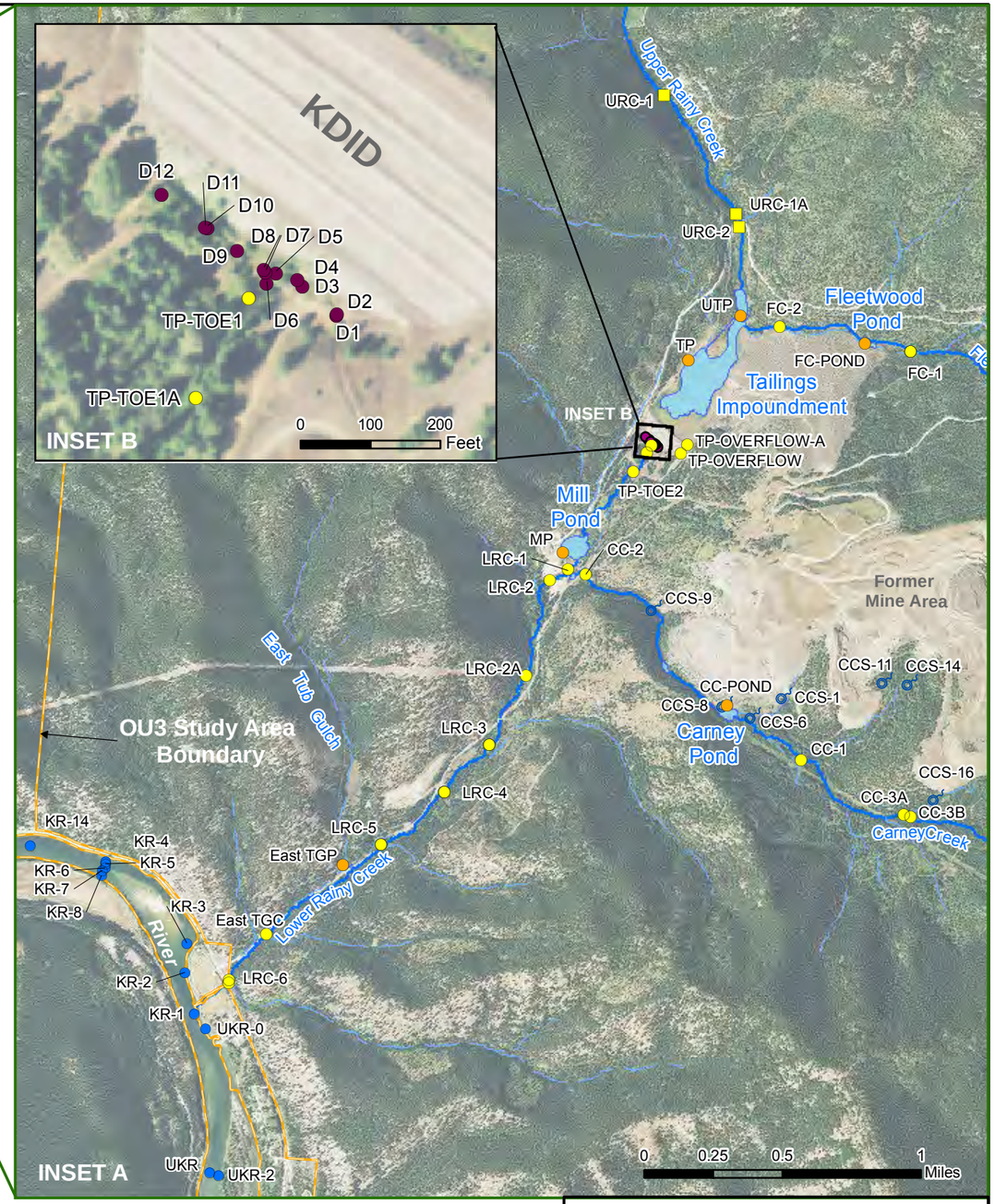
Figure 2-18

OU2 Conveyor Belt System before and after Train Derailment

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co.-Conn

MWH





File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\SW_LAA_11x17_Lnd_010416.mxd

Legend

Surface Water Sample Locations

- Pond
- River
- Creek
- Seep
- Toe Drain
- Lake Reference Location
- Pond Reference Location
- Creek Reference Location

- Perennial Stream or River
- Intermittent Stream
- OU3 Study Area Boundary
- Pond

KDID Kootenai Development Impoundment Dam

BTT	Bobtail Creek Tributary
CC	Carney Creek
CCS	Carney Creek Seep
FC	Fleetwood Creek
KR	Kootenai River
LRC	Lower Rainy Creek
MP	Mill Pond
NER	Nature and Extent River
NSY	Noisy Creek
TGC	Tub Gulch Creek
TGP	Tub Gulch Pond
TP	Tailings Pond
UKR	Upper Kootenai River
URC	Upper Rainy Creek

N W E S

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

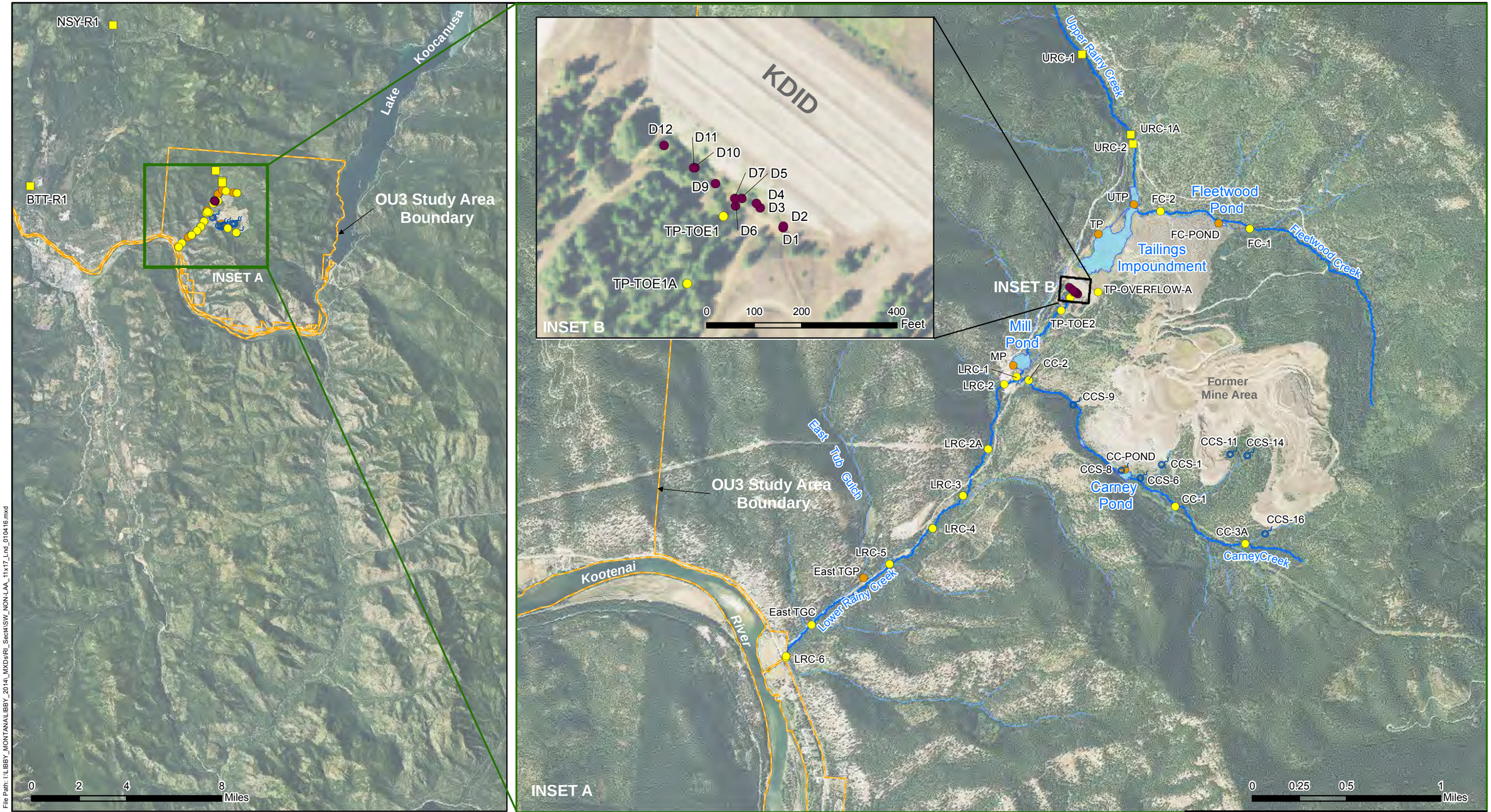
FIGURE 4-1a

Post 2007 Remedial Investigation LAA Surface Water Sample Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/4/2016

MWH



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\SW_NON-LAA_11x17_Ind_010416.mxd

Legend

Surface Water Sample Locations

- Pond
- Creek
- Toe Drain
- Seep
- Creek Reference Location

- Perennial Stream or River
- Intermittent Stream
- OU3 Study Area Boundary
- Pond

KDID Kootenai Development Impoundment Dam

BTT	Bobtail Creek Tributary
CC	Carney Creek
CCS	Carney Creek Seep
FC	Fleetwood Creek
LRC	Lower Rainy Creek
MP	Mill Pond
NSY	Noisy Creek
TGC	Tub Gulch Creek
TGP	Tub Gulch Pond
TP	Tailings Pond
URC	Upper Rainy Creek

N
W E
S

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

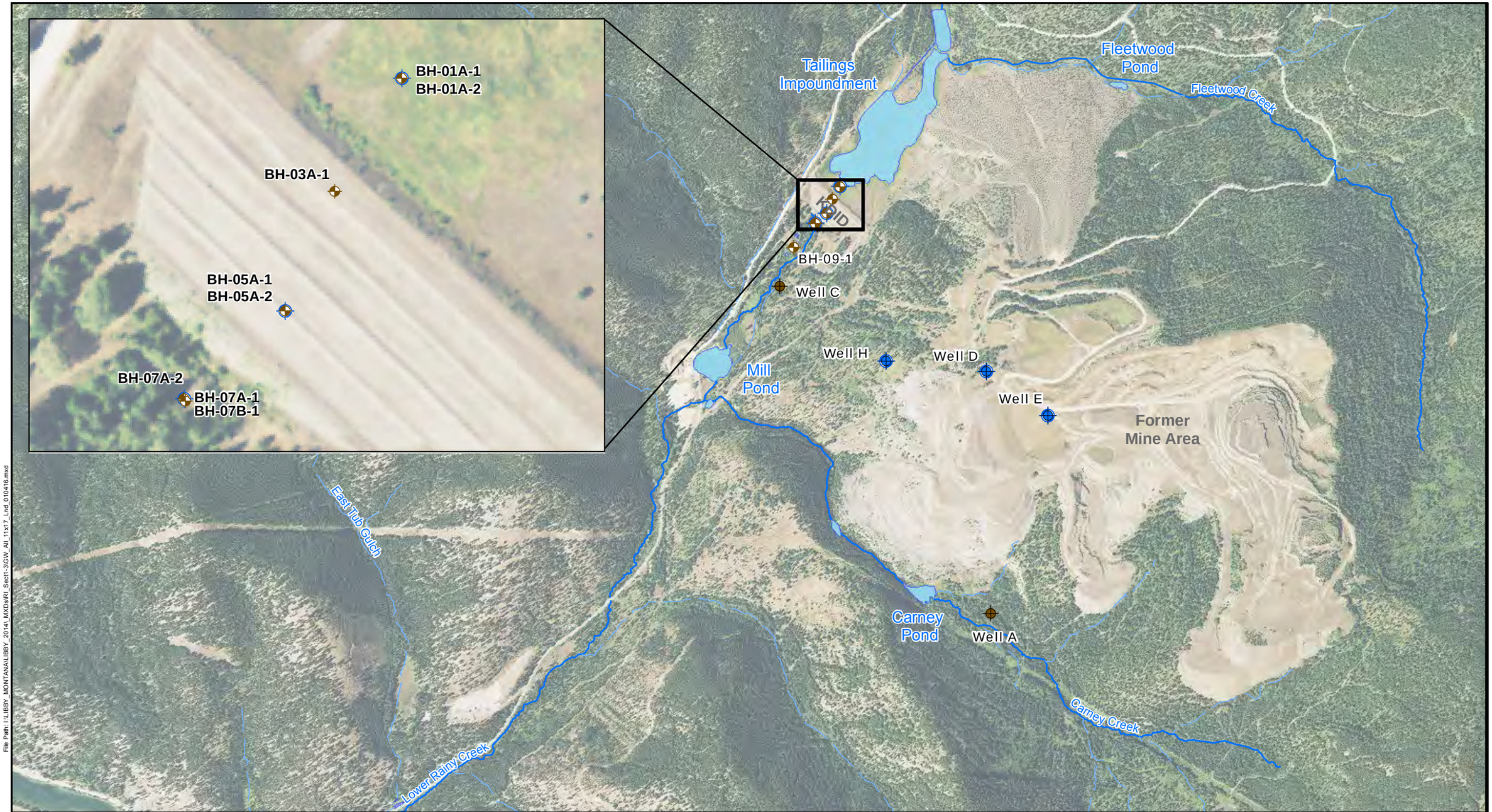
FIGURE 4-1b

Post 2007 Remedial Investigation Non-Asbestos Surface Water Sample Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/4/2016

MWH



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect-3\GW_All_11x17_Lnd_010416.mxd

Legend

Monitoring Well Locations

- Bedrock Groundwater Well
- Shallow Groundwater Well (Alluvial, Glacial)
- Bedrock Piezometer
- Shallow Piezometer (Alluvium, Embankment Fill, Glacial Till, Fill)

- Perennial Stream or River
- Intermittent Stream
- Pond
- KDID — Kootenai Development Impoundment Dam

N
W E
S

0 0.125 0.25 0.5 Miles

Base Image: National Agriculture Imagery Program, 2013
Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

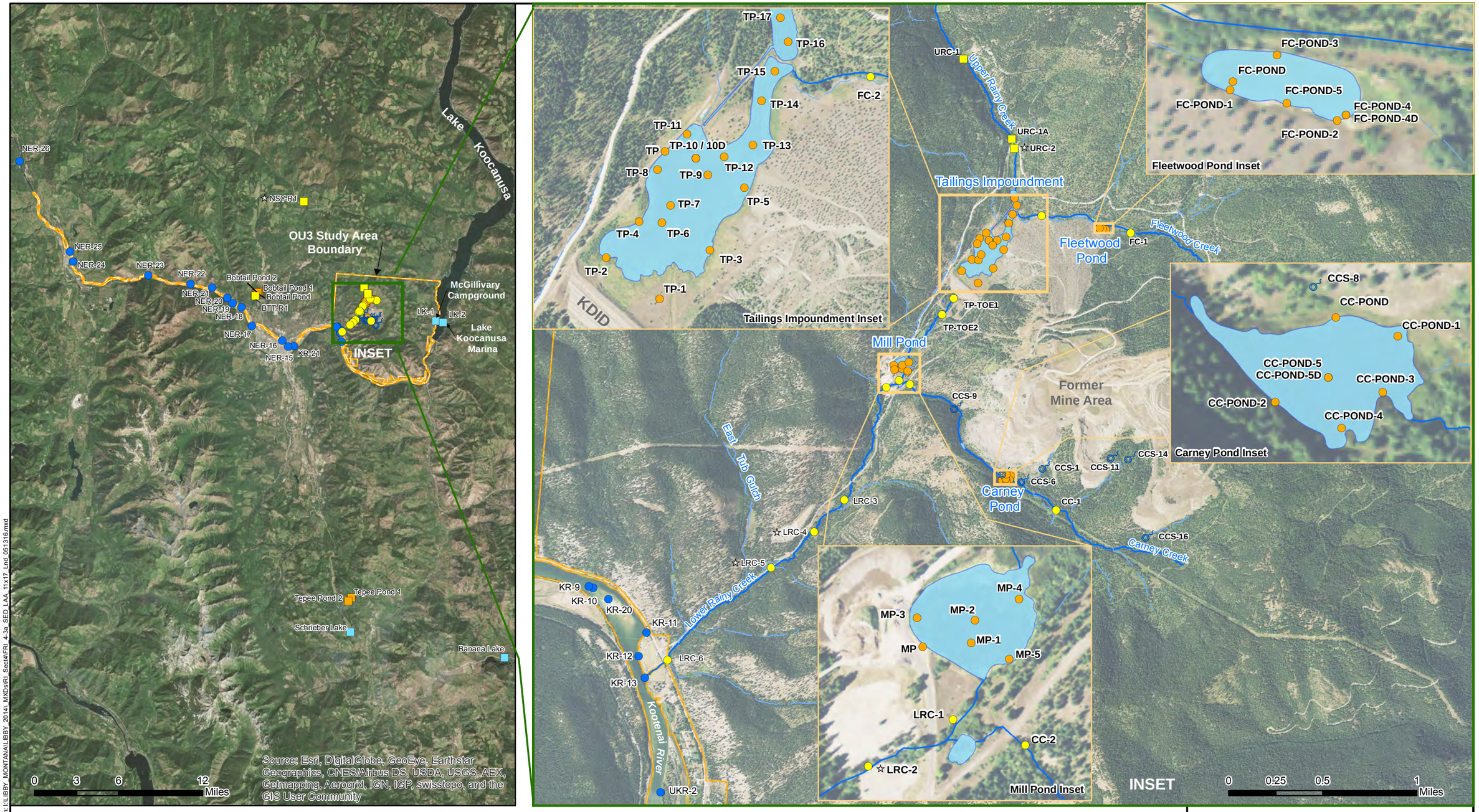
FIGURE 4-2

Post 2007 Remedial Investigation LAA and Non-Asbestos Groundwater Sample Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/4/2016

MWH



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\FRI_4-3a_SED_LAA_11x17_Lnd_051316.mxd

Legend

Sediment Sample Locations

- Pond
- River
- Creek
- Seep
- Lake Reference Location
- Pond Reference Location
- Creek Reference Location

- ☆ Pore Water Location
- Perennial Stream or River
- Intermittent Stream
- OU3 Study Area Boundary
- Pond
- KDID Kootenai Development Impoundment Dam

BTT	Bobtail Creek Tributary
CC	Carney Creek
CCS	Carney Creek Seep
FC	Fleetwood Creek
KR	Kootenai River
LK	Lake Koocanusa
LRC	Lower Rainy Creek
MP	Mill Pond
NER	Nature and Extent River
NSY	Noisy Creek
TP	Tailings Pond
UKR	Upper Kootenai River
URC	Upper Rainy Creek

N W E S

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

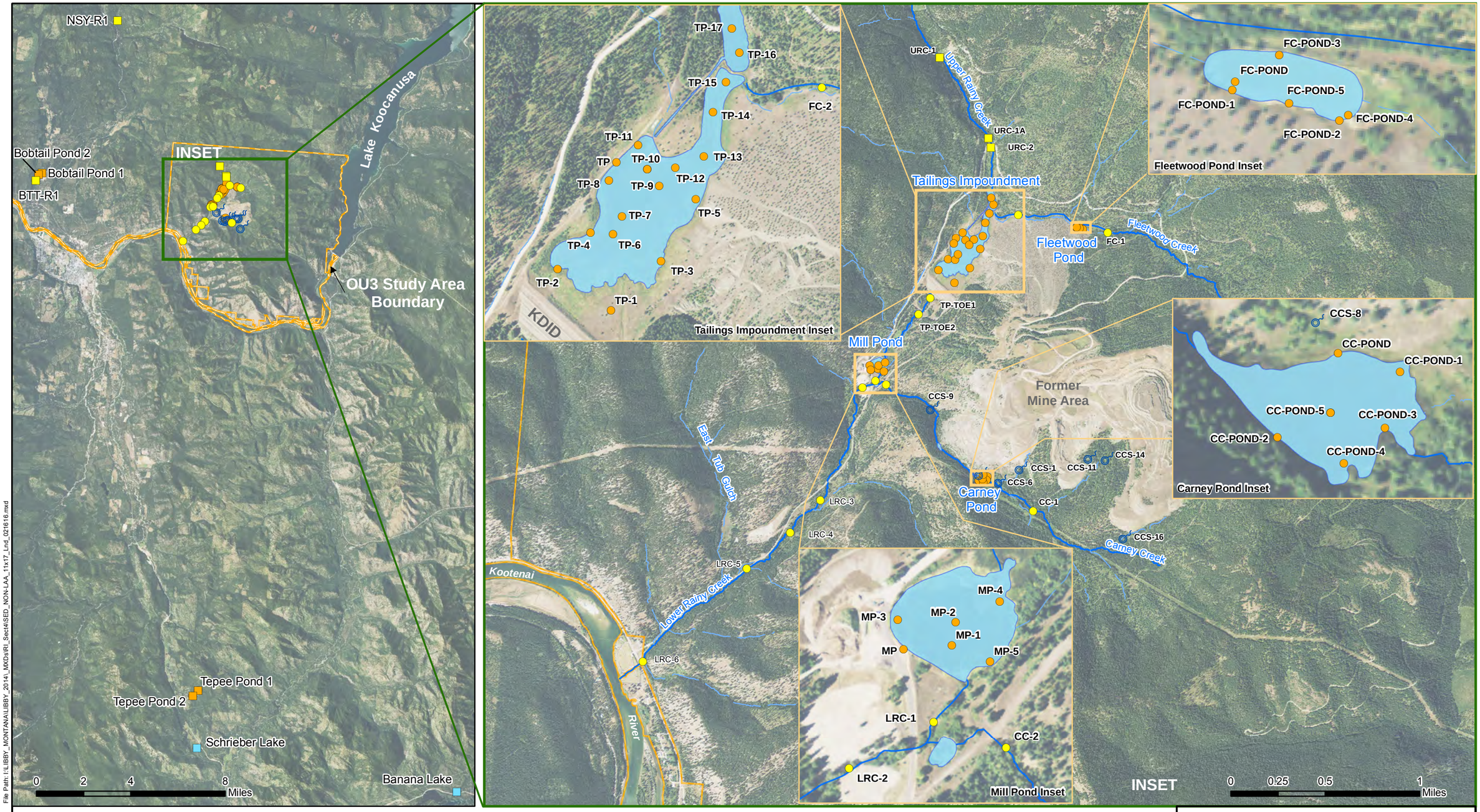
FIGURE 4-3a

Post 2007 Remedial Investigation LAA Sediment Sample Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 5/13/2016

MWH



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4SED_NON-LAA_11x17_Lnd_021616.mxd

Legend

Sediment Sample Locations

- Pond
- River
- Creek
- Seep
- Lake Reference Location
- Pond Reference Location
- Creek Reference Location

- Perennial Stream or River
- Intermittent Stream
- OU3 Study Area Boundary
- Pond

KDID Kootenai Development Impoundment Dam

BTT	Bobtail Creek Tributary	MP	Mill Pond
CC	Carney Creek	NSY	Noisy Creek
CCS	Carney Creek Seep	TP	Tailings Pond
FC	Fleetwood Creek	URC	Upper Rainy Creek
LRC	Lower Rainy Creek		

N W E S

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

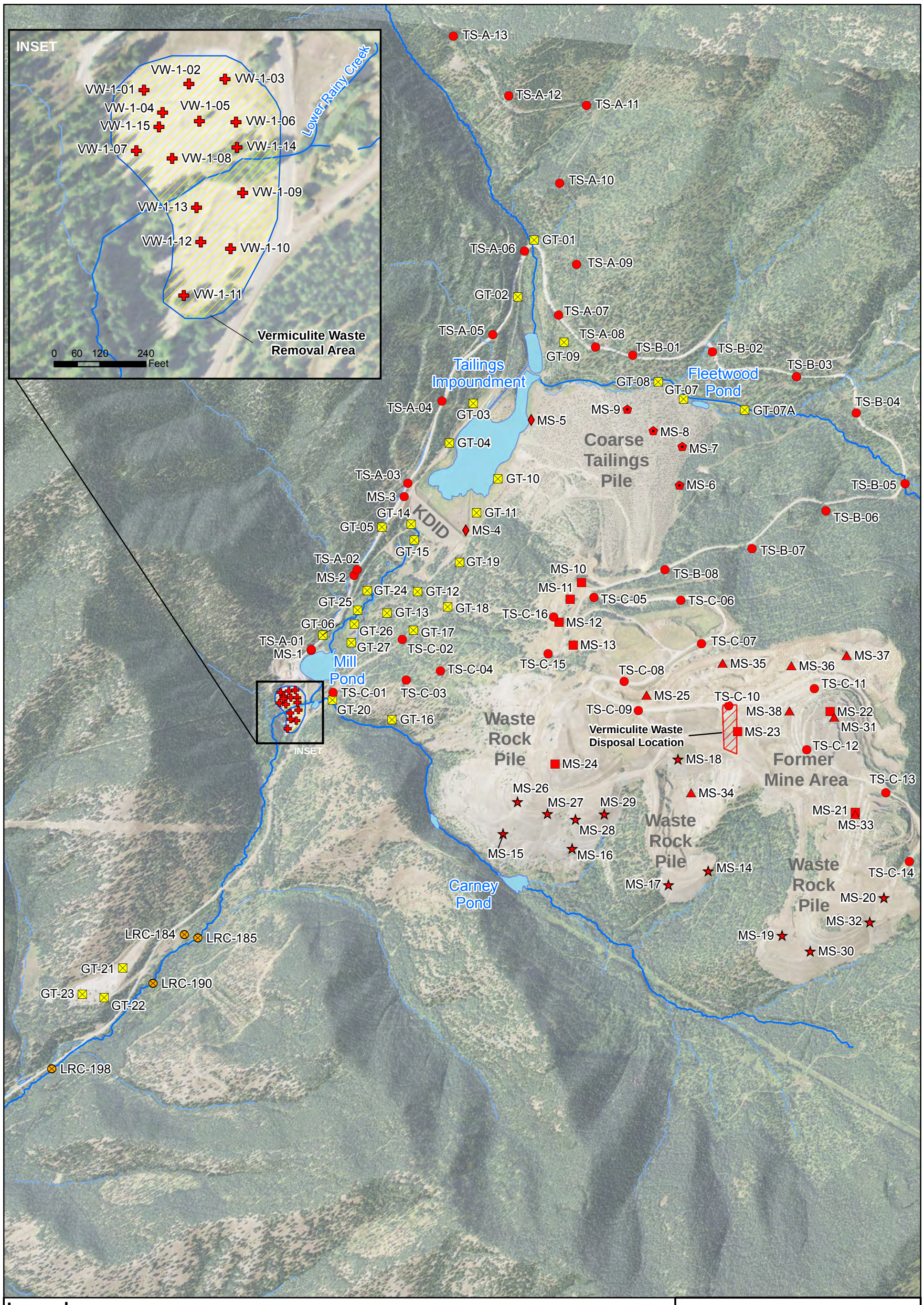
FIGURE 4-3b

Post 2007 Remedial Investigation Non-Asbestos Sediment Sample Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 2/16/2016

MWH



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\Soil_MW_LAA_11x17_Port_010416.mxd

Legend

Soil/Rock/Mine Waste Sample Locations

- Coarse Tailings
- Cover Material
- Outcrop
- Road Material
- Tailings Impoundment
- Waste Rock
- Vermiculite Waste
- Test Pit
- Reconnaissance Location

- Vermiculite Waste Removal Area
- Vermiculite Waste Disposal Location
- Perennial Stream or River
- Intermittent Stream
- Pond
- KDID Kootenai Development Impoundment Dam

Note: Forest soil sample locations for LAA are presented on Figure 4-5

GT Geotech
MS Mine Sample
LRC Lower Rainy Creek
TS Trespasser Routes A, B and C
VW Vermiculite Waste

N W E S

0 675 1,350 Feet

0 0.125 0.25 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 4-4a

Post 2007 Remedial Investigation LAA Soil/Rock/Mine Waste Sample Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/22/2016

MWH

SL15-16
SL15-15
Tailings Impoundment
MS-5
MS-9
Coarse Tailings Pile
MS-8
MS-7
Fleetwood Pond
MS-6
MS-3
KDID
MS-4
MS-2
MS-10
MS-11
MS-12
MS-13
MS-1
Mill Pond
MS-35
MS-36
MS-37
MS-25
MS-38
MS-22
MS-31
MS-23
MS-24
MS-18
Former Mine Area
Waste Rock Pile
MS-26
MS-27
MS-29
MS-34
MS-21
MS-33
MS-28
MS-15
MS-16
Waste Rock Pile
MS-14
MS-17
Waste Rock Pile
MS-20
MS-19
MS-32
MS-30
Carney Pond
INSET
INSET
SL45-16
SL45-15
SL315-08
SL315-07
SL75-16
SL75-15
SL135-07
SL135-08
SL195-11
SL195-12

File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\Soil_MW_NON-LAA_11x17_Port_010416.mxd

Legend

Soil/Rock/Mine Waste Sample Locations

- Coarse Tailings
- Cover Material
- Outcrop
- Road Material
- Tailings Impoundment
- Waste Rock
- Forest Soil (SL)

- OU3 Study Area Boundary
- Perennial Stream or River
- Intermittent Stream
- Pond
- KDID Kootenai Development Impoundment Dam
- MS Mine Sample
- SL135 Sample Location (SL) with Respective Degrees from North

N
W E
S

0 2,900 5,800 Feet

0 0.5 1 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

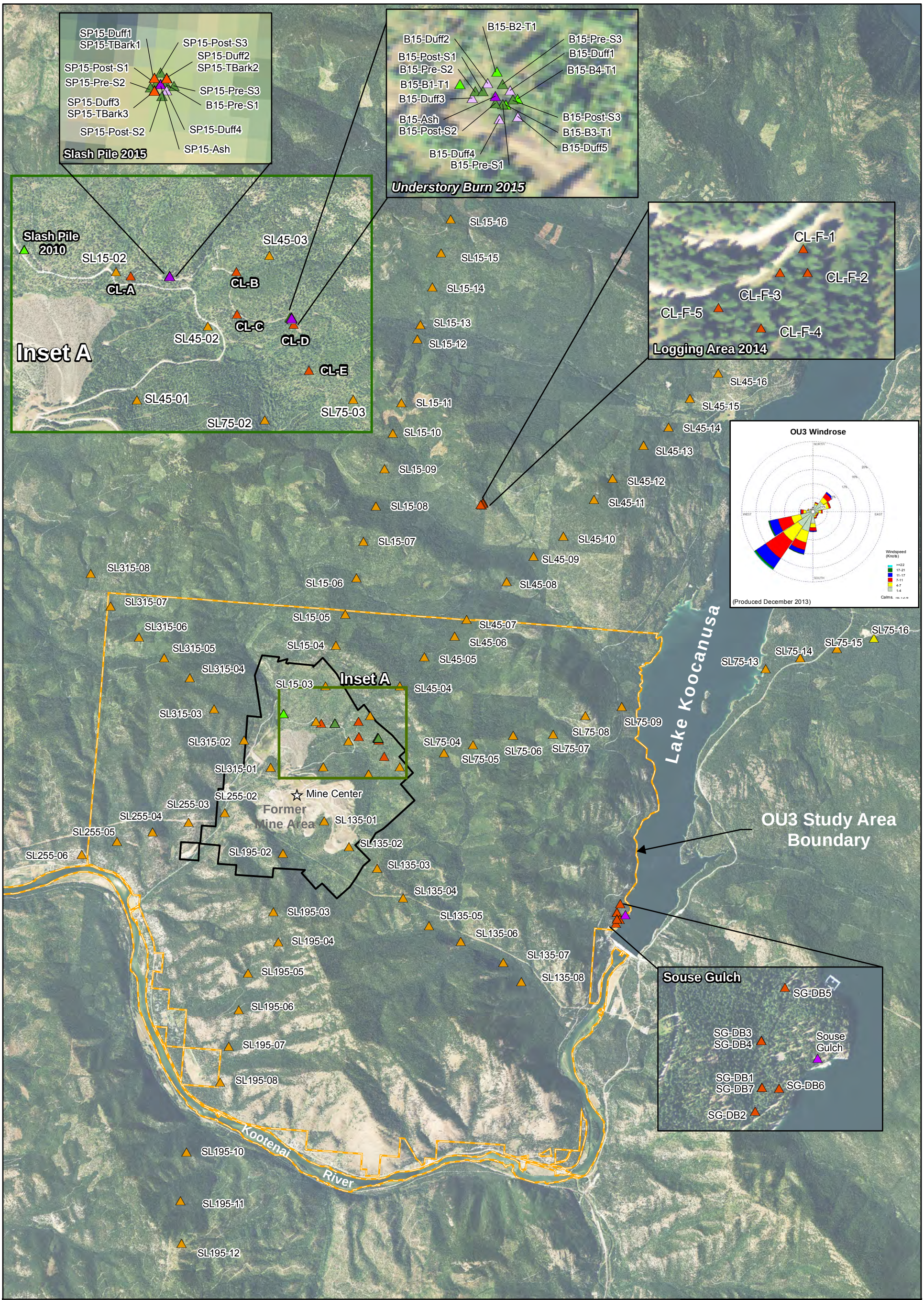
FIGURE 4-4b

Post 2007 Remedial Investigation Non-Asbestos Soil/Rock/Mine Waste and Forest Soil Sample Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 1/4/2016

MWH



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\FRI_4-5a_Forest_SoilDuffBarkAsh_11x17_Port_042616.mxd

Legend

Forested Area Sample Locations

- Ash
- Duff
- Duff/TreeBark
- Forest Soil
- Forest Soil/Duff/Tree Bark
- Forest Soil/Tree Bark
- Tree Bark

- OU3 Study Area Boundary
- Mine Property Boundary
- ☆ Location used as Mine Center
- B — Burn
- CL — Commerical Logging
- SG — Souse Gulch
- SL135 — Sample Location (SL) with Respective Degrees from North
- SP — Slash Pile

Note:
Refer to Figure 4-6 for nature and extent forested area locations outside of the OU3 Study Area

N W E S

0 3,250 6,500 Feet

0 0.5 1 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 4-5a

Post 2007 Remedial Investigation LAA Forest Soil, Duff Material, Tree Bark, and Ash Sample Locations from the Forested Areas

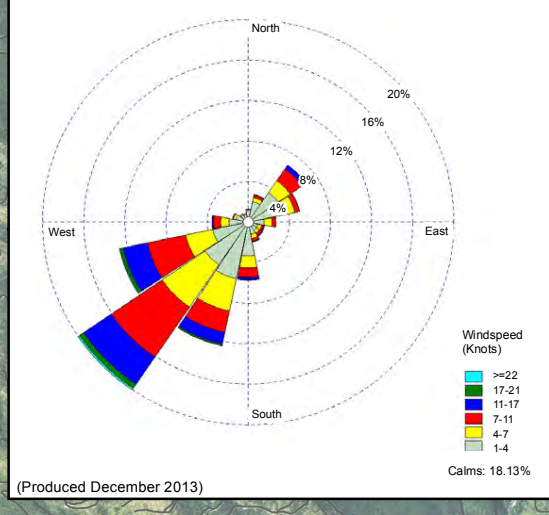
Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

MWH

Date Revised: 5/9/2016

Near Mine
Mine Center
Lincoln County Landfill
LSF-13-5 (Disturbed Road Area 2)
LSF-13-1 (Equipment Decon)
LSF-13-2 (Equipment Decon Undisturbed Area)
LSF-13-4 (Disturbed Road Area 1)
LSF-13-7 (Personnel Decon Undisturbed Area)
LSF-13
LSF-13-3 (Fire Site)
LSF-13-6 (Personnel Decon)
LSF-12-1 (Canoe Gulch Decon Area)
LSF-12
LSF-12-2 (Canoe Gulch Decon Undisturbed Area)
Kootenai River
Near Flower Creek
Near Bear Creek

OU3 Windrose



(Produced December 2013)

File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\Libby_RI_Fig4-5b_FireWood_Wildfire_11x17_L_080316.mxd

Legend

- Lincoln County Landfill
- Mine Center
- Wildfire, Forest Soil
- Wildfire, Forest Soil/Duff
- Wildfire Location
- Tree Collection Location
- Mine Property Boundary
- OU3 Study Area Boundary
- Asphalt Road
- Paved Road
- Gravel Road
- Decon Decontamination
- LSF Libby Superfund Fire

N
W E
S

0 3,000 6,000 12,000 Feet

0 0.65 1.3 2.6 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

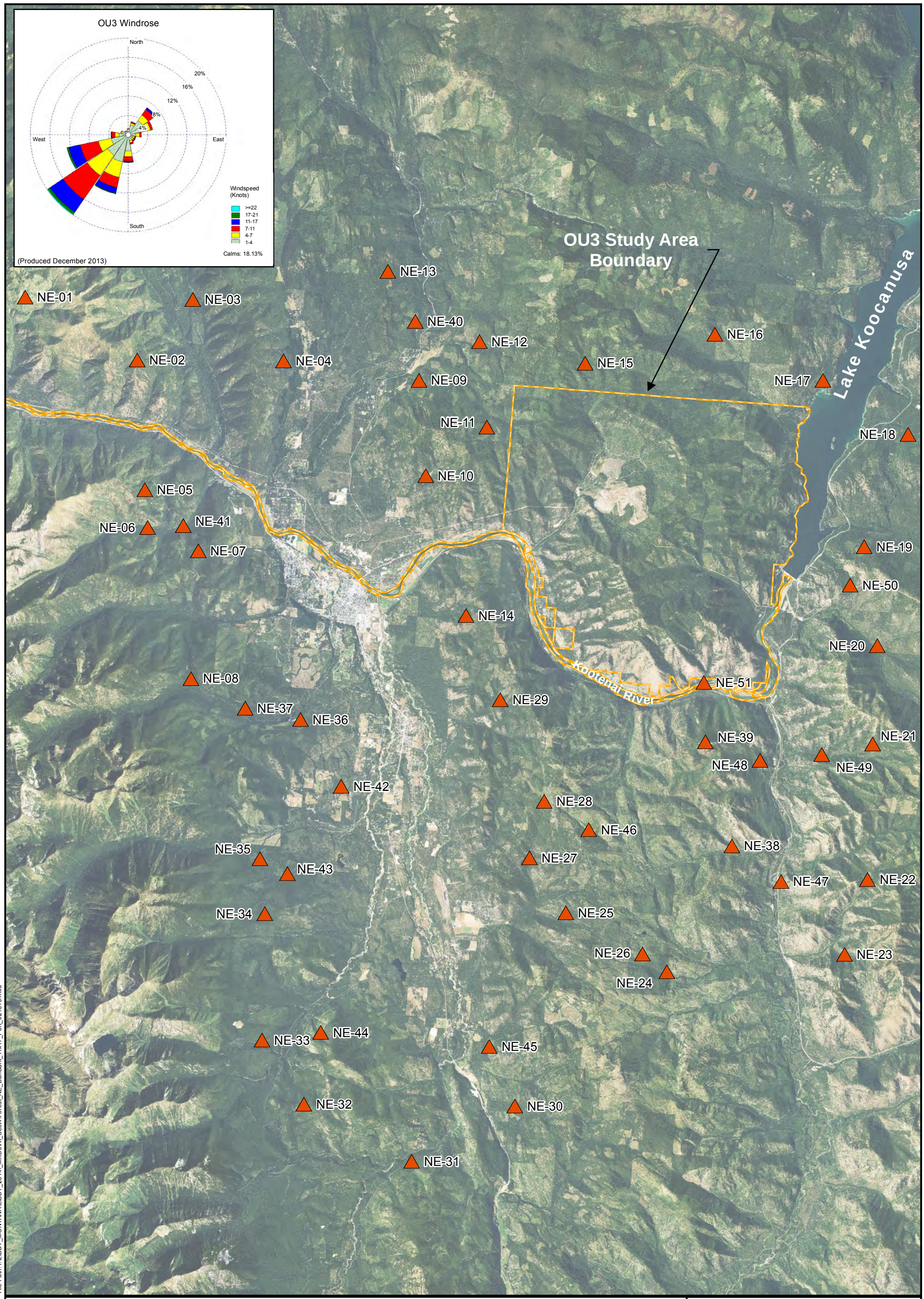
FIGURE 4-5b

2012 Firewood Collection Locations for the Wood Burning Stove Ash Investigation and 2015 Wildfire Monitoring

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 8/18/2016

MWH



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\Forest_NE_DuffBark_11x17_Port_021616.mxd

Legend

Forested Area Sample Locations

Duff/TreeBark

OU3 Study Area Boundary

NE Nature and Extent

N
W E
S

0 6,000 12,000 24,000 Feet

0 1.15 2.3 4.6 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

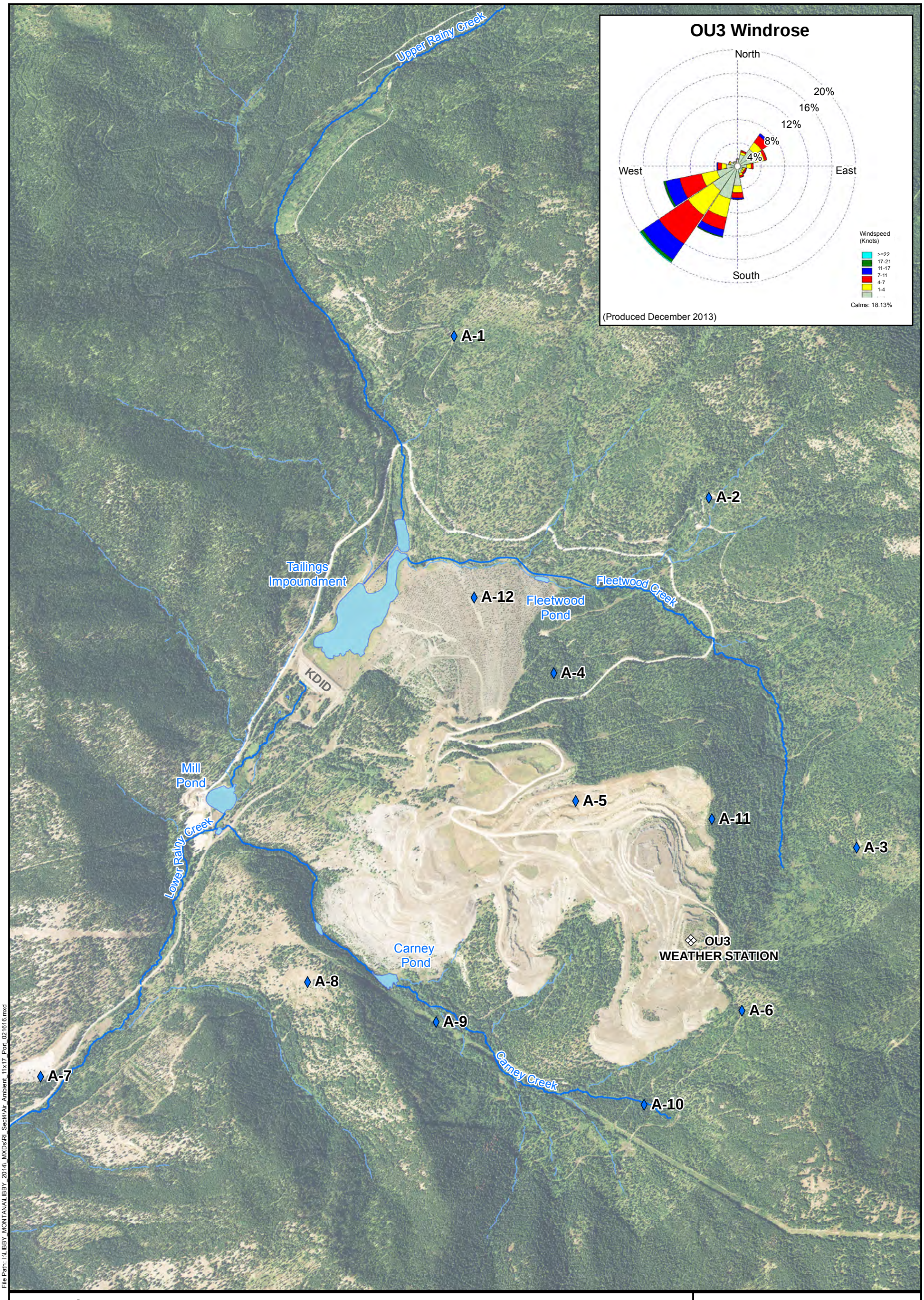
FIGURE 4-6

Post 2007 Remedial Investigation LAA Nature and Extent Duff Material and Tree Bark Locations from the Forested Areas

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 2/16/2016

MWH



OU3 Windrose

(Produced December 2013)

File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\Air_Ambient_11x17_Port_021616.mxd

Legend

- Ambient Air Sample
- Weather Station
- Perennial Stream or River
- Intermittent Stream
- Pond
- A Ambient

N
W E
S

0 800 1,600 3,200 Feet

0 0.125 0.25 0.5 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

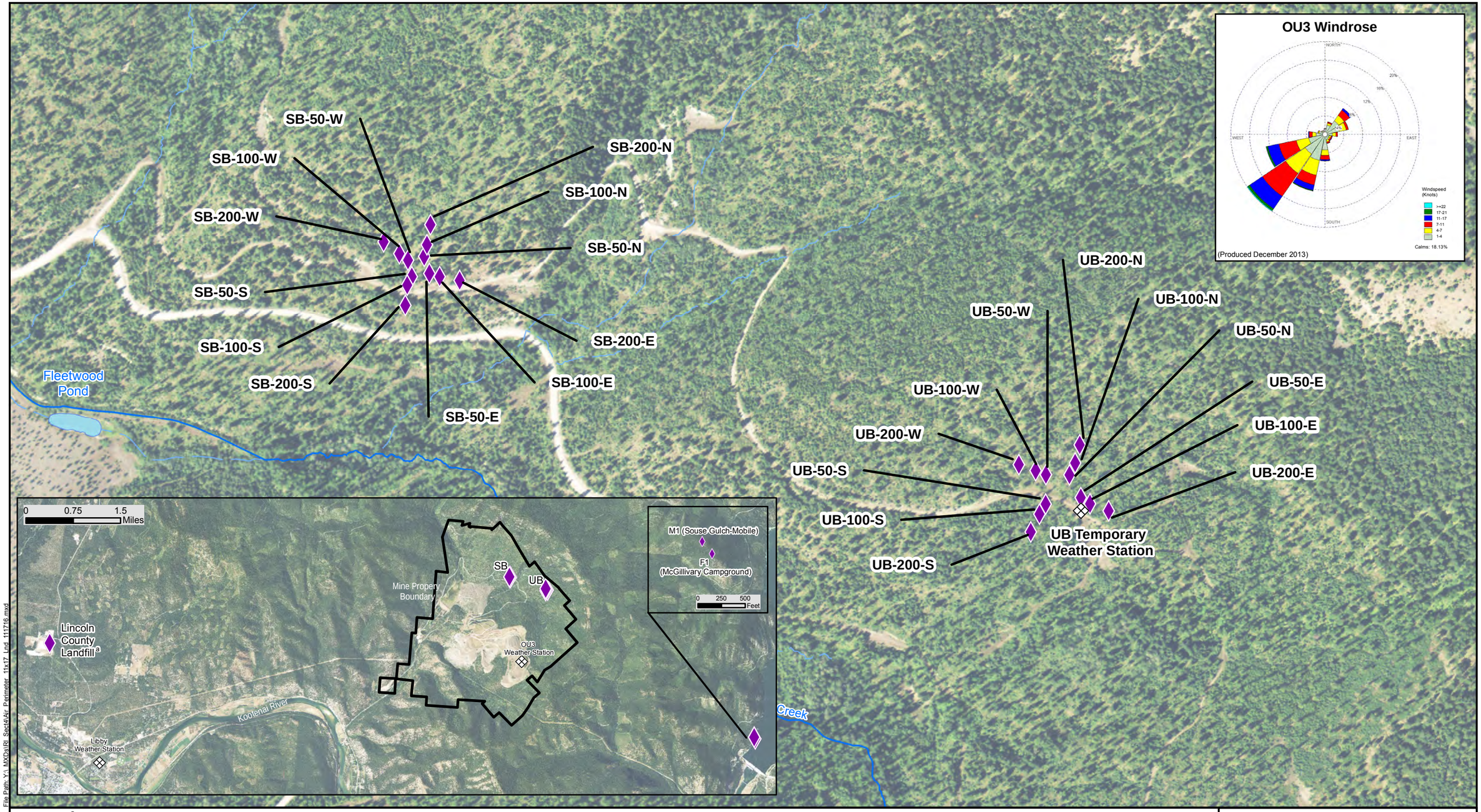
FIGURE 4-7a

Post 2007 Remedial Investigation Ambient Air Sample Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 2/16/2016

MWH



File Path: Y:\ MXDs\RI_Sect4\Air_Perimeter_11x17_Lnd_111716.mxd

Legend

- **SB-50-S** Perimeter air sample location
- Perennial Stream or River
- Intermittent Stream
- Pond
- Weather Station

Notes:

a. Lincoln County Landfill was used for the 2012 Woodstove Ash Burn location.

- LAA Libby Amphibole Asbestos
- SB Slash Pile Burn - Samples collected May 14-16, 2015
- UB Understory Burn - Samples collected June 22-24, 2015

N W E S

0 225 450 900 Feet

0 0.05 0.1 0.2 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

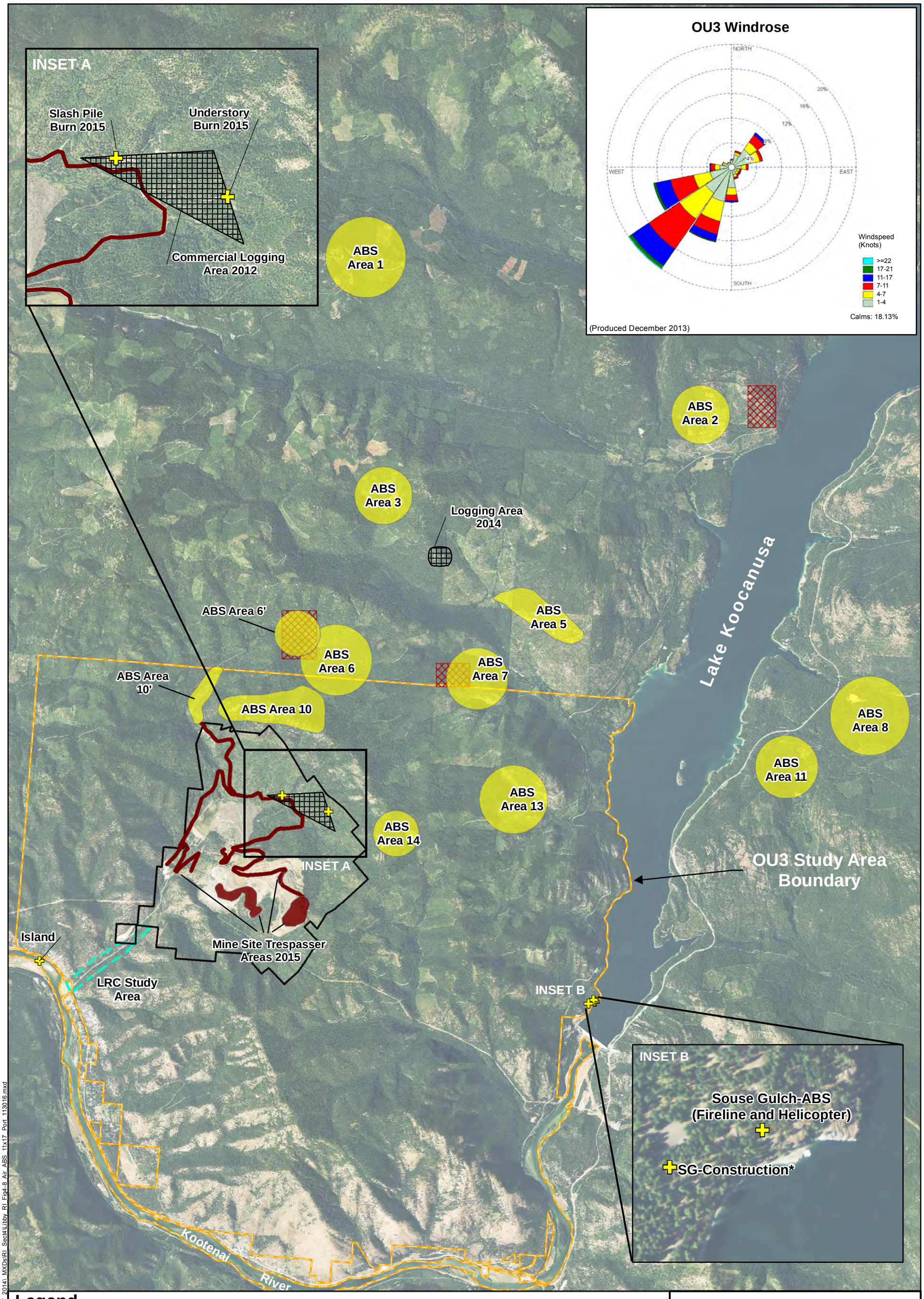
FIGURE 4-7b

Post 2007 Remedial Investigation Perimeter Air Sample Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 11/18/2016

MWH



Legend

- ABS Air Sample Location
- ABS Areas - Phase III and IV Part A
- Heavy Equipment Activity Area - Phase IV Part A
- Lower Rainy Creek (LRC) Study Area - Phase IV Part A
- Logging Areas - 2012 and 2014
- Mine Site Trespasser Areas 2015
- OU3 Study Area Boundary
- Mine Property Boundary
- * Five ABS samples taken in Souse Gulch area data provided in USACE, 2013.

N W E S

0 3,000 6,000 12,000 Feet

0 0.625 1.25 2.5 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 4-8

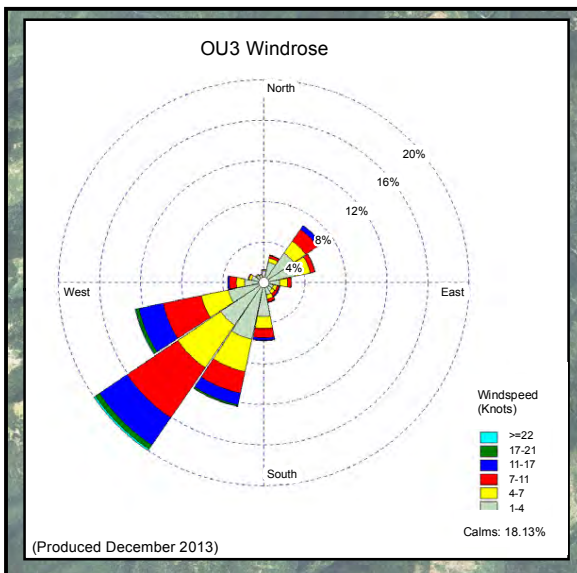
Post 2007 Remedial Investigation Activity Based Sampling (ABS) Air Sample Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 11/30/2016

MWH

File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\Libby_RI_Fig4-8_Air_ABS_11x17_Port_113016.mxd



OU3 Study Area Boundary

Lake Koocanusa

Kootenai River

NE-40

NE-02

NE-06

NE-19

NE-20

NE-46

NE-35

NE-22

NE-25

NE-32

File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect4\Libby_RI_Fig4-9_NatureEx_11x17_L_081616.mxd

Legend

- ABS Sample Locations
- OU3 Study Area Boundary
- NE Nature and Extent

N
W E
S

0 6,000 12,000 24,000 Feet

0 1.15 2.3 4.6 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

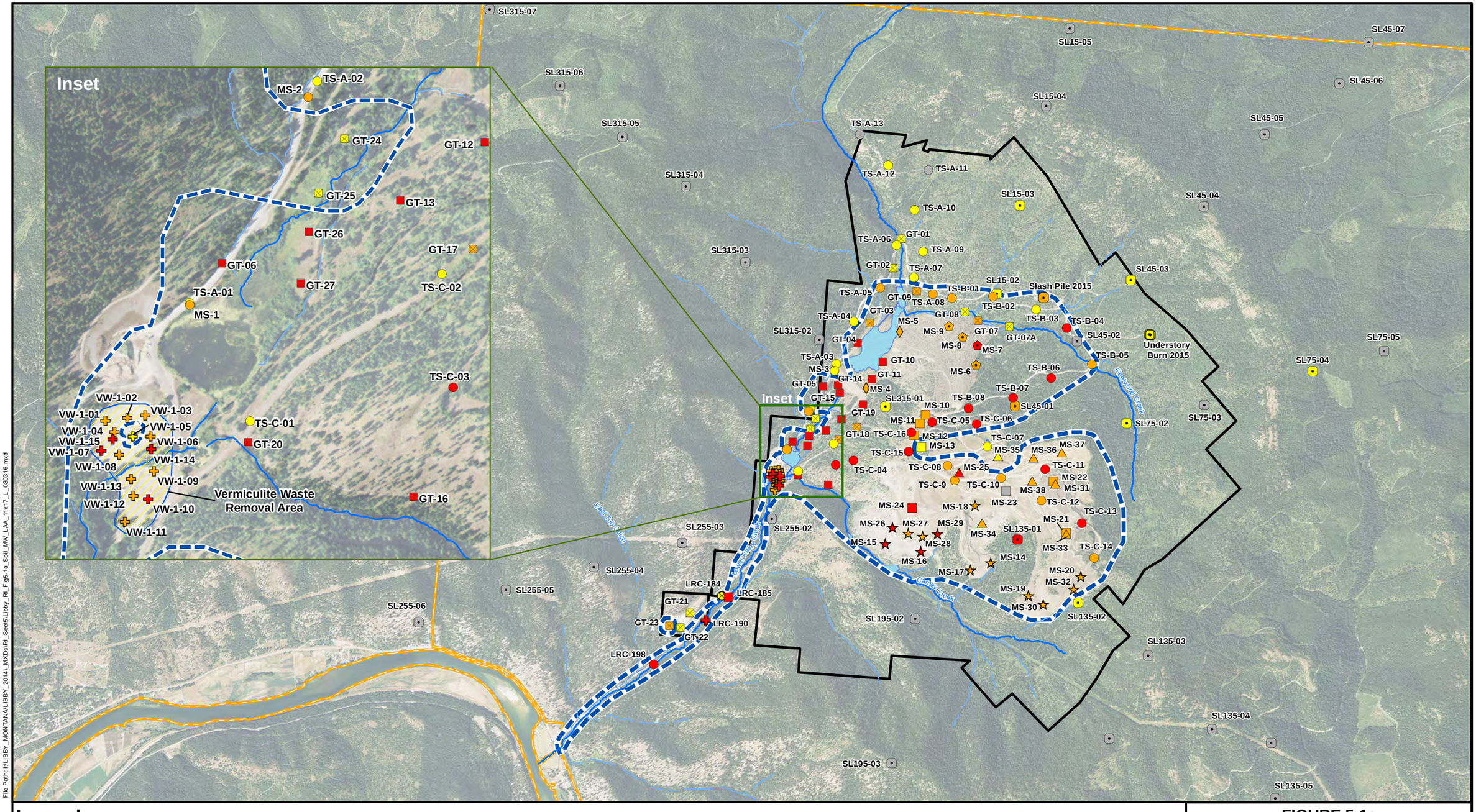
FIGURE 4-9

2014 Nature and Extent ABS Areas Sampling Locations

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 8/19/2016

MWH



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect5\Libby_RI_Fig5-1a_Soil_MW_LAA_11x17_L_080316.mxd

Legend

Soil/Rock/Mine Waste Sample Locations

- Test Pit *
- Forest Soil **
- Coarse Tailings
- Fine Tailings
- Waste Rock
- Road Material
- Cover/Fill Material
- Alluvium/Other Material
- Glacial
- Bedrock (Outcrop)

PLM-VE (% mass fraction)

- ND (Bin A)
- Tr (Bin B1; >ND<0.2%)
- <1% (Bin B2; ≥0.2%<1%)
- ≥1% (Bin C; ≥ 1%)

- Soil ≥ 0.2% PLM-VE mass fraction
- Mine Property Boundary
- OU3 Study Area Boundary
- Pond
- Perennial Stream or River
- Intermittent Stream

* Samples collected at various depths and include tailings, fill, alluvium, glacial, and bedrock materials

** Forest Soil location samples outside the view area of this figure are all ND (Bin A).

Notes:

GT	Geotech
MS	Mine Sample
LAA	Libby Amphibole Asbestos
LRC	Lower Rainy Creek
PLM-VE	Polarized Light Microscopy, Visual Area Estimation
SL195	Sample Location (SL) with Respective Degrees from North
TS	Trespasser (Routes A, B and C)
VW	Vermiculite Waste

N W E S

0 1,350 2,700 5,400 Feet

0 0.25 0.5 1 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

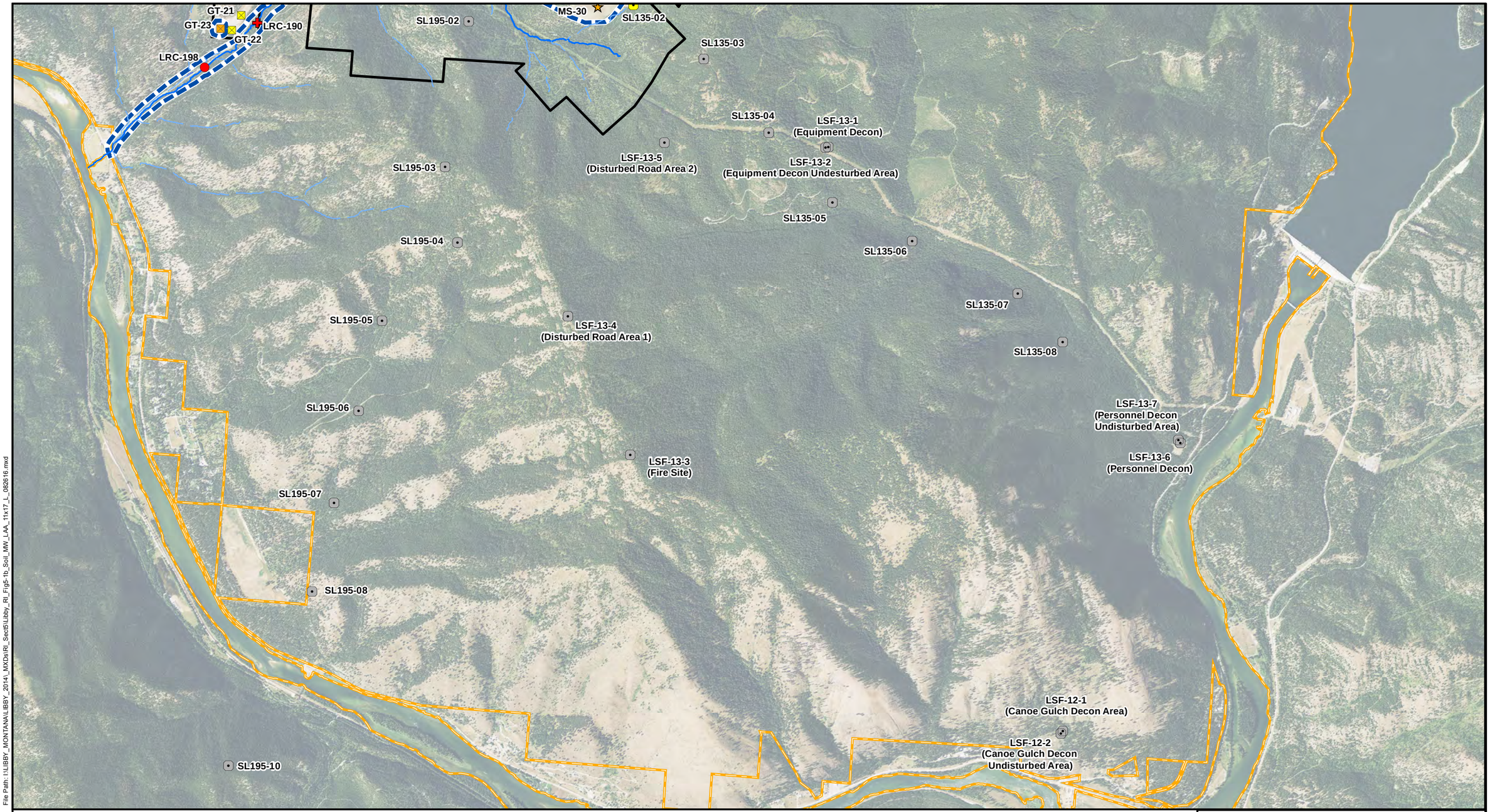
FIGURE 5-1a

Maximum LAA PLM-VE Results for Soil/Rock/Mine Waste (North) (Post 2007 Data)

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 8/26/2016

MWH



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect5\Libby_RI_Fig5-1b_Soil_MW_LAA_11x17_L_082816.mxd

Legend

Soil/Rock/Mine Waste Sample Locations

- Test Pit *
- Forest Soil **
- Coarse Tailings
- Fine Tailings
- Waste Rock
- Road Material
- Cover/Fill Material
- Alluvium/Other Material
- Glacial
- Bedrock (Outcrop)

PLM-VE (% mass fraction)

- ND (Bin A)
- Tr (Bin B1; >ND<0.2%)
- <1% (Bin B2; ≥0.2%<1%)
- ≥1% (Bin C; ≥ 1%)

- Soil ≥ 0.2% PLM-VE mass fraction
- Mine Property Boundary
- OU3 Study Area Boundary
- Pond
- Perennial Stream or River
- Intermittent Stream

* Samples collected at various depths and include tailings, fill, alluvium, glacial, and bedrock materials

** Forest Soil location samples outside the view area of this figure are all ND (Bin A).

Notes:

GT	Geotech
MS	Mine Sample
LAA	Libby Amphibole Asbestos
LRC	Lower Rainy Creek
PLM-VE	Polarized Light Microscopy, Visual Area Estimation
SL195	Sample Location (SL) with Respective Degrees from North
TS	Trespasser (Routes A, B and C)
VW	Vermiculite Waste

N
W E
S

0 1,350 2,700 5,400 Feet

0 0.25 0.5 1 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 5-1b

Maximum LAA PLM-VE Results for Soil/Rock/Mine Waste (South) (Post 2007 Data)

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 8/26/2016

MWH

Material	Pre-1963 Volume, CY (2)	1963 - 2015 Volume, CY (3)	Total, CY
KDID Embankment	n/a	1.2M	1.2M
Fine Tailings	n/a	3.2M	3.2M
Coarse Tailings	3.0M	11.7M	14.7M
Waste Rock	10.0M	30.7M	40.7

V = 3,200,000 CY

V = 1,200,000 CY

Tailings Impoundment

Fine Tailings

KDID

Coarse Tailings Pile

V = 14,700,000 CY

Fleetwood Pond

Fleetwood Creek

Lower Rainy Creek

Former Mill Area

Mill Pond

Mine Center

Mined Area

Waste Rock Pile

Lower Carney Pond

Carney Pond

Carney Creek

East Tub Gulch

V = 28,200,000 CY

V = 1,000,000 CY

V = 11,500,000 CY

Document Path: I:\LIBBY_MONTANA\LIBBY 2014\ MXDs\RI_Sect5\FRI_2_MineWasteMaterials_11x17_Lnd_020916.mxd

Legend

- Contour Interval (100 Feet)
- Perennial Stream or River
- Intermittent Stream
- Pond
- Mine Property Boundary

Material

- KDID Embankment
- Fine Tailings
- Coarse Tailings
- Waste Rock

Notes:

- Existing grade contours from 2015 LiDAR Survey.
- Estimated volumes (V) for materials placed prior to 1963 from comparison of "Thompson Lakes Quadrangle" topo map (USGS, 1935), Contour Interval = 100 feet.
- Estimated volumes for materials placed after 1963 from comparison of "Vermiculite Mountain Quadrangle" topo map (USGS, 1963), Contour Interval = 40 feet.

CY cubic yards

N W E S

0 600 1,200 2,400 Feet

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

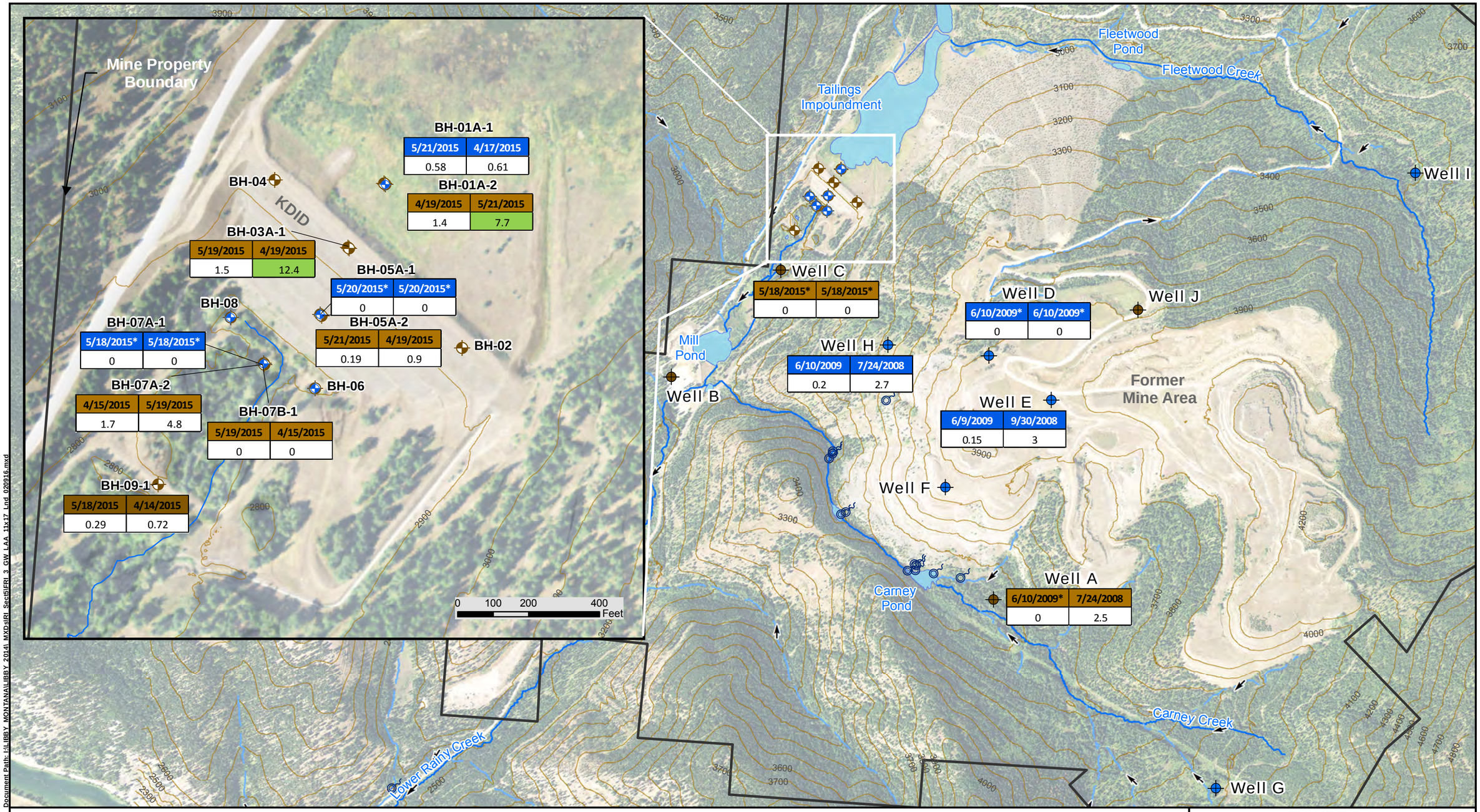
FIGURE 5-2

Mine Waste Material Volumes

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 2/9/2016

MWH



Document Path: I:\LIBBY_MONTANA\LIBBY_2014\ MXD\SIRI_Sec5\FRI_3_GW_LAA_11x17_Lnd_020916.mxd

Legend

- Bedrock Groundwater Well
- Shallow Groundwater Well (Alluvial, Glacial)
- Bedrock Piezometer
- Shallow Piezometer (Alluvium, Embankment Fill, Glacial Till, Fill)
- Observed Seep (October, 2014)
- Topographic Contour (Contour Interval 100
- Perennial Stream or River
- Intermittent Stream
- Pond
- Mine Property Boundary

Well C

Date Collected	Date Collected
Minimum Value (µm)	Maximum Value (µm)

* There were multiple dates with results at this concentration

Notes:

- Wells BH-01A,-05A,-06,-07A,-08 contain both bedrock & shallow piezometers.
- All data MFL LAA > 10 µm in length.
- Values greater than MCL of 7 MFL highlighted green.

BH	Borehole
KDID	Kootenai Development Impoundment Dam
LAA	Libby Amphibole Asbestos
MCL	Primary drinking water standard Maximum Contaminant Level
MFL	million fibers per liter
µm	micrometers

N W E S

0 0.125 0.25 0.5 Miles

Base Image: National Agriculture Imagery Program, 2013

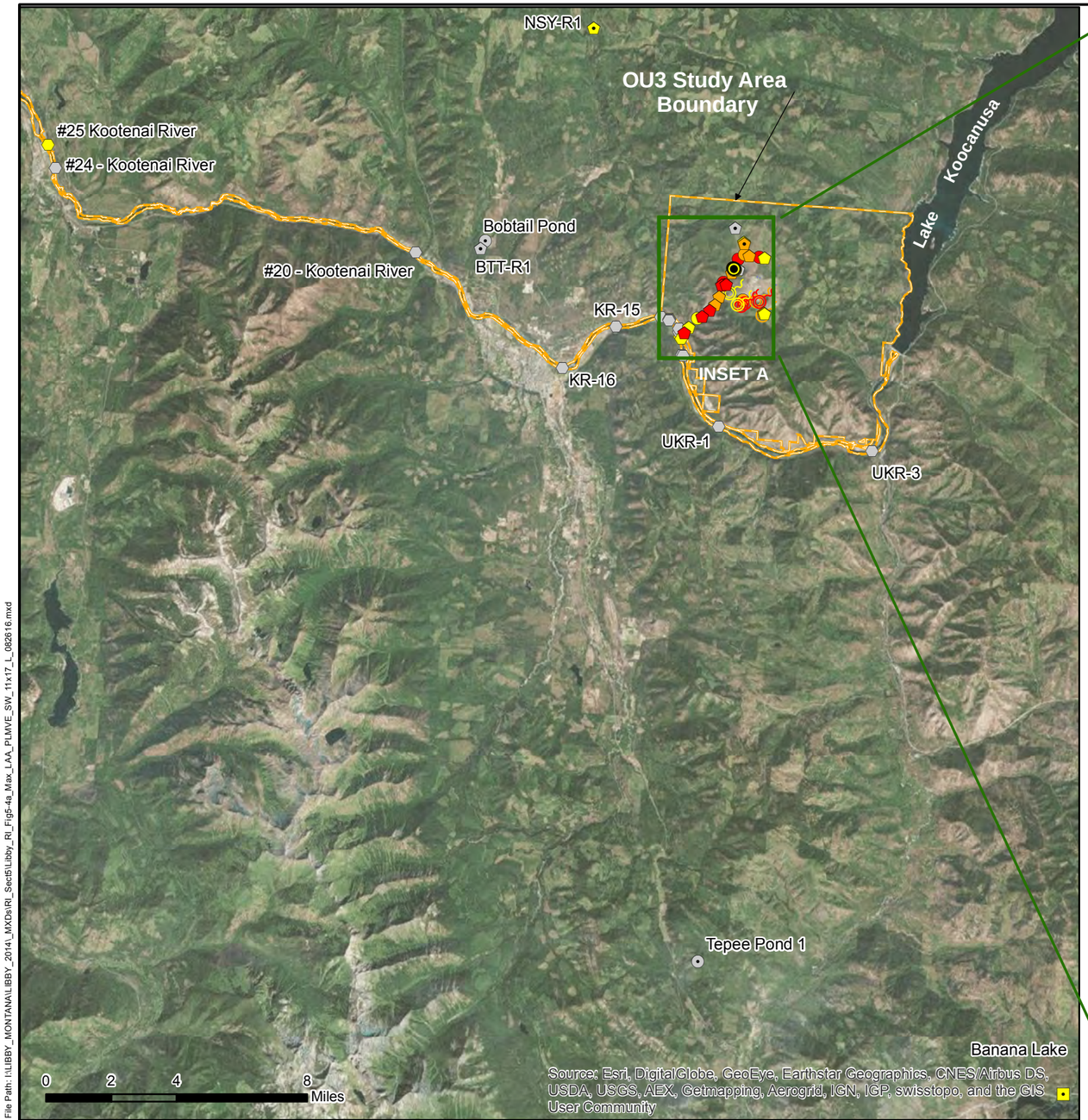
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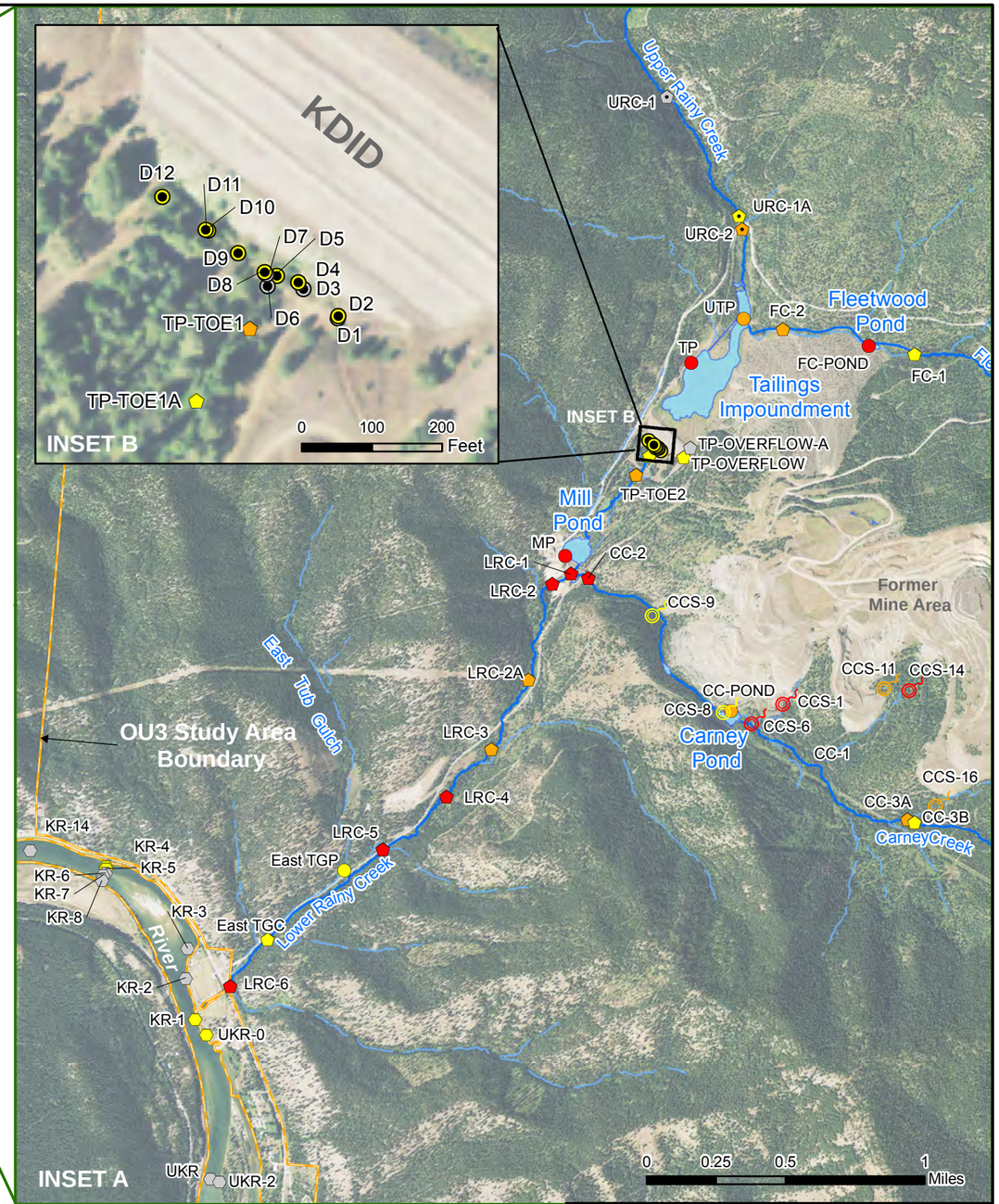
FIGURE 5-3
Maximum LAA > 10µm in Length Results for Groundwater (Post 2007 Data)

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 2/9/2016

MWH





Legend

Surface Water Sample Locations

- Creek
- Pond
- River
- Seep
- Toe Drain
- Creek Reference Location
- Pond Reference Location
- Lake Reference Location

Surface Water
(MFL LAA ≥ 10 µm in length)

- 0
- > 0 - 1
- > 1 - 7
- ≥ 7

- Perennial Stream or River
- Intermittent Stream
- OU3 Study Area Boundary
- Pond

Notes:

BTT	Bobtail Creek Tributary	MFL	million fibers per liter
CC	Carney Creek	MP	Mill Pond
CCS	Carney Creek Seep	NSY	Noisy Creek
FC	Fleetwood Creek	TGC	Tub Gulch Creek
KDID	Kootenai Development Impoundment Dam	TGP	Tub Gulch Pond
		TP	Tailings Pond
LAA	Libby Amphibole Asbestos	UKR	Upper Kootenai River
LRC	Lower Rainy Creek	URC	Upper Rainy Creek
		µm	micrometers

N
W E
S

Base Image: National Agriculture Imagery Program, 2013
Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 5-4a

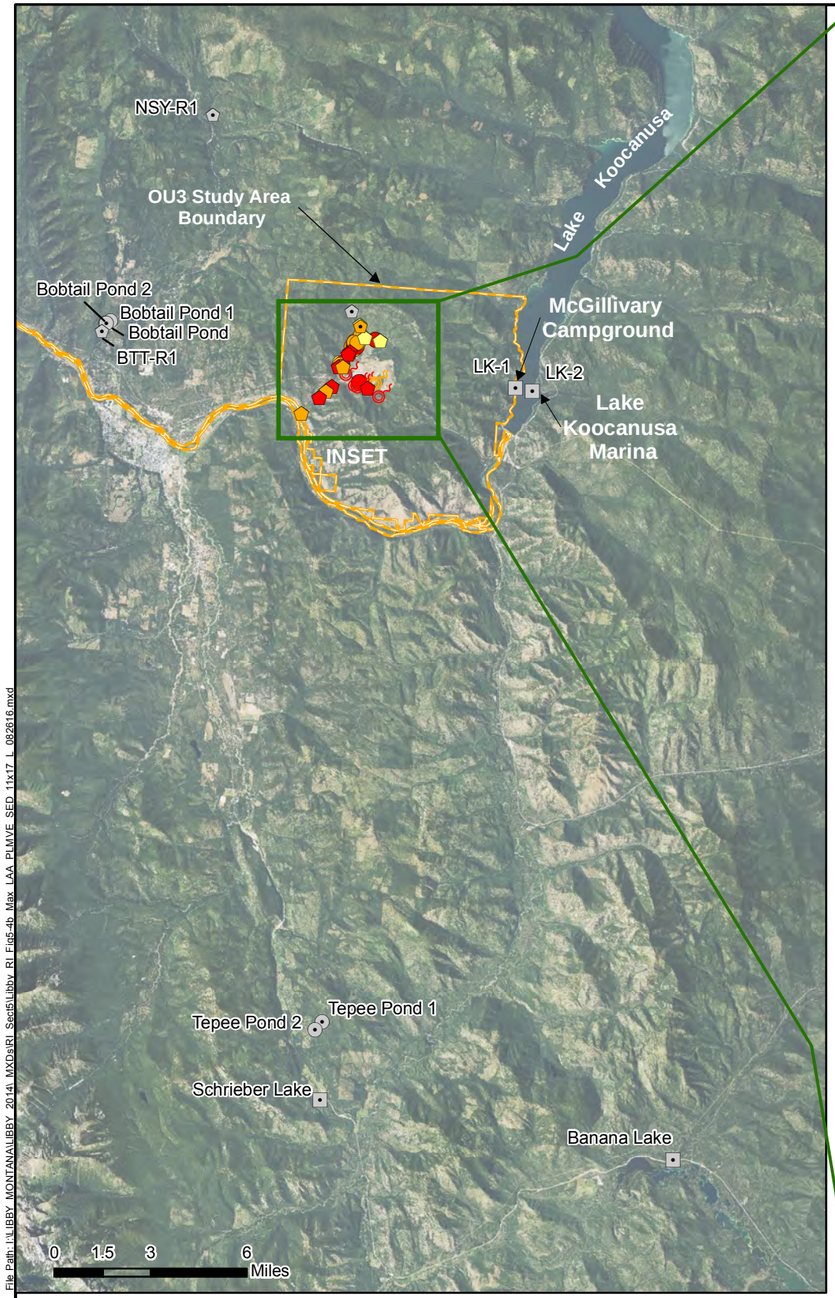
Maximum LAA Results for Surface Water (Post 2007 Data)

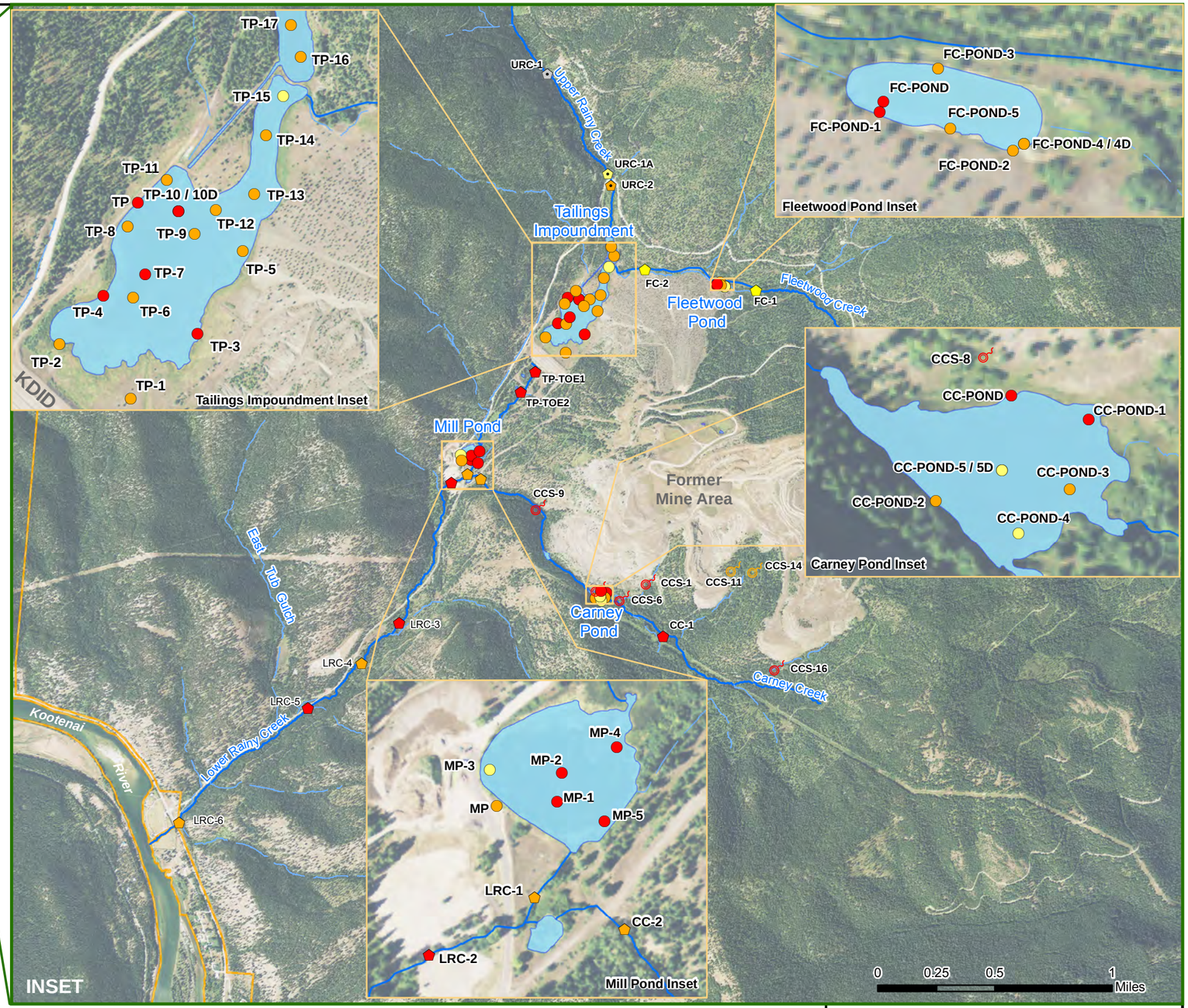
Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 8/26/2016

MWH

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Legend

Sediment Sample Locations

- Creek
- Pond
- Seep
- Creek Reference Location
- Pond Reference Location
- Lake Reference Location

Sediment
(PLM-VE % mass fraction)

- ND (Bin A)
- TR (Bin B1; > ND < 0.2%)
- < 1% (Bin B2; ≥ 0.2% < 1%)
- ≥ 1% (Bin C)

- Perennial Stream or River
- Intermittent Stream
- OU3 Study Area Boundary
- Pond

Notes:

BTT	Bobtail Creek Tributary	MP	Mill Pond
CC	Carney Creek	ND	Non-Detect
CCS	Carney Creek Seep	NSY	Noisy Creek
FC	Fleetwood Creek	PLM-VE	Polarized Light Microscopy, Visual Area Estimation
KDID	Kootenai Development Impoundment Dam	TP	Tailings Pond
LAA	Libby Amphibole Asbestos	TR	Trace
LK	Lake Koocanusa	URC	Upper Rainy Creek
LRC	Lower Rainy Creek		

N W E S

Base Image: National Agriculture Imagery Program, 2013
Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

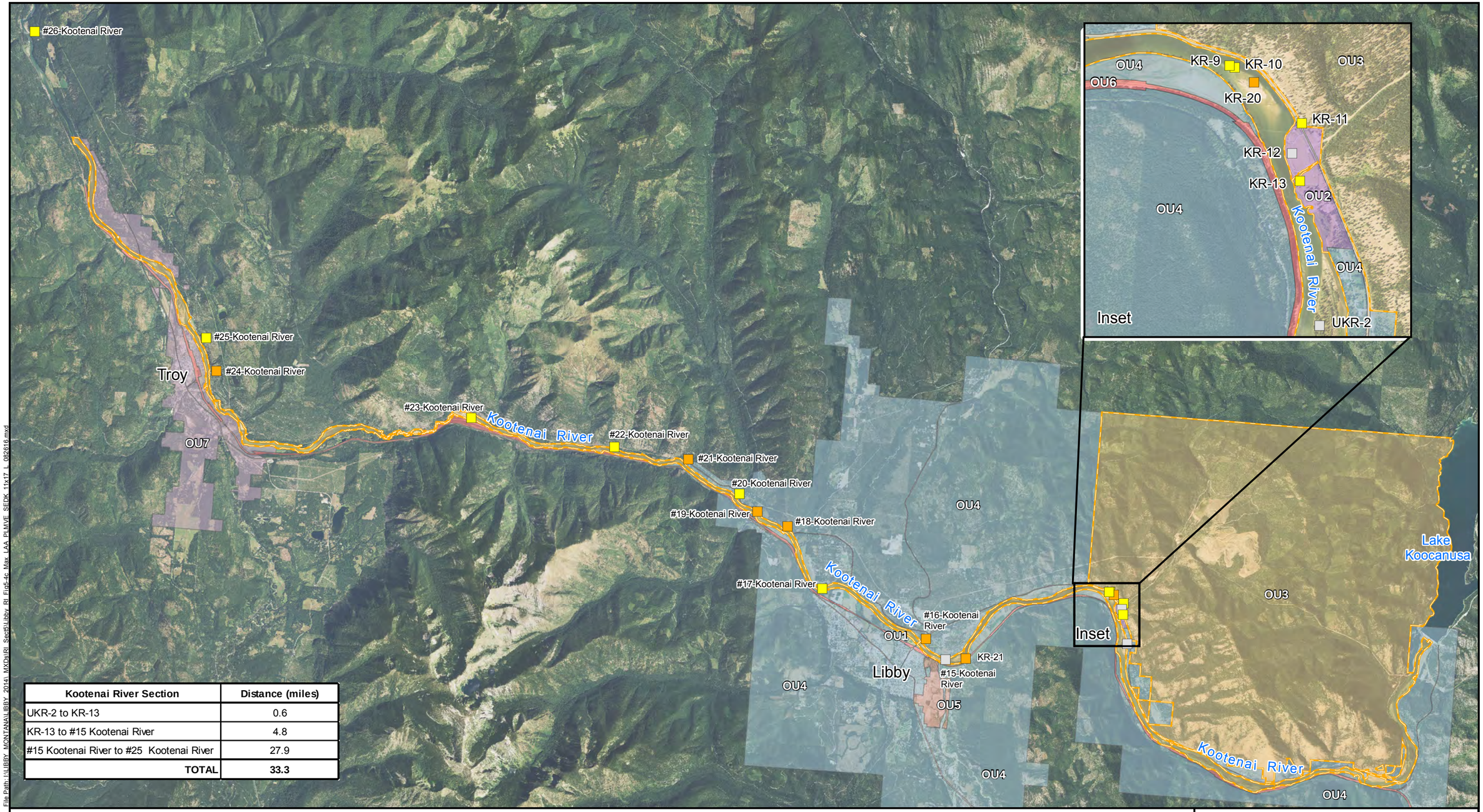
FIGURE 5-4b

Maximum LAA PLM-VE Results for Sediment (Post 2007 Data)

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 8/26/2016

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Kootenai River Section	Distance (miles)
UKR-2 to KR-13	0.6
KR-13 to #15 Kootenai River	4.8
#15 Kootenai River to #25 Kootenai River	27.9
TOTAL	**33.3**

Legend

Sediment
(PLM-VE % mass fraction)

- ND (Bin A)
- TR (Bin B1; > ND < 0.2%)
- <1% (Bin B2; ≥ 0.2% < 1%)
- ≥ 1% (Bin C)

Operable Unit (OU) Boundary (Reference: U.S. EPA Region 8)

- Operable Unit 1
- Operable Unit 2
- Operable Unit 3
- Operable Unit 4
- Operable Unit 5
- Operable Unit 6
- Operable Unit 7
- Operable Unit 8

Notes:

- Figure shows the maximum LAA concentration at each location where multiple samples were collected.

KR	Kootenai River
LAA	Libby Amphibole Asbestos
ND	Non-Detect
PLM-VE	Polarized Light Microscopy, Visual Area Estimation
TR	Trace
UKR	Upper Kootenai River

N
W E
S

0 5,000 10,000 20,000 Feet
0 0.9 1.8 3.6 Miles

Base Image: National Agriculture Imagery Program, 2013
Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 5-4c

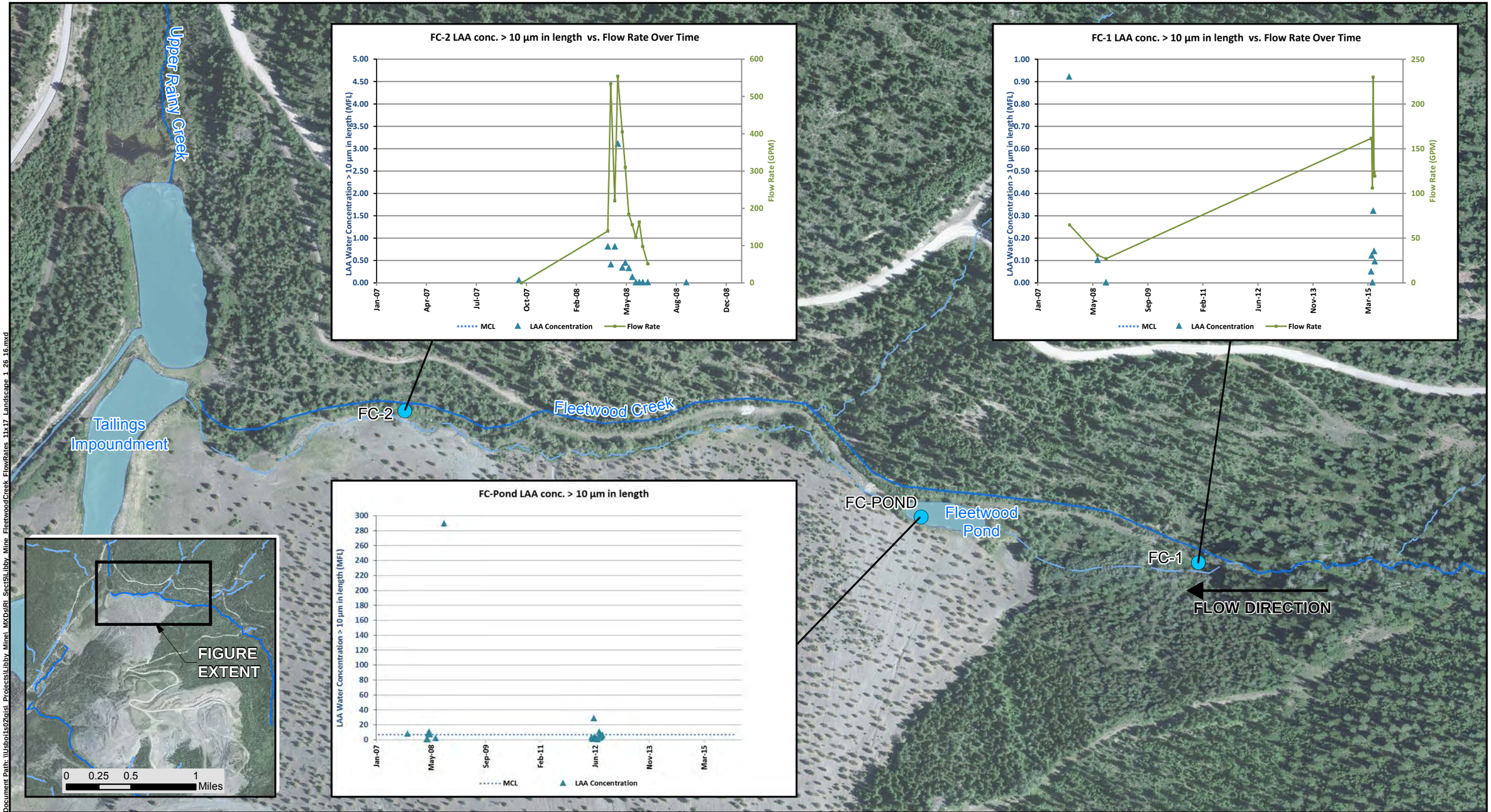
Maximum LAA PLM-VE Results for Sediment within the Kootenai River (Post 2007 Data)

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 8/26/2016

MWH

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Legend

- Surface Water Sampling Station
- Perennial Stream or River
- Intermittent Stream
- Pond

Notes:

- Graphs are only shown for locations where there was one or more detections of LAA with flow data.

LAA	Libby amphibole asbestos
µm	micrometers
MFL	million fibers per liter
MCL*	Maximum Contaminant Level *National Primary Drinking Water Regulation (NPDWR) MCL for asbestos of 7 million fibers longer than 10 µm per liter of water.
GPM	gallons per minute

N W E S

0 150 300 600 Feet

Base Image: LiDAR, 2015

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

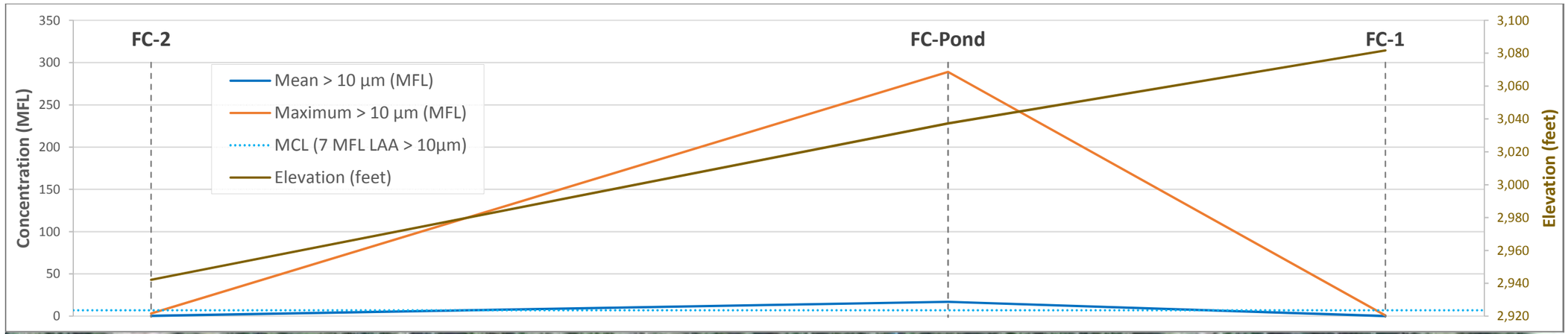
FIGURE 5-5a

Fleetwood Creek Surface Water LAA Concentrations vs. Flow Rate Over Time

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 2/15/2016

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Sampling Station	FC-2	FC-Pond	FC-1
Mean > 10 µm (MFL)	0.45	17.0	0.19
Maximum > 10 µm (MFL)	3.1	289	0.92
Standard Deviation	0.81	59.6	0.29
Number of Samples	14	23	9
Number of MCL Exceedences*	0	6	0
Frequency of MCL Exceedences	0%	26%	0%
Elevation (feet)	2,942	3,037	3,082

Notes:

*National Primary Drinking Water Regulation (NPDWR) for asbestos of 7 million fibers longer than 10 µm per liter of water.

MFL million fibers per liter

MCL Maximum Contaminant Level

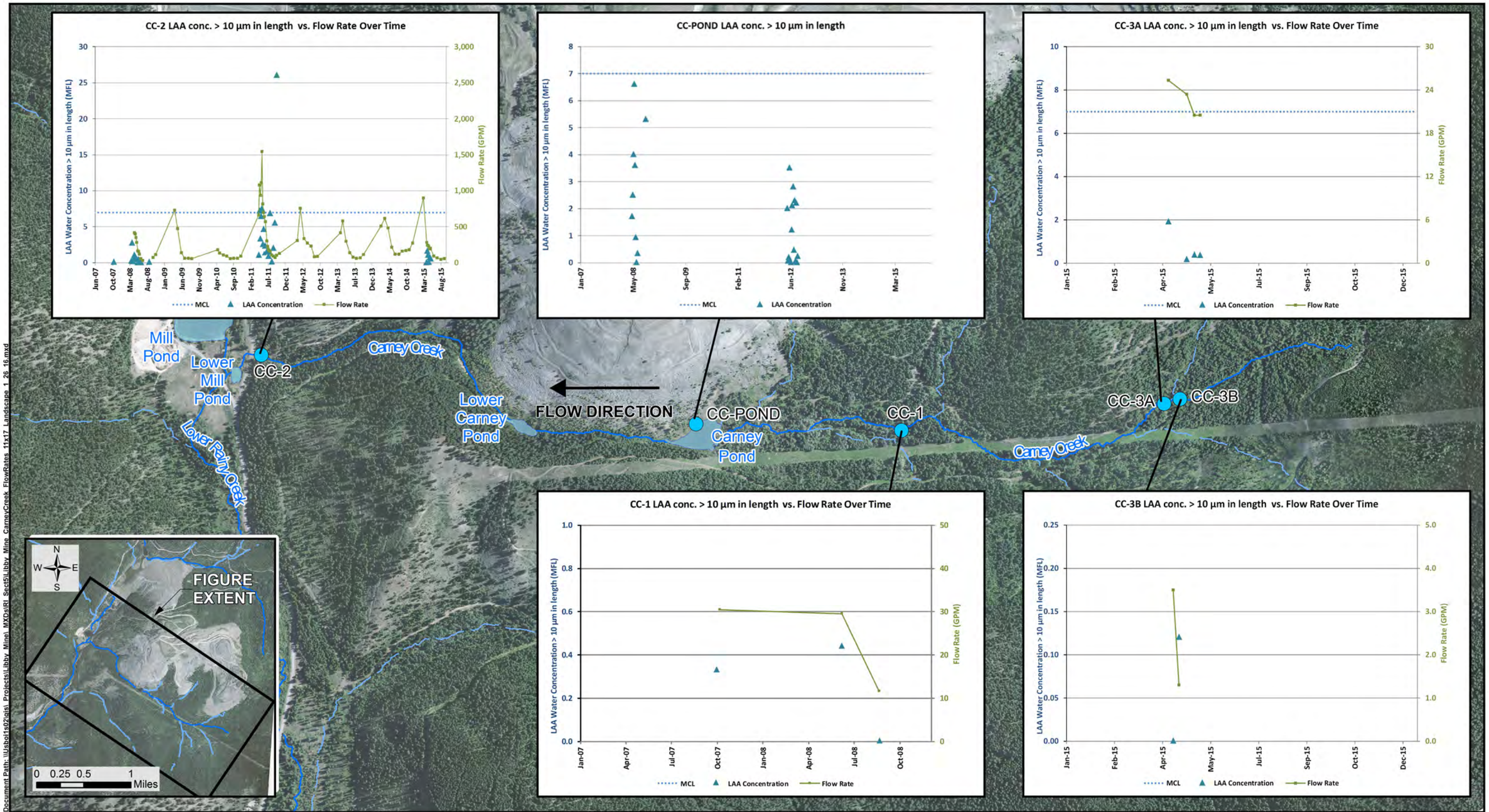
µm micrometer

LAA Libby Amphibole Asbestos

FIGURE 5-5b
Fleetwood Creek Surface Water LAA Concentrations, Elevation Profile, and Summary Statistics

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co.-Conn.

MWH



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Legend

- Surface Water Sampling Station
- Perennial Stream or River
- Intermittent Stream
- Pond

Notes:

- Graphs are only shown for locations where there was one or more detections of LAA with flow data.

LAA	Libby amphibole asbestos
µm	micrometers
MFL	million fibers per liter
MCL*	Maximum Contaminant Level *National Primary Drinking Water Regulation (NPDWR) MCL for asbestos of 7 million fibers longer than 10 µm per liter of water.
GPM	gallons per minute

N W E S

0 400 800 1,600 Feet

Base Image: LiDAR, 2015

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

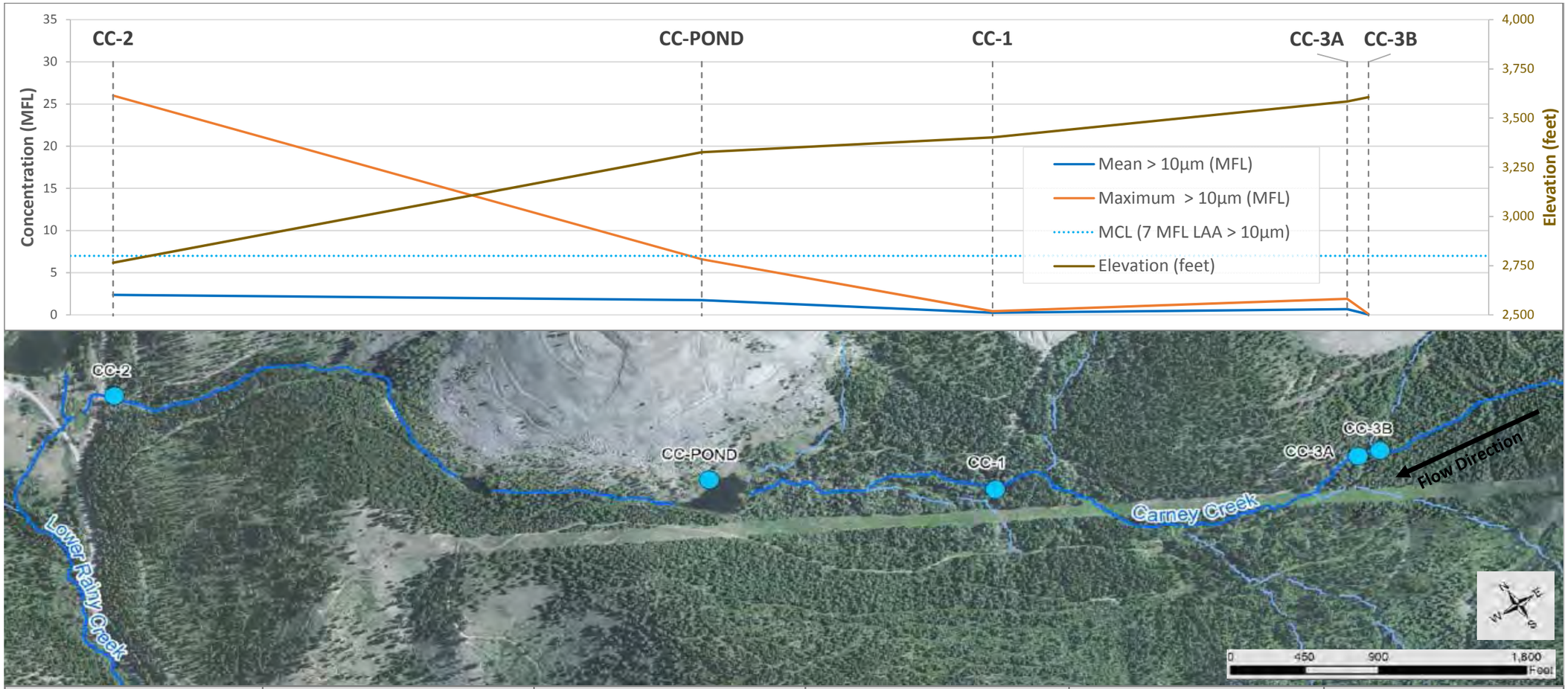
FIGURE 5-6a

Carney Creek Surface Water LAA Concentration vs. Flow Rate Over Time

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

MWH

Date Revised: 2/15/2016



Sampling Station	CC-2	CC-POND	CC-1	CC-3A	CC-3B
Mean > 10µm (MFL)	2.4	1.8	0.26	0.69	0.06
Maximum > 10µm (MFL)	26	6.6	0.44	1.9	0.12
Standard Deviation	4.5	1.8	0.23	0.81	0.08
Number of Samples	39	24	3	4	2
Number of MCL Exceedences*	3	0	0	0	0
Frequency of MCL Exceedences*	8%	0%	0%	0%	0%
Elevation (feet)	2,765	3,326	3,402	3,585	3,606

Notes:

*National Primary Drinking Water Regulation (NPDWR) for asbestos of 7 million fibers longer than 10 µm per liter of water.

MFL - million fibers per liter

MCL - Maximum Contaminant Level

µm - micrometer

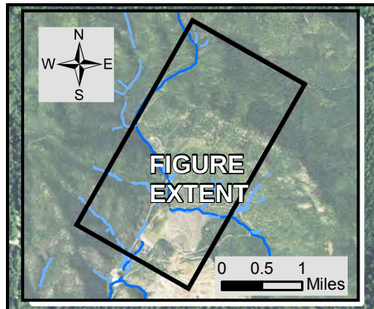
LAA - Libby Amphibole Asbestos

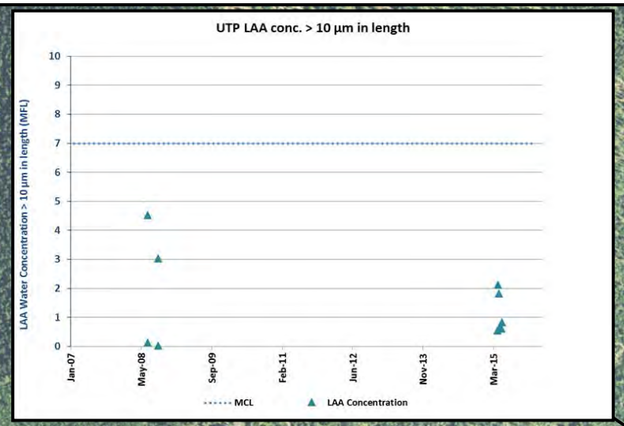
FIGURE 5-6b

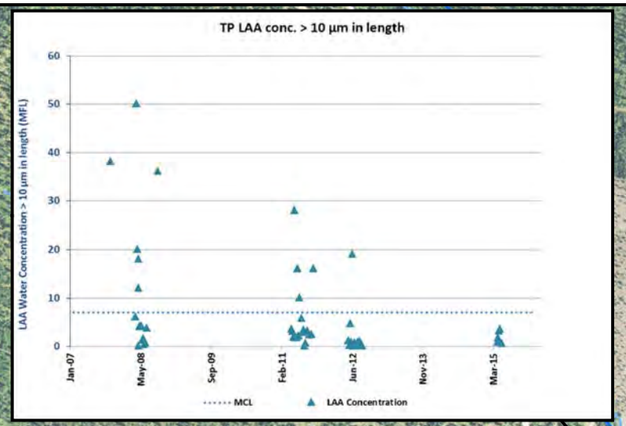
Carney Creek Surface Water LAA Concentrations, Elevation Profile, and Summary Statistics

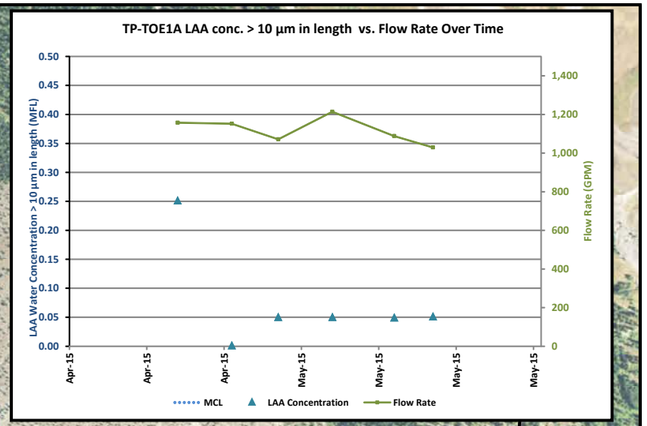
Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co.-Conn.

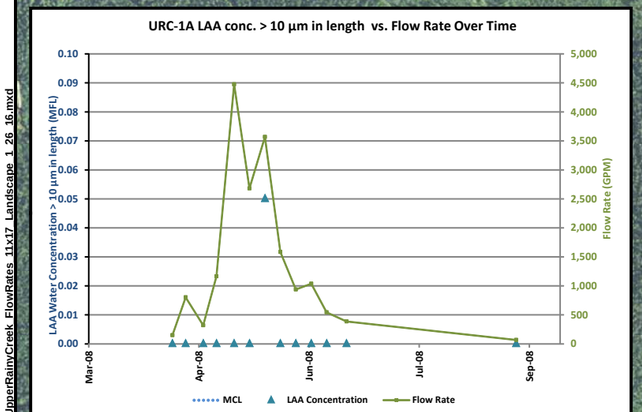
MWH

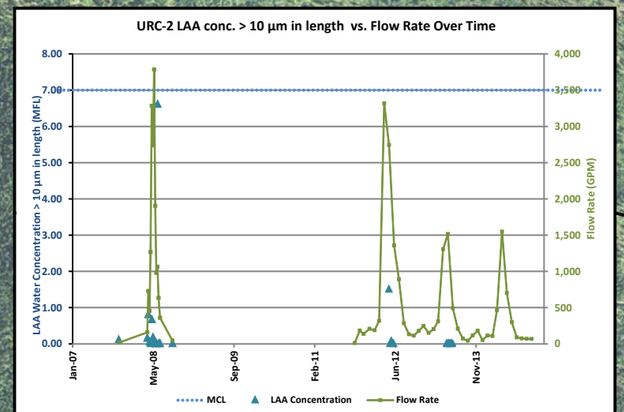


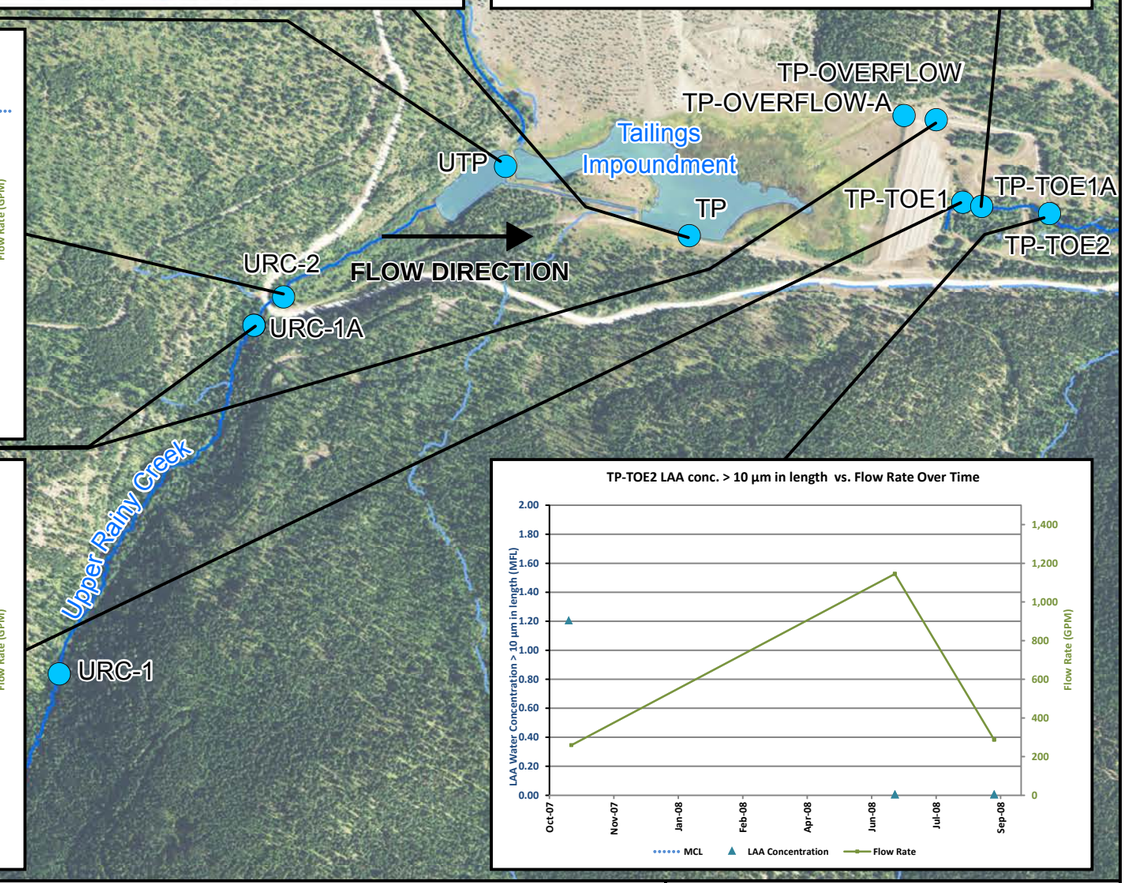


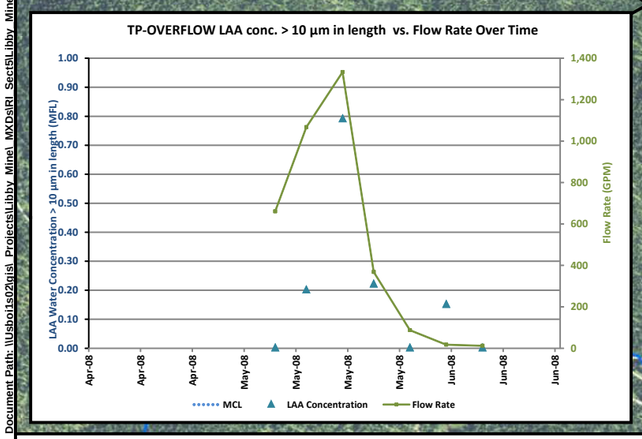


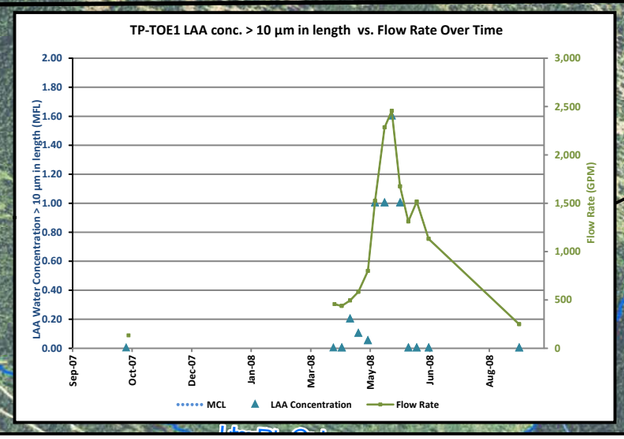












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Legend

- Surface Water Sampling Station
- Perennial Stream or River
- Intermittent Stream
- Pond

Notes:

- Graphs are only shown for locations where there was one or more detections of LAA with flow data.

LAA	Libby amphibole asbestos
µm	micrometers
MFL	million fibers per liter
MCL*	Maximum Contaminant Level *National Primary Drinking Water Regulation (NPDWR) MCL for asbestos of 7 million fibers longer than 10 µm per liter of water.
GPM	gallons per minute

N W E S

0 500 1,000 2,000 Feet

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

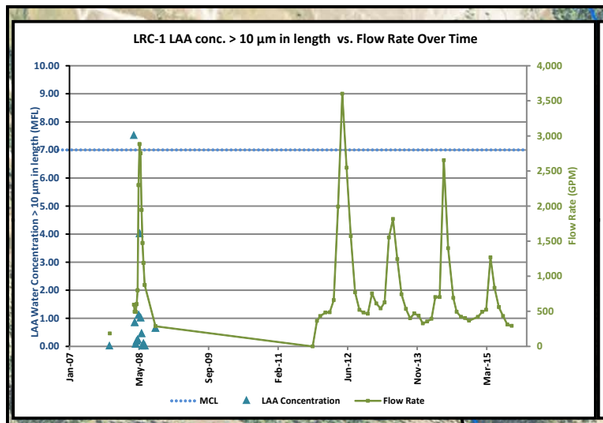
FIGURE 5-7a

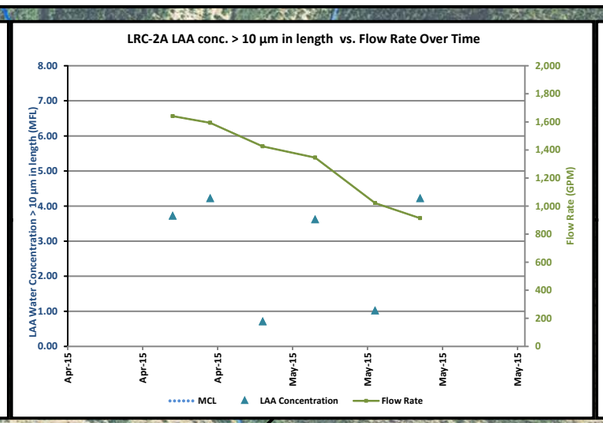
Upper Rainy Creek and Tailings Pond Area Surface Water LAA Concentrations vs. Flow Rate Over Time

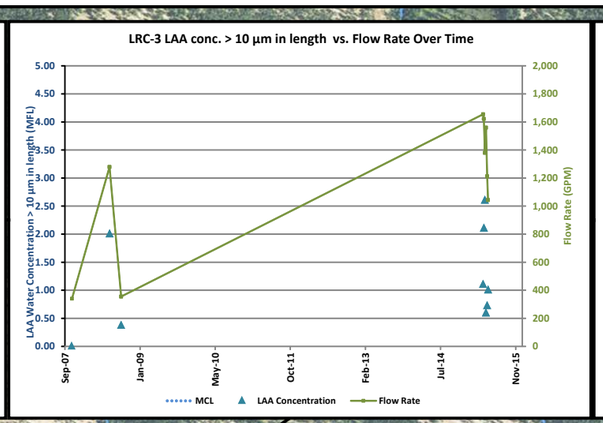
Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

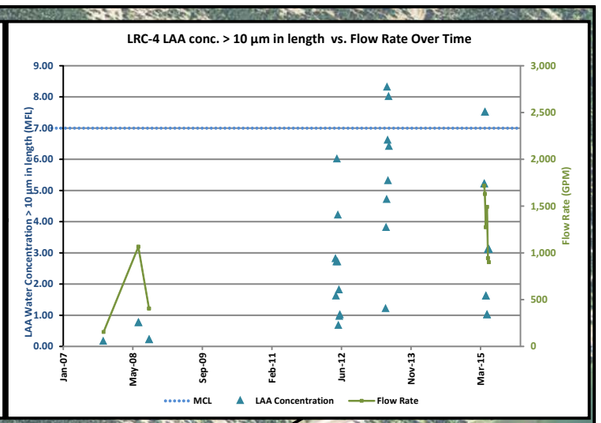
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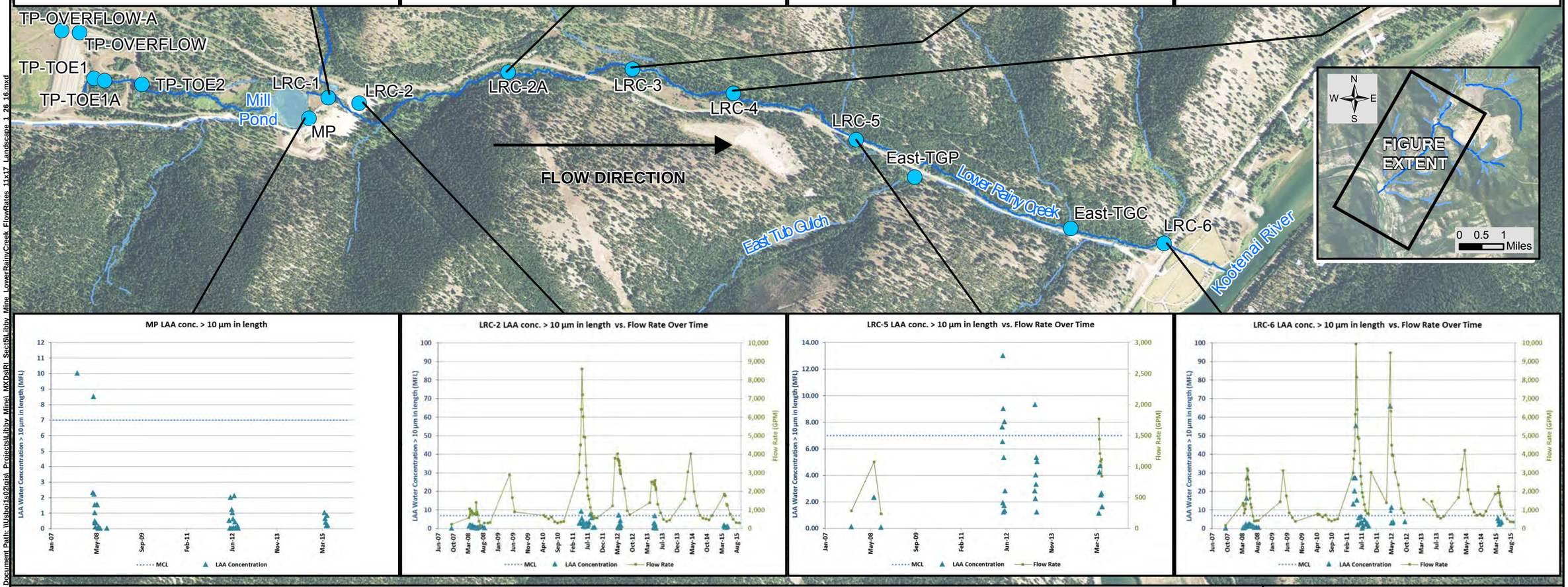
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Legend

- Surface Water Sampling Station
- Perennial Stream or River
- Intermittent Stream
- Pond

Notes:

- Graphs are only shown for locations where there was one or more detections of LAA with flow data.

LAA	Libby amphibole asbestos
µm	micrometers
MFL	million fibers per liter
MCL*	Maximum Contaminant Level *National Primary Drinking Water Regulation (NPDWR) MCL for asbestos of 7 million fibers longer than 10 µm per liter of water.
GPM	gallons per minute

0 600 1,200 2,400 Feet

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 5-7b

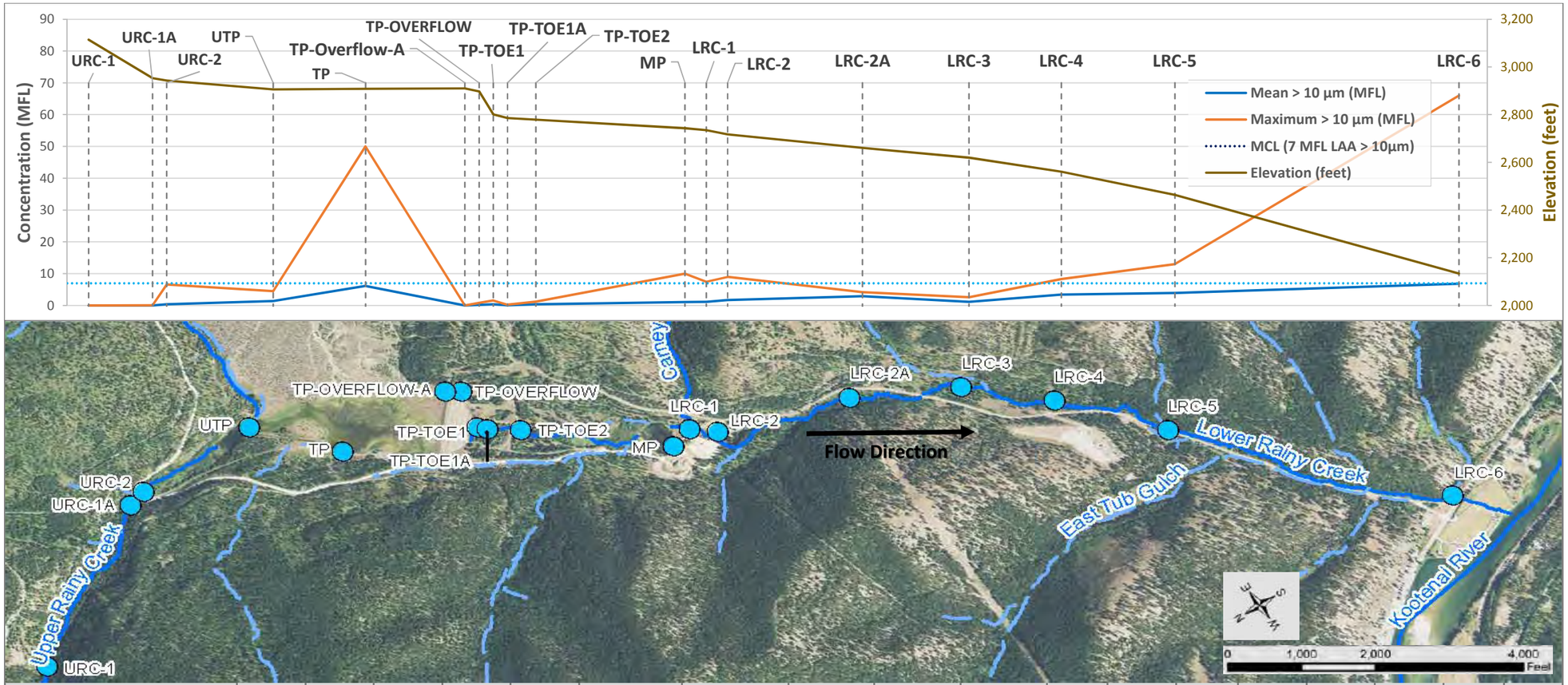
Lower Rainy Creek Surface Water LAA Concentrations vs. Flow Rate Over Time

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 2/15/2016

MWH

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Sampling Station	URC-1	URC-1A	URC-2	UTP	TP	TP-Overflow-A	TP-OVERFLOW	TP-TOE1	TP-TOE1A	TP-TOE2	MP	LRC-1	LRC-2	LRC-2A	LRC-3	LRC-4	LRC-5	LRC-6
Mean > 10 µm (MFL)	0	0.004	0.39	1.4	6.1	0	0.19	0.35	0.074	0.4	1.1	1.1	1.7	2.9	1.2	3.4	3.9	6.9
Maximum > 10 µm (MFL)	0	0.05	6.6	4.5	50	0	0.79	1.6	0.25	1.2	10	7.5	9	4.2	2.6	8.3	13	66
Standard Deviation	0	0.0	1.3	1.4	10.5	0	0.3	0.5	0.1	0.7	2.1	2.1	2.0	1.6	0.9	2.5	3.1	12.4
Number of Samples	9	13	26	10	56	1	7	14	6	3	38	14	61	6	9	28	28	56
Number of MCL Exceedences*	0	0	0	0	11	0	0	0	0	0	2	1	3	0	0	3	5	11
Frequency of MCL Exceedences*	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	5%	7%	5%	0%	0%	11%	18%	20%
Elevation (feet)	3,115	2,953	2,943	2,906	2,909	2,910	2,898	2,801	2,786	2,779	2,743	2,735	2,718	2,661	2,620	2,561	2,464	2,134

Notes:

*National Primary Drinking Water Regulation (NPDWR) for asbestos of 7 million fibers longer than 10 µm per liter of water.

MFL million fibers per liter

MCL Maximum Contaminant Level

µm micrometer

LAA Libby Amphibole Asbestos

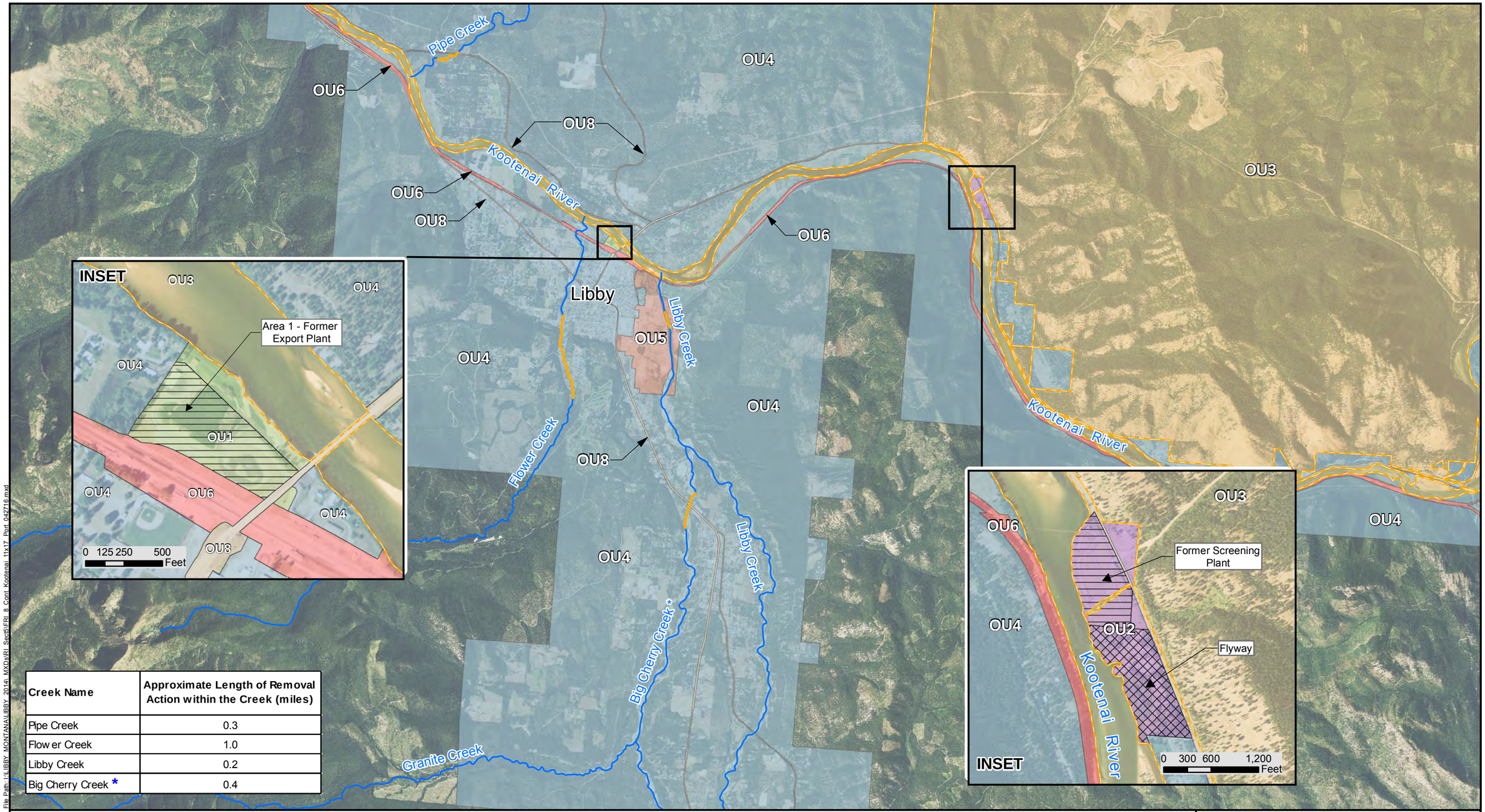
FIGURE 5-7c

Rainy Creek and Tailings Pond Area Surface Water LAA Concentrations, Elevation Profile, and Summary Statistics

Libby Asbestos Superfund Site, OU3 Study Area

W.R. Grace & Co.-Conn.

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Creek Name	Approximate Length of Removal Action within the Creek (miles)
Pipe Creek	0.3
Flower Creek	1.0
Libby Creek	0.2
Big Cherry Creek *	0.4

Legend

- Potential creek contributions to the Kootenai River from riprap removal actions
- Portion of creek with removal action

Operable Unit (OU) Boundary (Reference: U.S. EPA Region 8)

- Operable Unit 1
- Operable Unit 2
- Operable Unit 3
- Operable Unit 4
- Operable Unit 5
- Operable Unit 6
- Operable Unit 8

Notes:

* Referred to as Granite Creek
Reference: Libby Asbestos Superfund Site Residential and Commercial Properties Operable Unit 4 Libby, Montana Remedial Investigation Report (CDM, June 2014)

LAA Libby Amphibole Asbestos

N W E S

0 0.5 1 2 Miles
0 3,000 6,000 12,000 Feet

Base Image: National Agriculture Imagery Program, 2013
Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 5-8

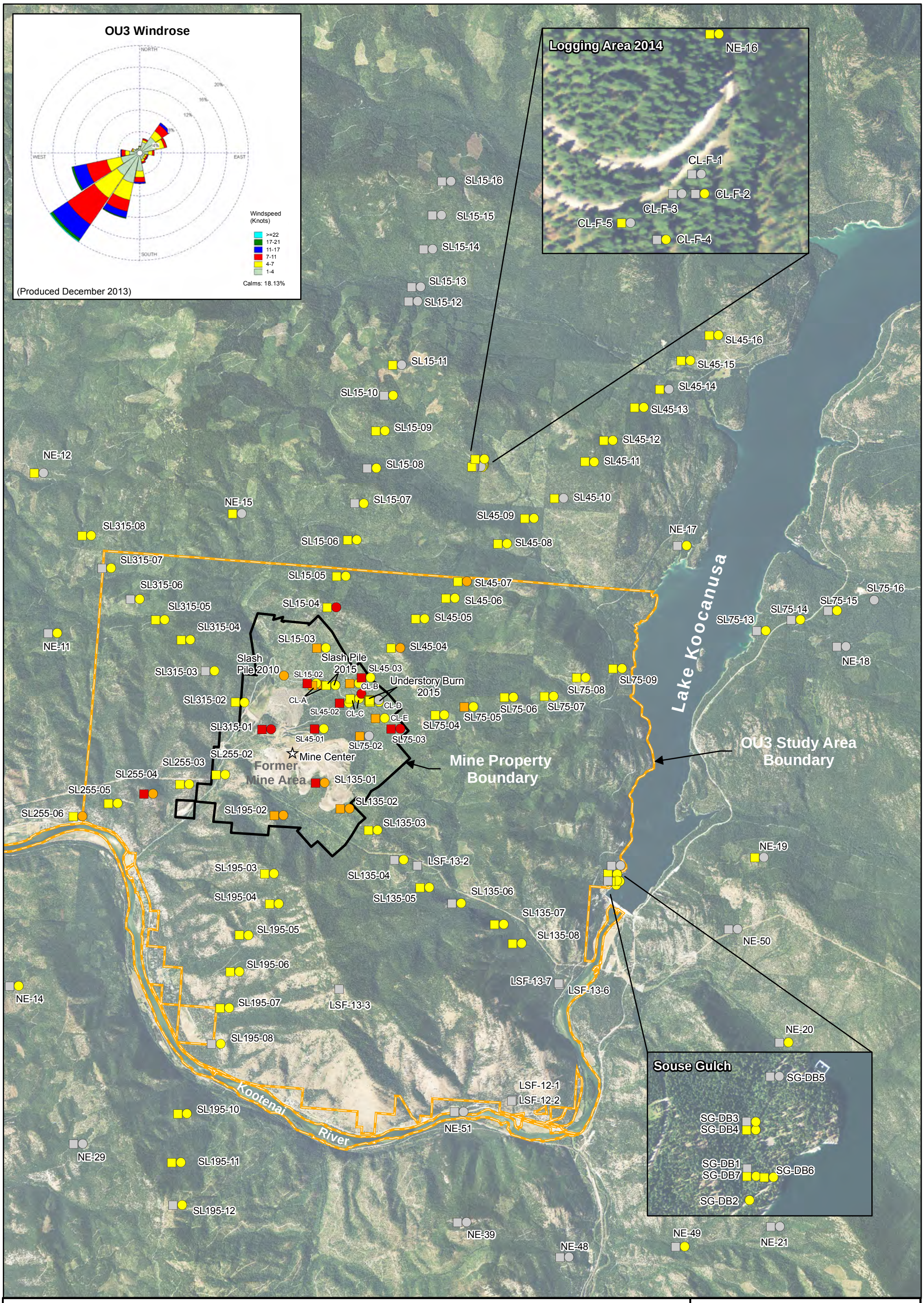
Potential Contributing Sources of LAA to the Kootenai River

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 4/27/2016

MWH

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Legend

Duff Material PCME (Ms/g - dw)

- 0
- > 0 - 100
- > 100 - 300
- > 300

Tree Bark PCME (Ms/cm^2)

- 0
- > 0 - 0.9
- > 0.9 - 3.0
- > 3.0

OU3 Study Area Boundary

Mine Property Boundary

Notes:

- Figure shows the maximum LAA Concentration at each location
- The date range of sampling is between June 2007 to May 2015

CL	Commercial Logging
LAA	Libby Amphibole Asbestos
Ms/g - dw	million structures per gram - dry weight
Ms/cm^2	million structures per square centimeter
NE	Nature and Extent
PCME	Phase Contrast Microscopy-Equivalent
SL195	Sample Location (SL) with Respective Degrees from North

N W E S

0 3,250 6,500 Feet

0 0.5 1 Miles

Base Image: 2013 NAIP

Coordinate System:
NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

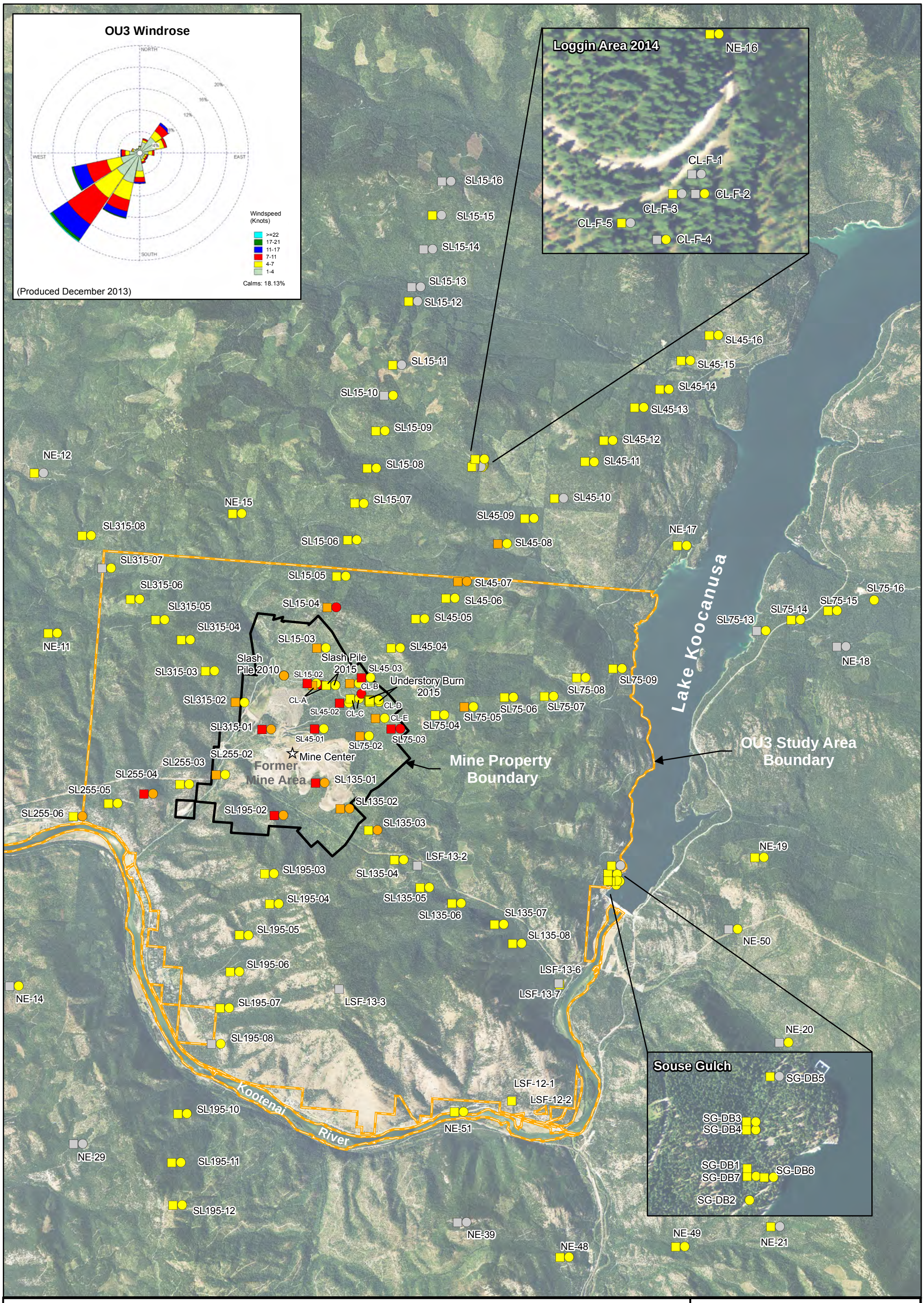
FIGURE 5-9a

Maximum LAA PCME Results for Tree Bark and Duff Material (Post 2007 Data)

Libby Asbestos Superfund Site,
OU3 Study Area
W.R. Grace & Co. - Conn.

MWH

Date Revised: 11/30/2016



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect5\Libby_RI_Fig5-9b_Total_LAA_TBDM_11x17_L_113016.mxd

Legend

Duff Material
Total (Ms/g - dw)

- 0
- > 0 - 400
- > 400 - 1000
- > 1000

Tree Bark
Total (Ms/cm²)

- 0
- > 0 - 5
- > 5 - 10
- > 10

OU3 Study Area Boundary

Mine Property Boundary

Notes:

- Figure shows the maximum Total LAA Concentration at each location
- The date range of sampling is between June 2007 to May 2015

CL	Commercial Logging
LAA	Libby Amphibole Asbestos
LSF	Libby S??? Fire
Ms/g - dw	million structures per gram - dry weight
Ms/cm²	million structures per square centimeter
NE	Nature and Extent
SG	Souse Gulch
SL195	Sample Location (SL) with Respective Degrees from North

N
W E
S

0 3,250 6,500 Feet

0 0.5 1 Miles

Base Image: 2013 NAIP

Coordinate System:
NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 5-9b

Maximum LAA Total Results for Tree Bark and Duff Material (Post 2007 Data)

Libby Asbestos Superfund Site,
OU3 Study Area
W.R. Grace & Co. - Conn.

MWH

Date Revised: 11/30/2016

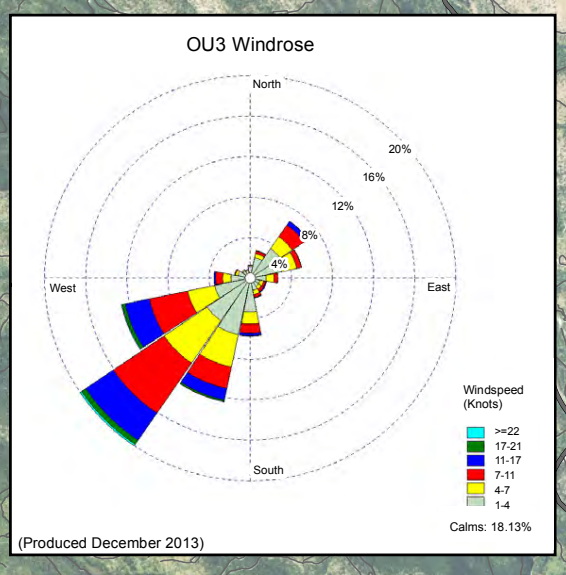
WA-NEAR

Mine Center

WA-FC

Kootenai River

WA-BC



File Path: Y:_MXDs\RI_Sect5\Libby_RI_Fig5-9c_BarkFire_11x17_Lnd_111716.mxd

Legend

- Mine Center
- Mine Property Boundary
- OU3 Study Area Boundary
- Asphalt Road
- Paved Road
- Gravel Road

Tree Bark

PCME (Ms/cm^2)
- 0
- > 0 - 0.9
- > 0.9 - 3.0
- > 3.0

Total (Ms/cm^2)
- 0
- > 0 - 5
- > 5 - 10
- > 10

Notes:

- Figure shows the maximum LAA Concentration at each location

LAA	Libby Amphibole Asbestos
Ms/cm^2	million structures per square centimeter
NBC	Near Bear Creek
NFC	Near Flower Creek
NM	Near Mine
PCME	Phase Contrast Microscopy-Equivalent
WA	Woodstove Ash

N W E S

0 3,000 6,000 12,000 Feet

0 0.65 1.3 2.6 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 5-9c

Maximum LAA PCME and Total Results for Tree Bark from 2012 WoodStove Burn Collection Areas (Post 2007 Data)

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

MWH

Date Revised: 11/17/2016

OU3 Study Area Boundary

Upper Rainy Creek

Mine Property Boundary

A-1 (0)

A-2 (0)

Tailings Impoundment

A-12 (0)

Fleetwood Pond

Fleetwood Creek

A-4 (0)

KDID

Mill Pond

Lower Rainy Creek

A-5 (0.0026)

A-11 (0.0026)

A-3 (0)

Carney Pond

OU3 WEATHER STATION

A-8 (0)

A-9 (0.0056)

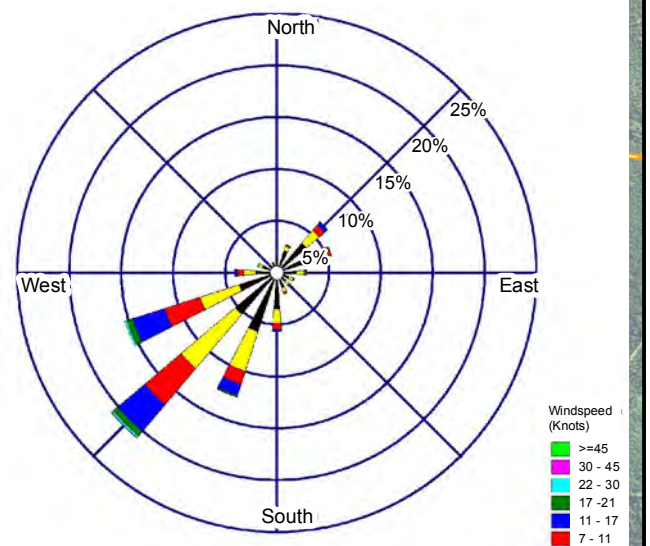
A-6 (0.0005)

Carney Creek

A-7 (0)

A-10 (0)

OU3 Windrose



(2007-2009 data)

File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect5\FRI_10_Air_Ambient_11x17_Port_012516.mxd

Legend

- A-11 (0.0026) — Ambient air sample location (Fall 2007, Summer 2008, and Fall 2008) with maximum LAA PCME value measured in s/cc. Sample results shown in parentheses.
- Weather Station
- Perennial Stream or River
- Intermittent Stream
- Pond
- OU3 Study Area Boundary
- Mine Property Boundary

Notes:

A	Ambient Air
LAA	Libby Amphibole Asbestos
PCME	Phase Contrast Microscopy-Equivalent
s/cc	structures per cubic centimeter

N W E S

0 800 1,600 3,200 Feet

0 0.125 0.25 0.5 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 5-10

Maximum LAA PCME Results for Ambient Air (Post 2007 Data)

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 2/9/2016

MWH

SP15-Ash	
PCME Ms/g	Total Ms/g
698	3,392

WA-NEAR	
PCME Ms/g	Total Ms/g
49	109

B15-Ash	
PCME Ms/g	Total Ms/g
418	1,742

Souse Gulch	
PCME Ms/g	Total Ms/g
34	90

WA-FC	
PCME Ms/g	Total Ms/g
0	6

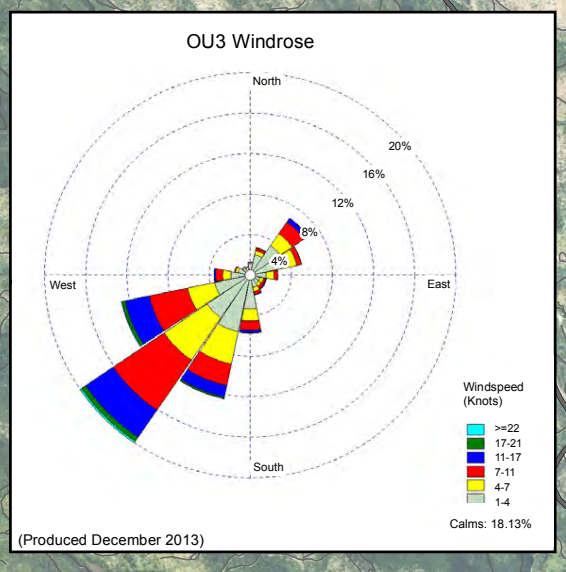
WA-BC	
PCME Ms/g	Total Ms/g
10	10

SP15-Ash

B15-Ash

Mine Center

Kootenai River



File Path: Y:_MXDs\RI_Sect5\Libby_RI_Fig11_Ash_11x17_Lnd_111716.mxd

Legend

- Ash Sample
- Mine Center
- Tree Collection Location
- Mine Property Boundary
- OU3 Study Area Boundary
- Asphalt Road
- Paved Road
- Gravel Road

Notes:

- Figure shows the maximum LAA Concentration at each location

B	Understory Burn 2015
LAA	Libby Amphibole Asbestos
Ms/g	million structures per gram
NBC	Near Bear Creek
NFC	Near Flower Creek
NM	Near Mine
PCME	Phase Contrast Microscopy-Equivalent
SP	Slash Pile Burn 2015
WA	Woodstove Ash 2012

N W E S

0 3,000 6,000 12,000 Feet

0 0.65 1.3 2.6 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

FIGURE 5-11

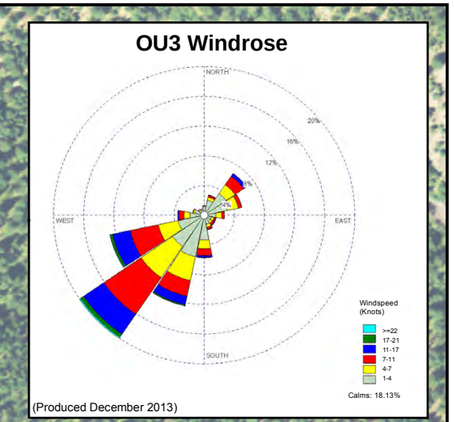
Maximum LAA PCME and Total Results for Ash (Post 2007 Data)

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 11/17/2016

MWH

a. Windspeeds at 1 mph from the north northwest to 4 mph from the west southwest during the Slash Pile Post Burn sampling event.

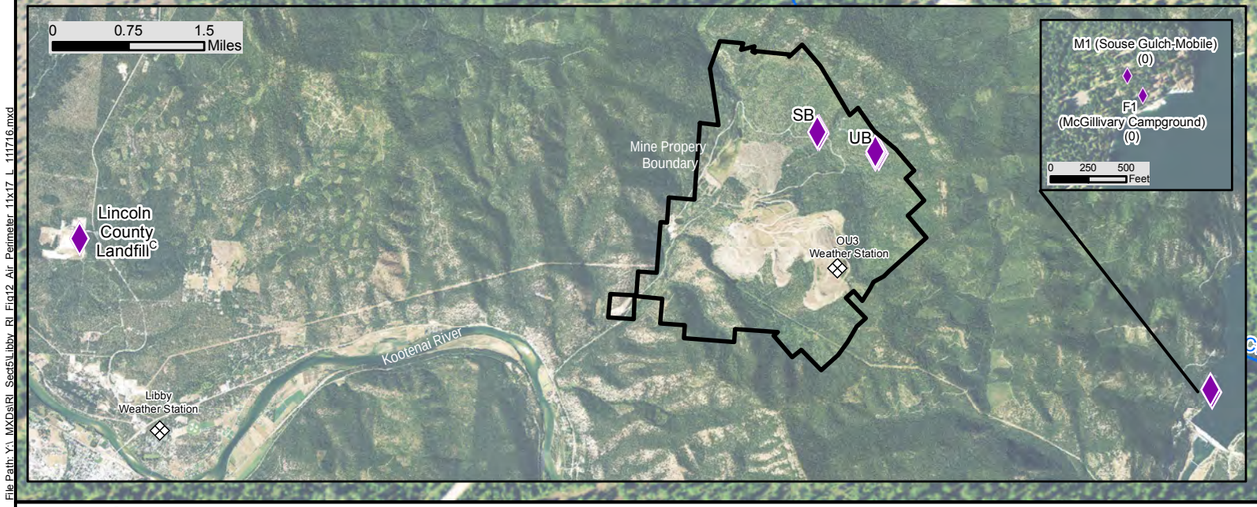


(Produced December 2013)

SB-50-W (0.071)
SB-100-W (0.026)
SB-200-W (0.0038)
SB-50-S (0.012)
SB-100-S (0)
SB-200-S (0)
SB-50-E (0)
SB-100-E (0.0039)
SB-200-E (0)
SB-50-N (0.0077)
SB-100-N (0)
SB-200-N (0)

UB-50-W (0.002)
UB-100-W (0)
UB-200-W (0)
UB-50-S (0)
UB-100-S (0)
UB-200-S (NA)
UB-200-N (0.0039)
UB-100-N (0.0058)
UB-50-N (0.0039)
UB-50-E (0.0019)
UB-100-E (0)
UB-200-E (0)
UB Temporary Weather Station

Fleetwood Pond



b. Windspeeds at 1 mph from the west to 7 mph from the northwest during the Understory Burn sampling event

File Path: Y:\ MXDs\RI_Sect5\Libby_RI_Fig12_Air_Perimeter_11x17_L_111716.mxd

Legend

- SB-50-S (0.012) — Perimeter air sample location with maximum LAA PCME value measured in s/cc. Sample results shown in parentheses.
- Perennial Stream or River
- Intermittent Stream
- Pond
- Weather Station

Notes:

a. Wind data during the Slash Pile Burn event were collected from the OU3 Weather Station located approximately 1.35 miles to the south southeast of the Slash Pile Burn location.

b. Wind data during the Understory Burn event were collected from a temporary weather station set up specifically for the Understory Burn event.

c. Lincoln County Landfill was used for the 2012 Woodstove Ash Burn location. All the perimeter air samples were non-detect.

LAA	Libby Amphibole Asbestos
NA	Not Available
PCME	Phase Contrast Microscopy-Equivalent
s/cc	structures per cubic centimeter
SB	Slash Pile Burn - Samples collected May 14-16, 2015
UB	Understory Burn - Samples collected June 22-24, 2015

N W E S

0 225 450 900 Feet

0 0.05 0.1 0.2 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System: NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

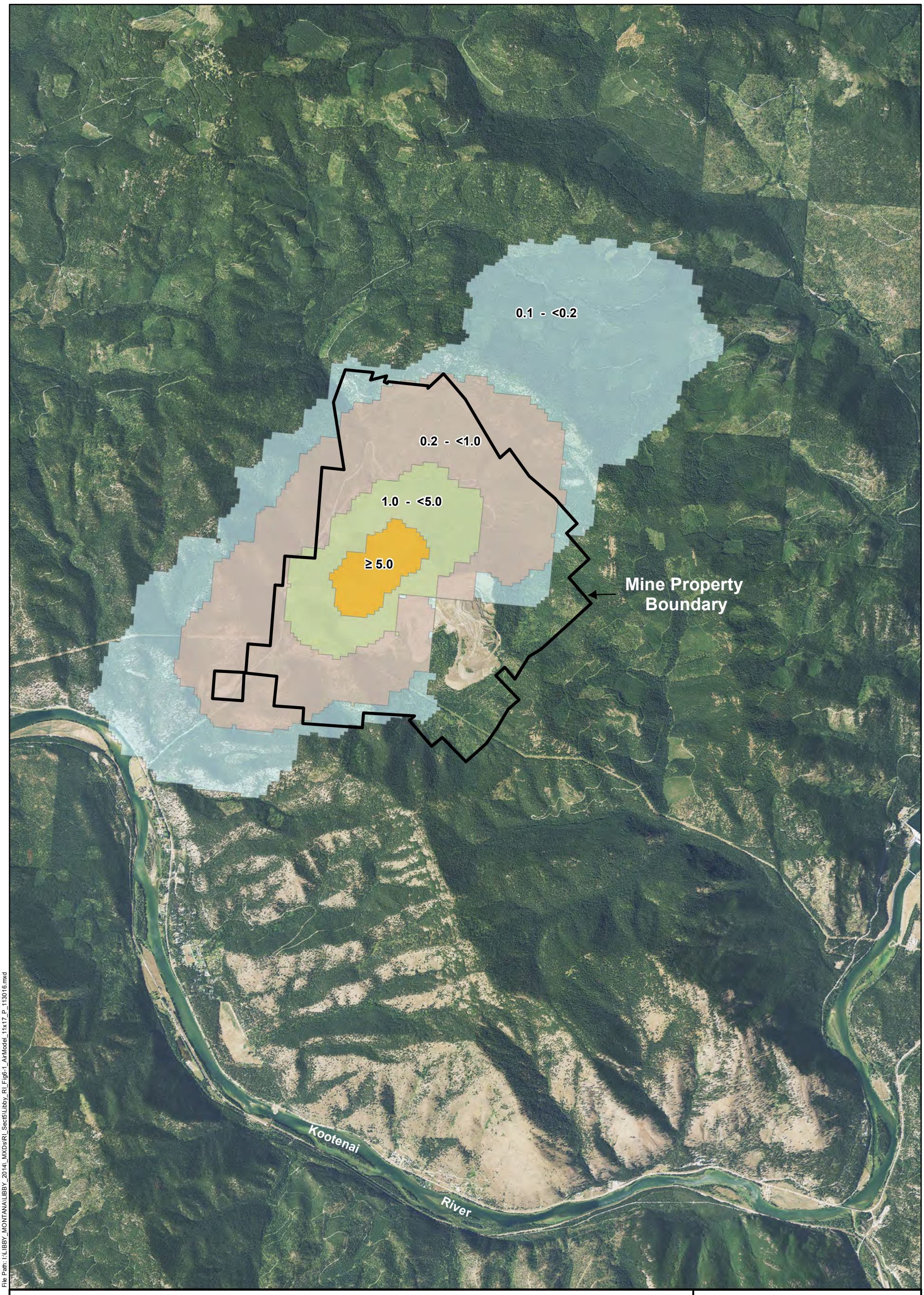
FIGURE 5-12

Maximum LAA PCME Results for During Burn Perimeter Air (Post 2007 Data)

Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 11/18/2016

MWH



File Path: I:\LIBBY_MONTANA\LIBBY_2014_MXDs\RI_Sect5\Libby_RI_Fig6-1_AirModel_11x17_P_113016.mxd

Legend

Air Model

Estimated Deposition Rates (g/m² - year)

- 0.1 - <0.2
- 0.2 - <1.0
- 1.0 - <5.0
- ≥ 5.0

Mine Property Boundary

Notes:

Lower contour threshold of 0.1 g/m²-yr based on estimated equivalent soil LAA concentration of approximately 0.02% [the published background level for the Libby area was <0.02% (CDM, 2014)]. The equivalent soil concentration was calculated based an assumed dry bulk density of 1.5 g/cm³, depth of ½ inch, and 30 years of dry mill operation.

g/m²-yr	grams per meter squared per year
g/cm³	grams per cubic centimeter
LAA	Libby Amphibole Asbestos

N
W E
S

0 2,000 4,000 Feet

0 0.5 1 Miles

Base Image: National Agriculture Imagery Program, 2013

Coordinate System:
NAD 1983 HARN StatePlane Montana FIPS 2500 Feet Intl

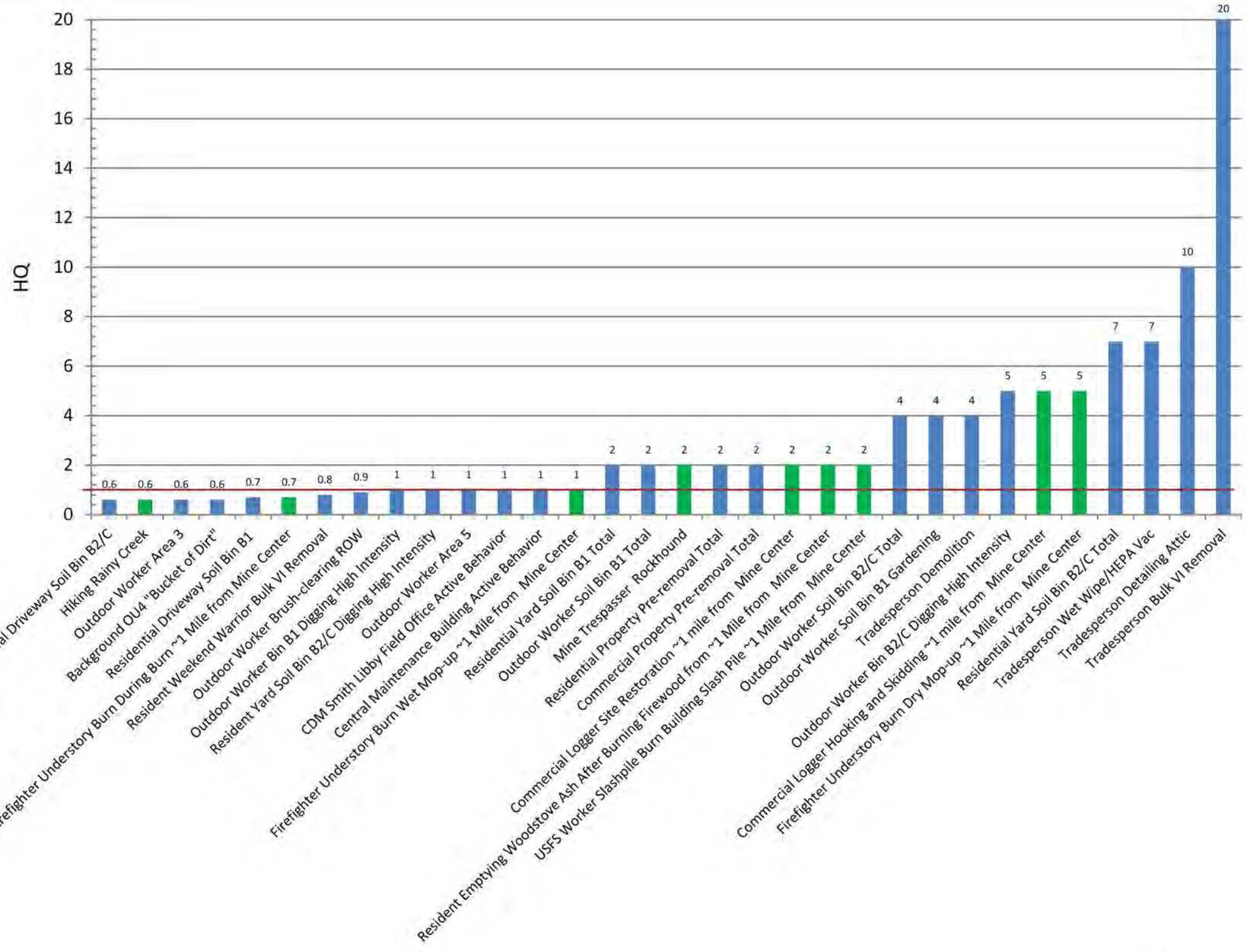
FIGURE 6-1

Air Dispersion Model

Libby Asbestos Superfund Site,
OU3 Study Area
W.R. Grace & Co. - Conn.

MWH

Date Revised: 12/2/2016



File Path: \\Astro1\gis2\gis_Projects_libby_Mxds_MXDs\RI_Sec7_Libby_Fig7_1_ABS_Activities_RME_HQ_0.6_11x17_Lands_12212015.mxd

Legend

- Non-OU3
- OU3
- HQ=1

Data based on Reasonable Maximum Exposure (RME) results presented in the Final LAA HHRA (EPA, 2015a).

Figure 7-1

ABS Activities with RME
HQ ≥ 0.6

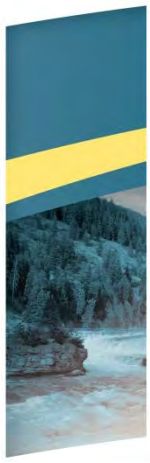
Libby Asbestos Superfund Site, OU3 Study Area
W.R. Grace & Co. - Conn.

Date Revised: 2/15/2016

MWH



Appendices



Appendix A

Pre-2007 Data

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Table A-1
Asbestos Results for Soil Samples within OU3

Location	Sampling Date	Sample Description	PLM NIOSH 9002 Analytical Results Tremolite-Actinolite Area Fraction (%)
Rainy Creek Rd	12/11/99 - 12/12/99	52 surface (0-6") along the road	20 samples were non-detect; 30 samples were <1%; 2 samples with detectable levels ranging from 3% to 5%
	9/8/00	5 surface (0-6") from driveway	2 samples were non-detect; 1 sample was <1%; 2 samples with detectable levels at 2%
	4/5/01 - 4/6/01	9 surface (0-6") 5 sub-surface (6-12") 17 sub-surface (12"+)	4 samples were non-detect; 16 samples were <1%; 11 samples with detectable levels ranging from 2% to 8%
	10/9/01	4 surface (0-6") from the ampitheater	4 samples with detectable levels ranging from 2% to 7%
Forest Service Rd	7/17/03 - 7/22/03	4 surface (0-6")	4 samples were non-detect
Highway 37 N (Right of Way)	9/16/03 - 9/18/03	48 surface (0-6") *	8 samples were non-detect; 37 samples with trace levels; 3 samples were <1%
	5/23/05	12 surface (0-6")	1 sample was non-detect; 11 samples were <1%
	7/11/05	1 surface (0-6")	1 sample was non-detect
Carney Creek Logging Area	3/9/00	15 surface (0-6")	3 samples were non-detect; 11 samples were <1%; 1 sample with detectable levels at 1%
USFS Logging Site Above Ampitheater	3/10/00	5 surface (0-6")	5 samples were <1%

* Results based on PLM-VE mass fraction (%)

Based on samples in Libby2DB designated as OU3 (download date: July 5, 2007).

TABLE A-2
SURFACE WATER ASBESTOS RESULTS IN THE LIBBY 2 DATABASE

Sample Date	Sample ID	Location Description	Analysis Date	Sensitivity $(ml)^{-1}$	LA Structures > 10 um			Total LA Structures		
					Count	Conc (s/mL)	Conc(MFL)*	Count	Conc (s/mL)	Conc(MFL)*
8/13/2001	1R-05337	Rainy Creek (Upper Reach) above upper pond	8/15/2001	104	**0**	**< 104**	**< 0.104**	**0**	**< 104**	**< 0.104**
	1R-05339	Zonolite Mountain -- Sleuce gate structure @ upper tailings pond	8/15/2001	207	**0**	**< 207**	**< 0.207**	**0**	**< 207**	**< 0.207**
	1R-06024	Zonolite Mountain -- Lower tailings pond @ water intake	8/15/2001	1,036	**0**	**< 1036**	**< 1.036**	**0**	**< 1036**	**< 1.036**
	1R-06026	Zonolite Mountain -- "Darwin Spring" @ upper decon	8/15/2001	104	**0**	**< 104**	**< 0.104**	**0**	**< 104**	**< 0.104**
	1R-06027	Rainy Creek (Lower Reach) catch basin	8/15/2001	414	**18**	**7,459**	**7.459**	**18**	**7,459**	**7.459**
5/16/2003	CS-11785	Zonolite Mountain -- Main discharge from upper tailings pond	5/20/2003	219	**0**	**< 219**	**< 0.219**	**1**	**219**	**0.219**
	CS-11786	Zonolite Mountain -- Confluence from discharge of upper tailings pond	5/20/2003	219	**0**	**< 219**	**< 0.219**	**1**	**219**	**0.219**
	CS-11787	Zonolite Mountain -- Stream located above lower tailings pond	5/20/2003	219	**3**	**658**	**0.658**	**43**	**9,438**	**9.438**
	CS-11788	Zonolite Mountain -- Main discharge from lower tailings pond	5/21/2003	439	**3**	**1,317**	**1.317**	**16**	**7,024**	**7.024**

Based on Libby 2DB download performed 7/5/07

* The surface water sample result concentrations were originally reported in the *Phase I Sampling and Analysis Plan for Operable Unit 3 Libby Asbestos Superfund Site* (EPA, 2007b) as structures per milliliter (s/mL) or fibers per milliliter (f/mL). For the RI report, these results were converted to million fibers per liter of water (MFL) for comparability with later RI studies.

TABLE A-3
Non-Asbestos Results for Surface Water Samples in the Libby 2 Database

INDEX ID	SAMPLE DATE	SAMPLE LOCATION DESCRIPTION
1R-05329	2-Aug-01	Rainy Creek Rd, Vermiculite Mine -- Lower pond
1R-05330	2-Aug-01	Rainy Creek Rd, Vermiculite Mine -- Upper pond

INDEX ID		**1R-05329**	**1R-05330**
LAB SAMPLE ID		912533-001	912533-002
PARAMETER	UNITS		
INORGANICS			
Antimony	ug/L	<50	<50
Arsenic	ug/L	<5	<5
Beryllium	ug/L	<10	<10
Cadmium	ug/L	<5	<5
Chromium	ug/L	<10	<10
Copper	ug/L	< 10	< 10
Lead	ug/L	< 50	< 50
Mercury	ug/L	< 0.5	< 0.5
Nickel	ug/L	< 25	< 25
Selenium	ug/L	< 5	< 5
Silver	ug/L	< 10	< 10
Thallium	ug/L	< 5	< 5
Zinc	ug/L	< 50	< 50
Cyanide, total	mg/L	< 0.01	< 0.01
TOTAL PETROLEUM HYDROCARBONS (TPH)			
TPH-DIESEL	ug/L	< 100	< 100
TPH-GASOLINE	ug/L	< 100	< 100
ORGANOCHLORINE PESTICIDES			
4,4'-DDD	ug/L	< 0.099	< 0.098
4,4'-DDE	ug/L	< 0.099	< 0.098
4,4'-DDT	ug/L	< 0.099	< 0.098
Aldrin	ug/L	< 0.050	< 0.049
alpha-BHC	ug/L	< 0.050	< 0.049
alpha-Chlordane	ug/L	< 0.050	< 0.049
beta-BHC	ug/L	< 0.050	< 0.049
delta-BHC	ug/L	< 0.050	< 0.049
Dieldrin	ug/L	< 0.099	< 0.098
Endosulfan I	ug/L	< 0.050	< 0.049
Endosulfan II	ug/L	< 0.099	< 0.098
Endosulfan sulfate	ug/L	< 0.099	< 0.098
Endrin	ug/L	< 0.099	< 0.098
Endrin aldehyde	ug/L	< 0.099	< 0.098
Endrin ketone	ug/L	< 0.099	< 0.098
gamma-BHC (Lindane)	ug/L	< 0.050	< 0.049
gamma-Chlordane	ug/L	< 0.050	< 0.049
Heptachlor	ug/L	< 0.050	< 0.049
Heptachlor epoxide	ug/L	< 0.050	< 0.049
Methoxychlor	ug/L	< 0.50	< 0.49
Toxaphene	ug/L	< 5.0	< 4.9
POLYCHLORINATED BIPHENYLS (PCBs)			
Aroclor 1016	ug/L	< 0.99	< 0.98
Aroclor 1221	ug/L	< 0.99	< 0.98
Aroclor 1232	ug/L	< 0.99	< 0.98
Aroclor 1242	ug/L	< 0.99	< 0.98
Aroclor 1248	ug/L	< 0.99	< 0.98
Aroclor 1254	ug/L	< 0.99	< 0.98

TABLE A-3
Non-Asbestos Results for Surface Water Samples in the Libby 2 Database

INDEX ID	SAMPLE DATE	SAMPLE LOCATION DESCRIPTION
1R-05329	2-Aug-01	Rainy Creek Rd, Vermiculite Mine -- Lower pond
1R-05330	2-Aug-01	Rainy Creek Rd, Vermiculite Mine -- Upper pond

INDEX ID		**1R-05329**	**1R-05330**
LAB SAMPLE ID		912533-001	912533-002
PARAMETER	UNITS		
Aroclor 1260	ug/L	< 0.99	< 0.98
VOLATILE ORGANIC CHEMICALS (VOCs)			
1,1,1-Trichloroethane	ug/L	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	ug/L	< 1.0	< 1.0
1,1,2-Trichloroethane	ug/L	< 1.0	< 1.0
1,1-Dichloroethane	ug/L	< 1.0	< 1.0
1,1-Dichloroethene	ug/L	< 1.0	< 1.0
1,2-Dichloroethane	ug/L	< 1.0	< 1.0
1,2-Dichloroethene,	ug/L	< 2.0	< 2.0
1,2-Dichloropropane	ug/L	< 1.0	< 1.0
2-Butanone	ug/L	< 5.0	< 5.0
2-Hexanone	ug/L	< 5.0	< 5.0
4-Methyl-2-pentanone	ug/L	< 5.0	< 5.0
Acetone	ug/L	< 5.0	< 5.0
Benzene	ug/L	< 1.0	< 1.0
Bromodichloromethane	ug/L	< 1.0	< 1.0
Bromoform	ug/L	< 1.0	< 1.0
Bromomethane	ug/L	< 2.0	< 2.0
Carbon disulfide	ug/L	< 1.0	< 1.0
Carbon tetrachloride	ug/L	< 1.0	< 1.0
Chlorobenzene	ug/L	< 1.0	< 1.0
Chlorodibromomethane	ug/L	< 1.0	< 1.0
Chloroethane	ug/L	< 2.0	< 2.0
Chloroform	ug/L	< 1.0	< 1.0
Chloromethane	ug/L	< 2.0	< 2.0
cis-1,3-Dichloropropene	ug/L	< 1.0	< 1.0
Ethylbenzene	ug/L	< 1.0	< 1.0
Methylene chloride	ug/L	< 1.0	< 1.0
Styrene	ug/L	< 1.0	< 1.0
Tetrachloroethene	ug/L	< 1.0	< 1.0
Toluene	ug/L	< 1.0	< 1.0
trans-1,3-Dichloropropene	ug/L	< 1.0	< 1.0
Trichloroethene	ug/L	< 1.0	< 1.0
Vinyl chloride	ug/L	< 2.0	< 2.0
Xylene, total	ug/L	< 3.0	< 3.0

TABLE A-4
SEDIMENT ASBESTOS RESULTS IN THE LIBBY 2 DATABASE

Sample Date	Sample ID	Location Description	Analysis Method	Area Fraction (%)		
				Tremolite-Actinolite	Other Amphibole	Chrysotile
8/13/2001	1R-06025	Lower tailings pond at water intake	PLM NIOSH 9002	**ND**	**ND**	**ND**
	1R-05338	Rainy Creek above upper pond	PLM NIOSH 9002	**ND**	**ND**	**ND**
	1R-05340	Upper tailings pond at sleuce gate structure	PLM NIOSH 9002	**2**	**ND**	**ND**

Based on Libby 2DB download performed 7/5/07

Table A-5
Asbestos Data from Tree Bark

Sample Point	Location, Description	Type of Tree	Amphibole Loading (fiber/cm^2)
*Location 1, Sample 1A	Approx. 100 yards from the former pump house site at the W. R. Grace Vermiculite Mine.	Lodgepole pine	100 million
*Location 1, Sample 1B	Approx. 100 yards from the former pump house site at the W. R. Grace Vermiculite Mine.	Lodgepole pine	260 million
*Location 1, Sample 1D	Approx. 100 yards from the former pump house site at the W. R. Grace Vermiculite Mine.	Larch	40 million
*Location 2	4 mile mark (from bottom of Rainy Creek Rd). Immediately outside of the mine property.	Lodgepole pine	110 million
Location 3, Sample 3B	Approx. 20 yards from the decontamination trailer and access gate for Rainy Creek Rd.	Ponderosa pine	14 million
Location 3, Sample 3C	Approx. 20 yards from the decontamination trailer and access gate for Rainy Creek Rd.	Lodgepole pine	54 million

*Location 1 and 2 samples were collected within the EPA restricted area surrounding the mine site.

Source: Ward et al. (2006)

Table A-6
Summary of Worker Air Samples from OU3

Location	Activity Description	Sampling Date	LA Detection Frequency	Average Sensitivity $(cc)^{-1}$	Range of LA Detects (s/cc)
Zonolite Mountain	4 samples from site visit	4/26/01	3/4 (75%)	0.0333	0.0631 - 0.147
Forest Service Rd	5 samples excavating logging road	7/29/03 - 7/30/03	0/5 (0%)	0.0300	NA
Rainy Creek Rd	31 samples for driver	5/2/01	1/2 (50%)	0.0529	0.00195
		8/12/02 - 8/26/02	8/9 (89%)	0.0300	0.0147 - 0.824
		7/14/03 - 7/28/03	5/6 (83%)	0.0173	0.151 - 1.30
		6/1/06 - 9/7/06	7/11 (64%)	0.0706	0.0730 - 1.52
		6/1/07	3/3 (100%)	0.0374	0.0470 - 1.53
	22 samples for excavator	5/4/01 - 5/17/01	6/9 (67%)	0.0259	0.0038 - 0.0978
		8/8/02 - 8/15/02	6/7 (86%)	0.0251	0.0352 - 0.245
		9/4/03 - 10/2/03	3/3 (100%)	0.0492	0.0465 - 6.66
		4/20/04	0/3 (0%)	0.0227	NA
	2 samples for foreman	10/22/02 - 10/28/02	0/2 (0%)	0.0894	NA
	12 samples for grader	4/26/01 - 5/15/01	5/7 (71%)	0.0405	0.0113 - 0.154
		8/7/02 - 8/16/02	4/5 (80%)	0.0766	0.0660 - 3.55
	58 samples for laborer	8/7/02 - 9/7/02	25/36 (69%)	0.0351	0.00820 - 4.04
		7/16/03 - 8/19/03	7/7 (100%)	0.0388	0.0719 - 5.37
		4/20/04	0/3 (0%)	0.0612	NA
		7/27/05 - 10/13/06	4/12 (33%)	0.122	0.133 - 0.508
	47 samples for decon activities	8/12/02 - 10/28/02	40/47 (85%)	0.025348426	0.010 - 1.49

NA = not applicable

Based on samples in Libby2DB designated as OU3 (download date: July 5, 2007).

Table A-7
Summary of Stationary Air Samples from OU3

Location	Location Description	Sampling Date	LA Detection Frequency	Average Sensitivity $(cc)^{-1}$	Range of LA Detects (s/cc)
Zonolite Mountain	83 samples from mine roads and near source areas	5/22/00 - 10/4/00	25/83 (30%)	0.0014	0.00110 - 0.00227
Rainy Creek Rd	104 samples along roadway	3/11/00 - 12/2/00	67/190 (38%)	0.0031	0.000426 - 0.045
	150 samples along roadway	5/4/01 - 9/8/01	81/150 (54%)	0.0022	0.00117 - 0.222
	2 samples downwind of lawn mowing near trace amount	7/11/05	0/2 (0%)	0.00092	NA
Highway 37 N (Right of Way)	10 samples at S of intersection of Pipe Creek Rd & Highway 37 N	5/23/05	0/10 (0%)	0.0042	NA
	2 samples during lawn mowing	7/11/05	0/2 (0%)	0.00092	NA

NA = not applicable

Based on samples in Libby2DB designated as OU3 (download date: July 5, 2007).

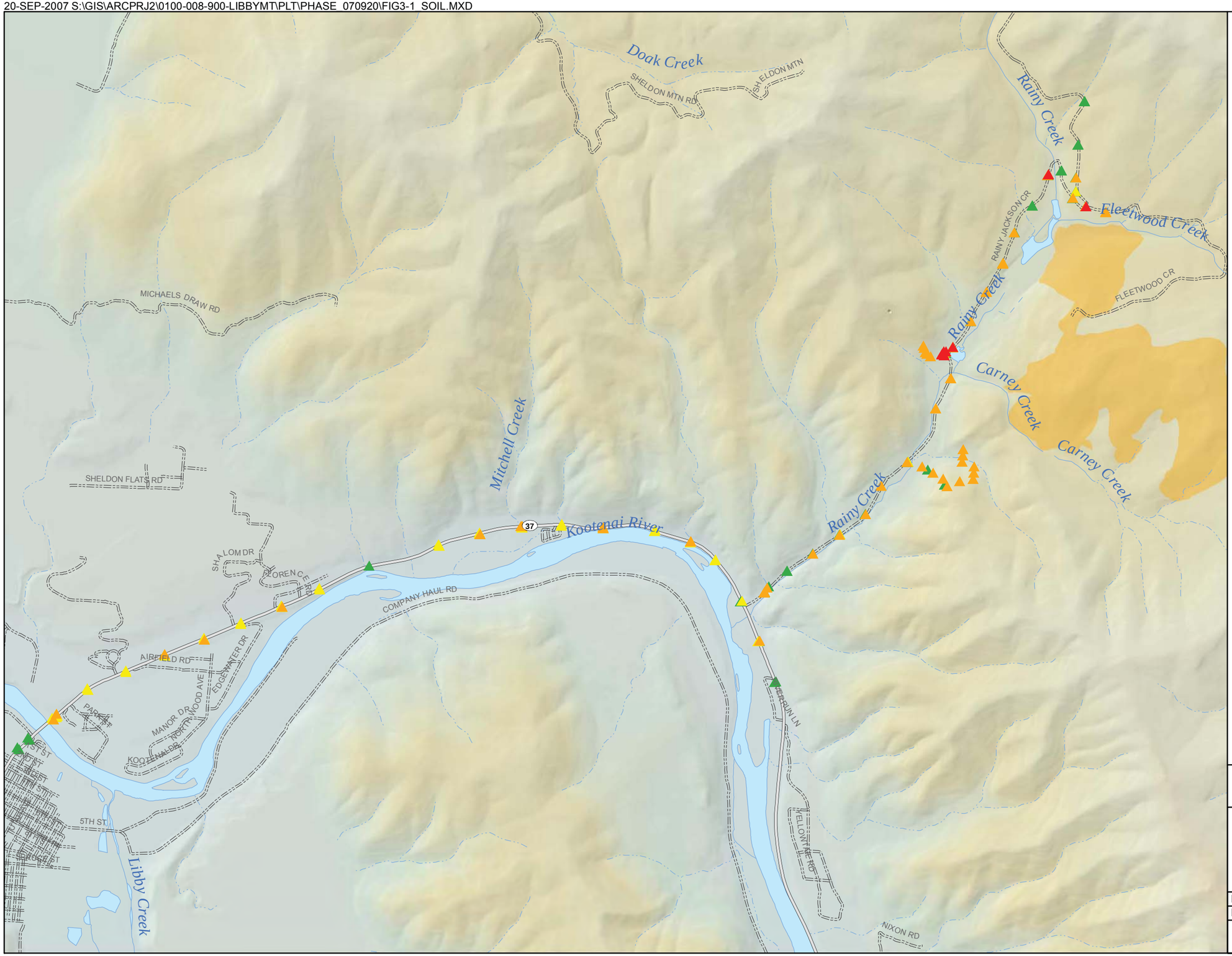
Table A-8
Aquatic Invertebrate Species Collected from EMAP Sampling Location in Kootenai River (August 2002)

PHYLUM	CLASS	ORDER	FAMILY	GENUS	SPECIES	ABUND.
ANNELIDA	HIRUDINEA	RHYNCHOBDELLIDA	PISCICOLIDAE	NA	NA	1
	OLIGOCHAETA	NA	NA	NA	NA	59
ARTHROPODA	ARACHNIDA	TROMBIDIFORMES	HYGROBATIDAE	HYGROBATES	NA	1
			TORRENTICOLIDAE	TORRENTICOLA	NA	3
	INSECTA	DIPTERA	CHIRONOMIDAE	NA	NA	8
				CRICOTOPUS	BICINCTUS	20
				CRICOTOPUS	NA	17
				CRYPTOCHIRONOMUS	NA	1
				DICROTENDIPES	NA	3
				EUKIEFFERIELLA	NA	8
				MICROPSECTRA	NA	16
				NA	NA	85
				PAGASTIA	NA	10
				PARACHIRONOMUS	NA	7
				PARAKIEFFERIELLA	NA	4
				NA	NA	1
				PHAENOPSECTRA	NA	57
				POTTHASTIA	GAEDII	2
				POTTHASTIA	LONGIMANA	7
				PROCLADIUS	NA	1
				PSECTROCLADIUS	NA	1
				SYNORTHOCLADIUS	NA	7
				TANYTARSUS	NA	73
				THIENEMANNIMYIA	NA	7
				TVETENIA	DISCOLORIPES	17
			TIPULIDAE	TIPULA	NA	1
		EPHEMEROPTERA	BAETIDAE	BAETIS	NA	10
				BAETIS	TRICAUDATUS	17
			EPHEMERELLIDAE	DRUNELLA	GRANDIS	1
				EPHEMERELLA	NA	13
				SERRATELLA	TIBIALIS	2
			SIPHLONURIDAE	NA	NA	1
		HEMIPTERA	CORIXIDAE	NA	NA	18
		TRICHOPTERA	HYDROPTILIDAE	HYDROPTILA	NA	3
			LEPTOCERIDAE	MYSTACIDES	ALAFIMBRIATA	1
				OECETIS	NA	1
			LIMNEPHILIDAE	NA	NA	1
				PSYCHOGLYPHA	NA	1
	OSTRACODA	NA	NA	NA	NA	1
COELENTERATA	HYDROZOA	HYDROIDA	HYDRIDAE	HYDRA	NA	12
MOLLUSCA	GASTROPODA	BASOMMATOPHORA	LYMNAEIDAE	NA	NA	1
			LYMNAEIDAE	STAGNICOLA	NA	2
			PHYSIDAE	PHYSA	NA	7
NEMATODA	NA	NA	NA	NA	NA	2

Table A-9
Fish Species Collected from EMAP Sampling Location in Kootenai River (August 2002)

Common Name	Genus	Species	Abundance
Longnose Dace	*Catostomus*	*catostomus*	24
Largescale Sucker	*Catostomus*	*macrocheilus*	21
Slimy Sculpin	*Cottus*	*cognatus*	1
Torrent Sculpin	*Cottus*	*rhotheus*	2
Cutthroat trout	*Oncorhynchus*	*clarki*	4
Rainbow trout	*Oncorhynchus*	*mykiss*	39
Sockeye Salmon	*Oncorhynchus*	*nerka*	17
Mountain Whitefish	*Prosopium*	*williamsoni*	587
Longnose Dace	*Rhinichthys*	*cataractae*	1
Redside Shiner	*Richardsonius*	*balteatus*	9
Bull Trout	*Salvelinus*	*confluentus*	1

20-SEP-2007 S:\GIS\ARCPRJ2\0100-008-900-LIBBYMT\PLT\PHASE_070920\FIG3-1_SOIL.MXD



Legend

- County Road
- Primary Road
- Open Water
- Perennial Stream
- Intermittent Stream
- Mined Area

Soil Asbestos Data

- > 1%
- < 1%
- Trace
- Non-Detect

N

0 3,000 6,000

Feet

LIBBY MONTANA SUPERFUND SITE

OPERABLE UNIT 3

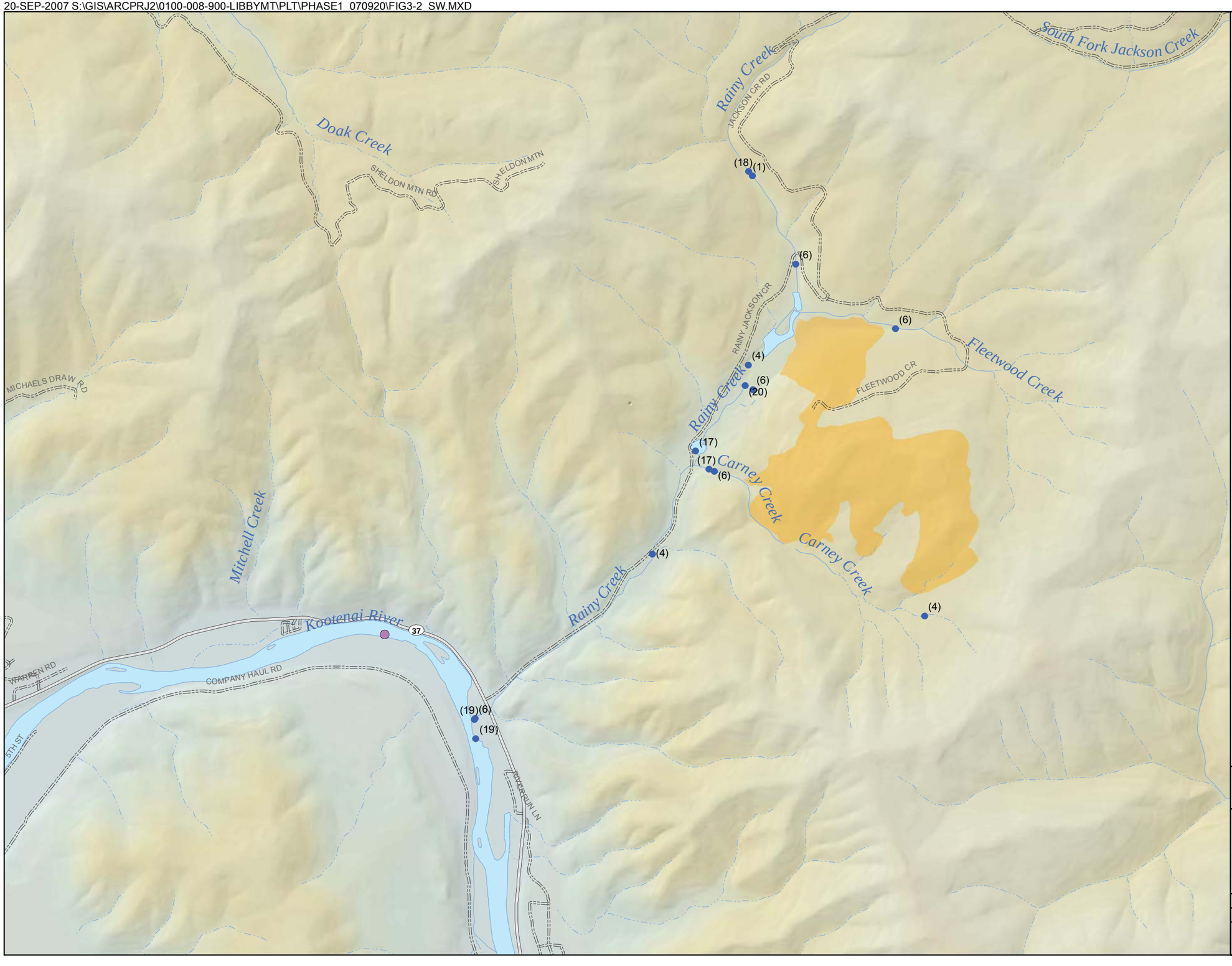
FIGURE A-1

HISTORICAL SOIL SAMPLE LOCATIONS

PROJECT: 0100-008-900	DATE: SEP 05, 2007	
REV: 0	BY: CRL	CHECKED: ACK

Figure originally presented in the Phase I Sampling and Analysis Plan (EPA, 2007b)

20-SEP-2007 S:\GIS\ARCPRJ2\0100-008-900-LIBBYMT\PLT\PHASE1_070920\FIG3-2_SW.MXD



Legend

- EMAP Location
- Surface Water Sample Location (6) - Number of times sampled
- County Road
- Primary Road
- Open Water
- Perennial Stream
- Intermittent Stream
- Mined Area

N

0 3,000 6,000

Feet

LIBBY MONTANA SUPERFUND SITE

OPERABLE UNIT 3

FIGURE A-2

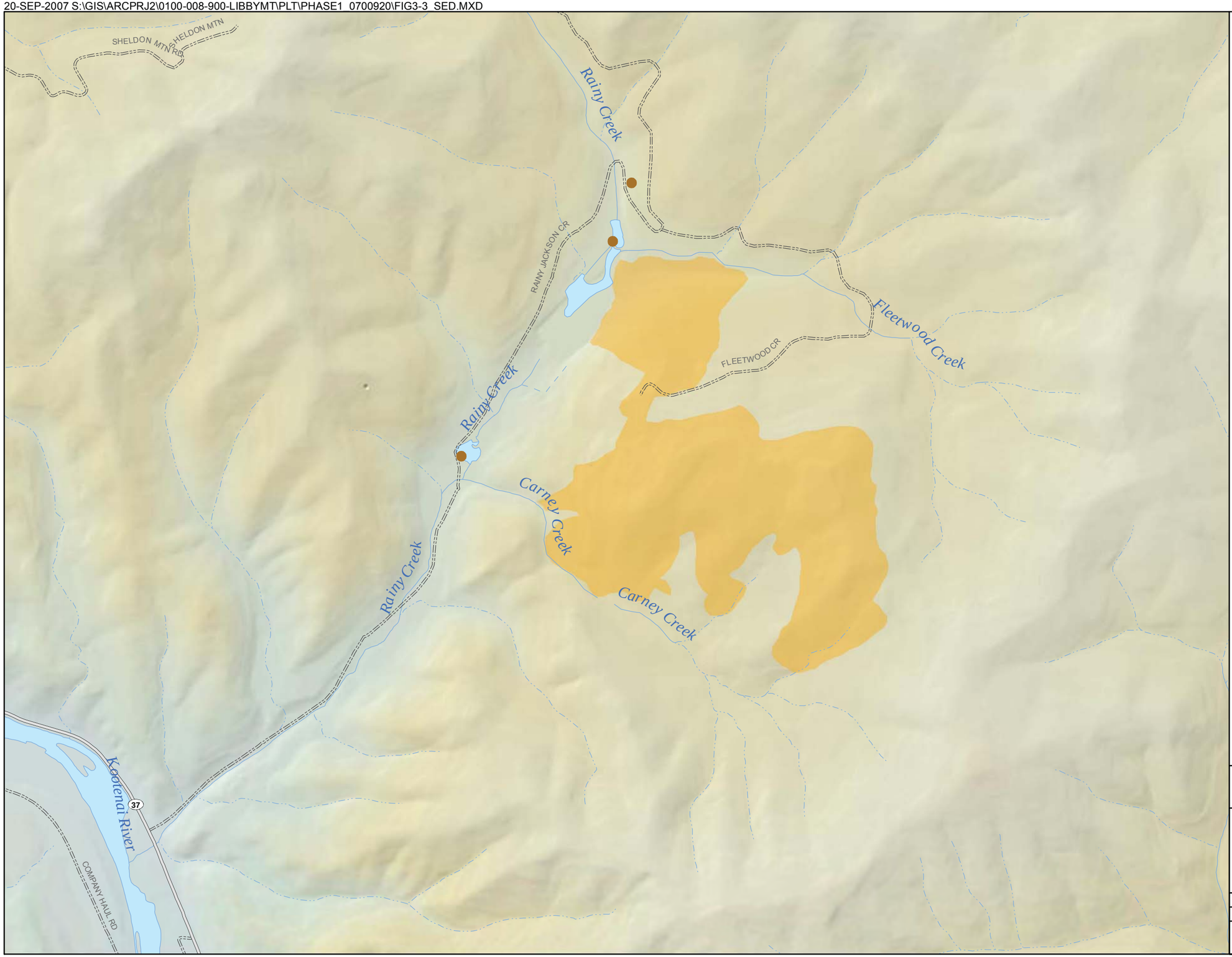
HISTORICAL SURFACE WATER SAMPLE LOCATIONS (1981 - 1994)

PROJECT: 0100-008-900	DATE: SEP 05, 2007	
REV: 0	BY: CRL	CHECKED: ACK

NEWFIELDS

Figure originally presented in the Phase I Sampling and Analysis Plan (EPA, 2007b)

20-SEP-2007 S:\GIS\ARCPRJ2\0100-008-900-LIBBYMT\PLT\PHASE1_0700920\FIG3-3_SED.MXD



Legend

- County Road
- Primary Road
- Open Water
- Perennial Stream
- Intermittent Stream
- Mined Area
- Sediment Sample Location

N

0 2,000 4,000

Feet

LIBBY MONTANA SUPERFUND SITE

OPERABLE UNIT 3

FIGURE A-3

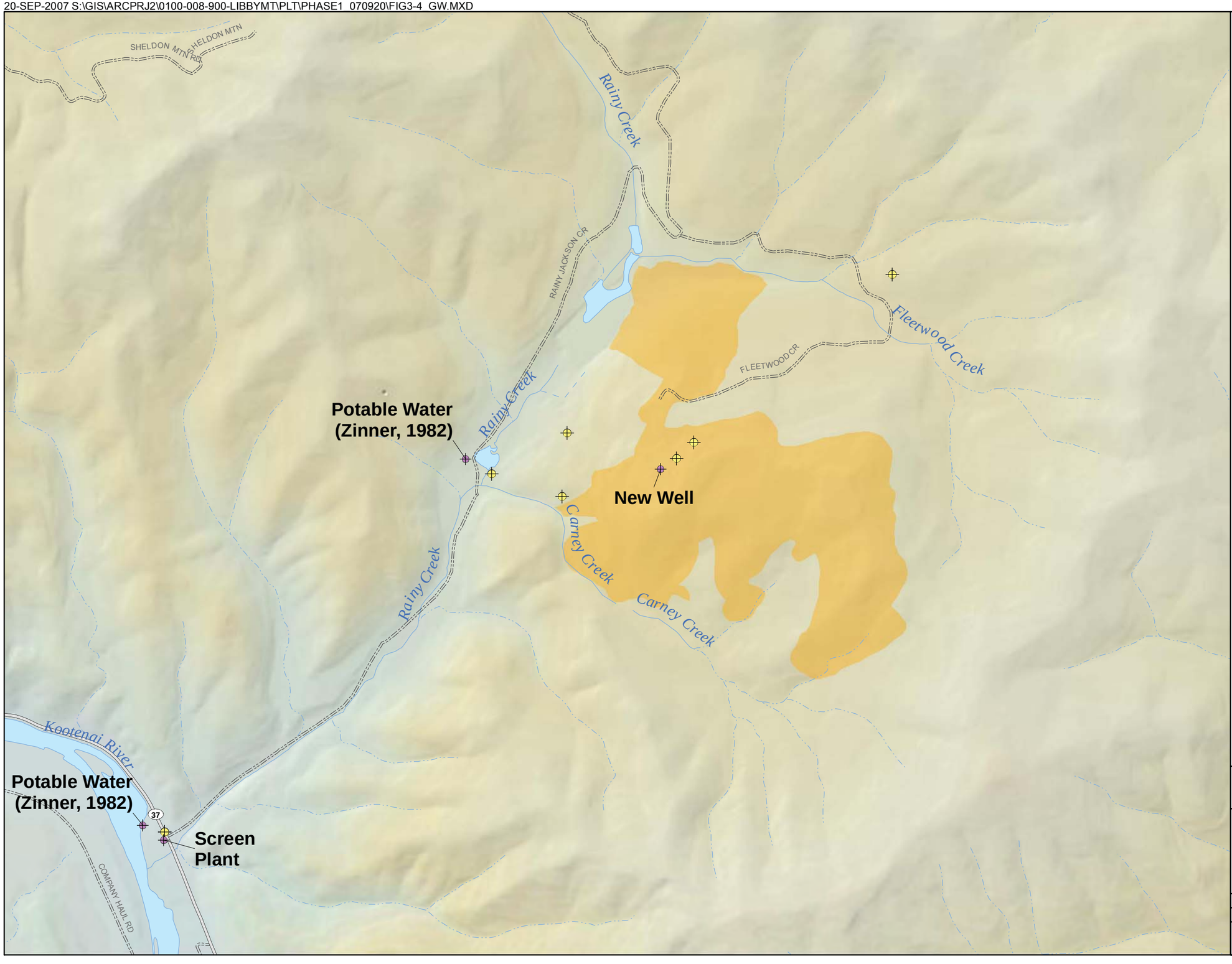
HISTORICAL SEDIMENT SAMPLE LOCATIONS

PROJECT: 0100-008-900	DATE: SEP 05, 2007	
REV: 0	BY: CRL	CHECKED: ACK

NEWFIELDS

Figure originally presented in the Phase I Sampling and Analysis Plan (EPA, 2007b)

20-SEP-2007 S:\GIS\ARCPRJ2\0100-008-900-LIBBYMT\PLT\PHASE1_070920\FIG3-4_GW.MXD



Legend

- County Road
- Primary Road
- Open Water
- Perennial Stream
- Intermittent Stream
- Mined Area
- Montana Groundwater Information Center Water Well Data (unverified locations)
- Other Possible Groundwater Wells (identified by WR Grace records Unverified Locations)

N

0 2,000 4,000

Feet

LIBBY MONTANA SUPERFUND SITE

OPERABLE UNIT 3

FIGURE A-4

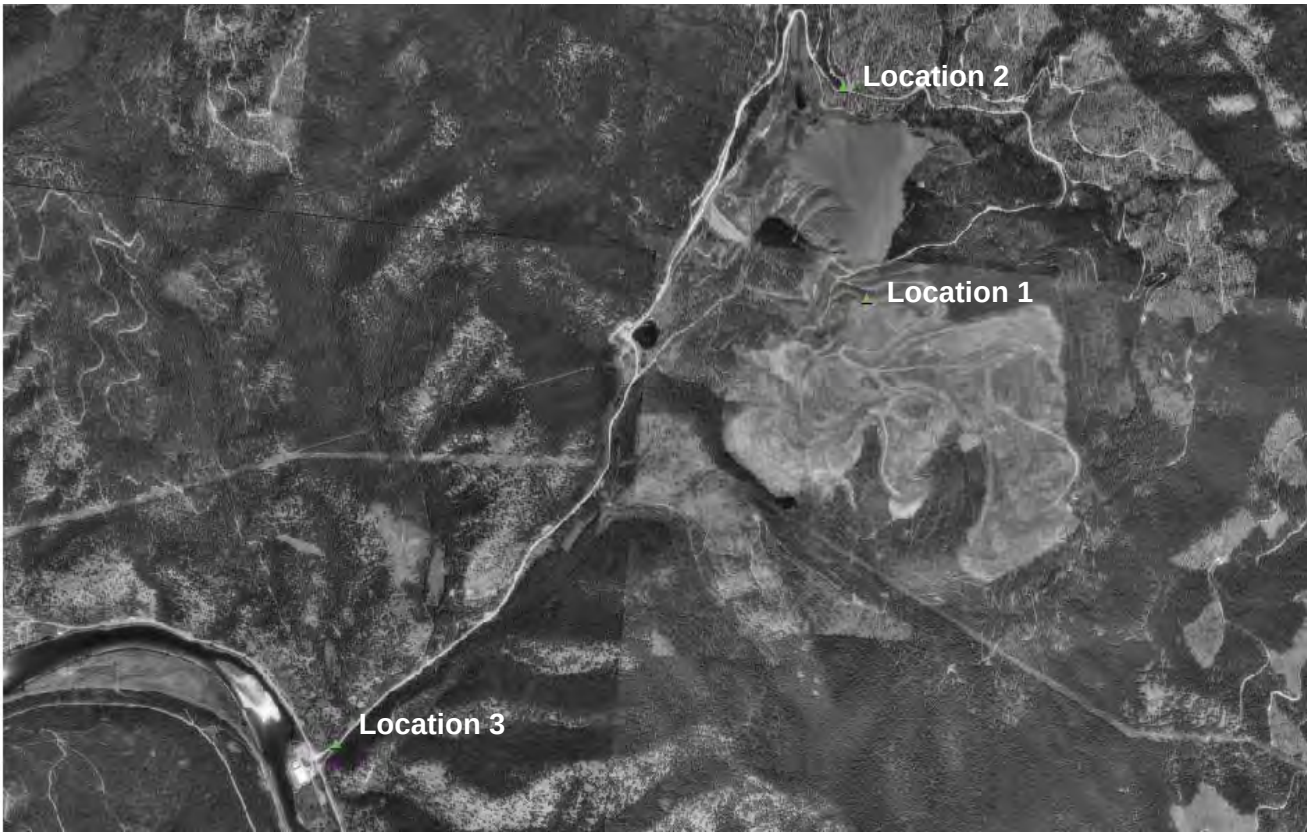
POSSIBLE GROUNDWATER WELL LOCATIONS

PROJECT: 0100-008-900	DATE: SEP 05, 2007	
REV: 0	BY: CRL	CHECKED: ACK

NEWFIELDS

Figure originally presented in the Phase I Sampling and Analysis Plan (EPA, 2007b)

Figure A-5
Locations of Tree Bark Sampling



Source: Ward et al. (2006)

Figure originally presented in the Phase I Sampling and Analysis Plan (EPA, 2007b)

Schafer & Associates
P.O. Box 6186
Bozeman, MT 59715
(406) 587-3478

Waste Management
Land Reclamation
Resource Inventory
Agricultural Consulting

March 5, 1992

Alan Stringer
General Manager
W.R. Grace
P.O. Box 609
Libby, MT 59711

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 12

To Mike Cohan	From Bob Marozzo
Co. WR Grace Kamb.	Co. WR Grace / Libby
Dept.	Phone # (406) 293-3746
Fax # (617) 498-1399	Fax # (406) 293-9132

Dear Alan:

Enclosed is a copy of Water Quality Monitoring Data Report No. 1 which we submitted to Pat Plantenberg of DSL and Tom Reid of the Water Quality Bureau. Probably the most significant finding is that over 95 percent of the asbestiform fibers entering the Kootenai River via Rainy Creek are entrained below Carney Creek. Also, even in this area the loading is nearly within the drinking water standard for asbestos which is effective in July, 1992.

We're working on the Engineering report revisions and should have that for you next week.

Sincerely,

Tom Hudson

Tom Hudson
Project Manager

3.0 PRESENTATION OF DATA

Results of the November 13-15, 1991 sampling campaign are summarized in tabular form as follows:

- Table 3.1 is a summary of field parameters including pH, electric conductivity (EC), temperature and flow. Dissolved oxygen monitoring was also planned. However, the meter failed in the field.
- Table 3.2 is a summary of metal analyses including selected heavy metals and major cations.
- Table 3.3 is a summary of miscellaneous analyses for various anions, petroleum hydrocarbons, hardness, etc.
- Table 3.4 is a summary of asbestiform fiber analyses.

Raw analytical data from Energy Laboratories and EMS Laboratories used to prepare Tables 3.2, 3.3 and 3.4, is included in Appendix A and B, respectively.

Table 3.1. Field data summary.

SITE NO.	DESCRIPTION	pH (su)	EC (mmhos/cm)	TEMP (°C)	FLOW (cfs)	D.O.[3] (ppm)
SW-1	Upper Rainy Creek above diversion dam	7.44	0.27	3.4	0.35[1]	
SW-2	Fleetwood Creek above coarse tails	7.56	0.37	5.9	0.19[2]	
SW-3	Upper Carney Creek at Zook's Dump	7.37	0.86	7.5	<.01[2]	
SW-4	Lower Carney Creek above Rainy Creek	8.35	0.69	4.3	0.24[2]	
SW-5	Tailings dam toe drains	6.78	0.75	9.1	1.22[1]	
SW-6	Tailings pond surface water	7.98	0.26	3.0	0.00	
SW-7	Lower Rainy Creek leaving mine property	8.03	0.66	4.4	1.10[1]	
SW-8	Lower Rainy Creek above Kootenai River	8.15	0.70	6.5	2.03[1]	
SW-9	Kootenai River above Rainy Creek	Not Sampled[4]				
SW-10	Kootenai River below Rainy Creek	Not Sampled[4]				
SW-11[5]	Rainy Creek flow into tailings pond	7.36	0.38	4.4	0.33[2]	
PW-1	Pore water from tailings	7.26	1.25	7.5	NA	
PW-2	Groundwater near SW-11	8.16	.58	4.5	NA	

1 Flow measurement was made with a Pygmy current meter.
2 Flow measurement was made with a Baski cutthroat flume.
3 The dissolved oxygen meter failed.
4 Samples of the Kootenai River were not taken as discussed in the Water Quality Monitoring Plan.
5 The Water Quality Monitoring Plan did not include this site. Rainy Creek reestablishes itself between the diversion dam and the tailings impoundment.

Table 3.2. Laboratory data summary for metals.

SITE NO.	DESCRIPTION	As (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	Pb (mg/l)	Hg (mg/l)	Ni (mg/l)	Zn (mg/l)	K (mg/l)	Na (mg/l)	Ca (mg/l)	Mg (mg/l)
SW-1	Upper Rainy Creek above diversion dam	<0.001	<0.001	<0.02	<0.01	<0.03	<0.01	<0.001	<0.03	0.02	3	3	68	11
SW-2	Fleetwood Creek above coarse tails	<0.001	<0.001	<0.02	<0.01	<0.03	<0.01	<0.001	<0.03	0.05	9	4	88	16
SW-3	Upper Carney Creek at Zook's Dump	<0.001	<0.001	<0.02	<0.01	0.29	<0.01	<0.001	<0.03	0.01	18	8	118	34
SW-4	Lower Carney Creek above Rainy Creek	0.001	<0.001	<0.02	<0.01	0.05	<0.01	<0.001	<0.03	0.02	11	9	98	9
SW-5	Tailings dam toe drains	0.005	<0.001	<0.02	<0.01	0.07	<0.01	<0.001	<0.03	0.16	10	6	92	25
SW-6	Tailings pond surface water	<0.001	<0.001	<0.02	<0.01	0.09	<0.01	<0.001	<0.03	<0.01	2	1	14	4
SW-7	Lower Rainy Creek leaving mine property	0.003	<0.001	<0.02	<0.01	0.18	<0.01	<0.001	<0.03	<0.01	9	6	90	24
SW-0	Blind Control (Replicate of SW-7)	0.004	<0.001	<0.02	<0.01	0.16	<0.01	<0.001	<0.03	<0.01	10	6	91	24
SW-8	Lower Rainy Creek above Kootenai River	0.003	<0.001	<0.02	<0.01	0.17	<0.01	<0.001	<0.03	<0.01	10	6	91	22
SW-9	Kootenai River above Rainy Creek	Not Sampled												
SW-10	Kootenai River below Rainy Creek	Not Sampled												
SW-11	Rainy Creek flow into tailings pond	0.001	<0.001	<0.02	<0.01	<0.03	<0.01	<0.001	<0.03	<0.01	5	3	70	11
PW-1	Pore water from tailings	0.004	<0.001	<0.02	<0.01	1.72	<0.01	<0.001	<0.03	<0.01	19	13	175	64
PW-2	Groundwater near SW-11	<0.001	<0.001	<0.02	<0.01	<0.03	<0.01	<0.001	<0.03	<0.01	5	5	65	13

Table 3.3. Laboratory data summary for miscellaneous constituents.

SITE NO.	DESCRIPTION	SO_4^{+2} (mg/l)	Cl^- (mg/l)	CO_3^{-2} (mg/l)	HCO_3^{-1} (mg/l)	TDS (mg/l)	TSS (mg/l)	Hardness (mg/l)	Alkalinity (mg/l)	NO_3^- (mg/l)	F^- (mg/l)	TPH (mg/l)
SW-1	Upper Rainy Creek above diversion dam	4	<1	0	249	203	1	216	204	<0.05	0.25	<0.1
SW-2	Fleetwood Creek above coarse tails	15	5	0	320	312	3	283	262	<0.05	0.32	<0.1
SW-3	Upper Carney Creek at Zook's Dump	13	2	0	531	496	8	434	435	0.44	0.25	<0.1
SW-4	Lower Carney Creek above Rainy Creek	21	2	6	428	400	<1	363	361	0.25	0.28	<0.1
SW-5	Tailings dam toe drains	9	8	0	390	364	<1	332	319	<0.05	3.1	<0.1
SW-6	Tailings pond surface water	6	1	0	52	52	2	54	43	0.06	0.28	0.3
SW-7	Lower Rainy Creek leaving mine property	11	10	0	378	350	2	322	310	0.05	2.3	<0.1
SW-0	Blind Control (Replicate of SW-7)	11	10	0	381	353	4	325	313	0.05	2.4	<0.1
SW-8	Lower Rainy Creek above Kootenai River	11	10	0	367	348	6	318	301	0.06	1.6	<0.1
SW-9	Kootenai River above Rainy Creek	Not Sampled										
SW-10	Kootenai River below Rainy Creek	Not Sampled										
SW-11	Rainy Creek flow into tailings pond	5	<1	0	269	223	<1	220	220	<0.05	0.15	<0.1
PW-1	Pore water from tailings	1	18	0	911	822	NA	699	747	1.40	3.5	NA
PW-2	Groundwater near SW-11	9	2	0	243	252	NA	216	199	2.65	0.44	NA

Table 3.4. Laboratory data summary for asbestiform fibers.

SITE NO.	DESCRIPTION	DETECTION LIMIT (MFL)	FIBERS <2.5μm (MFL)	FIBERS 2.5 - 9.9μm (MFL)	FIBERS >10μm (MFL)	FIBER MASS (μg/l)
SW-1	Upper Rainy Creek above diversion dam	0.07	<0.07	<0.07	<0.07	BDL
SW-2	Fleetwood Creek above coarse tails	0.07	2.0	1.4	0.5	24
SW-3	Upper Carney Creek at Zook's Dump	0.2	5.4	8.4	1.8	42
SW-4	Lower Carney Creek above Rainy Creek	0.07	1.8	2.1	0.1	6.4
SW-5	Tailings dam toe drains	0.3	0.6	0.6	0.3	8.8
SW-6	Tailings pond surface water	0.6	9.0	16.4	1.7	52
SW-7	Lower Rainy Creek leaving mine property	1.5	62	56	12	140
SW-0	Blind Control (Replicate of SW-7)	2.1	66	75	19	250
SW-8	Lower Rainy Creek above Kootenai River	1.9	73	83	17	240
SW-9	Kootenai River above Rainy Creek	Not Sampled				
SW-10	Kootenai River below Rainy Creek	Not Sampled				
SW-11	Rainy Creek flow into tailings pond	0.07	<0.07	<0.07	<0.07	BDL
	EMS Laboratories Blank	0.04	<0.04	<0.04	<0.04	BDL

4.0 DATA ANALYSIS

The important findings of this testing are summarized as follows:

- Upper Rainy Creek (Sites SW-1 and SW-11) was found to be free of asbestiform fibers. Metal levels were all below detection limits with the exception of zinc which was .05 mg/l.

- Fleetwood Creek (SW-2) and Lower Carney Creek (SW-4) showed asbestiform fiber counts of about 4 million fibers per liter (MFL). Upper Carney Creek (SW-3), which originates as a trickle from a waste dump, contained 15.6 MFL. Otherwise, water quality was similar to that in Upper Rainy Creek with the exception of slightly elevated iron levels (.29 and .05 mg/l) in Carney Creek. The elevated iron may be attributed in part to higher sediment loading in these samples.

- Samples of the tailings impoundment toe drains (SW-5) indicated that As, Fe and Zn were elevated above ambient levels at 0.005, 0.07 and 0.16 mg/l respectively. Fluoride, which is present because of the use of HF as a flotation reagent, was 3.1 mg/l. This is about an order of magnitude higher than natural streams in the area. The toe drains contained only 1.5 MFL of asbestiform fibers ostensibly due to effective filtration in the dam foundation materials.

- Surface water from the tailings impoundment (there was no outfall at the time of sampling) had the lowest TDS values of any samples collected. This sample (SW-6) was collected from under an ice layer. As such, it may have been a product of purification by successive freezing and thawing or simply diluted by natural precipitation. This was the only sample to show any indication of petroleum hydrocarbons with a concentration of 0.3 mg/l, just above the detection limit. This sample did contain elevated levels of asbestiform fibers at 26.1 MFL.

- Samples from the two sites on Lower Rainy Creek (SW-7 and SW-8), below the tailings impoundment, show the impact of fluoride, arsenic and iron from the toe drains and Carney Creek but zinc is not detected at these sites. Asbestiform fibers from these sites were much higher than any other sampling locations, 130 and 173 MFL, respectively. The asbestiform fiber contamination certainly must be characterized as a non-point source impact based on this finding. As shown in Figure 4.1, over 95 percent of the asbestiform fibers entering the Kootenai River originate below Carney Creek. It is probable that much of the high tremolite fiber content is derived from the early years of operation before the existence of the tailings impoundment. Tremolite is believed to have formed through hydrothermal alteration of pyroxenite during the last stage of geologic development when quartz and calcite

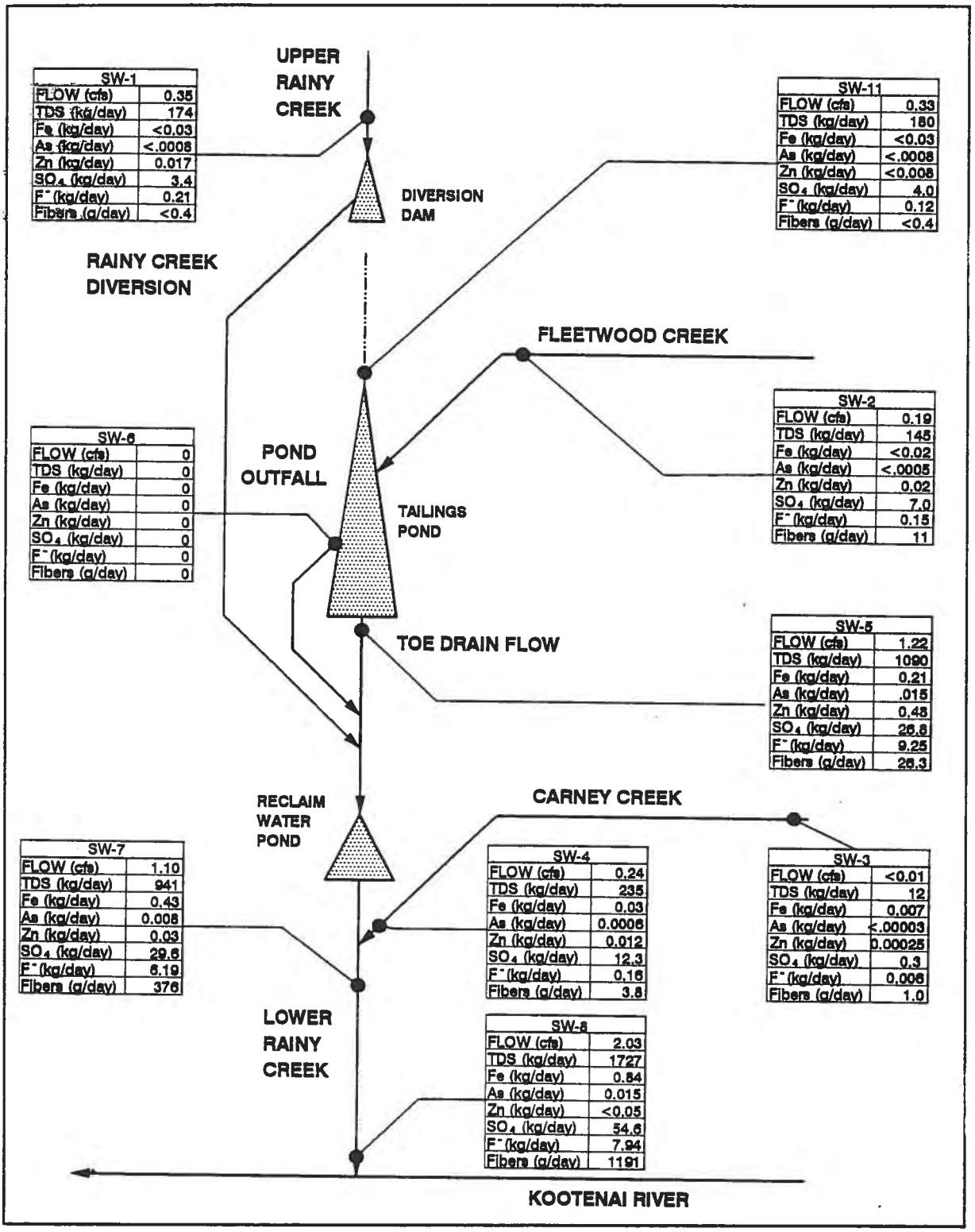


Figure 4.1 Schematic flow diagram of the Rainy Creek drainage with mass flow measurements for selected components.

veins intruded the Rainy Creek Complex (Boettcher, 1966). Figure 4.2 shows that Fleetwood Creek appears to have exposed the pyroxenite through erosion. Consequently, alluvial deposits in Lower Rainy Creek probably also contain tremolite fibers of natural origin. The relative contribution of tremolite from natural and historic mining sources cannot be determined.

- The flow at site SW-7 was only 1.10 cfs. This is less than the total flows from the toe drains, Carney Creek and the diverted Upper Rainy Creek (a total of 1.81 cfs). This site is in a relatively flat portion of the Rainy Creek Drainage below the water storage pond. It is probable that soils in this area are gravelly and that the pond acts to divert a portion of the surface flow back to groundwater flow thereby reducing the flow measured at SW-7. Most of this flow appears to be recovered as surface flow by the time Rainy Creek reaches SW-8. Most drainages contain both surface flow and an associated subsurface flow. Gaining or losing stretches where groundwater may emerge as surface flow or surface flow may infiltrate to groundwater are normal, particularly in small streams.

- Fluoride analyses appear to be a good indicator of the combined surface and subsurface flow, below the tailings dam. An estimate of total system flow can be calculated for sites SW-7 and SW-8 based on fluoride analyses making the following assumptions:

  1) there is no attenuation of fluoride in the streambed,

  2) there are no other water inputs containing high fluoride other than the toe drain flow, and

  3) all additional groundwater and surface recharge to Rainy Creek is at the 0.3 mg/l F concentration typical of the area.

  Using these assumptions, the calculated system flows at SW-7 and SW-8 are 1.71 and 2.28 cfs, respectively.

- The water balance around the tailings impoundment suggests that additional groundwater is being released from the toe drains as a result of natural seepage in this area (this was their intended purpose) and/or pore water draining from the tailings material as a result of the recent efforts to lower the water level in the tailings pond. Measured inputs to the impoundment are 0.52 cfs but toe drain flow is 1.22 cfs.

- Pore water samples showed some differences in Ca/Mg ratios between the local groundwater and stream flows (typically about 6:1) and water in the tailings impoundment (measured at 2.73:1). The toe drain Ca/Mg ratio was intermediate compared to these. Based on these ratios an estimated 60 to 70 percent of toe drain

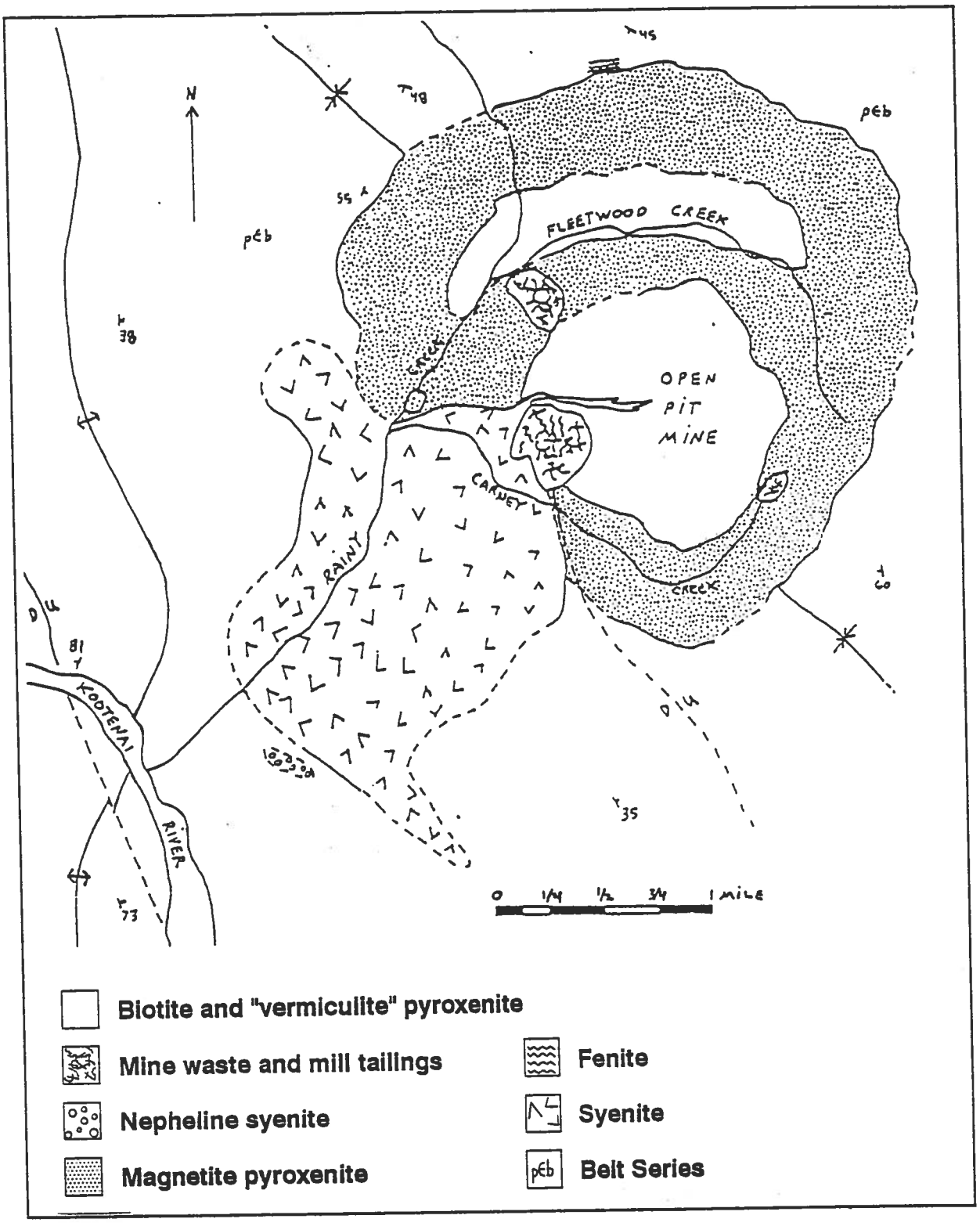


Figure 4.2 Surface geology map of the Rainy Creek Complex. Erosion of the pyroxenite formation in the Fleetwood Creek drainage may be a natural source of tremolite fibers in Lower Rainy Creek.

flows originate in or pass through the tailings materials. This analysis is confirmed by the elevated fluoride levels in the toe drains.

- There is evidence of very low levels of nitrate input to Carney Creek probably from the waste rock dumps which could have residual nitrate as the result of blasting. The nitrate is also evident in Lower Rainy Creek; however, it is just above detection limits.

- There is a general trend toward an increase in hardness and alkalinity as one moves down the Rainy Creek drainage. Mine wastes probably contribute to this as evidenced by samples from Upper Carney Creek (SW-3) and the tailings pore water sample (PW-1) both of which are generated by direct contact of water with mine wastes.

- Table 4.1 compares measured values with applicable drinking water standards. The only issues of concern appear to be asbestiform fibers and fluoride which are marginally higher than drinking water standards for some samples. There is no current drinking water standard for nickel. The EPA Gold Book Update No. 1 (USEPA, 1987) lists a human health criterion for nickel of 0.1 mg/l.

- The Gold Book (USEPA, 1986) also lists an increased risk level of 10^{-6} for asbestos at a concentration of 30,000 fibers per liter without specific reference to size or aspect ratios and without judgement on what constitutes acceptable risk. The drinking water standard for asbestos which takes effect in July, 1992 presumably reflects the current thinking on asbestos-related health risks in public water supplies.

Table 4.1 A comparison of measured water quality data with drinking water standards.

Constituent	Measured Concentration (mg/l)	Location of Sample with Maximum Concentration	Primary Drinking Water Standard (mg/l)	Secondary Drinking Water Standard (mg/l)
As	<0.001 to 0.005	SW-5	0.05	
Cd	<.001	All	0.005[1]	
Cr	<.002	All	0.1[1]	
Cu	<.01	All		1.0
Fe	<0.03 to 0.29	SW-3		0.3
Pb	<.01	All	0.05	
Hg	<.001	All	0.005	
Ni	<.03	All		
Zn	<0.01 to 0.16	SW-5	5.0	
Asbestos	<0.07 to 19.0	SW-8	7.0[1,2]	
SO_4^{-2}	4 to 21	SW-4		250
Cl^-	<1 to 10	SW-8		250
NO_3^-	<0.05 to 0.44	SW-3	10.0	
F^-	0.25 to 3.1	SW-5		2.0
pH	6.78 to 8.35	SW-5(min); SW-8(max)		6.5 to 8.5
TDS	52 to 496	SW-3		500

[1] These standards are added or revised effective July 1992.

[2] Fiber counts are based on fibers greater than 10 microns in length with an aspect ratio greater than 3:1.

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W.R. GRACE VERMICULITE MINE CLOSURE WATER QUALITY DATA REPORT NO. 2 MARCH, 1992

Submitted to:

Montana Department of State Lands
Hard Rock Mining Bureau
Helena, Montana

Submitted by:

Schafer and Associates
Bozeman, Montana

May 6, 1992

Schafer

1.0 BACKGROUND

The W.R. Grace vermiculite mine near Libby, Montana was closed in the fall of 1990. As part of the reclamation and closure, particularly as it applies to areas around the tailings impoundment, W.R. Grace submitted to the Water Quality Bureau a proposed Water Quality Monitoring Plan in September, 1991 (Schafer and Associates, 1991). The purpose of the Plan was to establish post-closure water quality data as a means of monitoring the performance of facility reclamation measures.

The plan calls for water sampling at several locations in the Rainy Creek drainage as shown on Figure 1.1. Contingent sampling on the Kootenai was proposed if initial data on Rainy Creek indicated any potential health concerns. Four sampling campaigns were proposed for the first year to characterize re-reclamation water quality conditions and assess seasonal variations in water quality. Additional annual sampling campaigns for a minimum of three years following closure were also proposed. The first sampling event took place in mid-November, 1991, the second in late March, 1992, the third in early July, 1992 and the fourth in late October, 1992. Results from these sampling events were reported in Water Quality Data Report No.1, No. 2, No.3 and No. 4, respectively. Data from these sampling events indicated that fluoride was slightly above drinking water standards in Lower Rainy Creek due to drainage of process water from the tailings impoundment. Asbestiform fibers were also above drinking water standards in Lower Rainy Creek. Although Carney Creek carried fibers potentially attributable to mine waste dumps and Fleetwood Creek carried fibers which appear to be of natural origin, neither tributary could account for the quantity of fibers found in Lower Rainy Creek. It was concluded that the Lower Rainy Creek streambed was the source of the high asbestiform fiber count and that this was probably the result of old mining practices which discharged tailings directly into the drainage without settlement.

Facility demolition and reclamation activities were completed in 1992 and early 1993. This report is the first of the post-closure water quality reports summarizing data from water samples collected October 21, 1993.

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2.0 METHODS

Conditions at the time of sampling were partly cloudy with morning fog but no rain. Temperatures ranged from 38° F to 50° F. The Rainy Creek diversion pipeline was removed as part of reclamation and Rainy Creek was flowing in its natural drainage into the tailings pond. The tailing pond surface water was restricted to the upper end of the impoundment but appeared to be slightly larger than the previous year. This is probably the result of a cool, wet summer. There was no surface water discharge from the impoundment through the new concrete spillway which was built in the spring of 1993.

Sampling methods were outlined in the Water Quality Monitoring Plan (Schafer and Associates, 1991) submitted in September, 1991 and modified slightly in the field as described in Water Quality Data Report No. 1 (Schafer and Associates, 1992). For the post-closure sampling, modifications were made to the initial plan to reduce the number of samples and the analyses performed on them based on the results of baseline sampling. These changes were outlined in a letter to DSL dated January 13, 1992 accompanying Water Quality Data Report No. 4. The revised sampling plan concentrated on the fluoride and asbestiform fibers in Lower Carney Creek, toe drains and surface discharge from the tailings impoundment, and Lower Rainy Creek. Since elevated metal concentrations were not detected in baseline sampling, metal analyses were removed from the analytical list. DSL agreed to the suggested changes and recommended that annual post-closure sampling take place each year in the fall of the year during base flow.

The preservation techniques and analytical methods used are summarized in Table 2.1. All samples were stored and shipped on ice.

Table 2.1. Summary of sampling and analytical methods for water samples.

Unpreserved Samples		Field Parameters	
Component	Analytical Method[1]	Parameter	Method
TDS	EPA 160.1	Flow	Pygmy current meter/ Baski flume
TSS	EPA 160.2	pH	Field pH meter
Asbestiform Fibers	EPA-600/4-83-043	EC	Field EC meter
Hardness	EPA 130.2	Temperature	Field meter
Alkalinity	EPA 310.1		
NO_3^{-1}	EPA 353.2		
SO_4^{-2}	EPA 375.3		
Cl^{-1}	EPA 325.3		
F^{-1}	EPA 340.2		
Ca	EPA 215.1/200.7		
Mg	EPA 242.1/200.7		
Na	EPA 273.1/200.7		
K	EPA 258.1/200.7		
CO_3^{-2}/HCO_3^{-1}	EPA 310.1		

[1] EPA procedures are described in 40 CFR Part 136, Table B. Procedures for asbestiform fibers are described in "Analytical Procedures for Determination of Asbestos Fibers in Water" (EPA-600/4-83-043).

3.0 PRESENTATION OF DATA

Results of the March 25, 1992 sampling event are summarized in tabular form as follows:

- Table 3.1 is a summary of field parameters including pH, electric conductivity (EC), temperature and flow. Our dissolved oxygen meter was not available at the time of this sampling trip, hence this data was not obtained.
- Table 3.2 is a summary of metal analyses including selected heavy metals and major cations.
- Table 3.3 is a summary of miscellaneous analyses for various anions, petroleum hydrocarbons, hardness, etc.
- Table 3.4 is a summary of asbestiform fiber analyses.

Raw analytical data from Energy Laboratories and EMS Laboratories used to prepare Tables 3.2, 3.3 and 3.4, are included in Appendix A and B, respectively.

Table 3.1. Field data summary.

SITE NO.	DESCRIPTION	pH (su)	EC (mmhos/cm)	TEMP (°C)	FLOW (cfs)	D.O.[3] (ppm)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled				
SW-2	Fleetwood Creek above coarse tails	8.50	0.45	6.8	0.34[1]	
SW-3	Upper Carney Creek at Zook's Dump	8.06	0.70	10.8	<.01[2]	
SW-4	Lower Carney Creek above Rainy Creek	8.61	0.58	4.6	0.51[2]	
SW-5	Tailings dam toe drains	7.26	0.68	9.8	1.26[1]	
SW-6	Tailings pond outfall (surface water sample, only)	8.66	0.36	8.9	0.00	
SW-7	Lower Rainy Creek leaving mine property	7.87	0.58	6.5	2.59[1]	
SW-8	Lower Rainy Creek above Kootenai River	7.98	0.57	5.3	2.92[1]	
SW-9	Kootenai River above Rainy Creek	Not Sampled[4]				
SW-10	Kootenai River below Rainy Creek	Not Sampled[4]				
SW-11[5]	Rainy Creek flow into tailings pond	8.18	0.32	4.6	1.46[1]	
PW-1	Tailings Pond pore water	Not Sampled				
PW-2	Groundwater near SW-11	Not Sampled				

1 Flow measurement was made with a Pygmy current meter.
2 Flow measurement was made with a Baski cutthroat flume.
3 The dissolved oxygen meter was not available.
4 Samples of the Kootenai River were not taken as discussed in the Water Quality Monitoring Plan.
5 The Water Quality Monitoring Plan did not include this site. Rainy Creek reestablishes itself between the diversion dam and the tailings impoundment.

Table 3.2. Laboratory data summary for metals.

SITE NO.	DESCRIPTION	As (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	Pb (mg/l)	Hg (mg/l)	Ni (mg/l)	Zn (mg/l)	K (mg/l)	Na (mg/l)	Ca (mg/l)	Mg (mg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled												
SW-2	Fleetwood Creek above coarse tails	<0.005	<0.001	<0.02	<0.01	0.03	<0.01	<0.001	<0.03	<0.01	8	5	79	15
SW-3	Upper Carney Creek at Zook's Dump	<0.005	<0.001	<0.02	<0.01	0.53	<0.01	<0.001	<0.03	<0.01	9	8	106	26
SW-4	Lower Carney Creek above Rainy Creek	<0.005	<0.001	<0.02	<0.01	0.11	<0.01	<0.001	<0.03	<0.01	12	9	85	26
SW-5	Tailings dam toe drains	0.005	<0.001	<0.02	<0.01	0.06	<0.01	<0.001	<0.03	<0.01	12	7	93	25
SW-0	Blind Control (Replicate of SW-5)	0.005	<0.001	<0.02	<0.01	0.06	<0.01	<0.001	<0.03	<0.01	12	7	93	25
SW-6	Tailings pond surface water	<0.005	<0.001	<0.02	<0.01	0.19	<0.01	<0.001	<0.03	0.01	6	4	51	13
SW-7	Lower Rainy Creek leaving mine property	<0.005	<0.001	<0.02	<0.01	0.15	<0.01	<0.001	<0.03	0.02	10	7	87	22
SW-8	Lower Rainy Creek above Kootenai River	<0.005	<0.001	<0.02	<0.01	0.11	<0.01	<0.001	<0.03	<0.01	10	6	87	21
SW-9	Kootenai River above Rainy Creek	Not Sampled												
SW-10	Kootenai River below Rainy Creek	Not Sampled												
SW-11	Rainy Creek flow into tailings pond	<0.005	<0.001	<0.02	<0.01	0.24	<0.01	<0.001	<0.03	0.01	4	3	64	11
PW-1	Pore water from tailings	Not Sampled												
PW-2	Groundwater near SW-11	Not Sampled												

Table 3.3. Laboratory data summary for miscellaneous constituents.

SITE NO.	DESCRIPTION	SO_4^{-2} (mg/l)	Cl^- (mg/l)	CO_3^{-2} (mg/l)	HCO_3^{-1} (mg/l)	TDS (mg/l)	TSS (mg/l)	Hardness (mg/l)	Alkalinity (mg/l)	NO_3^- (mg/l)	F^- (mg/l)	TPH (mg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled										
SW-2	Fleetwood Creek above coarse tails	18	4	0	293	291	1	258	240	<0.05	0.26	<0.1
SW-3	Upper Carney Creek at Zook's Dump	11	2	0	452	431	6	371	370	0.06	0.21	<0.1
SW-4	Lower Carney Creek above Rainy Creek	21	3	0	370	349	4	316	303	0.23	0.20	<0.1
SW-5	Tailings dam toe drains	12	7	0	397	383	3	335	325	0.06	3.0	No Data[1]
SW-0	Blind Control (Replicate of SW-5)	12	7	0	392	375	<1	334	321	0.07	3.2	<0.1
SW-6	Tailings pond surface water.	9	3	0	206	191	12	182	169	<0.05	0.29	<0.1
SW-7	Lower Rainy Creek leaving mine property	11	7	0	350	329	6	308	287	<.05	1.7	<0.1
SW-8	Lower Rainy Creek above Kootenai River	11	7	0	345	293	5	303	282	<0.05	1.5	<0.1
SW-9	Kootenai River above Rainy Creek	Not Sampled										
SW-10	Kootenai River below Rainy Creek	Not Sampled										
SW-11	Rainy Creek flow into tailings pond	5	<1	0	236	196	36	205	193	<0.05	0.13	No Data[1]
PW-1	Pore water from tailings	Not Sampled										
PW-2	Groundwater near SW-11	Not Sampled										

[1] Sample bottles broke during shipment.

Table 3.4. Laboratory data summary for asbestiform fibers.

SITE NO.	DESCRIPTION	DETECTION LIMIT (MFL)*	FIBERS <5μm (MFL)*	FIBERS >5μm (MFL)*	FIBERS >10μm (MFL)*	FIBER MASS (μg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled				
SW-2	Fleetwood Creek above coarse tails	0.8	8.9	3.1	2.3	47
SW-3	Upper Carney Creek at Zook's Dump	0.3	20.7	5.3	1.6	50
SW-4	Lower Carney Creek above Rainy Creek	1	65	55	19	950
SW-5	Tailings dam toe drains	1.6	<1.6	<1.6	<1.6	BDL*
SW-0	Blind Control (Replicate of SW-5)	0.2	<0.2	<0.2	<0.2	BDL*
SW-6	Tailings pond surface water	8.2	500	270	120	1800
SW-7	Lower Rainy Creek leaving mine property	1	66	34	9.2	180
SW-8	Lower Rainy Creek above Kootenai River	0.8	51	30	9	270
SW-9	Kootenai River above Rainy Creek	Not Sampled				
SW-10	Kootenai River below Rainy Creek	Not Sampled				
SW-11	Rainy Creek flow into tailings pond	2	1.9	2	2	1.6

* MFL = Million fibers per liter; BDL = Below detection limit

4.0 DATA ANALYSIS

The significant findings of this sampling event are as follows:

- Streamflow was about 50 percent higher than in November. This appears to have resulted in a dilution of dissolved solids in most samples. Predictably, the tailings impoundment toe drain water chemistry is virtually unchanged because it receives little or no direct surface runoff. The stability of this sample location is also reflected in the volumetric flow which was about the same as in November. The tailings pond surface water showed substantially higher dissolved solids than in November when ice was on the pond surface. This observation reinforces our theory that successive freeze/thaw cycles may purify the water at the surface of the pond.

- The elevated zinc concentrations encountered on the earlier sampling event appear to be much lower on this round of sampling but the samples showing detectable levels are generally at the same locations as in November.

- Higher asbestiform fiber counts were measured at SW-4 (Lower Carney Creek) and SW-6 (tailings pond surface water). The Carney Creek fiber count can probably be attributed to higher runoff. The high impoundment fiber counts may be due to the absence of an ice layer on the pond. It was breezy the day of sampling and the wind may have caused suspension of particles near the shore. SW-11 (Rainy Creek above the tailings pond) also had a slight showing of asbestiform fibers whereas in November there was none detected. We attribute this to the overall heavy suspended solids load in this particular sample. The sample was taken in mid- to late-afternoon when the temperature was highest and runoff appeared to be high as well. The sediment loading in Upper Rainy Creek was clearly visible at the time of sampling. Extensive clear-cutting in the Upper Rainy Creek drainage may be a contributing factor.

- We have assembled a mass flow schematic diagram for the sampling area in Figure 4.1 as we did in the prior data report. Lower Rainy Creek again appears to be a major source of asbestiform fibers but Carney Creek is a significant factor in the overall fiber loading, accounting for 61 percent of the total load discharged at the mouth of Rainy Creek. This is a result substantially different than seen in November. The Lower Carney Creek sample has a higher average fiber mass than other samples. This suggests a possible transport mechanism to explain variations in data observed to date. During periods of high flow, relatively coarse material may wash out of the Carney Creek drainage and settle out in the Rainy Creek drainage. It is probable

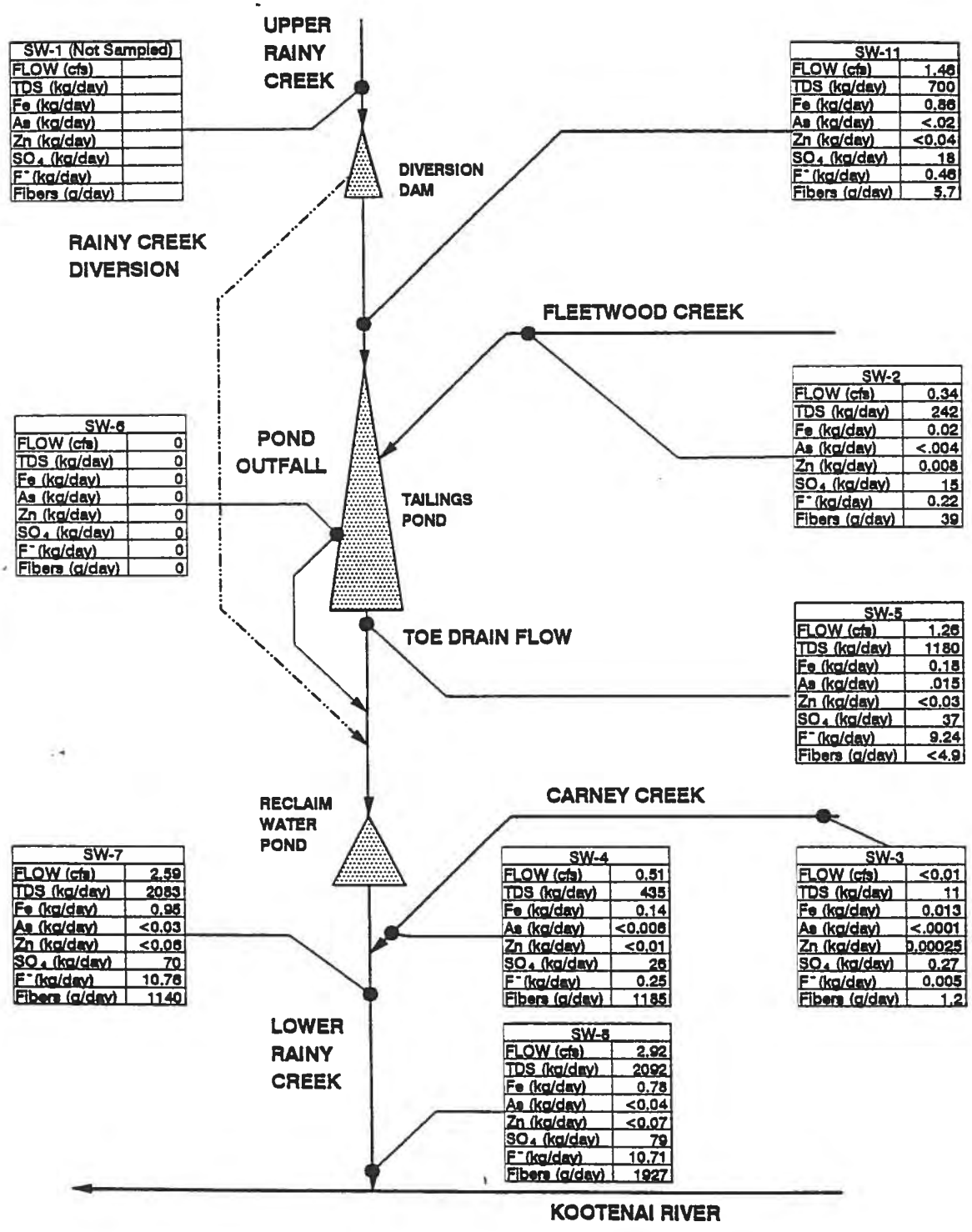


Figure 4.1 Schematic flow diagram of the Rainy Creek drainage with mass flow measurements for selected components.

that our sampling does not measure a significant portion of material transport in which material shifts in the stream bed without ever becoming fully entrained. These larger particles may be attrited into smaller more readily transportable particles which are carried out at a more uniform rate. Interestingly, on this round of sampling at least, the tailings impoundment was actually working to reduce asbestiform fibers in stream flows entering it. Both Upper Rainy Creek and Fleetwood Creek had detectable levels of asbestiform fibers but the toe drains, which were the only points of discharge from the pond, did not.

- Table 4.1 compares measured water quality values to existing standards. Once again, fluoride and asbestiform fibers appear to be the primary areas of concern. One sample (SW-3, Upper Carney Creek at Zook's dump) was slightly above the drinking water standard for Fe. Lower Carney Creek is within that standard, however.

Table 4.1 A comparison of measured water quality data with drinking water standards.

Constituent	Measured Concentration Range	Primary Drinking Water Standard	Secondary Drinking Water Standard	Location of Sample with Maximum Concentration
	(mg/l except as noted)			
As	<0.005 to 0.005	0.05		SW-5
Cd	<.001	0.005[1]		All
Cr	<.02	0.1[1]		All
Cu	<.01		1.0	All
Fe	0.03 to 0.53		0.3	SW-3
Pb	<.01	0.05		All
Hg	<.001	0.005		All
Ni	<.03			All
Zn	<0.01 to 0.02	5.0		SW-7
Asbestos (MFL)	<0.2 to 120	7.0[1,2]		SW-6
SO_4^{-2}	3 to 21		250.	SW-4
Cl^-	<1 to 7		250.	SW-5, -7 and -8
NO_3^-	<0.05 to 0.23	10.0		SW-4
F^-	0.13 to 3.0		2.0	SW-5
pH (su)	7.26 to 8.66		6.5 to 8.5	SW-5(min); SW-6(max)
TDS	191 to 431		500.	SW-3

[1] These standards are added or revised effective July 1992.

[2] Fiber counts are based on fibers greater than 10 microns in length with an aspect ratio greater than 3:1.

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November 12, 1992

Alan Stringer
General Manager
W.R. Grace & Co.
P.O. Box 609
Libby, Montana 59923-0609

Dear Alan:

Enclosed for your records is a copy of Water Quality Data Report No. 3 which was mailed to DSL. There was nothing in the data which was significantly different from the earlier samplings. Fluoride and asbestos are the only two components which exceed drinking water standards and then only marginally so.

We should be getting data back soon on the fourth sampling trip which when written up will complete the phase of water quality work related to current baseline information.

Sincerely,

Tom Hudson

Tom Hudson
Project Manager

3.0 PRESENTATION OF DATA

Results of the July 2, 1992 sampling are summarized in tabular form as follows:

- Table 3.1 is a summary of field parameters including pH, electric conductivity (EC), temperature and flow.
- Table 3.2 is a summary of metal analyses including selected heavy metals and major cations.
- Table 3.3 is a summary of miscellaneous analyses for various anions, petroleum hydrocarbons, hardness, etc.
- Table 3.4 is a summary of asbestiform fiber analyses.

Raw analytical data from Energy Laboratories and EMS Laboratories used to prepare Tables 3.2, 3.3 and 3.4, are included in Appendix A and B, respectively.

Table 3.1. Field data summary.

SITE NO.	DESCRIPTION	pH[6] (su)	EC (mmhos/cm)	TEMP (°C)	FLOW (cfs)	D.O.[3] (ppm)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled				
SW-2	Fleetwood Creek above coarse tails	8.32	0.48	9.5	0.30[1]	
SW-3	Upper Carney Creek at Zook's Dump	8.12	0.71	8.9	0.002	
SW-4	Lower Carney Creek above Rainy Creek	8.45	0.54	9.8	0.11[2]	
SW-5	Tailings dam toe drains	7.21	0.53	8.1	1.20[1]	
SW-6	Tailings pond outfall (surface water sample, only)	8.34	0.17	13.9	0.00	
SW-7	Lower Rainy Creek leaving mine property	7.97	0.54	11.6	1.30[1]	
SW-8	Lower Rainy Creek above Kootenai River	8.15	0.52	8.9	2.29[1]	
SW-9	Kootenai River above Rainy Creek	Not Sampled[4]				
SW-10	Kootenai River below Rainy Creek	Not Sampled[4]				
SW-11[5]	Rainy Creek flow into tailings pond	8.24	0.39	6.8	0.24[1]	
PW-1	Tailings Pond pore water	Not Sampled				
PW-2	Groundwater near SW-11	Not Sampled				

1 Flow measurement was made with a Pygmy current meter.
2 Flow measurement was made with a Baski cutthroat flume.
3 Dissolved oxygen was not measured.
4 Samples of the Kootenai River were not taken as discussed in the Water Quality Monitoring Plan.
5 The original Water Quality Monitoring Plan did not include this site. Rainy Creek reestablishes itself between the diversion dam and the tailings impoundment.
6 Field pH probe failed. Measurements were made in the lab one day later.

Table 3.2. Laboratory data summary for metals.

SITE NO.	DESCRIPTION	As (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	Pb (mg/l)	Hg (mg/l)	Ni (mg/l)	Zn (mg/l)	K (mg/l)	Na (mg/l)	Ca (mg/l)	Mg (mg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled												
SW-2	Fleetwood Creek above coarse tails	<0.001	<0.001	<0.01	<0.01	0.05	<0.01	<0.0001	<0.03	0.04	7	5	85	16
SW-3	Upper Carney Creek at Zook's Dump	0.001	<0.001	<0.01	<0.01	0.81	<0.01	<0.0001	<0.03	0.03	10	7	106	28
SW-4	Lower Carney Creek above Rainy Creek	<0.001	<0.001	<0.01	<0.01	0.04	<0.01	<0.0001	<0.03	0.03	11	9	89	28
SW-5	Tailings dam toe drains	0.005	<0.001	<0.01	<0.01	0.04	<0.01	<0.0001	<0.03	0.01	9	6	88	24
SW-6	Tailings pond surface water	0.002	<0.001	<0.01	<0.01	<0.03	<0.01	<0.0001	<0.03	<0.01	4	4	16	6
SW-7	Lower Rainy Creek leaving mine property	0.002	<0.001	<0.01	<0.01	0.19	<0.01	<0.0001	<0.03	0.03	9	6	77	24
SW-0	Blind Control (Replicate of SW-7)	0.002	<0.001	<0.01	<0.01	0.30	<0.01	<0.0001	<0.03	0.03	10	7	78	24
SW-8	Lower Rainy Creek above Kootenai River	0.002	<0.001	<0.01	<0.01	0.42	<0.01	<0.0001	<0.03	0.02	9	6	79	22
SW-9	Kootenai River above Rainy Creek	Not Sampled												
SW-10	Kootenai River below Rainy Creek	Not Sampled												
SW-11	Rainy Creek flow into tailings pond	0.001	<0.001	<0.01	<0.01	<0.03	<0.01	<0.0001	<0.03	0.03	4	3	66	11
PW-1	Pore water from tailings	Not Sampled												
PW-2	Groundwater near SW-11	Not Sampled												

Table 3.3. Laboratory data summary for miscellaneous constituents.

SITE NO.	DESCRIPTION	SO_4^{-2} (mg/l)	Cl^- (mg/l)	CO_3^{-2} (mg/l)	HCO_3^{-1} (mg/l)	TDS (mg/l)	TSS (mg/l)	Hardness (mg/l)	Alkalinity (mg/l)	NO_3^- (mg/l)	F^- (mg/l)	TPH (mg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled										
SW-2	Fleetwood Creek above coarse tails	15	4	0	353	335	<1	279	289	<0.05	0.22	<0.1
SW-3	Upper Carney Creek at Zook's Dump	8	2	0	513	423	2	381	420	<0.05	0.18	<0.1
SW-4	Lower Carney Creek above Rainy Creek	22	2	10	414	363	<1	335	356	0.29	0.18	<0.1
SW-5	Tailings dam toe drains	9	5	0	408	349	<1	320	334	<0.05	2.9	<0.1
SW-6	Tailings pond surface water	7	2	0	80	90	14	65	65	<0.05	0.33	<0.1
SW-7	Lower Rainy Creek leaving mine property	13	8	0	365	308	2	290	299	0.07	2.1	<0.1
SW-0	Blind Control (Replicate of SW-7)	12	8	0	346	280	<1	292	283	0.08	2.1	<0.1
SW-8	Lower Rainy Creek above Kootenai River	12	8	7	348	217	1	289	297	<0.05	1.7	<0.1
SW-9	Kootenai River above Rainy Creek	Not Sampled										
SW-10	Kootenai River below Rainy Creek	Not Sampled										
SW-11	Rainy Creek flow into tailings pond	5	<1	0	275	211	<1	211	225	<0.05	0.13	<0.1
PW-1	Pore water from tailings	Not Sampled										
PW-2	Groundwater near SW-11	Not Sampled										

Table 3.4. Laboratory data summary for asbestiform fibers.

SITE NO.	DESCRIPTION	DETECTION LIMIT (MFL)*	FIBERS <5μm (MFL)*	FIBERS >5μm (MFL)*	FIBERS >10μm (MFL)*	FIBER MASS (μg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled				
SW-2	Fleetwood Creek above coarse tails	0.4	26.8	6.3	3.1	52
SW-3	Upper Carney Creek at Zook's Dump	9.8	548	108	118	1600
SW-4	Lower Carney Creek above Rainy Creek	0.2	10.7	3.6	1.1	24
SW-5	Tailings dam toe drains	0.1	0.14	0.14	0	0.7
SW-6	Tailings pond surface water	2.5	267.5	32.5	27.5	550
SW-7	Lower Rainy Creek leaving mine property	1.5	64.5	19.5	10.5	420
SW-0	Blind Control (Replicate of SW-7)	0.6	45.0	10.0	7.5	280
SW-8	Lower Rainy Creek above Kootenai River	4.5	270	22.5	18	340
SW-9	Kootenai River above Rainy Creek	Not Sampled				
SW-10	Kootenai River below Rainy Creek	Not Sampled				
SW-11	Rainy Creek flow into tailings pond	0.1	0.1	0.1	0	0.3

* MFL = Million fibers per liter

4.0 DATA ANALYSIS

The significant findings of this sampling event are as follows:

- Streamflow was slightly less than in the spring. This is reflected in those sites subject to surface runoff by somewhat higher levels of dissolved solids. There is some indication that Fleetwood Creek may have less seasonal variation than Rainy Creek and Carney Creek.

- Zinc concentrations, although above detection limits at most sites, were all uniformly low. The November sampling had indicated potential areas of elevated zinc concentrations but we have not been able to reproduce this result since.

- Asbestiform fiber counts returned to the pattern measured in November, 1991 in which most fibers appear to originate in lower Rainy Creek. The Carney Creek fiber count is highly variable and is probably affected by runoff rates.

- The tailings pond surface water sample once again showed substantially different chemical properties than other samples. It has consistently had much lower dissolved solids content. We have speculated on the possibility of dilution through surface runoff or rainfall and on purification by freeze/thaw cycles. On this sampling round there was evidence of chemical precipitation in the form of a white sediment on the bottom of the pond in the area sampled. It appears that some mechanism other than dilution is at work.

- A mass flow schematic diagram for the sampling area is presented in Figure 4.1 for selected parameters.

- Table 4.1 compares measured water quality values to existing standards. These data show the same trends which have been noted in earlier reports.

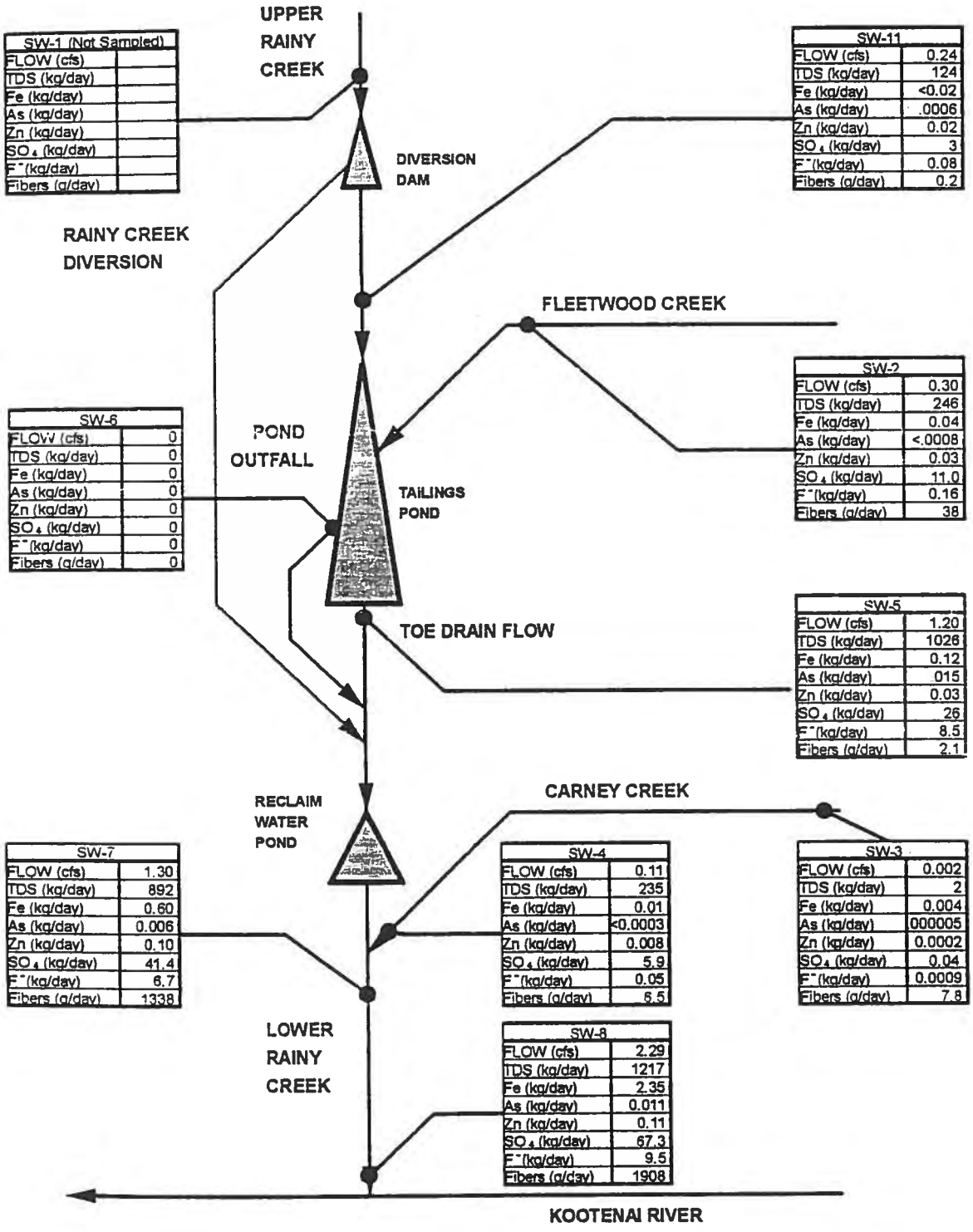


Figure 4.1 Schematic flow diagram of the Rainy Creek drainage with mass flow measurements for selected components.

Table 4.1 A comparison of measured water quality data with drinking water standards.

Constituent	Measured Concentration Range	Primary Drinking Water Standard	Secondary Drinking Water Standard	Location of Sample with Maximum Concentration
	(mg/l except as noted)			
As	<0.001 to 0.005	0.05		SW-5
Cd	<0.001	0.005[1]		All
Cr	<0.01	0.1[1]		All
Cu	<0.01		1.0	All
Fe	<0.03 to 0.81		0.3	SW-3
Pb	<0.01	0.05		All
Hg	<0.0001	0.005		All
Ni	<0.03			All
Zn	<0.01 to 0.04	5.0		SW-2
Asbestos (MFL)	<0.1 to 118	7.0[1,2]		SW-3
SO_4^{-2}	5 to 22		250.	SW-4
Cl^-	<1 to 8		250.	SW-7 and SW-8
NO_3^-	<0.05 to 0.29	10.0		SW-4
F^-	0.13 to 2.9		2.0	SW-5
pH (su)	7.21 to 8.45		6.5 to 8.5	SW-5(min); SW-4(max)
TDS	90 to 423		500.	SW-3

1 These standards were added or revised effective July 1992.

2 Fiber counts are based on fibers greater than 10 microns in length with an aspect ratio greater than 3:1.

Schafer & Associates
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865 Technology Blvd.
P.O. Box 6186
Bozeman, MT 59715

January 13, 1992

Alan Stringer
General Manager
W.R. Grace & Co.
P.O. Box 609
Libby, Montana 59923-0609

Dear Alan:

Enclosed for your records is a copy of Water Quality Data Report No. 4 which was mailed to DSL. Stream flows were the lowest we have measured on this round of sampling. Fluoride has shown a slow but steady decrease in the toe drain sample and this should soon be under the drinking water standard. There was much less asbestos in the samples from Lower Rainy Creek, perhaps because of the low flow.

I have proposed a revision to the sampling and analysis plan which would reduce the number of samples taken and the kinds of analyses done on them for the annual post-closure sampling. The Water Quality Monitoring Plan calls for annual sampling for at least three years following closure. The proposed changes focus the sampling effort on those sites and water quality parameters which might be of possible concern based on what we found in the baseline sampling. If DSL accepts the changes it should reduce the analytical costs by about $3000.00 per year. A copy of the transmittal letter to DSL and the proposed sampling changes is enclosed.

Sincerely,

Tom Hudson

Tom Hudson
Project Manager

3.0 PRESENTATION OF DATA

Results of the October 29, 1992 sampling are summarized in tabular form as follows:

- Table 3.1 is a summary of field parameters including pH, electric conductivity (EC), temperature and flow.
- Table 3.2 is a summary of metal analyses including selected heavy metals and major cations.
- Table 3.3 is a summary of miscellaneous analyses for various anions, petroleum hydrocarbons, hardness, etc.
- Table 3.4 is a summary of asbestiform fiber analyses.

Raw analytical data from Energy Laboratories and EMS Laboratories used to prepare Tables 3.2, 3.3 and 3.4, are included in Appendix A and B, respectively.

Table 3.1. Field data summary.

SITE NO.	DESCRIPTION	pH[6] (su)	EC (mmhos/cm)	TEMP (°C)	FLOW (cfs)	D.O.[3] (ppm)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled				
SW-2	Fleetwood Creek above coarse tails	8.10	0.51	6.9	0.14[1]	
SW-3	Upper Carney Creek at Zook's Dump	8.07	0.75	5.8	0.0002	
SW-4	Lower Carney Creek above Rainy Creek	8.20	0.66	6.5	0.00[2]	
SW-5	Tailings dam toe drains	6.95	0.73	9.6	0.69[1]	
SW-6	Tailings pond outfall (surface water sample, only)[6]	8.27	0.31	6.5	0.00	
SW-7	Lower Rainy Creek leaving mine property	7.70	0.63	7.1	0.98[1]	
SW-8	Lower Rainy Creek above Kootenai River	8.05	0.61	7.2	1.46[1]	
SW-9	Kootenai River above Rainy Creek	Not Sampled[4]				
SW-10	Kootenai River below Rainy Creek	Not Sampled[4]				
SW-11[5]	Rainy Creek flow into tailings pond	7.63	0.45	6.3	0.24[1]	
PW-1	Tailings Pond pore water	Not Sampled				
PW-2	Groundwater near SW-11	Not Sampled				

1 Flow measurement was made with a Pygmy current meter.

2 Flow measurement was not made. Carney Creek was flowing upstream of the settlement basin in which the Baski flume has normally been installed. However, there was no discharge from the settlement basin; significant percolation losses may be occurring here.

3 Dissolved oxygen was not measured.

4 Samples of the Kootenai River were not taken as discussed in the Water Quality Monitoring Plan.

5 The original Water Quality Monitoring Plan did not include this site. Rainy Creek reestablishes itself between the diversion dam and the tailings impoundment.

6 Standing water was no longer present at the original sample point near the decant tower. Water was collected nearby but at a slightly different location in the pond and this may have had an impact on measured water quality parameters.

Table 3.2. Laboratory data summary for metals.

SITE NO.	DESCRIPTION	As (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	Pb (mg/l)	Hg (mg/l)	Ni (mg/l)	Zn (mg/l)	K (mg/l)	Na (mg/l)	Ca (mg/l)	Mg (mg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled												
SW-2	Fleetwood Creek above coarse tails	<0.005	<0.001	<0.01	<0.01	<0.03	<0.01	<0.001	<0.03	<0.01	8	5	78	15
SW-3	Upper Carney Creek at Zook's Dump	<0.005	<0.001	<0.01	<0.01	0.51	<0.01	<0.001	<0.03	0.02	11	7	102	27
SW-4	Lower Carney Creek above Rainy Creek	<0.005	<0.001	<0.01	<0.01	0.03	<0.01	<0.001	<0.03	0.02	15	9	99	29
SW-0	Blind Control (Replicate of SW-4)	<0.005	<0.001	<0.01	<0.01	0.03	<0.01	<0.001	<0.03	0.02	14	10	99	29
SW-5	Tailings dam toe drains	0.006	<0.001	<0.01	<0.01	0.07	<0.01	<0.001	<0.03	<0.01	12	7	91	26
SW-6	Tailings pond surface water	<0.005	<0.001	<0.01	<0.01	0.39	<0.01	<0.001	<0.03	<0.01	7	5	31	12
SW-7	Lower Rainy Creek leaving mine property	<0.005	<0.001	<0.01	<0.01	<0.03	<0.01	<0.001	<0.03	0.01	13	8	93	25
SW-8	Lower Rainy Creek above Kootenai River	<0.005	<0.001	<0.01	<0.01	<0.03	<0.01	<0.001	<0.03	<0.01	11	7	91	22
SW-9	Kootenai River above Rainy Creek	Not Sampled												
SW-10	Kootenai River below Rainy Creek	Not Sampled												
SW-11	Rainy Creek flow into tailings pond	<0.005	<0.001	<0.01	<0.01	<0.03	<0.01	<0.001	<0.03	<0.01	5	4	69	11
PW-1	Pore water from tailings	Not Sampled												
PW-2	Groundwater near SW-11	Not Sampled												

Table 3.3. Laboratory data summary for miscellaneous constituents.

SITE NO.	DESCRIPTION	SO_4^{-2} (mg/l)	Cl^- (mg/l)	CO_3^{-2} (mg/l)	HCO_3^{-1} (mg/l)	TDS (mg/l)	TSS (mg/l)	Hardness (mg/l)	Alkalinity (mg/l)	NO_3^- (mg/l)	F^- (mg/l)	TPH (mg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled										
SW-2	Fleetwood Creek above coarse tails	16	5	0	333	322	3	255	273	<0.05	0.20	<0.1
SW-3	Upper Carney Creek at Zook's Dump	10	2	0	486	457	12	366	398	0.26	0.20	<0.1
SW-4	Lower Carney Creek above Rainy Creek	21	2	10	433	402	3	367	371	0.36	0.20	<0.1
SW-0	Blind Control (Replicate of SW-4)	22	2	11	435	410	3	367	374	0.34	0.20	<0.1
SW-5	Tailings dam toe drains	8	7	0	445	416	1	333	365	<0.05	2.6	<0.1
SW-6	Tailings pond surface water	21	4	1	158	162	21	127	131	0.08	0.43	<0.1
SW-7	Lower Rainy Creek leaving mine property	11	10	5	387	376	4	334	325	0.06	2.1	<0.1
SW-8	Lower Rainy Creek above Kootenai River	11	9	8	357	366	2	318	305	<0.05	1.5	<0.1
SW-9	Kootenai River above Rainy Creek	Not Sampled										
SW-10	Kootenai River below Rainy Creek	Not Sampled										
SW-11	Rainy Creek flow into tailings pond	6	<1	0	275	221	4	220	225	<0.05	0.18	<0.1
PW-1	Pore water from tailings	Not Sampled										
PW-2	Groundwater near SW-11	Not Sampled										

Table 3.4. Laboratory data summary for asbestiform fibers.

SITE NO.	DESCRIPTION	DETECTION LIMIT (MFL)*	FIBERS <5μm (MFL)*	FIBERS >5μm (MFL)*	FIBERS >10μm (MFL)*	FIBER MASS (μg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled				
SW-2	Fleetwood Creek above coarse tails	0.1	3.7	1.0	0.9	23
SW-3	Upper Carney Creek at Zook's Dump	2.5	162.1	43.0	20.2	1600
SW-4	Lower Carney Creek above Rainy Creek	0.2	10.3	3.2	1.2	23
SW-0	Blind Control (Replicate of SW-4)	0.2	13.8	2.6	1.5	18
SW-5	Tailings dam toe drains	0.3	0.6	0.0	0.0	0.1
SW-6	Tailings pond surface water	25.3	1821	304	202	2900
SW-7	Lower Rainy Creek leaving mine property	0.2	9.7	1.7	1.5	22
SW-8	Lower Rainy Creek above Kootenai River	0.2	13.5	3.7	0.4	24
SW-9	Kootenai River above Rainy Creek	Not Sampled				
SW-10	Kootenai River below Rainy Creek	Not Sampled				
SW-11	Rainy Creek flow into tailings pond	0.1	1.7	0.6	0.0	6.7

* MFL = Million fibers per liter

4.0 DATA ANALYSIS

4.1 ANALYSIS OF CURRENT DATA

The significant findings of this sampling event are as follows:

- Streamflow was significantly less than in the spring and summer. For the first time, flows from the toe drains were noticeably smaller indicating that drainage of tailings pore water may be subsiding and gradually approaching an equilibrium flow.

- Asbestiform fiber counts in Lower Rainy Creek were much lower than those measured during earlier sampling events. We have observed large variations in fiber counts in Carney Creek but not in Rainy Creek until now. The sampling may be very sensitive to stream flows. However, statistically, there is not sufficient data to make correlations here.

- A mass flow schematic diagram for the sampling area is presented in Figure 4.1 for selected parameters.

- Table 4.1 compares measured water quality values to existing standards. These data show the same trends which have been noted in earlier reports.

4.2 COMPARISON OF ALL BACKGROUND SAMPLING EVENTS

The past year, during which background data was collected, must be considered unusual in that the winter was exceptionally mild. There was essentially no significant snow accumulation and spring runoff was not much greater than base flow. Future data in periods of high flow may show asbestiform fiber counts which are substantially different than reported here because of this.

At no time during sampling was there any indication of the formation of acid or the mobilization of heavy metals. Acid-base accounting has been done on both fine tailings and coarse tailings. Samples showed little or no acid potential (AP) and as much as 30 lbs $CaCO_3$ per ton neutralization potential (NP). These data together with the long operating history of the property without a problem related to acid production gives us confidence that heavy metal contamination of surface waters will not occur at this mine.

The only potential areas of concern are which have been identified are with respect to fluoride and asbestiform fibers. The fluoride concentration in water discharged from the

tailings dam toe drains is slighlty above drinking water standards. However, the concentration has been shown to be decreasing and we expect it to drop below the standard for drinking water within a year or two as water drains from the tailings materials and is displaced by stream water and rainfall.

Asbestiform fibers in Lower Rainy Creek, Carney Creek and in tailings pond water have all been measured at levels higher than recently promulgated standards for drinking water. Measured values in streams have been quite variable and could be dependent on the volume of flow at the time of sampling. Lower Rainy Creek has been the apparent source of most fibers discharged into the Kootenai River. This is probably the result of old mining practices in which tailings were discharged directly into the drainage rather than contained in an impoundment. However, as shown in Water Quality Data Report No. 1, geologic formations containing asbestiform fibers are naturally exposed in the Fleetwood Creek drainage. These formations have almost certainly contributed to asbestiform fiber counts in downstream sediments including those in the Lower Rainy Creek channel.

The tailings dam toe drains have consistently produced water with little or no measurable asbestiform fiber counts. The tailings impoundment has not discharged surface water for a period of two years now because percolation rates have exceeded recharge rates from Upper Rainy Creek and Fleetwood Creek. It is expected that discharge from the box culvert and spillway to be constructed this year will be a relatively rare event. Consequently, contributions to total asbestiform fiber counts in Lower Rainy Creek from the tailings impoundment are anticipated to be low.

Table 4.2 compares some of these more critical and significant parameters over the entire period of background monitoring. These data show the variability of asbestiform fiber counts and the slow decline in fluoride content of the toe drains which we expect to continue for several years until approaching the concentration measured in natural surface waters in the area.

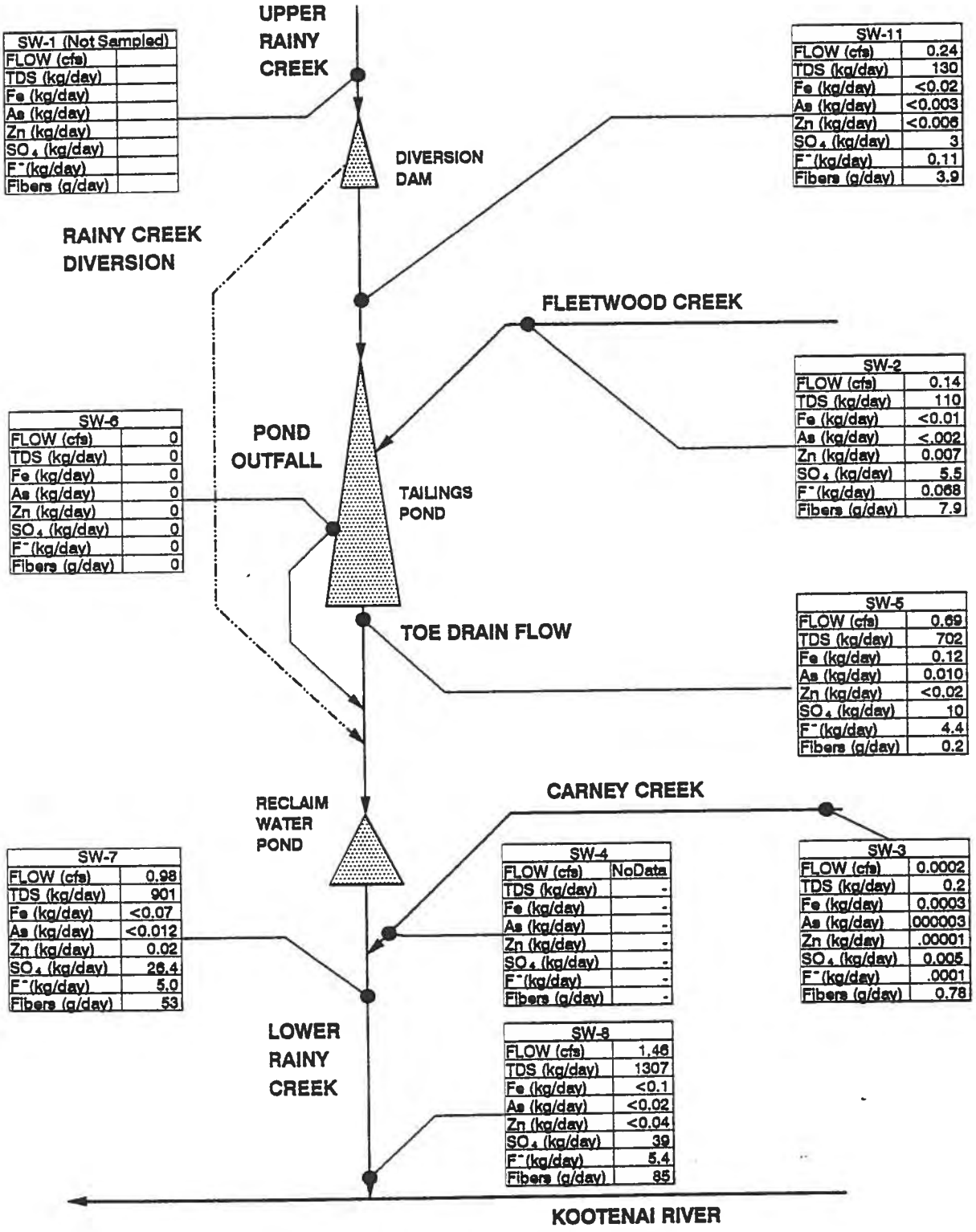


Figure 4.1 Schematic flow diagram of the Rainy Creek drainage with mass flow measurements for selected components.

Table 4.1 A comparison of measured water quality data with drinking water standards.

Constituent	Measured Concentration Range	Primary Drinking Water Standard	Secondary Drinking Water Standard	Location of Sample with Maximum Concentration
	(mg/l except as noted)			
As	<0.005 to 0.006	0.05		SW-5
Cd	<0.001	0.005[1]		All
Cr	<0.01	0.1[1]		All
Cu	<0.01		1.0	All
Fe	<0.03 to 0.51		0.3	SW-3
Pb	<0.01	0.05		All
Hg	<0.001	0.005		All
Ni	<0.03			All
Zn	<0.01 to 0.02	5.0		SW-2
Asbestos (MFL)	<0.1 to 202	7.0[1,2]		SW-6
SO_4^{-2}	6 to 22		250.	SW-4
Cl^-	<1 to 10		250.	SW-7
NO_3^-	<0.05 to 0.36	10.0		SW-4
F^-	0.18 to 2.6		2.0	SW-5
pH (su)	6.95 to 8.27		6.5 to 8.5	SW-5(min); SW-6(max)
TDS	163 to 398		500.	SW-3

[1] These standards were added or revised effective July 1992.

[2] Fiber counts are based on fibers greater than 10 microns in length with an aspect ratio greater than 3:1.

Table 4.2 A comparison of critical water quality parameters over the background sampling period.

Date	Lower Rainy Creek Streamflow (Site SW-8) (cfs)	Lower Rainy Creek Asbestiform Fibers (Site SW-8) (MFL)[1]	Lower Rainy Creek Asbestiform Fibers (Site SW-8) (μg/l)[2]	Carney Creek Streamflow (Site SW-4) (cfs)	Carney Creek Asbestiform Fibers (Site SW-4) (MFL)[1]	Carney Creek Asbestiform Fibers (Site SW-4) (μg/l)[2]	Toe Drain Fluoride Concentration (Site SW-5) (mg/l)
November 15, 1991	2.03	17.	240	0.24	0.1	6.4	3.1
March 25, 1992	2.92	9.	270	0.51	19.	950	3.1
July 2, 1992	2.29	18.	340	0.11	1.1	24	2.9
October 29, 1992	1.46	0.4	24	??	1.2	23	2.6

[1] Includes only fibers longer than 10 microns with aspect ratio greater than 3:1.
[2] Includes all fibers with aspect ratio greater than 3:1, regardless of size.

Schafer & Associates, Inc.
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P.O. Box 6186
Bozeman, MT 59715

January 27, 1994

Alan Stringer
General Manager
W.R. Grace & Co.
P.O. Box 609
Libby, Montana 59923-0609

Dear Alan:

Enclosed for your records is a copy of Water Quality Data Report No. 5 which was mailed to DSL. This report summarizes data from samples collected on October 21, 1993. It is the first of three proposed post-reclamation water sampling events. The others will be done in the fall of 1994 and the fall of 1995. The data in this report marks the first time that water quality parameters which we have been following have met federal drinking water standards at all sampled sites. This is good news! However, it may be premature to say that the asbestiform fiber analyses in this report are typical of what we can expect in Lower Rainy Creek in the future. These analyses have tended to be erratic in the past and are probably influenced greatly by runoff events and possible bank erosion.

If you have any questions regarding the report please call.

Sincerely,

Tom Hudson
Project Manager

encl

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3.0 PRESENTATION OF DATA

Results of the October 21, 1993 sampling are summarized in tabular form as follows:

- Table 3.1 is a summary of field parameters including pH, electric conductivity (EC), temperature and flow.
- Table 3.2 is a summary of major cation and anion analyses.
- Table 3.3 is a summary of miscellaneous analyses for various components, alkalinity, hardness, etc.
- Table 3.4 is a summary of asbestiform fiber analyses.

Raw analytical data from Energy Laboratories and EMS Laboratories used to prepare Tables 3.2, 3.3 and 3.4, are included in Appendix A and B, respectively.

Table 3.1. Field data summary.

SITE NO.	DESCRIPTION	pH (su)	EC (mmhos/cm)	TEMP (°C)	FLOW (cfs)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled			
SW-2	Fleetwood Creek above coarse tails	8.14	0.46	6.2	0.14[1]
SW-3	Upper Carney Creek at Zook's Dump	Not Sampled			
SW-4	Lower Carney Creek above Rainy Creek	8.25	0.56	6.0	0.14[2]
SW-5	Tailings dam toe drains	7.15	0.56	9.7	0.68[1]
SW-6	Tailings pond outfall[5]	Not Sampled			
SW-7	Lower Rainy Creek leaving mine property	Not Sampled			
SW-8	Lower Rainy Creek above Kootenai River	8.55	0.46	6.3	1.04[1]
SW-9	Kootenai River above Rainy Creek	Not Sampled[3]			
SW-10	Kootenai River below Rainy Creek	Not Sampled[3]			
SW-11[4]	Rainy Creek flow into tailings pond	8.24	0.33	5.1	0.11[1]
PW-1	Tailings Pond pore water	Not Sampled			
PW-2	Groundwater near SW-11	Not Sampled			

1 Flow measurement was made with a Pygmy current meter.
2 Flow measurement was made with a Baski flume.
3 Samples of the Kootenai River were not taken as discussed in the Water Quality Monitoring Plan.
4 The original Water Quality Monitoring Plan did not include this site.
5 There was no surface flow from the impoundment.

Table 3.2. Laboratory data summary for major cations and anions.

SITE NO.	DESCRIPTION	K (mg/l)	Na (mg/l)	Ca (mg/l)	Mg (mg/l)	SO_4^{-2} (mg/l)	Cl^{-1} (mg/l)	CO_3^{-2} (mg/l)	HCO_3^{-1} (mg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled							
SW-2	Fleetwood Creek above coarse tails	Not Sampled							
SW-3	Upper Carney Creek at Zook's Dump	Not Sampled							
SW-4	Lower Carney Creek above Rainy Creek	13	9	94	27	22	1	0	430
SW-5	Tailings dam toe drains	12	6	90	24	9	3	0	396
SW-6	Tailings pond surface water	Not Sampled							
SW-7	Lower Rainy Creek leaving mine property	Not Sampled							
SW-8	Lower Rainy Creek above Kootenai River	10	7	84	21	13	4	2	343
SW-0	Blind Control (Replicate of SW-4)	10	7	84	21	14	4	0	349
SW-9	Kootenai River above Rainy Creek	Not Sampled							
SW-10	Kootenai River below Rainy Creek	Not Sampled							
SW-11	Rainy Creek flow into tailings pond	Not Sampled							
PW-1	Pore water from tailings	Not Sampled							
PW-2	Groundwater near SW-11	Not Sampled							

Table 3.3. Laboratory data summary for miscellaneous constituents.

SITE NO.	DESCRIPTION	TDS (mg/l)	TSS (mg/l)	Hardness (mg/l)	Alkalinity (mg/l)	NO_3^{-1} (mg/l)	F^{-1} (mg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled					
SW-2	Fleetwood Creek above coarse tails	Not Sampled					
SW-3	Upper Carney Creek at Zook's Dump	Not Sampled					
SW-4	Lower Carney Creek above Rainy Creek	424	<1	347	352	0.22	0.38
SW-5	Tailings dam toe drains	379	2	324	324	<0.05	1.5
SW-6	Tailings pond surface water	Not Sampled					
SW-7	Lower Rainy Creek leaving mine property	Not Sampled					
SW-8	Lower Rainy Creek above Kootenai River	357	<1	296	285	<0.05	1.7
SW-0	Blind Control (Replicate of SW-8)	360	2	295	286	<0.05	1.6
SW-9	Kootenai River above Rainy Creek	Not Sampled					
SW-10	Kootenai River below Rainy Creek	Not Sampled					
SW-11	Rainy Creek flow into tailings pond	Not Sampled					
PW-1	Pore water from tailings	Not Sampled					
PW-2	Groundwater near SW-11	Not Sampled					

Table 3.4. Laboratory data summary for asbestiform fibers.

SITE NO.	DESCRIPTION	DETECTION LIMIT (MFL)*	FIBERS <5µm (MFL)*	FIBERS >5µm (MFL)*	FIBERS >10µm (MFL)*	FIBER MASS (µg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled				
SW-2	Fleetwood Creek above coarse tails	Not Sampled				
SW-3	Upper Carney Creek at Zook's Dump	Not Sampled				
SW-4	Lower Carney Creek above Rainy Creek	0.15	7.1	4.6	1.5	23
SW-5	Tailings dam toe drains	0.16	1.5	ND	ND	0.1
SW-6	Tailings pond surface water	Not Sampled				
SW-7	Lower Rainy Creek leaving mine property	Not Sampled				
SW-8	Lower Rainy Creek above Kootenai River	0.07	3.7	1.3	0.9	24
SW-0	Blind Control (Replicate of SW-8)	0.16	12.1	3.8	1.9	18
SW-9	Kootenai River above Rainy Creek	Not Sampled				
SW-10	Kootenai River below Rainy Creek	Not Sampled				
SW-11	Rainy Creek flow into tailings pond	Not Sampled				

* MFL = Million fibers per liter

4.0 DATA ANALYSIS

Data for streamflow, fluoride and asbestiform fibers collected during the last three base flow periods is compared in Table 4.1.

Stream flow data indicate that the toe drains contributed about an additional 0.6 cfs to the overall flow in Lower Rainy Creek on the first sample date following plant closure (11/15/91). This additional flow has subsided as the tailings pond has drained and now appears to be near an equilibrium flow condition.

Asbestiform fiber data in Lower Rainy Creek may have improved somewhat since mine operation was ceased. Fiber counts in the last two base flow periods are substantially less than the initial sampling done in November, 1991. Both samples are within the federal drinking water standard of 7.0 MFL. The reduced fiber counts may be influenced by the lower base flows in Rainy Creek. Fiber counts in Lower Rainy Creek during other seasons with higher measured streamflows and during the initial period when the tailings impoundment was draining down, were between 10 and 20 MFL (> 10 microns long with aspect ratio > 3:1) and 200 to 400 µg/l (all fibers with aspect ratio > 3:1).

Fluoride has steadily declined in the toe drain samples and now analyzes 1.5 mg/l F, slightly below the drinking water standard of 2.0 mg/l F. Fluoride in Lower Rainy Creek has not decreased with time and is averaging 1.6 mg/l F. The levels now being measured in Lower Rainy Creek are only about four times higher than background concentrations in natural streams in the area. These fluoride concentrations are near the saturation value for CaF_2 reported by Lindsay and as predicted by MINTAQA2 modelling. This may be an indication that fluoride previously discharged from the toe drains (greater than 3.0 mg/l F) was slightly oversaturated with respect to CaF_2. Equilibrium may have been achieved in Lower Rainy Creek through dilution and possibly precipitation of CaF_2. The latest data indicates that additional fluoride is resolubilizing in Lower Rainy Creek (higher flow than the toe drains at the same fluoride concentration). The source of this additional fluoride may be precipitated CaF_2. If this is the case, it may be some time before the fluoride levels decline any further in Lower Rainy Creek since the fluoride concentration may be determined by the availability of previously precipitated CaF_2.

Table 4.1. A comparison of critical water quality parameters in the last three base flow periods.

Date	LOWER RAINY CREEK (Site SW-8)				LOWER CARNEY CREEK (Site SW-4)				TAILINGS DAM TOE DRAINS (Site SW-5)			
	Flow	Asbestiform Fibers		Fluoride	Flow	Asbestiform Fibers		Fluoride	Flow	Asbestiform Fibers		Fluoride
	(cfs)	(MFL)[1]	(µg/l)[2]	(mg/l)	(cfs)	(MFL)[1]	(µg/l)[2]	(mg/l)	(cfs)	(MFL)[1]	(µg/l)[2]	(mg/l)
11/15/91	2.03	17.	240	1.6	0.24	0.1	6.4	0.28	1.22	0.3	8.8	3.1
10/29/92	1.46	0.4	24	1.5	NM	1.2	23	0.20	0.69	ND	0.1	2.6
10/21/93	1.04	0.9	9.9	1.7	0.14	1.5	22	0.38	0.68	ND	0.8	1.5

ND = Not Detected
NM = Not Measured
[1] Includes only fibers longer than 10 microns with aspect ratio greater than 3:1.
[2] Includes all fibers with aspect ratio greater than 3:1, regardless of size.

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W.R. GRACE VERMICULITE MINE CLOSURE
WATER QUALITY DATA REPORT NO. 5
OCTOBER, 1993

Submitted to:

Montana Department of State Lands
Hard Rock Mining Bureau
Helena, Montana

Submitted by:

Schafer and Associates
Bozeman, Montana

January 27, 1994



3.0 PRESENTATION OF DATA

Results of the October 21, 1993 sampling are summarized in tabular form as follows:

- Table 3.1 is a summary of field parameters including pH, electric conductivity (EC), temperature and flow.
- Table 3.2 is a summary of major cation and anion analyses.
- Table 3.3 is a summary of miscellaneous analyses for various components, alkalinity, hardness, etc.
- Table 3.4 is a summary of asbestiform fiber analyses.

Raw analytical data from Energy Laboratories and EMS Laboratories used to prepare Tables 3.2, 3.3 and 3.4, are included in Appendix A and B, respectively.

Table 3.1. Field data summary.

SITE NO.	DESCRIPTION	pH (su)	EC (mmhos/cm)	TEMP (°C)	FLOW (cfs)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled			
SW-2	Fleetwood Creek above coarse tails	8.14	0.46	6.2	0.14[1]
SW-3	Upper Carney Creek at Zook's Dump	Not Sampled			
SW-4	Lower Carney Creek above Rainy Creek	8.25	0.56	6.0	0.14[2]
SW-5	Tailings dam toe drains	7.15	0.56	9.7	0.68[1]
SW-6	Tailings pond outfall[5]	Not Sampled			
SW-7	Lower Rainy Creek leaving mine property	Not Sampled			
SW-8	Lower Rainy Creek above Kootenai River	8.55	0.46	6.3	1.04[1]
SW-9	Kootenai River above Rainy Creek	Not Sampled[3]			
SW-10	Kootenai River below Rainy Creek	Not Sampled[3]			
SW-11[4]	Rainy Creek flow into tailings pond	8.24	0.33	5.1	0.11[1]
PW-1	Tailings Pond pore water	Not Sampled			
PW-2	Groundwater near SW-11	Not Sampled			

1 Flow measurement was made with a Pygmy current meter.
2 Flow measurement was made with a Baski flume.
3 Samples of the Kootenai River were not taken as discussed in the Water Quality Monitoring Plan.
4 The original Water Quality Monitoring Plan did not include this site.
5 There was no surface flow from the impoundment.

Table 3.2. Laboratory data summary for major cations and anions.

SITE NO.	DESCRIPTION	K (mg/l)	Na (mg/l)	Ca (mg/l)	Mg (mg/l)	SO_4^{-2} (mg/l)	Cl^{-1} (mg/l)	CO_3^{-2} (mg/l)	HCO_3^{-1} (mg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled							
SW-2	Fleetwood Creek above coarse tails	Not Sampled							
SW-3	Upper Carney Creek at Zook's Dump	Not Sampled							
SW-4	Lower Carney Creek above Rainy Creek	13	9	94	27	22	1	0	430
SW-5	Tailings dam toe drains	12	6	90	24	9	3	0	396
SW-6	Tailings pond surface water	Not Sampled							
SW-7	Lower Rainy Creek leaving mine property	Not Sampled							
SW-8	Lower Rainy Creek above Kootenai River	10	7	84	21	13	4	2	343
SW-0	Blind Control (Replicate of SW-4)	10	7	84	21	14	4	0	349
SW-9	Kootenai River above Rainy Creek	Not Sampled							
SW-10	Kootenai River below Rainy Creek	Not Sampled							
SW-11	Rainy Creek flow into tailings pond	Not Sampled							
PW-1	Pore water from tailings	Not Sampled							
PW-2	Groundwater near SW-11	Not Sampled							

Table 3.3. Laboratory data summary for miscellaneous constituents.

SITE NO.	DESCRIPTION	TDS (mg/l)	TSS (mg/l)	Hardness (mg/l)	Alkalinity (mg/l)	NO_3^{-1} (mg/l)	F^{-1} (mg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled					
SW-2	Fleetwood Creek above coarse tails	Not Sampled					
SW-3	Upper Carney Creek at Zook's Dump	Not Sampled					
SW-4	Lower Carney Creek above Rainy Creek	424	<1	347	352	0.22	0.38
SW-5	Tailings dam toe drains	379	2	324	324	<0.05	1.5
SW-6	Tailings pond surface water	Not Sampled					
SW-7	Lower Rainy Creek leaving mine property	Not Sampled					
SW-8	Lower Rainy Creek above Kootenai River	357	<1	296	285	<0.05	1.7
SW-0	Blind Control (Replicate of SW-8)	360	2	295	286	<0.05	1.6
SW-9	Kootenai River above Rainy Creek	Not Sampled					
SW-10	Kootenai River below Rainy Creek	Not Sampled					
SW-11	Rainy Creek flow into tailings pond	Not Sampled					
PW-1	Pore water from tailings	Not Sampled					
PW-2	Groundwater near SW-11	Not Sampled					

Table 3.4. Laboratory data summary for asbestiform fibers.

SITE NO.	DESCRIPTION	DETECTION LIMIT (MFL)*	FIBERS <5µm (MFL)*	FIBERS >5µm (MFL)*	FIBERS >10µm (MFL)*	FIBER MASS (µg/l)
SW-1	Upper Rainy Creek above diversion dam	Not Sampled				
SW-2	Fleetwood Creek above coarse tails	Not Sampled				
SW-3	Upper Carney Creek at Zook's Dump	Not Sampled				
SW-4	Lower Carney Creek above Rainy Creek	0.15	7.1	4.6	1.5	23
SW-5	Tailings dam toe drains	0.16	1.5	ND	ND	0.1
SW-6	Tailings pond surface water	Not Sampled				
SW-7	Lower Rainy Creek leaving mine property	Not Sampled				
SW-8	Lower Rainy Creek above Kootenai River	0.07	3.7	1.3	0.9	24
SW-0	Blind Control (Replicate of SW-8)	0.16	12.1	3.8	1.9	18
SW-9	Kootenai River above Rainy Creek	Not Sampled				
SW-10	Kootenai River below Rainy Creek	Not Sampled				
SW-11	Rainy Creek flow into tailings pond	Not Sampled				

* MFL = Million fibers per liter

4.0 DATA ANALYSIS

Data for streamflow, fluoride and asbestiform fibers collected during the last three base flow periods is compared in Table 4.1.

Stream flow data indicate that the toe drains contributed about an additional 0.6 cfs to the overall flow in Lower Rainy Creek on the first sample date following plant closure (11/15/91). This additional flow has subsided as the tailings pond has drained and now appears to be near an equilibrium flow condition.

Asbestiform fiber data in Lower Rainy Creek may have improved somewhat since mine operation was ceased. Fiber counts in the last two base flow periods are substantially less than the initial sampling done in November, 1991. Both samples are within the federal drinking water standard of 7.0 MFL. The reduced fiber counts may be influenced by the lower base flows in Rainy Creek. Fiber counts in Lower Rainy Creek during other seasons with higher measured streamflows and during the initial period when the tailings impoundment was draining down, were between 10 and 20 MFL (> 10 microns long with aspect ratio > 3:1) and 200 to 400 µg/l (all fibers with aspect ratio > 3:1).

Fluoride has steadily declined in the toe drain samples and now analyzes 1.5 mg/l F, slightly below the drinking water standard of 2.0 mg/l F. Fluoride in Lower Rainy Creek has not decreased with time and is averaging 1.6 mg/l F. The levels now being measured in Lower Rainy Creek are only about four times higher than background concentrations in natural streams in the area. These fluoride concentrations are near the saturation value for CaF_2 reported by Lindsay and as predicted by MINTAQA2 modelling. This may be an indication that fluoride previously discharged from the toe drains (greater than 3.0 mg/l F) was slightly oversaturated with respect to CaF_2. Equilibrium may have been achieved in Lower Rainy Creek through dilution and possibly precipitation of CaF_2. The latest data indicates that additional fluoride is resolubilizing in Lower Rainy Creek (higher flow than the toe drains at the same fluoride concentration). The source of this additional fluoride may be precipitated CaF_2. If this is the case, it may be some time before the fluoride levels decline any further in Lower Rainy Creek since the fluoride concentration may be determined by the availability of previously precipitated CaF_2.

Table 4.1. A comparison of critical water quality parameters in the last three base flow periods.

Date	LOWER RAINY CREEK (Site SW-8)				LOWER CARNEY CREEK (Site SW-4)				TAILINGS DAM TOE DRAINS (Site SW-5)			
	Flow	Asbestiform Fibers		Fluoride	Flow	Asbestiform Fibers		Fluoride	Flow	Asbestiform Fibers		Fluoride
	(cfs)	(MFL)[1]	(µg/l)[2]	(mg/l)	(cfs)	(MFL)[1]	(µg/l)[2]	(mg/l)	(cfs)	(MFL)[1]	(µg/l)[2]	(mg/l)
11/15/91	2.03	17.	240	1.6	0.24	0.1	6.4	0.28	1.22	0.3	8.8	3.1
10/29/92	1.46	0.4	24	1.5	NM	1.2	23	0.20	0.69	ND	0.1	2.6
10/21/93	1.04	0.9	9.9	1.7	0.14	1.5	22	0.38	0.68	ND	0.8	1.5

ND = Not Detected
NM = Not Measured
[1] Includes only fibers longer than 10 microns with aspect ratio greater than 3:1.
[2] Includes all fibers with aspect ratio greater than 3:1, regardless of size.



Appendix B-1

Review of Distinguishing Characteristics of Libby Amphibole Asbestos

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B.1 Review of the Distinguishing Characteristics of Libby Amphibole Asbestos

This report presents a review of the available literature and data on the composition of amphibole and amphibole asbestos associated with the former Zononlite Mine in Libby, Montana. The purpose of the review is to provide additional information for use in the identification of mine-related amphibole asbestos as part of remedial investigation evaluations.

The 2014 *Toxicological Review of Libby Amphibole Asbestos* (Libby IRIS Assessment) (EPA, 2014a) addresses the risks posed by Libby Amphibole Asbestos (LAA), also referred to as "LA", which it describes as "a mixture of amphibole mineral fibers identified in the Rainy Creek Complex and present in the ore from the vermiculite mine near Libby, MT."[1] For purposes of clarity, this review will use the term "Ore Body Amphibole" to refer to the material from the Rainey Creek Complex, and "non-Ore Body Amphibole" to refer to amphiboles and amphibole asbestos that come from other sources. Using this nomenclature, Ore Body Amphibole includes both mined materials and non-anthropogenic materials that pre-date mining activities.

The United States Environmental Protection Agency (EPA) has established Laboratory Procedure LB-000066 (LB-66) (EPA, 2007) to assess amphiboles from the Libby Asbestos Superfund Site. The original version of LB-66 and subsequent revisions through LB-66C state that, "the primary focus of this temporary modification is to collect more detailed data on the frequency of occurrence of sodium and potassium-containing particles both for samples from Libby and for samples from other locations." The latest revision, LB-66E[2] (EPA, 2013), requires laboratories to record whether sodium and potassium are found in the analyzed samples, because "delineating amongst these mineral types is desirable" at the current stage of the investigation. **Appendix B-2** provides a copy of the OU3 project database, which includes information on the sodium and potassium presence, as directed by Laboratory Procedure LB-66, of all LAA structures recorded for OU3 Study Area samples collected from 2007 through 2015 as part of the remedial investigation.

This review examines in more detail the relationship between the presence and absence of sodium and potassium and the determination that an amphibole is a Ore Body Amphibole or a non-Ore Body Amphibole.

B.1.1 Available Literature

Background Report. In the 2014 *Background Soil Summary Report, Libby Asbestos Superfund Site, Montana* (Background Report) (EPA, 2014b), EPA sought to determine if there was some non-zero background level of LAA in Kootenai Valley soils. For purposes of the Background Report, the term "background" was used to refer to soils that were not expected to be affected by

[1] Other EPA documents sometime refer to the source of Libby Amphibole as coming "from the mine," "from the Vermiculite Mountain ore body," or "the Vermiculite Mountain deposit." This report draws no distinction between these formulations. Note that the Libby IRIS Assessment cautions, "It is not intended to be an assessment of the toxicity of asbestos generally (nor a comprehensive treatise on the agent or toxicological nature of Libby Amphibole asbestos)."

[2] The previous versions of LB-66 have also included similar notations.

anthropogenic releases from vermiculite mining and processing activities. Because the Background Report was designed to aid EPA's risk managers in determining the nature and magnitude of naturally occurring levels of asbestos at the Libby Superfund Site (Site), the term "LAA" was defined in a unique manner to mean "the mixture of asbestos present at the Site," without regard to whether it originated from the Vermiculite Mountain ore body (which the report describes as being "contained within the Rainy Creek complex"), or some other geological formation.[3] Note that this definition would include both "Ore Body Amphiboles" and "non-Ore Body Amphiboles" as those terms are used herein. This review will follow the designation in the Background Report, and use "LAA" to refer to amphibole asbestos found at the Libby Asbestos Superfund Site without regard to origin.

The Background Report found that LAA structures have been consistently detected in background soils within the Kootenai Valley that are "not thought to be affected by anthropogenic releases from vermiculite mining and processing activities," and that "these results support the data reported by other researchers that low-level detection of amphibole fibers in background soils within the Kootenai Valley originated from normal geologic and geomorphic processes unrelated to mining and milling of vermiculite ore from Vermiculite Mountain." Whether these non-anthropogenic releases are Ore Body Amphibole or non-Ore Body Amphibole was not addressed.

More important to the purposes of this review, the Background Report also concludes that "These results indicate that a portion of the LA structures at the Site likely did not originate from the Vermiculite Mountain ore body." While this conclusion can lead to confusion, given the way that most other reports define the terms LAA or Libby Amphibole, it is not self-contradictory due to the way the Background Report defines LAA to include both Ore Body Amphibole and non-Ore Body Amphibole.

The Background Report addresses some of the issues in classifying asbestos amphiboles at the Libby Superfund Site, and states that:

> "Use of EDS {energy dispersive spectroscopy} to classify an amphibole particle as LA is complicated by a number of factors, including a) inherent variability in chemical composition of different LA particles, b) dependence of the spectrum on random variables such as particle thickness, orientation, and proximity to other particles, and c) variation between instruments in sensitivity to different elemental constituents. Because of these factors, relative errors of 20% or more have been noted (Meeker and Lowers 2004)[4] which affect the ability of the analyst to properly classify amphibole structures. For these reasons, it is not possible to define a unique EDS[5] spectrum for LA structures (EPA, 2008)."[6]

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[3] Background Report at Page 6.

[4] The Meeker and Lowers paper, reviewed below, addresses sources of error relating to the ability to properly classify asbestos species, not the origin of asbestos structures.

[5] EDS - Energy dispersive spectroscopy systems provide semi-quantitative compositional data from scanning electron microscopes (SEM) or transmission electron microscopes (TEM) - often presented as spectra images.

[6] The Characteristic EDS Spectra for Libby-Type Amphiboles, finalized for EPA in 2008 (EPA, 2008) concludes that, "it is possible to consolidate the EDS spectra obtained from the analysis of many different asbestos particles that are known to be LA and to characterize the average spectrum and the range of variability in the spectrum of the primary elemental constituents." However, EPA has not adopted such an

The Background Report stated that, "The types of LA structures in background soils within the Kootenai Valley include a mixture of elemental compositions (see **Figure 2**) including structures with sodium and potassium (NaK) and structures without sodium or potassium (XX)". The Background Report presented three EDS spectra of LAA identified as WRTA (winchite/richterite/tremolite/actinolite), AC (actinolite), and TR (tremolite). See **Figure 1** below. However, the report does not indicate whether these LAA structures found at the Libby Asbestos Superfund Site are Ore Body Amphibole or non-Ore Body Amphibole.

The Background Report also compared LAA structures from the Kootenai Valley with asbestos structures collected from "towns near the Site that are not impacted by the mine," Eureka, Helena and Whitefish. For the soil samples collected from locations in and around these three towns, the report finds that "no sodium or potassium ("XX") was noted on the EDS spectra for any of these structures," (see **Figure 2**), and concludes that, "This would indicate that the amphibole structures in these soils do not originate from the Vermiculite Mountain ore body (Meeker *et al.,* 2003). However, the report does not address whether the absence of sodium and potassium (structures identified as XX) could also be used to identify non-Ore Body Amphiboles when found in the Kootenai Valley.

Given the stated purpose of the report, "determining the nature and magnitude of naturally occurring levels of asbestos at the Libby Asbestos Superfund Site," it is not surprising that the report did not distinguish Ore Body Amphibole from non-Ore Body Amphibole within the Kootenai Valley. However, the report did present data on whether sodium or potassium were found in the LAA structures obtained from the valley. Depending on the sampling location, between approximately 5% and 80% of the structures did not contain sodium and potassium (see results marked "XX" on **Figure 3**). Overall, the data indicate that approximately 70% of the structures found in the Kootenai Valley borrow pits were identified as XX (i.e., no sodium or potassium).

As detailed below, other researchers have similarly concluded that amphiboles from the vermiculate ore body contain both sodium and potassium, and some have tried to determine representative ranges of sodium and potassium content that can be used to distinguish Ore Body Amphibole from non-Ore Body Amphibole.

Meeker *et al.*, 2003. Meeker *et al.* (2003) collected Ore Body Amphibole samples from across the accessible portion of the Zonolite Mine site "to obtain as complete a representation of the distribution of amphibole types as possible." In total, samples were collected from 30 different areas of the Libby mine in the spring of 2000 as shown on **Figure 4**. These samples are frequently referred to as the "Dirty 30."

approach, "Rather, each laboratory is required to develop an EDS 'reference library' using site-specific materials (prepared from samples collected at the mine) to illustrate the range of EDS conditions that encompass LA."

The composition of amphiboles was determined using both EDS and EPMA[7] analysis. Much of the Meeker *et al.* paper is focused on identifying the species of amphibole found in the materials from the mine. For example, **Figure 5** below presents the sodium and potassium content readings from the Dirty 30 samples (expressed in apfu[8]) on a plot designed to determine the amphibole species (winchite, richterite, tremolite, etc.).[9]

Meeker *et al.* presented data showing that "In general, the WDS[10] (from EPMA) and the EDS data agree with respect to the amphibole species represented in each sample" (see the correspondence of the 'x' and 'o' data points on **Figure 5**). In addition, Meeker *et al.* present plots of the level of sodium and potassium (in apfu) at the "A" and "B" locations in amphibole particles found at each of the Dirty 30 sample locations. See **Figure 6** While these plots present a rough picture of the composition of Ore Body Amphibole, they do not indicate whether the "A" location contains sodium or potassium, and do not directly show ranges for sodium and potassium content of Ore Body Amphibole.

While the focus of the Meeker *et al.* paper was not to distinguish Ore Body Amphibole from non-Ore Body Amphibole, it presented data that aids in making this distinction. Meeker *et al.* presents detailed quantitative compositional data from a limited number of sample locations as both weight percent oxides (Wt% Oxides) and structural formula based on WDS analysis. A sample of these data is presented on **Figure 7**.

For the limited data set presented, the observed Wt% Oxides for Na_2O range from 1.29 to 7.11 percent, while the observedWt% Oxides of K_2O range from 0.58 to 1.56 percent. All of the samples collected by Meeker *et al.*[11] contain sodium, and the paper strongly suggests that all contain potassium. Other published studies support the conclusion that all Ore Body Amphiboles contain both sodium and potassium.

Gunter and Sanchez, 2009. The Gunter and Sanchez (2009) paper cited in the Background Report, presented results from a study that sought to "determine the amphibole content in soils in and around the town of Libby and to determine what portion of the amphibole were pre- or post-mining (i.e., compare the natural occurrences vs. the contamination from mining)." While finding asbestos amphiboles in all 66 samples analyzed, the study found that approximately 90% were non-Ore Body Amphiboles. This is higher than the percentage of XX structures shown in the

[7] EPMA – Electron probe microanalysis or "probe" is a more expensive system as compared with SEM or TEM and is paired with wavelength dispersive x-ray spectroscopy – generally, WDS is "a more precise measure of the atomic composition of a particle than EDS" (IRIS Assessment)
[8] apfu – Atoms per formula unit - the number of atoms in a chemical formula (e.g., in an amphibole particle) – a quantitative method for presenting compositional data – an alternative to using "weigh percent oxides."
[9] According to the Report the three main types of Vermiculite Mountain amphiboles are, "in order of decreasing abundance, winchite (approximately 84%), richterite (approximately 11%) and tremolite (approximately 6%)."
[10] WDS – wavelength dispersive x-ray spectroscopy - WDS measures the wavelength of emitted photons, EDS measures their energy- "Generally WDS is a more precise measure of the atomic composition of a particle than EDS," *LA IRIS Assessment*
[11] In 2012, the USGS published a report on the "Preparation and Characterization of 'Libby Amphibole' Toxicological Testing Material," which noted that while the original Dirty 30 samples have been exhausted, USGS obtained a new set of samples from 29 of the original 30 sample locations in 2007.

Kootenai Valley borrow pit data from the Background Report (~70%), but is largely in keeping with those results.

To distinguish Ore Body Amphibole from non-Ore Body Amphibole, Gunter and Sanchez used EDS as well as EPMA data. Criteria to distinguish Ore Body Amphibole were developed by assessing representative samples from the ore body deposit selected to show low, intermediate and high levels of sodium and potassium. "Of the 43 samples for which EPMA data are available, 0.5 [apfu for Na+K] is the lowest[12] and 0.7 is the second lowest value," citing EPMA data in similar ranges found by Wylie and Verkouteren (2000), Meeker *et al.* (2003), Gunter *et al.* (2003), and Bandli *et al.* (2003).

Based on these data, Gunter and Sanchez concluded that, "The amphiboles originating from the deposit can be distinguished from those not originating from the deposit based on the fact that all of the analyzed amphiboles from the deposit contain Na and K, and Na and K peaks can be seen in the SEM-EDS spectra on amphiboles obtained from soil samples." Furthermore, "We make this statement with confidence because multiple workers have performed EPMA characterization on over 40 amphiboles collected from the deposit and all are found to contain measureable amounts of Na and K." These results "demonstrate the ability to distinguish particles with compositions consistent with reference amphiboles obtained from the former vermiculite deposit from amphibole particles with compositions inconsistent with those known to be from the deposit [which do not contain Na and K]".

Gunter and Sanchez indicate that they were presenting only a small subset of their results while a larger data set was being analyzed.

Bern *et al.*, 2002. The Background Report also cites a 2002 paper by Bern, Meeker and Brownfield for the proposition that, in contrast with "[m]ost structures from the Vermiculite Mountain ore body… most commercial forms of actinolite and tremolite usually lack both sodium and potassium." The Bern *et al.* study obtained quantitative data on a limited set of the available samples from the mine, and reached conclusions similar to Gunter and Sanchez. Firstly, "To accurately identify amphibole fibers by SEM analysis, EDS spectra must be obtained to verify that mineral composition is consistent with an amphibole." Secondly, "Libby amphiboles contain the elements Na, Mg, Al, Si, K, Ca, Ti, Mn, and Fe in varying amounts, but similar to those shown on Figure 1a," where a small peak for potassium and a larger peak for sodium can be seen in the amphibole from Libby. Figure 1a from the Bern *et al.* paper is included herein as **Figure 8**. The Bern paper also noted that "Pyroxene and Libby amphibole can be difficult to tell apart, but usually can be distinguished by the absence of K and higher Al in pyroxene."

In 2003, the findings of the Bern *et al.* paper were adopted by EPA as SRC-Libby-02: Quantification of Asbestos in Soil by SEM/EDS (EPA, 2003) to "describe a standard operating procedure (SOP) for estimating the concentration (expressed as weight percent) of amphibole asbestos found in soils in Libby." The SOP was considered a screening technique that would be

[12] This lowest reading of 0.5 apfu Na+K was obtained from Dirty 30 sample location number 20.

further "assessed in a performance evaluation (PE) study being planned and performed by USEPA."

The SOP established counting rules for recording as LAA, structures that satisfied certain counting rules, including, "The EDS spectrum of the particle is characteristic of Libby amphibole asbestos based on the EDS criteria" presented in a 2002 *USGS Administrative Report for the US EPA, Guide to Analysis of Soil Samples from Libby, Montana for Asbestos Content by Scanning Electron Microscope and Energy Dispersive Spectroscopy* (Guide). This Guide provided the following screening criteria:

> Two EDS spectra of amphiboles are illustrated on Figure 1a {included herein as **Figure 8**}. The first is an example of an amphibole from Libby, Montana. The second is an International Union Against Cancer (UICC) standard tremolite. Libby amphiboles contain the elements Na, Mg, Al, Si, K, Ca, Ti, Mn, and Fe in varying amounts, but similar to those shown on Figure 1a, F and Cl also occur, but usually not in quantities great enough to show on EDS spectra. Some diagnostic spectra of other minerals are presented for comparison.
>
> Biotites contain many of the same elements as Libby amphiboles. The Al and Mg content is used to distinguish biotite from amphibole. Biotites contain much more aluminum than Libby amphiboles. EDS spectra of Libby micas are provided on **Figure 8** for comparison.
>
> Pyroxene and Libby amphibole can be difficult to tell apart, but usually can be distinguished by the absence of K and higher Al in pyroxene. An EDS spectrum for a typical pyroxene is given in
> **Figure 8**.
>
> The best way to determine if the chemical composition is consistent with an amphibole is to perform a "quantitative" analysis. In most cases a "standardless" analysis will provide sufficient accuracy to give confidence that the material is compatible with an amphibole. For this analysis, oxygen should be determined by stoichiometry and cation ratios for Na, Mg, Al, Si, K, Ca, Ti, Mn, and Fe should be calculated based on 23 oxygens. The cation total should equal between 15 and 16. Examples of EDS analyses for Libby amphibole weight percentages and cations are given in Table 1. (Reproduced as **Figure 9**)

This SOP provides data on compositional ranges for Ore Body Amphibole supporting the conclusion that all Ore Body Amphibole contain sodium and potassium. However, it considered the EDS equipment of the day as being unable to detect their presence at low levels, and did not provide sufficiently clear and actionable screening criteria for identifying non-Ore Body Amphibole.

Meeker and Lowers 2004. A 2004 paper by Meeker and Lowers addressed some of the challenges in identifying asbestos amphiboles and implications for the regulation of asbestos.

> "Most regulations and approved analytical methods for asbestos analysis identify five regulated amphiboles: actinolite asbestos, tremolite asbestos, anthophyllite asbestos, amosite (cummingtonite-grunerite asbestos), and crocidolite (riebeckite asbestos)… When asbestos regulations were developed in the 1970s it was these materials that were identified as problematic because they were the most common species encountered in

> mining, processing, and manufacturing… The health crisis in Libby has spawned concern about existing nomenclature and analytical methods for asbestos. For the analyst using electron beam-based techniques, identification of asbestos is critical and results must often be defended in court… Current mineralogical classification for amphiboles uses crystal site chemistry for identification. Therefore, in order to properly classify amphiboles, accurate quantitative analyses must be obtained.

As this excerpt suggests, the Meeker and Lowers paper is focused on the ability to classify an amphibole by its species – specifically winchite, richterite, tremolite, etc. as shown on **Figure 10**. It is not focused on whether EDS can be used to distinguish whether a fiber is Ore Body Amphibole or non-Ore Body Amphibole.

However, in assessing the legal and regulatory implications of amphibole species identification, the paper addresses several potential sources of error with SEM and TEM EDS, "Factors that contribute to errors in quantitative analysis include: counting statistics, instrument stability, volatile loss and migration, matrix corrections, calibration materials, secondary fluorescence, contaminants, Fe oxidation state, and particle geometry."

The Meeker and Lowers paper concludes that "Many factors can introduce relative errors of 20 percent or more and affect the ability of the analyst to properly classify amphibole species," and recommends that regulators drop their focus on asbestos species entirely. However, it does not indicate that the potential errors in identifying asbestos species would impact the ability to distinguish Ore Body Amphiboles from non-Ore Body Amphiboles.

Langer *et al.*, 2010 and Adams *et al.*, 2010. The Background Report cites papers by Langer *et al.*, 2010 and Adams *et al., 2010* in support of its conclusion that "low-level detections of amphibole fibers in background soils within the Kootenai Valley originated from normal geologic and geomorphic processes unrelated to mining and milling of vermiculite ore from Vermiculite Mountain." However, their work also has relevance to distinguishing between Ore Body Amphibole and non-Ore Body Amphibole.

Langer states that the presence of sodium and potassium is a distinguishing characteristic of Ore Body Amphibole – including Libby tremolite.

> Non-fibrous tremolite is a common rock-forming mineral in many igneous and metamorphic rocks and is likely present in many of the rock units surrounding Libby Valley. Small quantities of non-fibrous tremolite derived from sources other than the Rainy Creek Complex would, therefore, not be unusual in soils and sediments sampled in and around Libby. Tremolite from other sources, however, would not be expected to contain appreciable amounts of Na and K, as does the tremolite from Vermiculite Mountain. Thus, it is likely that any fibrous Na- and K-rich tremolite, along with richterite and winchite, found in soils and sediments of the Libby Valley are derived from the Rainy Creek Complex at Vermiculite Mountain.

In fact, Langer *et al.* and Adams *et al.* used this as a screening criteria in locating the sedimentary layers across Libby that contain Ore Body Amphiboles from periods prior to the opening of the mine – identified as red on **Figure 11**.

EPA 2008 Characteristic Report. In 2008, Syracuse Research Corporation (EPA, 2008) finalized a paper for EPA entitled: *Characteristic EDS Spectra for Libby-Type Amphiboles* (the 2008 Report). In this report, six EPA Libby project laboratories were provided three samples from the Meeker *et al.* Dirty 30, and one sample of non-ore body tremolite for analysis by EDS. **See Figure 12**.

The 2008 Report identifies three sources of variability in the use of EDS that are relevant to any screening criteria seeking to distinguish Ore Body Amphibole from non-Ore Body Amphibole. "The use of EDS to classify an amphibole particle as LAA[13] is complicated by a number of factors, including a) inherent variability in chemical composition of different LA particles, b) dependence of the spectrum on random variables such as particle thickness, orientation, and proximity to other particles, and c) variation between instruments in sensitivity to different elemental constituents."

The first of these sources of variability is really just a restatement of the differences in the data presented by Meeker *et al.* (2003) showing variations across and within samples. The amount of this variation reflects the unique characteristics of the ore body, but published data suggest there are bounds to this variation.

The second source reflects variations in readings from a single sample at a single laboratory. As with the variations within the ore body, there are observable bounds to these variations. The third source reflects variations in readings from the same sample by different laboratories. The difference between the laboratories can be significant depending on the condition of each laboratory's EDS equipment. By comparing a laboratory's EDS spectra library to other laboratories' spectra, this variation can also be bounded.

As quoted in the Background Report, the 2008 Report states that, "For these reasons, it is not possible to define a unique EDS spectrum for LA particles." But the 2008 Report continues: "However, it is possible to consolidate the EDS spectra obtained from the analysis of many different asbestos particles that are known to be LA and to characterize the average spectrum and the range of variability in the spectrum of the primary elemental constituents. These consolidated spectra serve as a useful tool in judging when an EDS spectrum is sufficiently similar to the spectra from known LA particles to support the assignment of the LA designation."

The 2008 Report makes an effort to approximate the range of variability in the components of Ore Body Amphibole. Using material from three sample locations, as measured by the six labs, the report identifies mean peak magnitudes relative to silicone for the constituents of Ore Body Amphibole, along with the concentrations at the 5th and 95th percentile. See **Figure 13**.

Given the fact that the 2008 Report only looked at three samples of Meeker *et al.'s* Dirty 30, it cautions that, "It is important to stress that these typical averages and ranges should NOT be interpreted as absolute rules for classifying a particle as LAA. Rather, as noted above, it must be understood that there is substantial variability in EDS spectra from LA particles, both within and

[13] Note that here, "LA" is used in its traditional sense to refer to "Libby Amphibole Asbestos" originating from the mine, and is not used as in the Background Report to apply to all asbestos structures found in the Kootenai Valley regardless of origin.

between laboratories, and that authentic LA particles may sometimes result in spectra that fall outside the bounds above. However, it is thought that the bounds above will include the majority of all LA structures." In fact, those bounds support the conclusion that all Ore Body Amphibole contains sodium and potassium, but as with the other referenced studies, the data set was too small to develop a tighter set of criteria or a higher confidence interval.

Sanchez *et al.*, 2008. In 2008, Sanchez, Gunter and Dyar published a paper on the "*Characterization of Historical Amphibole Samples from the Former Vermiculite Mine near Libby, Montana, USA*." The paper identified samples dating from the 1920s through 1999 including from museums at Harvard, the Smithsonian Institution, and Montana Tech in Butte, Montana. See **Figure 14**. This work was cited by the Libby IRIS Assessment, along with Meeker *et al.*, to confirm that "the amphibole content of the vermiculite ore from the mine has remained approximately constant over the 70-year mining history at the Rainy Creek Complex."

For each of the samples, Sanchez *et al.* present average chemical compositions in Wt% Oxides and calculated site occupancies (apfu). See **Figure 15**. Sanchez *et al.* also presented these data in summary boxplots showing the variability in the constituents of Ore Body Amphibole. See **Figure 16**. These data are consistent with the range of readings from the Meeker *et al.* Dirty 30.

Sanchez *et al.* reached an important conclusion regarding historical trends, "Based upon the historic samples and a more thorough characterization of the samples collected in 1999 by Gunter, we did not find any changes in composition of the amphiboles as a function of the time they were mined or the location in the deposit." This analysis supports the conclusion that all Ore Body Amphiboles contain both sodium and potassium, by looking at an additional set of samples beyond the 30 locations assessed by Meeker *et al*.

B.1.2 Complete Data Set from the Meeker *et al.* "Dirty 30" Samples

Additional data were collected to better assess compositional ranges for sodium and potassium in Ore Body Amphibole. **Attachment 1** includes compositional data obtained from the U.S. Geological Survey for each of the 30 samples described in Meeker *et al.* (2003). This is the complete dataset of 782 compositional readings that formed the basis for the Meeker *et al.* paper, as represented graphically in **Figure 6**. For each of the 30 sample locations, between 11 and 31 different readings were obtained. The Meeker *et al.* paper presented sample data from this data set, portions of which were reproduced in **Figure 7**. However, the complete data set has not been previously published.

Attachment 2 presents spectra plots derived from these data for each of Meeker *et al.* 30 sample locations. In each of these plots, the important features are the noticeable peaks for sodium and potassium relative to the peak for silicon, and the absence of a peak for aluminum, as highlighted on **Figure 17**. Each plot is derived from the multiple readings taken at the particular location and represents an average of compositional data from the sample. All of these plots clearly show the presence of sodium and potassium at observable levels.

Compositional data in **Attachment 1** were also analyzed statistically to evaluate the ranges of elemental concentrations found in Ore Body Amphibole. The results of this analysis confirm that

all samples contain both sodium and potassium. These data are presented on **Figure 18.** The mean concentrations of sodium and potassium in Ore Body Amphibole expressed in apfu are 0.9778 and 0.1932, respectively. Concentrations of sodium and potassium in Ore Body Amphibole at the 5th percentile are 0.5106 and 0.0965, respectively. Concentrations of sodium and potassium in Ore Body Amphibole at the 95th percentile are 1.4466 and 0.3260, respectively. These mean values, as well as the percentile ranges, are in keeping with data in the published papers referenced above, but are much more certain. The observed ranges at the 5th and 95th percentile are presented graphically as sample EDS spectra on **Figure 19** (the red trace showing the 5th percentile and the blue trace showing the 95th percentile). Spectra for 90 percent of the readings taken from the Dirty 30 fall within the red and blue traces. The complete distributions of sodium, potassium, and aluminum concentrations for the Dirty 30 data set are graphically represented in **Figure 20**.

Compositional data from additional samples have been collected and analyzed using EPMA by Mickey Gunter at the University of Idaho. These data include readings from samples assessed in many of the key studies cited in the Background Report and the Libby IRIS Assessment, including Wylie and Verkouteren (2000), Bandli *et al.* (2003), Gunter *et al.* (2003) and Sanchez *et al.* (2008). It includes historical samples from Harvard and the Smithsonian Institution (collected by Larsen in the 1920s), and from Montana Tech in Butte, Montana (collected in the 1960s). It also includes more recent samples collected by Bandli and Gunter in 1999 (referenced as Vein, Float, Outcrop and Boulder). Spectra plots from this dataset are shown in **Attachment 3**. As with the plots of the Meeker *et al.* data, each of these plots represents an average derived from multiple readings from different points within a mounted sample from a particular sample location. All of these plots show sodium and potassium levels that fall within the ranges shown on **Figure 19**, and are similar in appearance to the plots shown in **Attachment 2**.

These compositional ranges can be compared with the ranges presented in EPA's 2008 Report. The EDS spectra data from Meeker *et al.* samples 20, 23 and 28 as collected by the six Libby project laboratories was normalized to align the Silicone reading to "10" with the data from other elements shown relative to silicone. These results are shown in **Figure 21a.** WDS data presented in Attachment 1 from the Meeker *et al.* samples 20, 23 and 28 has also been normalized to a silicone peak of "10" in **Figure 21b.** A comparison of these results show reasonable alignment between the WDS data and the results from Batta Environmental Associates, Inc. (Batta), EMSL Westmont (EMSL), EMSL Mobile Laboratory (Mobile), and Materials Analytical Services (MAS). However, the results from Hygeia Laboratories, Inc. (Hygeia) and Reservoirs Environmental, Inc. (RESI) (highlighted in red) appear to be anomalous.

B.1.3 Conclusions

The papers reviewed identified sodium and potassium in all of the analyzed samples of Ore Body Amphibole. The data from the Meeker *et al.* Dirty 30 and the other samples show the presence of sodium and potassium at concentrations within finite ranges greater than zero.

Based on a review of available data, the mean concentrations of sodium and potassium in Ore Body Amphibole expressed in apfu are 0.9778 and 0.1932, respectively. Concentrations of

sodium and potassium in Ore Body Amphibole at the 5th percentile are 0.5106 and 0.0965, respectively. Concentrations of sodium and potassium in Ore Body Amphibole at the 95th percentile are 1.4466 and 0.3260, respectively.

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Sanchez,M.S., Gunter,M.E., and Dyar,M.D. 2008. Characterization of Historical Amphibole Samples from the Former Vermiculite Mine near Libby, Montana, USA. European Journal of Mineralogy, Vol. 20 Number 6 (1043-1053)

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Figures

Figure 1 Examples of EDS Spectra for LAA Structures

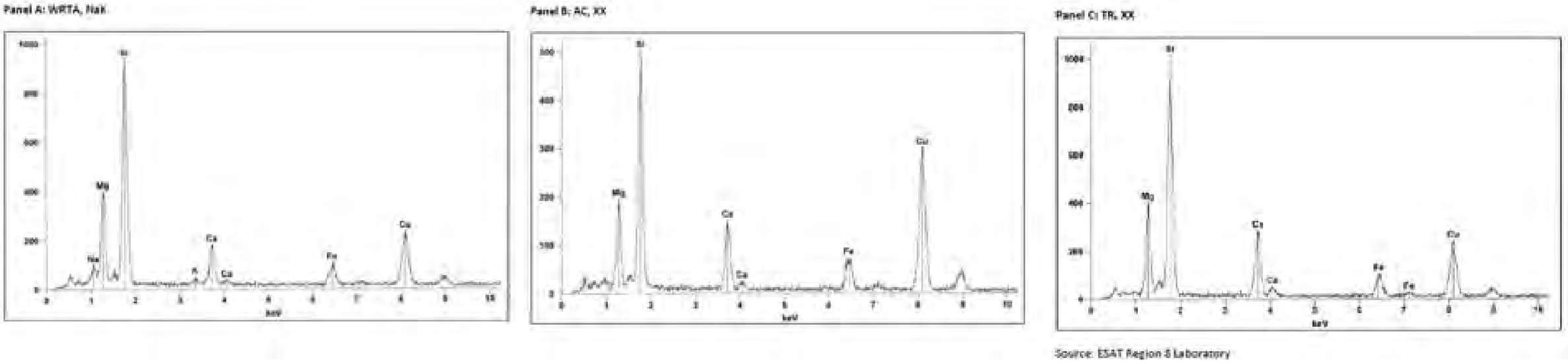
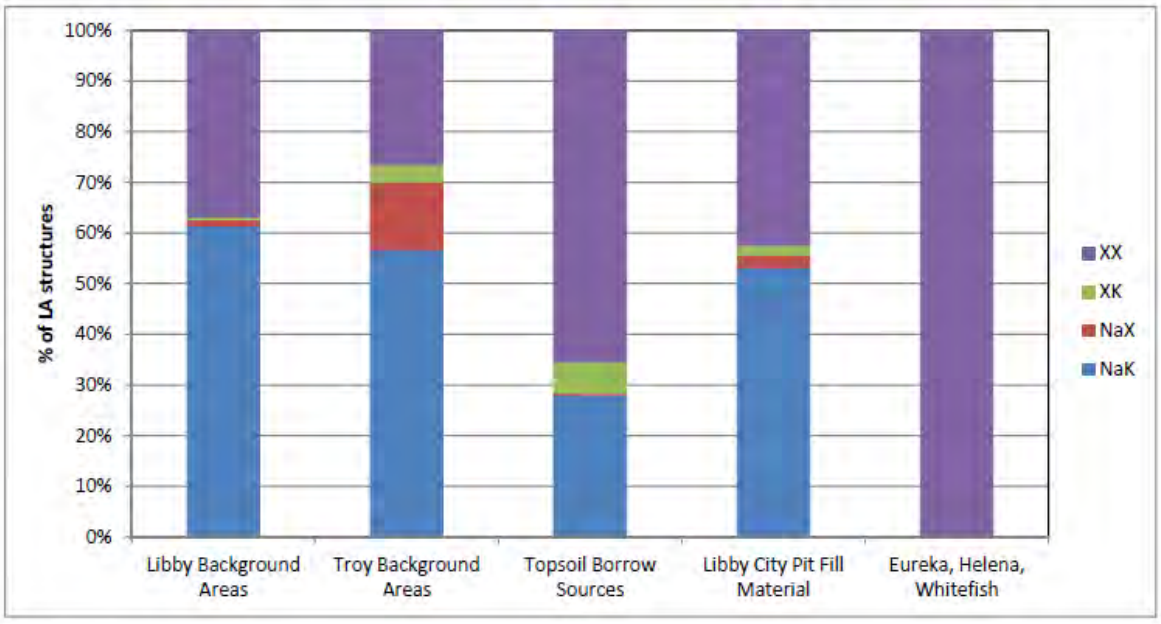


Figure presented as Figure 2-1 in EPA, 2014b. Shows asbestos structures from the Libby Superfund Site (LAA) that may or may not have originated from the Rainy Creek Complex – they may be Libby Amphibole or non-Ore Body Amphibole as those terms are used in this analysis.

Figure 2 NaK Content of Total LAA Structures in Background Soil Samples

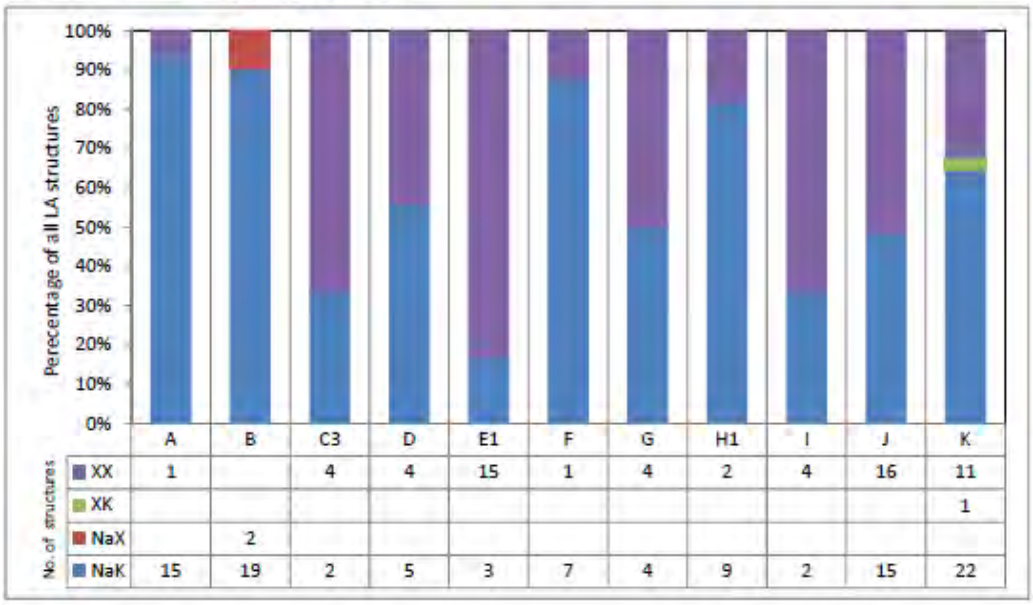


% = percent
LA = Libby amphibole
NaK = contains sodium and potassium
NaX = contains sodium
XK = contains potassium
XX = contains neither sodium nor potassium

Figure presented as Figure 6-2 in EPA, 2014b. Presents all fibers as "LAA Structures" including non-Ore Body Amphiboles found in Eureka, Helena and Whitefish.

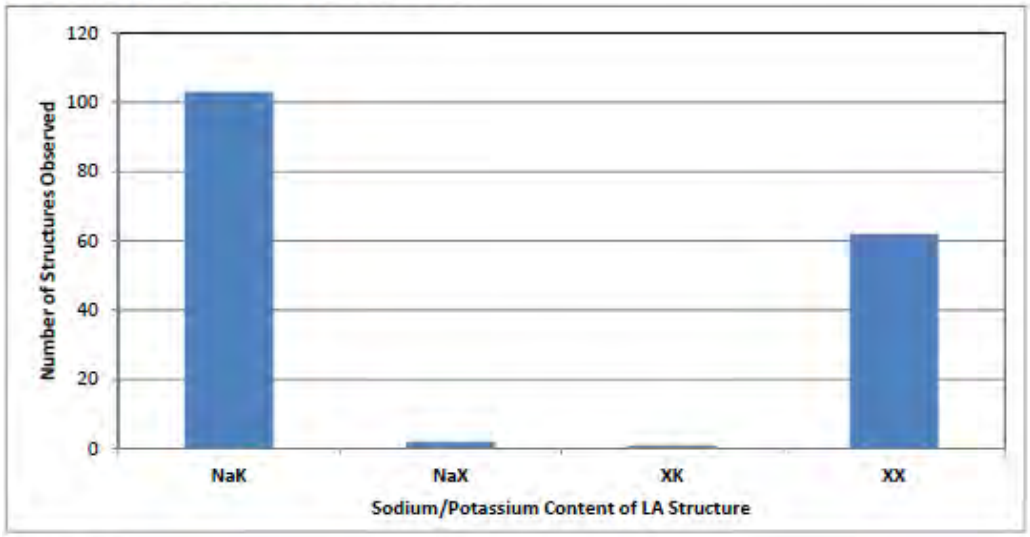
Figure 3a NaK Content of LAA Structures in Libby Background Soils

Panel A: NaK Content by Background Area



No. of structures	A	B	C3	D	E1	F	G	H1	I	J	K
XX	1		4	4	15	1	4	2	4	16	11
XK											1
NaX		2									
NaK	15	19	2	5	3	7	4	9	2	15	22

Panel B: NaK Content across All Background Areas

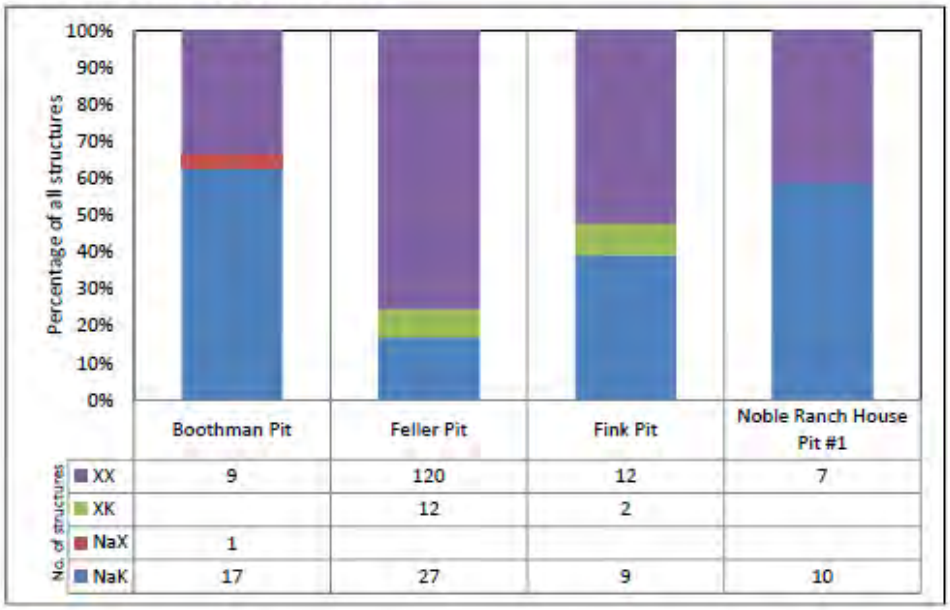


% = percent
LA = Libby amphibole asbestos
NaK = contains sodium and potassium
NaX = contains sodium
XK = contains potassium
XX = contains neither sodium nor potassium

Figure presented as Figure 4-6 in EPA, 2014b. Shows a significant portion of the "LAA" structures in Libby background soils lack both sodium and potassium. Using the screening criteria applied to the structures found in Eureka, Helena and Whitefish, these would be considered as non-Ore Body.

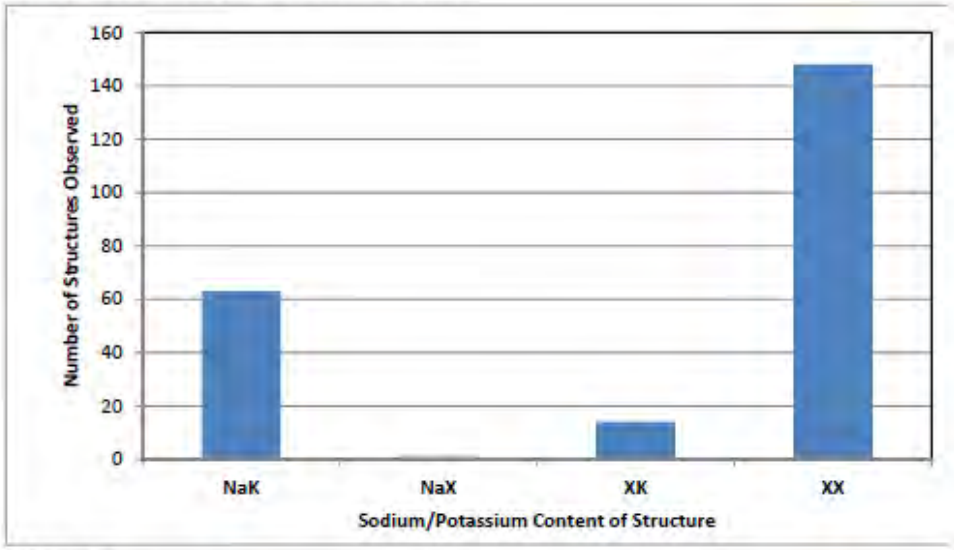
Figure 3b NaK Content of LAA Structures in Borrow Source Soils

Panel A: NaK Content by Borrow Area



No. of structures	Boothman Pit	Feller Pit	Fink Pit	Noble Ranch House Pit #1
XX	9	120	12	7
XK		12	2	
NaX	1			
NaK	17	27	9	10

Panel B: NaK Content across All Borrow Areas



% = percent

LA = Libby amphibole asbestos

NaK = contains sodium and potassium

NaX = contains sodium

XK = contains potassium

XX = contains neither sodium nor potassium

Figure presented as Figure 4-12 in EPA, 2014b. Shows a significant portion of the "LAA" structures in Libby borrow source soils lack both sodium and potassium. Using the screening criteria applied to the structures found in Eureka, Helena and Whitefish, these would be considered as non-Ore Body amphiboles.

Figure 4 Map of Vermiculite Mine Showing Amphibole Sampling Locations

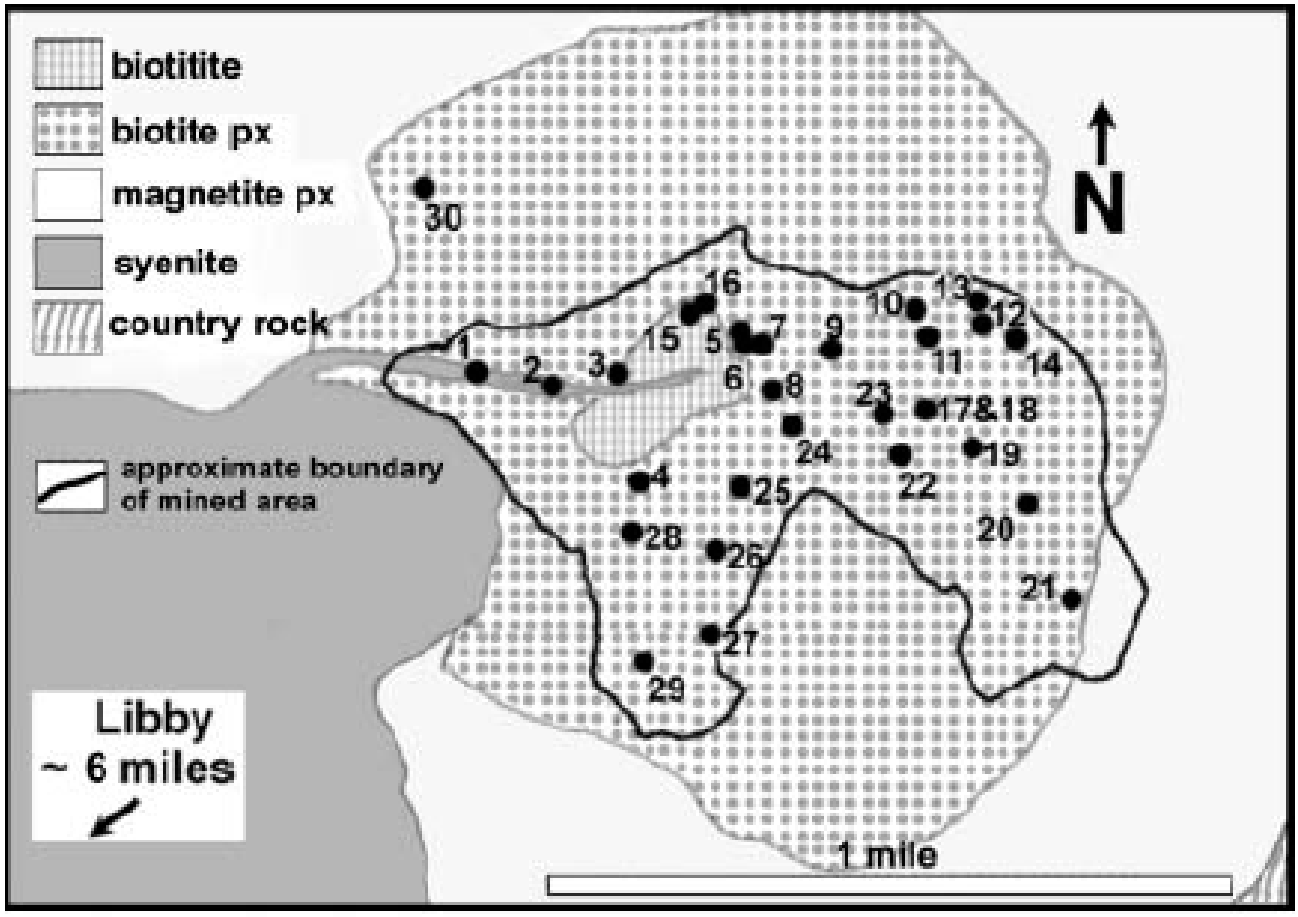
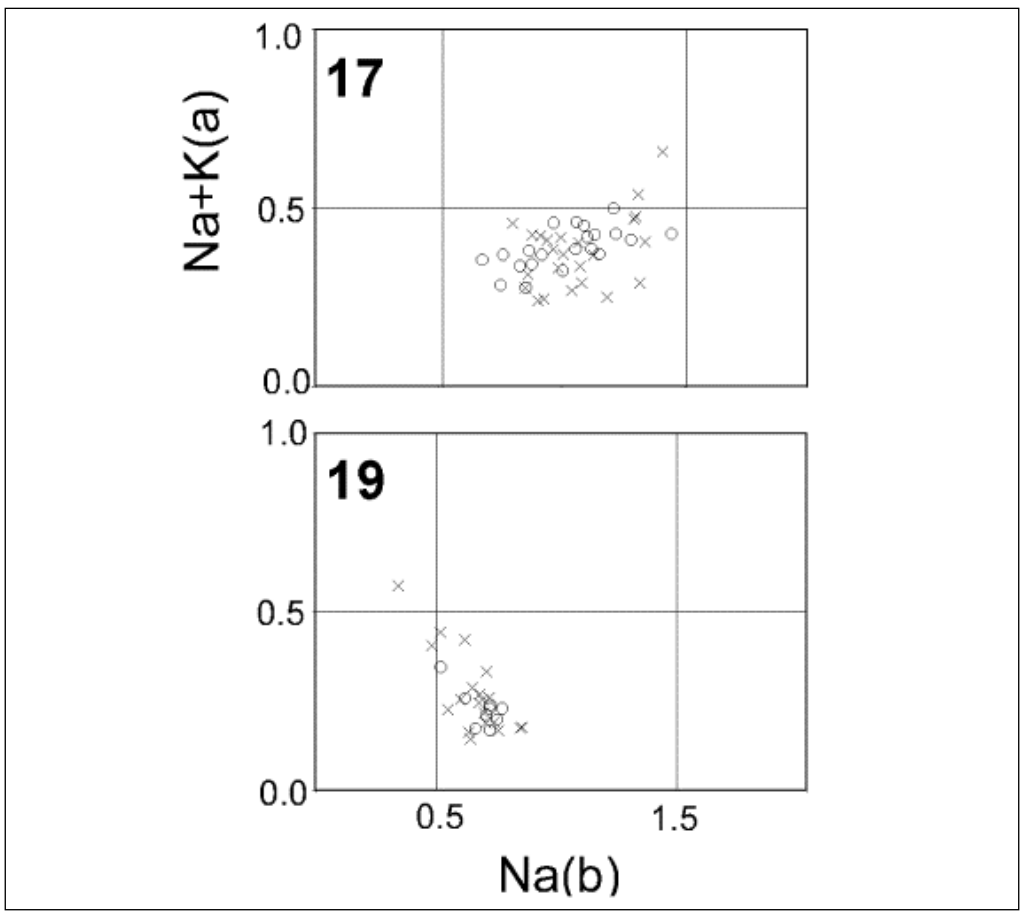
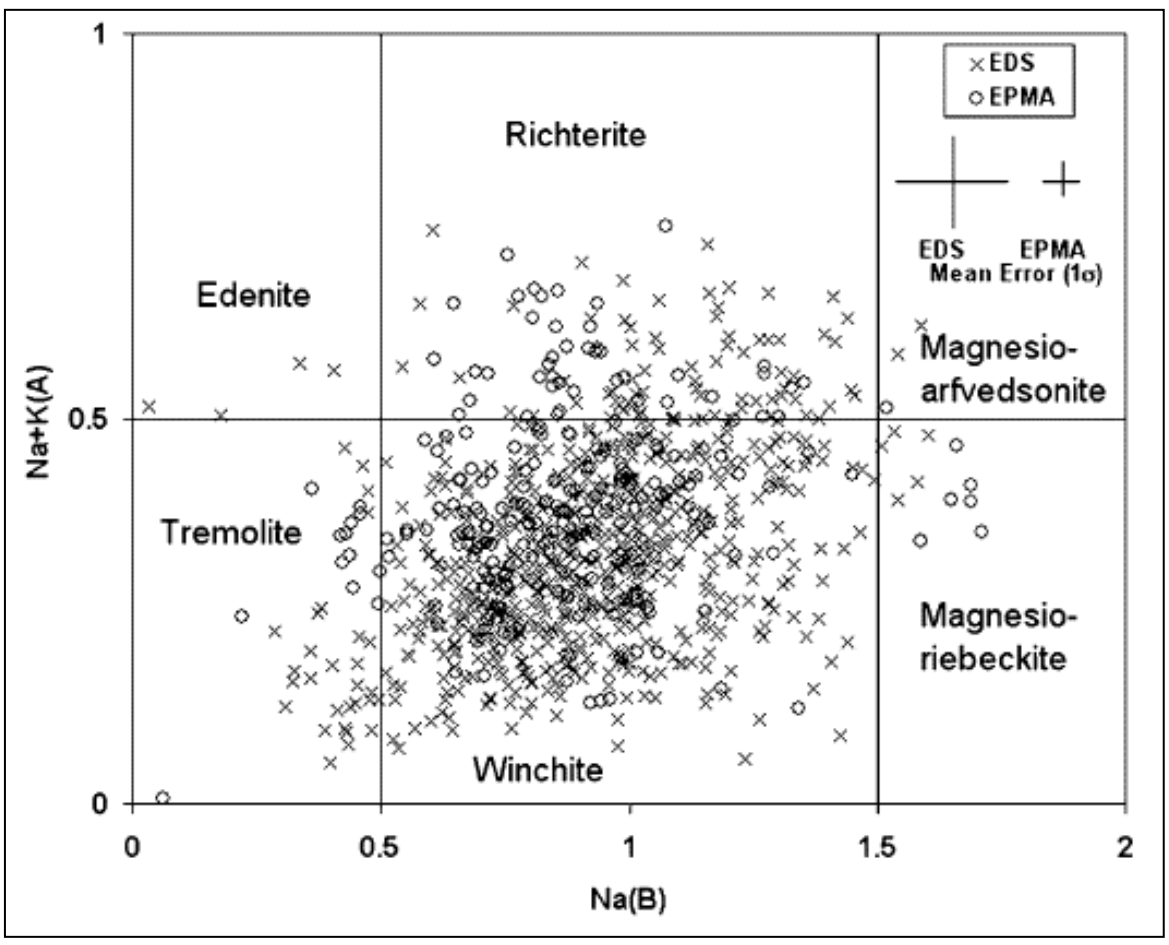


Figure presented as Figure 1 in Meeker et al., 2003. Shows a map of the Rainey Creek Complex at the Zonloite Vermiculite Mine in Libby MT and indicates sampling locations for amphibole sampling. Geology after Boettcher (1967). The geology, as depicted here, may not completely conincide with the present-day surface geology because of the mining activity between 1967 and 1992. Therefore, the sampling points may not coincide in al

Figure 5 – EMPA and EDS Data on Content for Sodium and Potassium



Cation values for Na in the B-site and Na + K in the A-site from individual samples show typical correlation between SEM (crosses) and EPMA (circles) data. Sample numbers are in the upper left corner of each plot.



EPMA/WDS and SEM/EDS data showing the entire range of amphibole species found from all 30 samples. See Meeker *et al.*, 2003 for details.

Figures presented as Figures 4 and 6 in Meeker *et al.,* 2003. Shows EPMA and EDS data on content for sodium and potassium and associated error bars expressed in apfu. "For some samples, the EPMA data show a narrower compositional range than the EDS data. This result is reasonable because EPMA analyses were performed on a single polished thin section for each sample, which may not represent the entire range of compositions of friable material found in a sample."

Figure 6 EDS Data for 30 Samples Showing Distribution of Compositions of the Fibrous and Friable Amphibole for Each Sample Location at the Mine (refer to Figure 4)

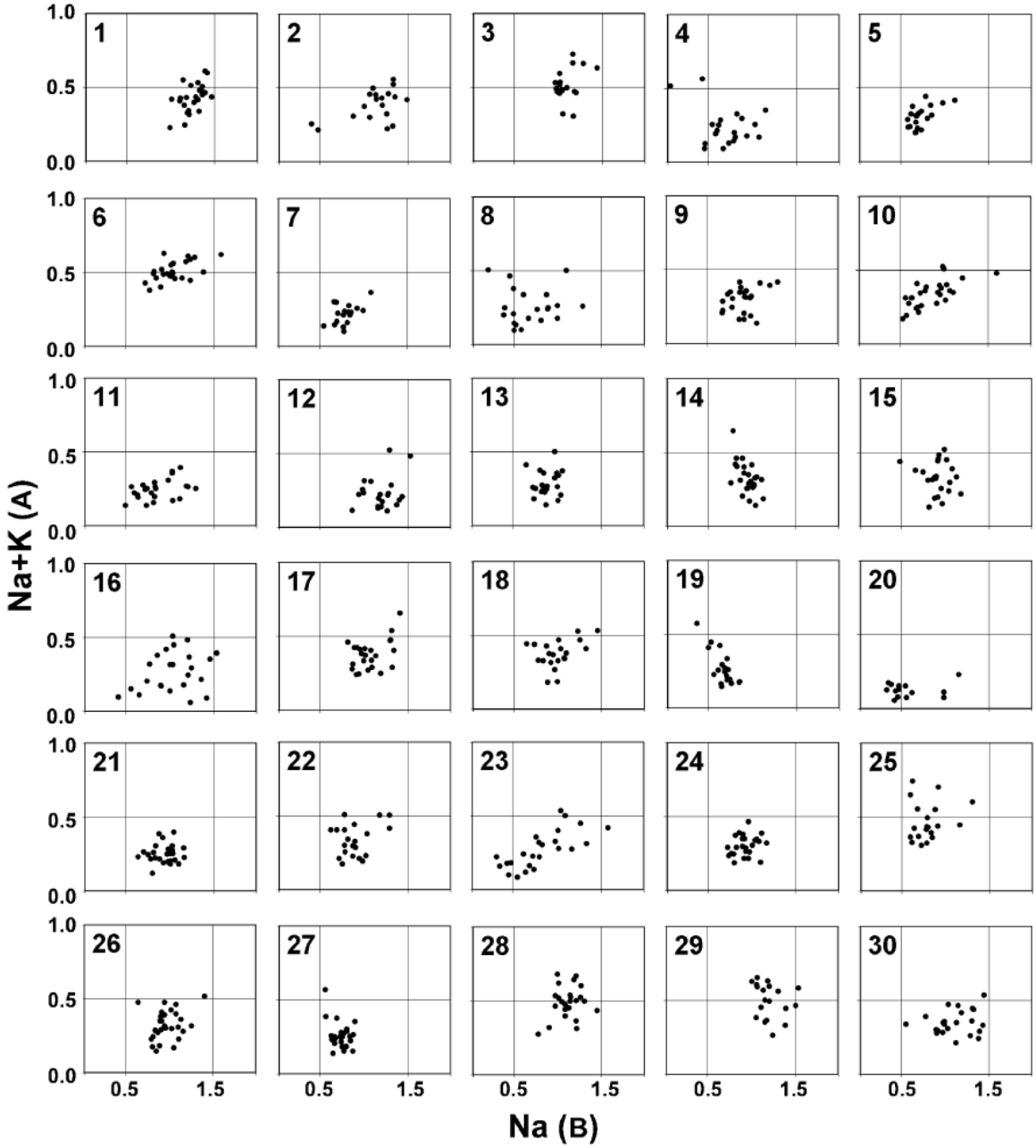


Figure presented as Figure 7 in Meeker *et al.,* 2003*.* Shows EDS plots indicating the presence of sodium in the "B" crystal location in each of the 30 samples, and the presence of either sodium of potassium in the "A" crystal location in each of the 30 samples. "A" and "B" refer to locations within an asbestos amphibole crystal and are expressed in apfus. Sample 20 appears as an outlier among the group with the least amount of sodium and potassium.

Figure 7 Weight Percent Oxide Concentration of Various Minerals Found in a Selection of Sample Locations (Partial Presentation)

TABLE 2. Representative wavelength dispersive of amphibole minerals

Sample	12	12	14	16	17	24	24	25	10	16	16
Mineral	W	W	W	W	W	W	W	W	T	T	T
Wt% Oxides											
F	0.21	0.27	0.18	0.20	0.58	0.31	0.52	0.43	0.21	0.17	0.20
Na_2O	3.39	4.45	4.21	3.29	3.54	3.13	4.47	2.70	2.61	2.26	2.27
MgO	22.3	19.2	20.5	21.4	19.8	21.3	20.9	21.7	22.0	23.0	22.0
Al_2O_3	0.15	0.17	0.16	0.46	0.37	0.15	0.33	0.11	0.16	0.60	0.52
SiO_2	58.7	57.1	57.2	57.7	56.8	57.5	57.7	57.5	57.1	56.4	56.6
Cl	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
K_2O	0.65	0.71	1.03	1.02	0.94	0.93	1.10	0.62	0.71	0.87	0.78
CaO	7.50	5.18	6.28	9.41	7.51	8.43	6.62	9.89	10.2	10.1	10.3
TiO_2	0.14	0.14	0.13	0.07	0.17	0.04	0.23	0.07	0.12	0.10	0.09
MnO	0.10	0.05	0.06	0.14	0.14	0.13	0.08	0.10	0.09	0.08	0.08
FeO-T	5.71	8.38	6.35	4.38	6.54	4.95	5.54	4.22	3.08	2.48	2.47
O ≡ F,Cl	0.09	0.11	0.07	0.08	0.24	0.13	0.22	0.18	0.09	0.07	0.08
□TOTAL	98.79	95.54	96.00	97.99	96.21	96.73	97.21	97.12	96.19	95.92	95.19

TABLE 2. -- *continued (2)*

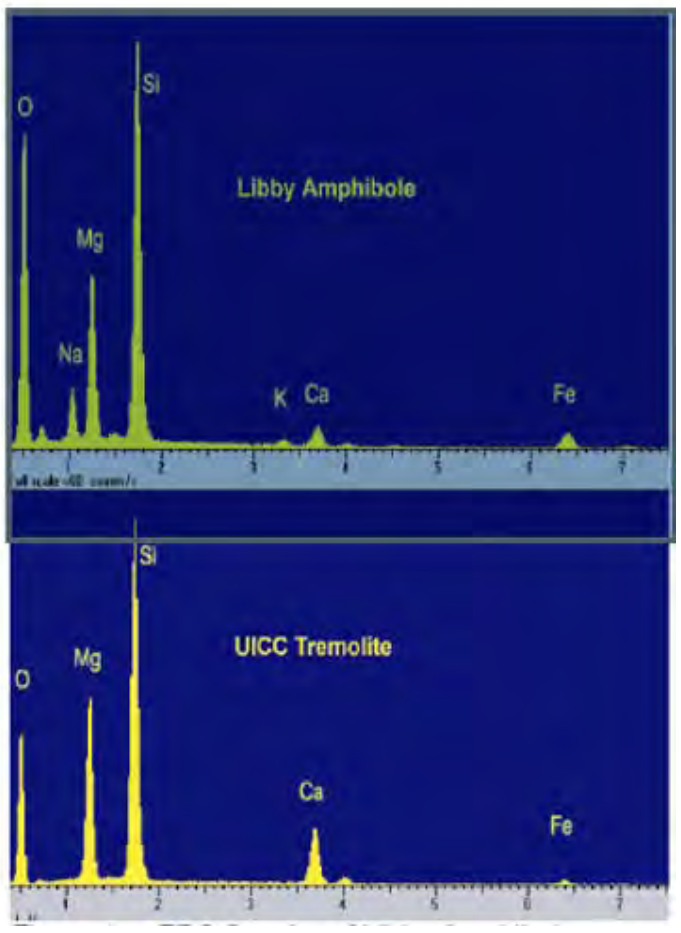
Sample	16	20	25	25	25	10	12	14	16	24	30
Mineral	T	T	T	T	T	R	R	R	R	R	R
Wt% Oxides											
F	0.18	0.00	0.08	0.47	0.21	0.65	0.08	0.17	0.34	0.74	0.52
Na_2O	2.26	1.29	2.62	2.49	2.28	4.13	3.73	4.38	4.96	3.90	4.48
MgO	22.1	21.7	21.9	21.9	21.9	23.0	21.1	20.3	19.8	21.2	21.4
Al_2O_3	0.71	0.56	0.30	0.32	0.25	0.01	0.12	0.20	0.29	0.36	0.27
SiO_2	55.6	55.2	57.3	57.3	57.3	58.1	55.3	55.2	56.2	56.8	56.9
Cl	0.02	0.03	0.01	BDL	BDL	0.01	BDL	BDL	BDL	0.01	BDL
K_2O	0.86	0.58	0.78	0.75	0.68	1.56	0.77	1.06	0.97	1.20	1.22
CaO	10.1	10.70	10.2	10.3	10.5	7.79	7.45	6.11	5.76	8.03	7.43
TiO_2	0.11	0.10	0.01	0.04	0.06	0.20	0.21	0.12	0.04	0.07	0.16
MnO	0.07	0.10	0.10	0.10	0.10	0.09	0.05	0.09	0.08	0.13	0.12
FeO	2.40	4.00	3.73	3.82	3.52	2.35	5.61	6.56	7.49	5.08	5.08
O≡F,Cl	0.08	0.01	0.04	0.20	0.09	0.28	0.03	0.07	0.14	0.31	0.22
□TOTAL	94.32	94.24	96.96	97.21	96.63	97.59	94.33	94.13	95.73	97.25	97.34

TABLE 2 --*continued* (3)

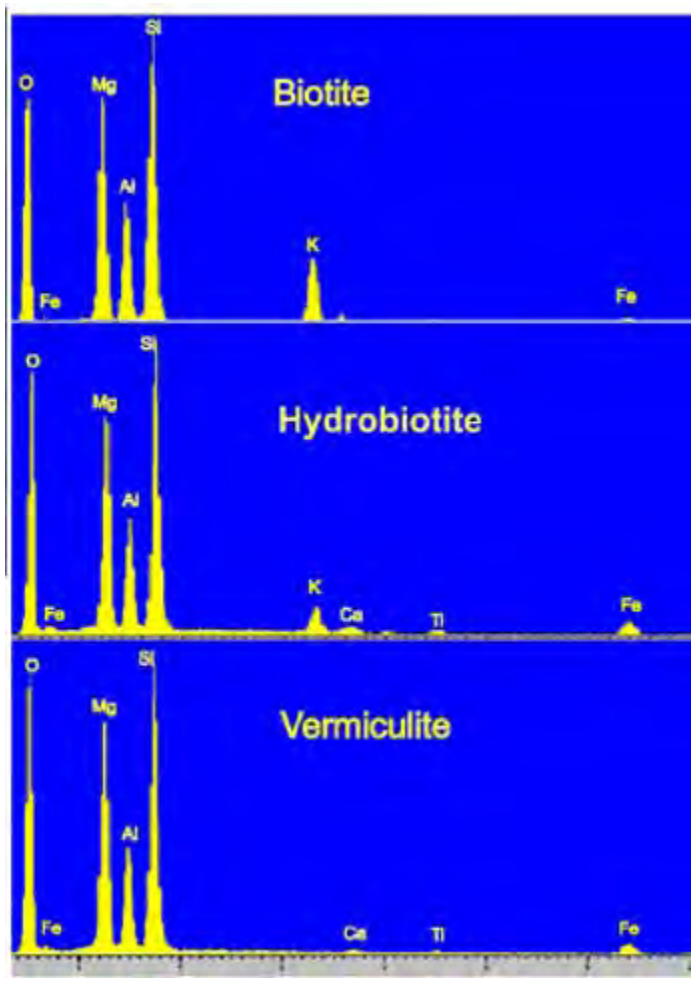
Sample	30	30	10	10	10	10	10	12	10
Mineral	R	R	MR	MR*	MR*	MR*	MR*	MR	MA
Wt% Oxides									
F	0.56	0.17	0.45	0.30	0.27	0.45	0.49	0.09	0.52
Na_2O	4.59	4.26	7.04	7.11	6.92	6.85	6.98	6.51	6.76
MgO	20.9	21.0	17.1	16.8	16.4	16.8	17.0	17.5	17.8
Al_2O_3	0.45	0.35	0.04	0.07	0.08	0.07	0.08	0.25	0.08
SiO_2	57.3	56.6	56.5	57.1	56.8	56.9	56.9	56.4	56.8
Cl	BDL	BDL	0.01	BDL	BDL	BDL	0.01	BDL	BDL
K_2O	1.29	1.32	1.09	0.95	0.96	0.98	0.97	0.81	1.06
CaO	7.31	7.26	2.03	2.07	1.92	2.32	2.07	2.20	2.70
TiO_2	0.05	0.04	0.47	0.15	0.39	0.44	0.41	0.58	0.25
MnO	0.12	0.06	0.07	0.09	0.05	0.09	0.08	0.04	0.04
FeO	5.29	5.22	11.5	12.3	12.3	11.4	11.3	11.0	11.0
O ≡ F,Cl	0.23	0.07	0.19	0.13	0.11	0.19	0.21	0.04	0.22
□TOTAL	97.65	96.16	96.15	96.76	96.06	96.13	96.03	95.39	96.89

Figure presented as Table 2 in Meeker *et al.*, 2003.

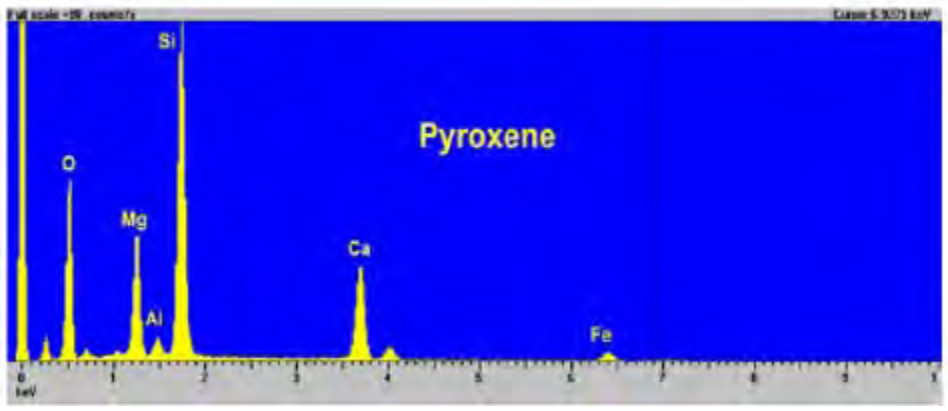
Figure 8 EDS Spectra



EDS Spectra of Libby Amphibole and Tremolite



EDS Spectra of micas found in Libby Samples



EDS Spectrum of Pyroxene

Figures presented as Figures 1a, b, c in Bern *et al.,* 2002.Shows the presence of sodium and potassium in Libby Amphibole and their absence in pyroxenes, micas and reference tremolite, – a non-Ore Body Amphibole

Figure 9 EDS Analysis of Libby Amphibole Fibers

Weight Percent									
	Na2O	MgO	Al2O3	SiO2	K2O	CaO	TiO2	MnO	Fe2O3
1	4.7	21	0.43	57	1.3	7.5	0.33	0.17	7.7
2	5.5	21	0	60	2.1	4.4	0	0.03	8.0
3	1.6	23	0.14	59	0.37	12	0.12	0.01	3.1

Cation Totals (all Fe is Fe3+)										
	Na	Mg	Al	Si	K	Ca	Ti	Mn	Fe3	Total
1	1.22	4.27	0.07	7.77	0.22	1.09	0.03	0.02	0.81	15.50
2	1.44	4.11	0.00	8.07	0.35	0.63	0.00	0.00	0.84	15.43
3	0.42	4.64	0.02	7.90	0.06	1.78	0.01	0.00	0.32	15.16

	T Site Total	C Site Total	B Site Total	A Site Total	Cation Total
1	7.87	5.00	2.00	0.63	15.50
2	8.00	5.02	2.00	0.42	15.43
3	7.93	4.96	2.00	0.26	15.16

T site-Si $\cong$ 8 C site-Al + Fe + Mg + Ti + Mn $\cong$ 5 A+B sites-Ca + Na + K >= 2

1. Quantitative analysis requires matrix corrections to correct for atomic number, absorption, and fluorescence effects. Matrix correction routines (e.g. ZAF or Phi Rho Z) assume that the sample is homogeneous in the volume analyzed, and has a flat polished surface. If these conditions are not met the results can have errors that are larger than what is normally expected. The magnitude of this error will depend on the size, shape and composition of the sample or particle and also on the analytical conditions, particularly accelerating voltage (Small and Armstrong, 2000). Our experience with the analysis of single structures of Libby amphibole using the analytical conditions specified in this procedure is that the errors for all elements are typically within +/-10 % relative concentration of the expected value, and often much better.

Standard Operating Procedure for Quantification of Asbestos in Soil by SEM/EDS (Table 1 of EPA, 2003), the reference table associated with the criteria for determining whether the EDS spectrum of a particle is characteristic of Libby amphibole asbestos in order to meet the counting rules of the

Figure 10 Composition Fields for Relevant Calcic and Sodic-calcic Amphiboles

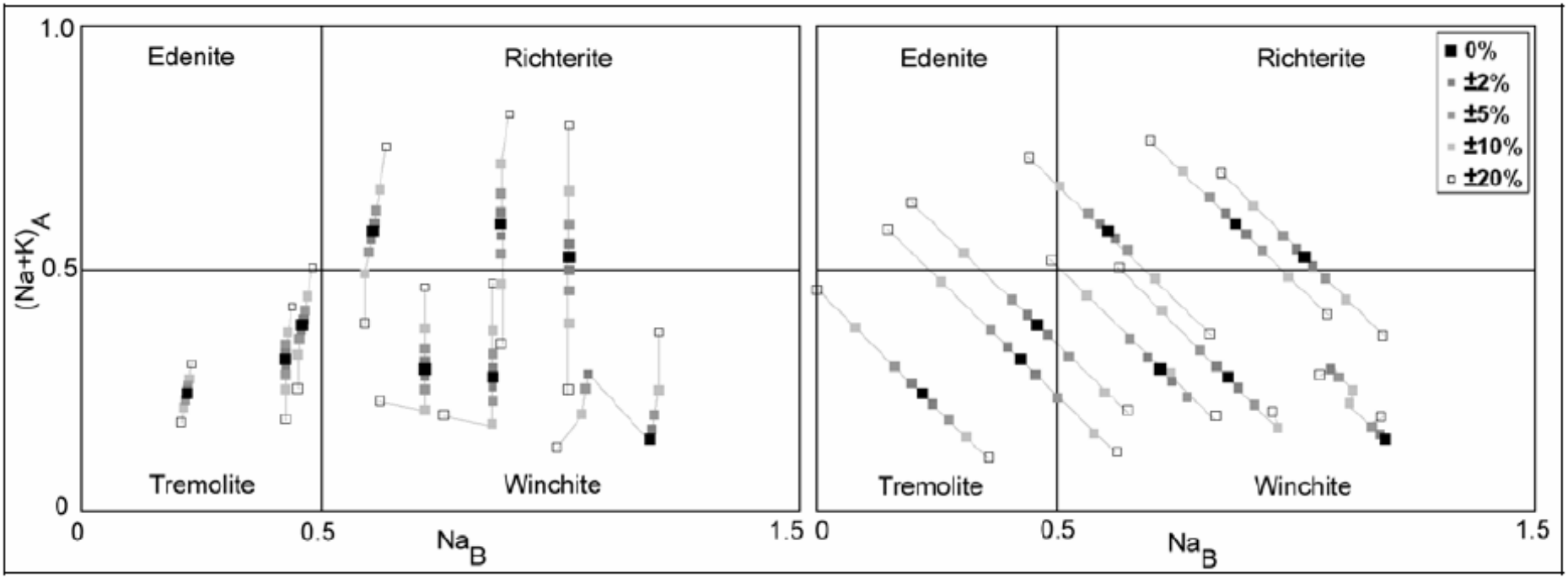


Figure presented as Figure 1 in Meeker and Lowers, 2004. Shows how errors in the relative composition of sodium and potassium impact the species of an amphibole as winchite, richterite, tremolite or edenite. The X-axis represents NA in the B crystallographic site, the Y-axis represents Na + K in the A crystallographic site. Mineral fields for tremolige, edenite, richterite, and winchite are shown. Calculated data show displacement of actual data points (large black squares) with relative errors of ± 2,5,10, and 20% for Na (left) and Ca (right). Cation ratios were determined by processing original and modified amphibole formula calculation based on Leake *et al.*, 1997.

Figure 11 Sedimentary Layers Likely to be Sources of Libby Amphibole

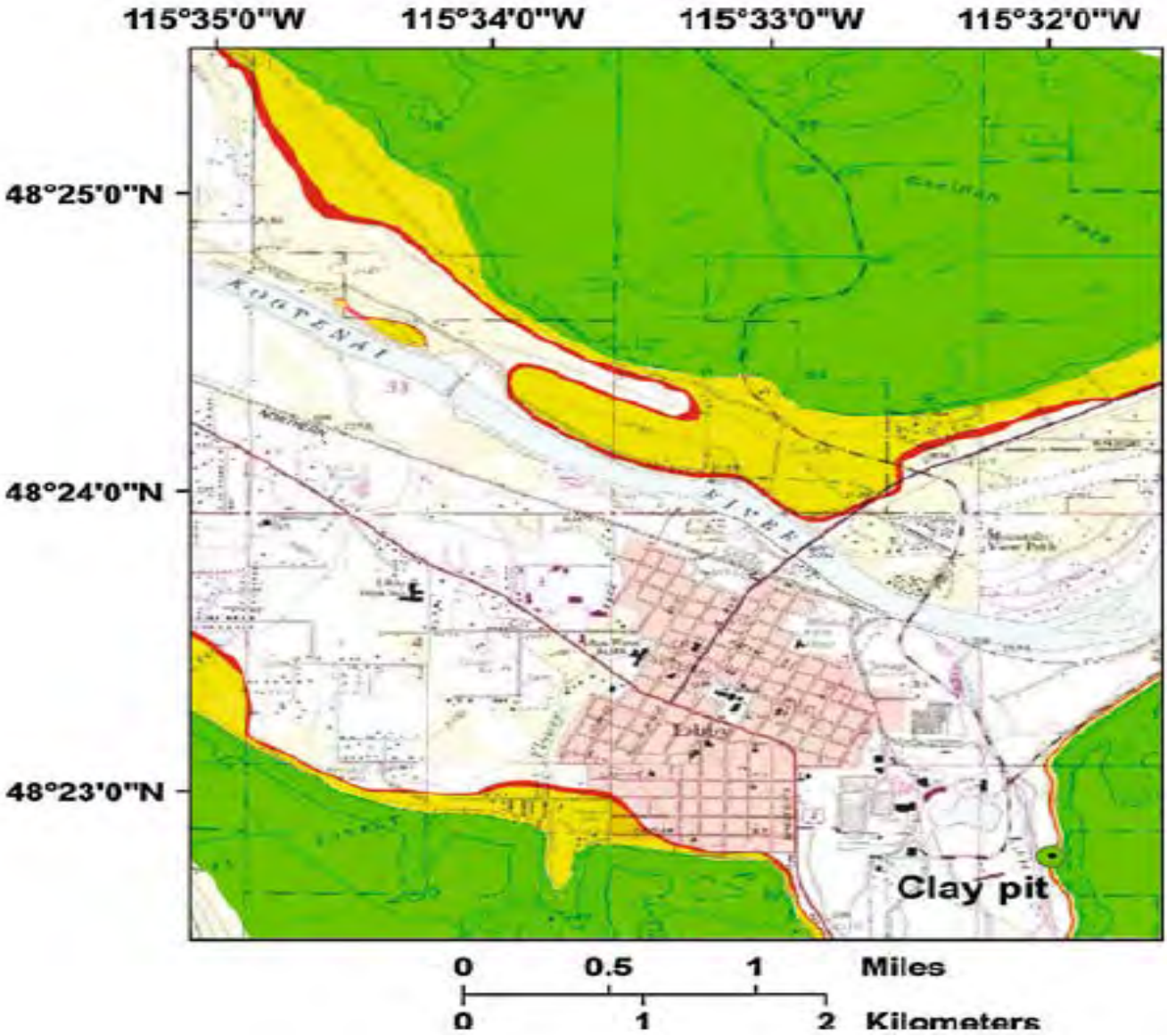


Figure presented as Figure 13 in Langer, 2010. Shows sedimentary layers (in red) likely to be sources of Libby Amphibole. Thickness of material overlying LAA-bearing layer in lake-bottom sediments, if they are pervasive: red 0-6 meters, yellow 6-15 meters, green > 16 meters. Possible exposures of LAA-bearing layers occur only as thin layers in red areas.

Figure 12 Identification of Dirty 30 Sample Sites 20, 28, and 23

Sample Number	Source	Primary Amphibole Components
SW[x]1201	Libby mine (site 20)	Tremolite, Actinolite
SW[x]1281	Libby mine (site 28)	Richterite, Winchite
SW[x]1231	Libby mine (site 23)	Tremolite, Actinolite, Richterite, Winchite
SW[x]1TR1	NIST	Tremolite

Note: [x] = variable integer used to indicate different aliquots (bottles) of the sample

Figure presented as Table in EPA, 2008. Identification of Dirty 30 sample sites 20, 28 and 23, and non-Ore Body tremolite as the materials subject to analysis by the six EPA labs.

Figure 13 Summary of Results Showing Sodium Peaks for LAA Relative to Silicone

Element	Typical Peak Magnitude		
	Mean	5th	95th
Na	0.36	0.15	0.64
Mg	3.08	2.47	3.49
Al	0.08	0.00	0.27
Si	10.00	10.00	10.00
K	0.25	0.06	0.53
Ca	1.81	0.96	2.63
Fe	1.08	0.57	1.88

Summary of results showing that sodium peaks for Libby Amphibole relative to Silicone (10.0) range between 0.15 and 0.64 at the 90% confidence level, and potassium peaks range between 0.06 and 0.53 (EPA, 2008)

Figure 14 Samples of Ore Body Amphiboles assessed in Sanchez *et al.*, 2008

Sample name[a]	Collected by	Analyzed previously	Approximate year collected	Location of sample
Suite 1				
Harvard 1#100839	E.S. Larsen	Larsen & Pardee[b]	~1920	North side of mine ridge
Harvard 2#100855	E.S. Larsen	Larsen & Pardee[b]	~1920	Prospect 2750
Harvard 3#100910	E.S. Larsen	Larson & Pardee[b]	~1920	Rainy Creek Complex
Smithsonian 1 NMNH#105991	E.S. Larsen	Larsen & Pardee[b]	~1920	Rainy Creek Complex
Suite 2				
Butte 2	Unknown	N/A	~1960	Pyroxenite
Butte A	Unknown	N/A	~1960	ore
Suite 3				
Float A	M.E. Gunter	Bandli *et al.* (2003), Gunter *et al.* (2003)	1999	~3 kg massive amphibole in float
Float B	M.E. Gunter	N/A	1999	~1 kg massive amphibole in float
Outcrop	M.E. Gunter	Bandli *et al.* (2003), Gunter *et al.* (2003)	1999	Mined bench of biotitite and pyroxenite
Vein	M.E. Gunter	Bandli *et al.* (2003), Gunter *et al.* (2003)	1999	2 cm amphibole vein in pyroxenite
Boulder	M.E. Gunter	N/A	1999	Small boulder taken from mine

[a]Names used in this paper. For the Harvard and Smithsonian samples, museum identification numbers are also given.
[b]Sample was described, but no chemical analyses were performed.

Figure presented as Table 1 in Sanchez *et al.*, 2008 Table 1. Identifies the samples of Ore Body Amphiboles assessed in the paper.

Figure 15 Average Chemical Compositions and Calculated Site Occupancies Based on 24 Oxygens for Suite 1.

	Harvard 1	Harvard 1 prismatic	Harvard 1 fibrous	Harvard_1N_B1	Harvard 2	Harvard 3	Smithsonian 1
SiO_2	57.43 (91)	56.62 (1.22)	56.67 (2.13)	58.69 (58)	56.82 (59)	55.00 (1.35)	56.09 (1.12)
Al_2O_3	0.33 (24)	0.36 (21)	0.28 (12)	0.30 (18)	0.33 (18)	0.88 (51)	0.28 (7)
TiO_2	0.09 (4)	0.08 (4)	0.09 (1)	0.08 (3)	0.08 (4)	0.06 (3)	0.14 (6)
FeO_{EPMA}	5.08 (78)	5.36 (179)	4.66 (40)	3.95 (1.20)	4.53 (36)	9.62 (118)	5.68 (100)
MnO	0.11 (2)	0.11 (2)	0.11 (2)	0.12 (2)	0.09 (2)	0.53 (5)	0.08 (2)
MgO	21.07 (74)	20.86 (1.26)	21.24 (68)	21.98 (82)	21.08 (32)	17.65 (66)	20.52 (71)
CaO	6.09 (97)	6.00 (1.47)	6.68 (72)	6.63 (1.15)	8.77 (53)	1.96 (1.61)	7.62 (1.32)
Na_2O	5.23 (54)	5.13 (79)	4.57 (30)	4.79 (46)	3.29 (30)	8.29 (65)	3.58 (52)
K_2O	1.60 (54)	1.71 (54)	1.37 (22)	1.86 (60)	0.88 (16)	1.62 (22)	0.91 (17)
H_2O^a	1.24 (19)	1.19 (15)	1.30 (9)	1.17 (15)	2.04 (5)	0.75 (14)	2.02 (4)
F	1.92 (39)	1.98 (31)	1.73 (14)	2.16 (32)	0.19 (10)	2.82 (29)	0.19 (8)
Cl	0.01 (2)	0.01 (0.02)	0.03 (4)	0.01 (1)	0.02 (3)	0.00 (1)	0.00 (0)
$Fe^{3+}/\Sigma Fe^b$	0.65	0.65	0.65	0.65	0.67	0.70	0.72
Fe_2O_3	3.67 (56)	3.87 (130)	3.36 (29)	2.85 (87)	3.40 (27)	7.49 (92)	4.55 (80)
FeO	1.78 (27)	1.88 (63)	1.64 (14)	1.39 (42)	1.48 (12)	2.89 (35)	1.58 (28)
Total	99.77 (1.03)	98.94 (1.53)	98.32 (270)	101.10 (79)	98.38 (1.13)	98.76 (95)	97.48 (1.22)

Figure presented as Table 2a in Sanchez *et al.*, 2008. Figure 2 (portion) showing average weight % and standard deviations of constituent elements from Harvard and Smithsonian samples.

Figure 16 Boxplots Showing the Variability of Major Elements in apfu for All the Amphiboles Analyzed in this Study

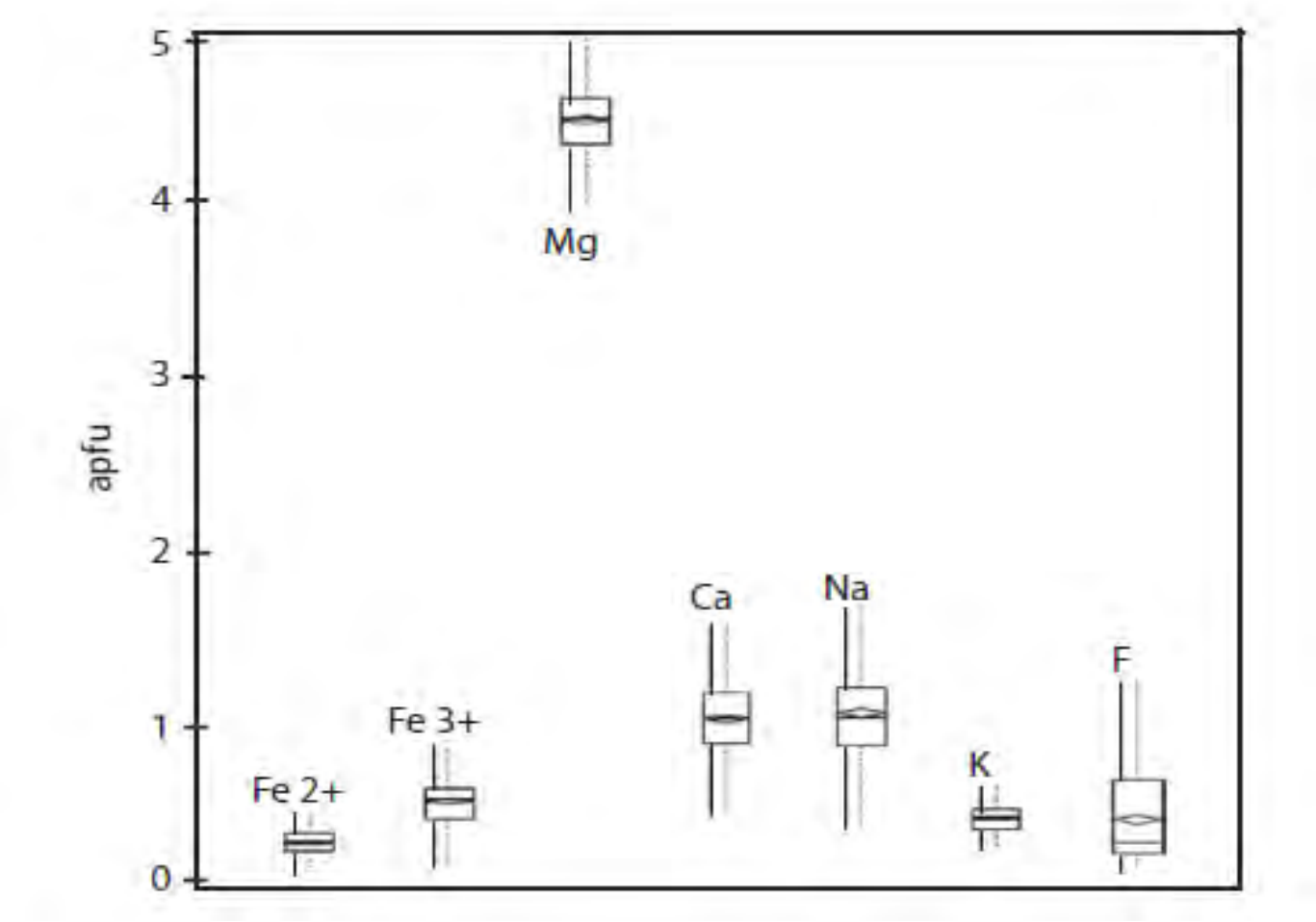
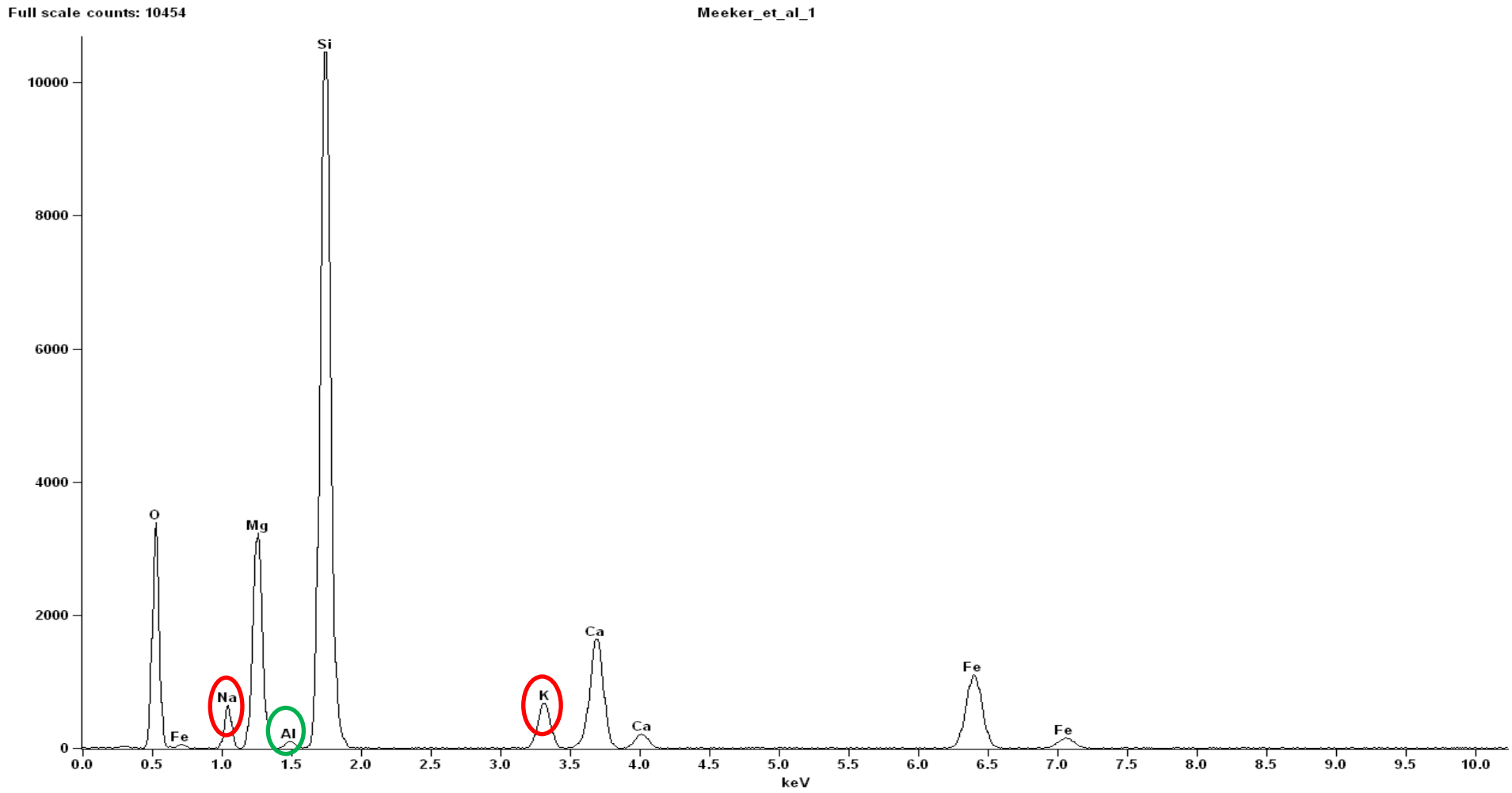


Figure presented as Figure 2 in Sanchez *et al.,* 2008. Scaled in apfu - this boxplot would appear similar if presented as weight percent, and is representative of the predicted counts associated with major elements in EDS spectra. Boxplots showing the variability of major elements in apfu for all the amphiboles analyzed in this study. The upper and lower 25th percentiles are contained within the box, the horizontal line is the median, the diamond is the mean (and plots nearly on top of the median for all the elements expect F), and the whiskers show the minimum and maximum range of the data.

Figure 17 Example of EDS Spectra



Example EDS spectra with sodium and potassium peaks highlighted in red and low aluminum peak highlighted in green.

Figure 18 Summary of Statistical Analysis of Concentrations of Sodium, Potassium, and Aluminum

Compositional data (in apfu)				
782 WDS points from Meeker et al (2003)				
	Average	Standard	Lower (5^{th})	Upper (95^{th})
Element	Reading	Deviation	percentile	percintile
Si	7.8033	0.0916	7.6444	7.9201
Al	0.0558	0.1042	0.0016	0.1422
Ti	0.0145	0.0158	-0.0050	0.0433
FeTot	0.9364	0.2584	0.5016	1.3695
Mn	0.0136	0.0172	-0.0056	0.0350
Mg	4.2664	0.2862	3.4581	3.7813
Ca	1.1498	0.2860	0.6864	1.6385
Na	0.9778	0.2787	0.5106	1.4466
K	0.1932	0.0756	0.0965	0.3260

Summary of statistical analysis of concentrations of sodium, potassium and aluminum found in 782 WDS readings taken from the 30 samples described by Meeker *et al.,* 2003

Figure 19 The range of calculated EDS spectra at the 5th percentile and 95th percentile for the Meeker *et al.* 2003 "Dirty 30" data set.

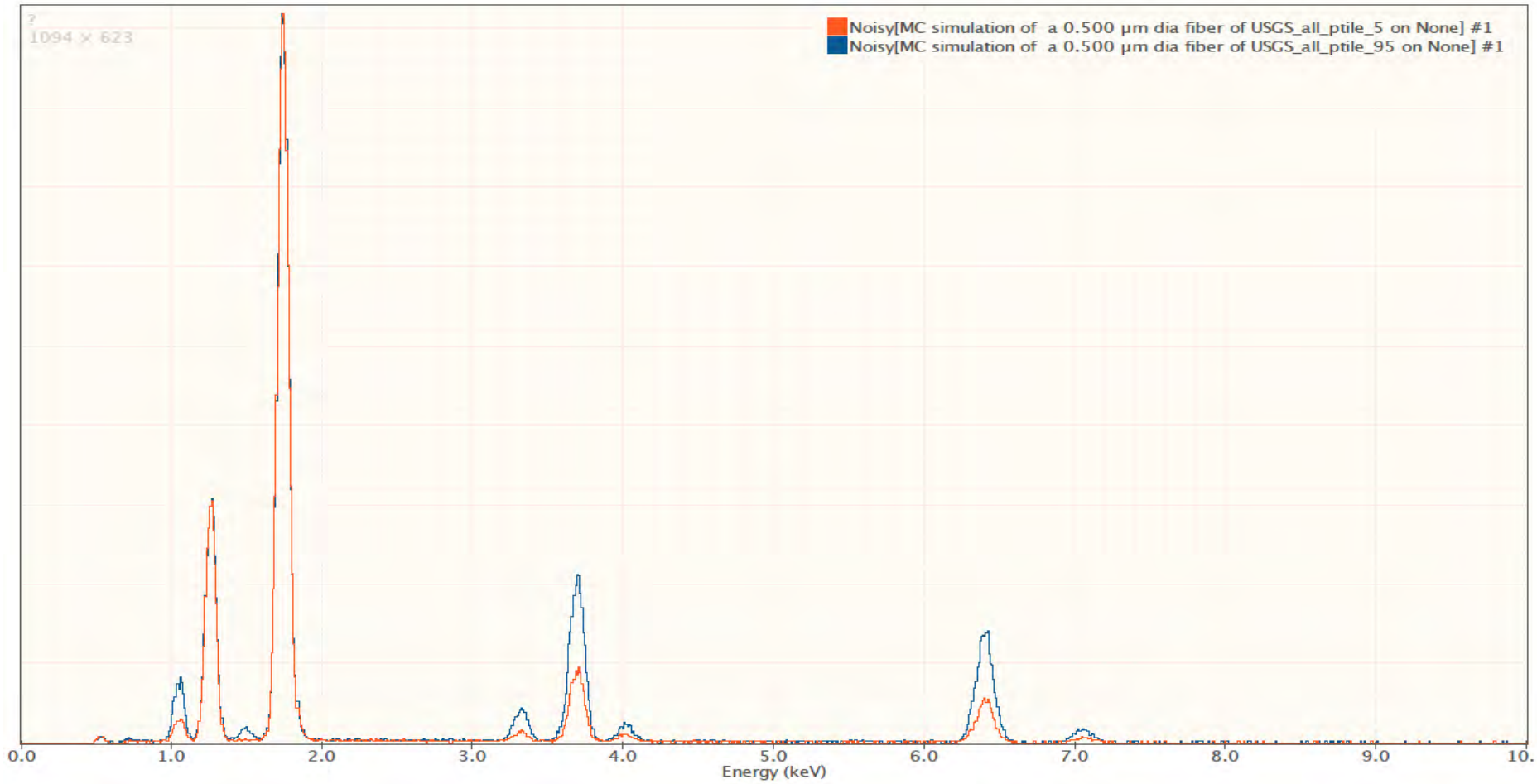
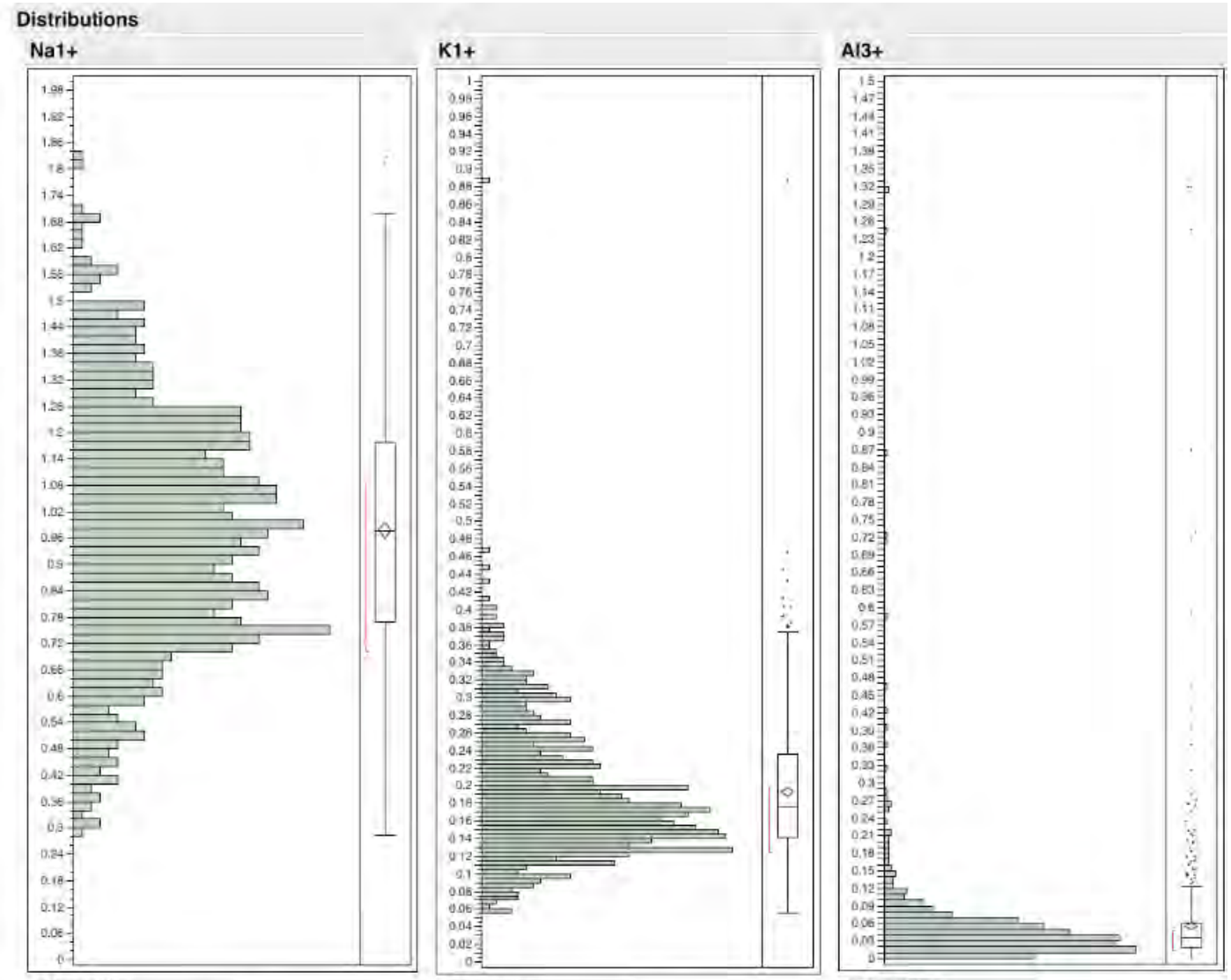


Figure 20 Complete Distributions of Sodium, Potassium, and Aluminum Concentrations for the Meeker *et al.* 2003 "Dirty 30" data set.



Quantiles

100.0%	maximum	1.82572
99.5%		1.69503
97.5%		1.54139
90.0%		1.34408
75.0%	quartile	1.17702
50.0%	median	0.97633
25.0%	quartile	0.76764
10.0%		0.62185
2.5%		0.43047
0.5%		0.31145
0.0%	minimum	0.28358

Moments

Mean	0.9777563
Std Dev	0.278694
Std Err Mean	0.0099661
Upper 95% Mean	0.9973198
Lower 95% Mean	0.9581928
N	782

Quantiles

100.0%	maximum	0.68654
99.5%		0.43354
97.5%		0.36349
90.0%		0.29999
75.0%	quartile	0.23524
50.0%	median	0.17603
25.0%	quartile	0.14174
10.0%		0.11537
2.5%		0.08239
0.5%		0.05932
0.0%	minimum	0.05573

Moments

Mean	0.1932324
Std Dev	0.0755668
Std Err Mean	0.0027023
Upper 95% Mean	0.1985369
Lower 95% Mean	0.1879278
N	782

Quantiles

100.0%	maximum	1.31801
99.5%		0.90061
97.5%		0.24159
90.0%		0.09492
75.0%	quartile	0.06111
50.0%	median	0.03607
25.0%	quartile	0.01875
10.0%		0.00628
2.5%		-0.0038
0.5%		-0.0131
0.0%	minimum	-0.0329

Moments

Mean	0.0557878
Std Dev	0.1041689
Std Err Mean	0.0037251
Upper 95% Mean	0.0631001
Lower 95% Mean	0.0484754
N	782

Figure 21a Compositional Ranges from EDS Spectra

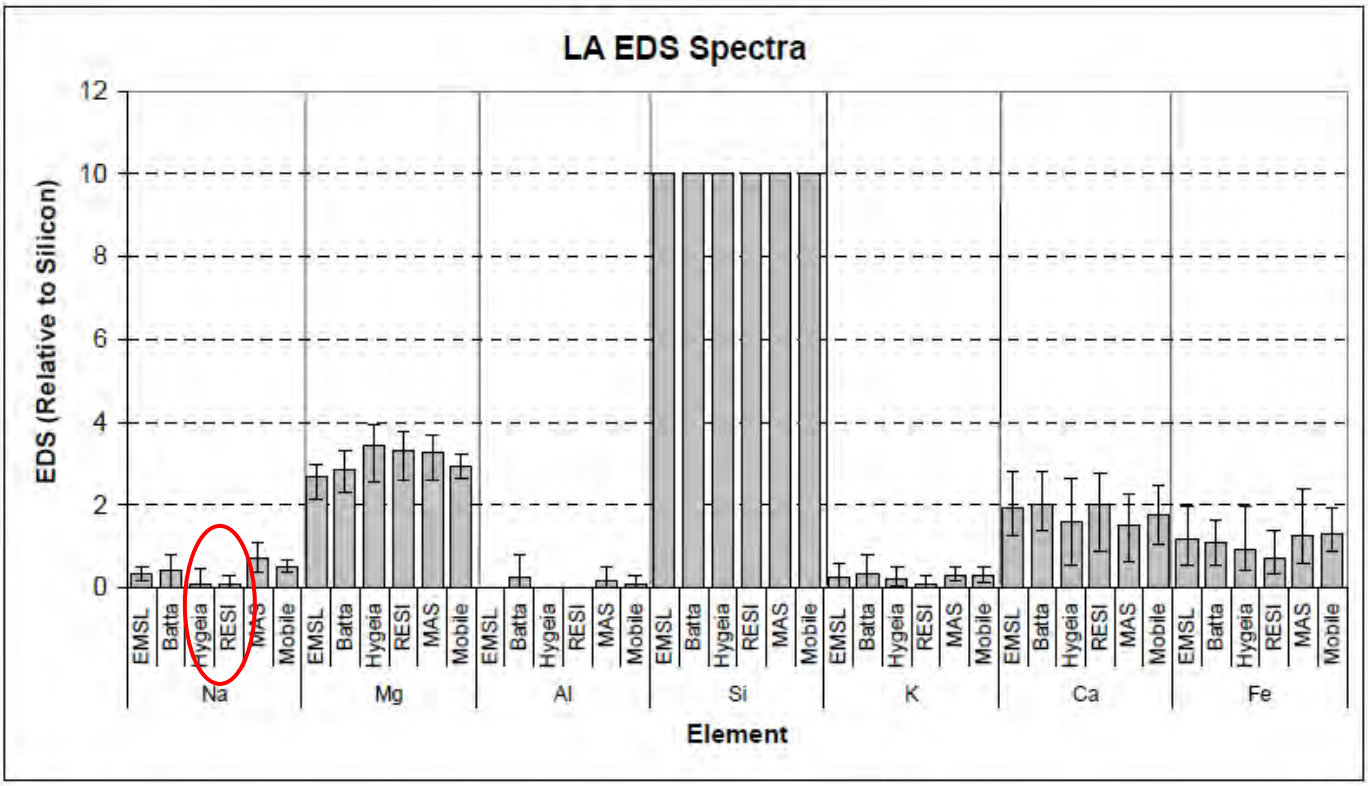
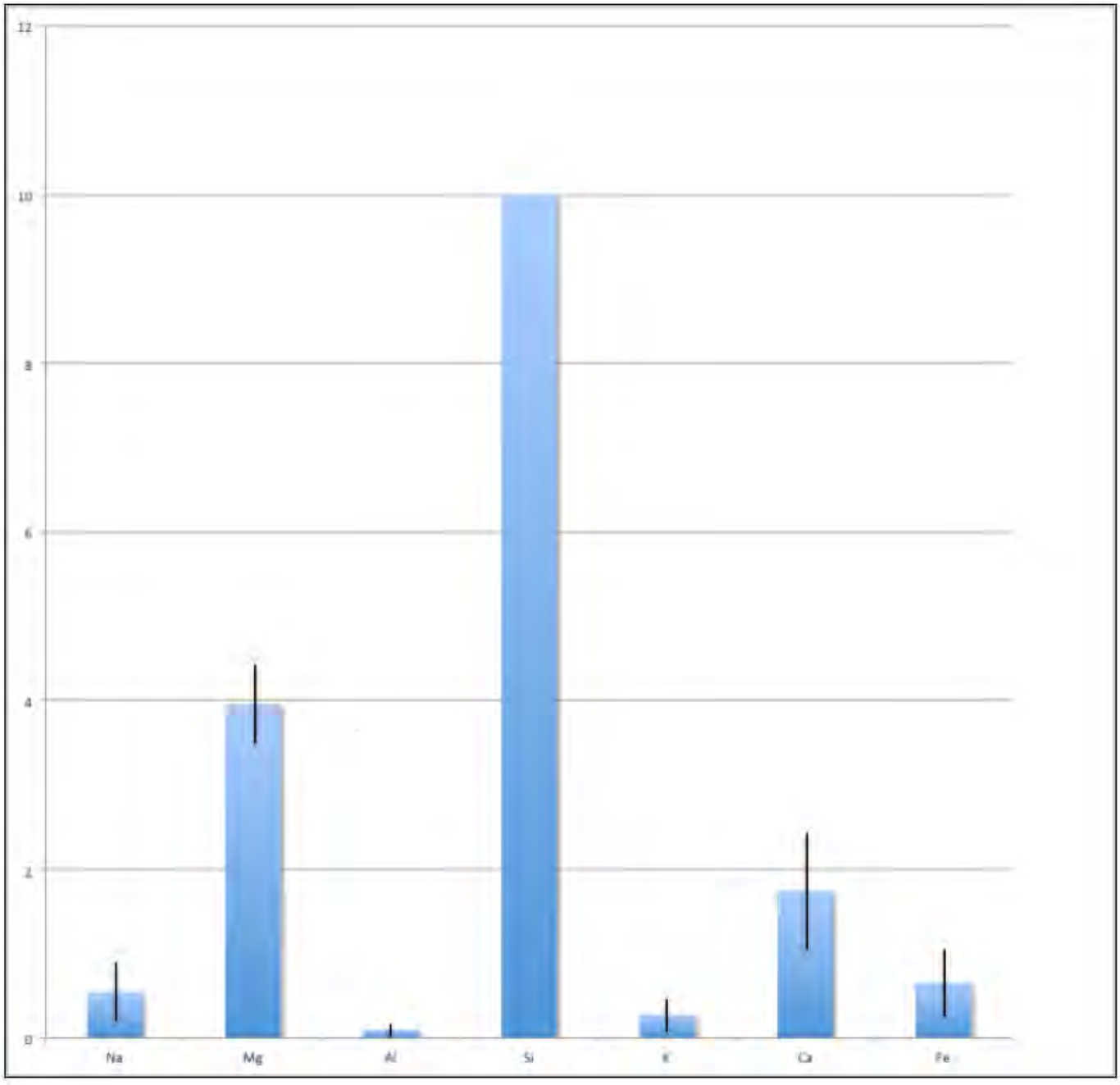


Figure presented as Figure 1 in Meeker *et al.,* 2003. Compositional Study showing compositional ranges from EDS spectra for samples 20, 23 and 28 as found by six laboratories. Anomalous readings highlighted in red.

Figure 21b Compositional Ranges from WDS Data



Compositional ranges from WDS data presented in Attachment 1 on material from for Meeker *et al., 2003* samples 20, 23 and 28.

Attachment 1

Compositional Data from Meeker *et al., 2003* (the Dirty 30)

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
1	1	58.98	0.43	0.72	6.23	0.15	21.68	3.92	5.57	2.31	7.84	0.07	0.07	0.67	0.29	0.96	0.02	4.30	0.56	1.44	0.39
1	2	58.08	0.22	0.08	7.59	0.28	20.72	7.33	4.36	1.35	7.74	0.03	0.01	0.82	0.35	1.17	0.03	4.12	1.05	1.13	0.23
1	3	59.05	0.09	0.08	6.95	0.05	21.14	4.47	6.00	2.18	7.86	0.01	0.01	0.75	0.32	1.07	0.01	4.19	0.64	1.55	0.37
1	4	59.67	0.05	0.38	6.62	0.18	20.50	5.54	5.29	1.76	7.92	0.01	0.04	0.71	0.30	1.02	0.02	4.06	0.79	1.36	0.30
1	5	58.53	0.74	0.52	6.34	0.03	21.67	4.82	5.55	1.81	7.78	0.12	0.05	0.69	0.29	0.98	0.00	4.29	0.69	1.43	0.31
1	6	57.35	1.79	0.41	9.01	0.07	19.88	4.75	4.99	1.74	7.61	0.28	0.04	0.97	0.41	1.38	0.01	3.93	0.68	1.28	0.29
1	7	58.49	0.50	0.34	6.78	0.27	21.17	4.30	6.13	2.02	7.79	0.08	0.03	0.73	0.31	1.05	0.03	4.21	0.61	1.58	0.34
1	8	59.17	0.20	0.22	7.27	0.09	21.11	4.49	5.81	1.63	7.85	0.03	0.02	0.78	0.33	1.12	0.01	4.17	0.64	1.49	0.28
1	9	59.37	0.23	0.26	7.01	0.11	20.45	6.28	4.59	1.68	7.88	0.04	0.03	0.76	0.32	1.08	0.01	4.05	0.89	1.18	0.28
1	10	59.32	0.11	0.15	7.67	0.14	20.50	4.73	5.45	1.92	7.87	0.02	0.01	0.83	0.35	1.18	0.02	4.06	0.67	1.40	0.33
1	11	59.46	0.38	0.28	6.20	0.17	21.16	5.31	5.15	1.90	7.89	0.06	0.03	0.67	0.28	0.95	0.02	4.19	0.76	1.33	0.32
1	12	59.67	0.12	0.37	6.84	-0.04	19.86	7.81	4.07	1.30	7.91	0.02	0.04	0.74	0.31	1.05	0.00	3.92	1.11	1.05	0.22
1	13	58.85	0.23	0.23	5.89	0.20	22.04	6.11	5.00	1.44	7.82	0.04	0.02	0.64	0.27	0.91	0.02	4.37	0.87	1.29	0.24
1	14	60.19	0.47	0.10	7.63	-0.03	19.65	5.08	4.87	2.03	7.95	0.07	0.01	0.82	0.35	1.17	0.00	3.87	0.72	1.25	0.34
1	15	59.07	0.76	0.63	7.45	0.07	19.89	5.90	4.75	1.49	7.82	0.12	0.06	0.80	0.34	1.14	0.01	3.93	0.84	1.22	0.25
1	16	59.21	1.35	0.41	10.75	0.08	17.53	4.36	4.36	1.94	7.80	0.21	0.04	1.15	0.49	1.64	0.01	3.44	0.62	1.11	0.33
1	17	59.00	0.58	0.08	6.71	0.20	20.55	6.68	4.42	1.78	7.84	0.09	0.01	0.73	0.31	1.03	0.02	4.07	0.95	1.14	0.30
1	18	57.64	2.74	0.14	7.85	0.08	19.31	4.72	5.42	2.09	7.66	0.43	0.01	0.85	0.36	1.21	0.01	3.82	0.67	1.40	0.35
1	19	56.31	5.55	0.16	6.82	0.24	19.21	4.22	5.26	2.24	7.48	0.87	0.02	0.74	0.31	1.05	0.03	3.80	0.60	1.35	0.38
1	20	58.23	1.50	0.09	9.34	0.04	18.80	5.08	5.38	1.53	7.72	0.23	0.01	1.01	0.43	1.43	0.00	3.71	0.72	1.38	0.26
1	21	56.90	4.58	0.34	7.76	0.02	18.95	5.13	4.45	1.88	7.53	0.71	0.03	0.84	0.35	1.19	0.00	3.74	0.73	1.14	0.32
1	22	57.93	2.99	0.22	7.83	0.02	19.28	4.91	4.93	1.90	7.67	0.47	0.02	0.84	0.36	1.20	0.00	3.80	0.70	1.27	0.32
1	23	58.63	1.25	0.18	6.90	-0.03	20.65	4.74	5.51	2.16	7.79	0.20	0.02	0.75	0.32	1.06	0.00	4.09	0.67	1.42	0.37
1	24	55.06	8.46	0.14	6.82	0.12	17.69	6.73	3.63	1.35	7.28	1.32	0.01	0.73	0.31	1.04	0.01	3.49	0.95	0.93	0.23
1	25	55.06	8.46	0.14	6.82	0.12	17.69	6.73	3.63	1.35	7.28	1.32	0.01	0.73	0.31	1.04	0.01	3.49	0.95	0.93	0.23
1	26	55.09	8.00	0.24	7.62	0.07	17.89	5.39	4.26	1.45	7.28	1.25	0.02	0.82	0.35	1.16	0.01	3.52	0.76	1.09	0.24
1	28	59.54	0.14	0.09	7.26	0.07	20.19	5.67	4.76	2.27	7.91	0.02	0.01	0.78	0.33	1.12	0.01	4.00	0.81	1.23	0.38
1	29	58.21	0.43	0.02	6.50	0.24	21.88	6.62	4.79	1.31	7.75	0.07	0.00	0.70	0.30	1.00	0.03	4.34	0.94	1.24	0.22
1	30	58.94	0.09	0.14	5.72	0.20	22.09	5.72	5.21	1.89	7.85	0.01	0.01	0.62	0.26	0.88	0.02	4.39	0.82	1.35	0.32
1	31	59.23	0.05	0.04	5.76	-0.05	22.38	5.14	5.60	1.85	7.87	0.01	0.00	0.62	0.26	0.89	-0.01	4.43	0.73	1.44	0.31
1	32	59.29	0.03	0.26	5.39	0.06	21.66	6.41	5.01	1.89	7.89	0.00	0.03	0.58	0.25	0.83	0.01	4.30	0.91	1.29	0.32
2	1	57.51	0.45	0.30	7.24	0.09	21.62	6.34	4.77	1.68	7.67	0.07	0.03	0.79	0.33	1.12	0.01	4.30	0.91	1.23	0.29
2	2	59.56	0.34	0.43	5.60	0.22	21.47	5.91	4.87	1.60	7.90	0.05	0.04	0.60	0.26	0.86	0.02	4.25	0.84	1.25	0.27
2	3	59.50	0.32	0.40	8.48	0.23	18.80	5.43	4.69	2.14	7.89	0.05	0.04	0.91	0.39	1.30	0.03	3.72	0.77	1.21	0.36
2	5	58.69	0.08	0.25	10.48	0.11	17.50	7.16	3.87	1.86	7.80	0.01	0.02	1.13	0.48	1.61	0.01	3.47	1.02	1.00	0.32
2	6	59.19	0.09	0.29	6.51	-0.11	21.51	5.93	5.06	1.52	7.85	0.01	0.03	0.70	0.30	1.00	-0.01	4.25	0.84	1.30	0.26
2	7	58.51	0.21	0.04	10.10	0.13	19.27	5.42	4.96	1.37	7.75	0.03	0.00	1.09	0.46	1.55	0.01	3.81	0.77	1.27	0.23
2	8	59.83	0.18	0.19	7.86	0.22	20.31	5.42	4.66	1.33	7.90	0.03	0.02	0.84	0.36	1.20	0.02	4.00	0.77	1.19	0.22
2	10	59.65	0.13	0.24	5.77	0.24	20.95	8.29	3.42	1.32	7.91	0.02	0.02	0.62	0.26	0.89	0.03	4.14	1.18	0.88	0.22
2	11	59.30	0.28	0.57	5.74	0.09	21.53	4.91	5.66	1.93	7.88	0.04	0.06	0.62	0.26	0.88	0.01	4.27	0.70	1.46	0.33
2	12	57.58	0.20	0.97	9.52	0.37	18.69	6.30	4.53	1.84	7.68	0.03	0.10	1.03	0.44	1.47	0.04	3.72	0.90	1.17	0.31
2	13	58.63	0.15	0.46	6.35	0.08	21.77	4.92	5.78	1.86	7.81	0.02	0.05	0.69	0.29	0.98	0.01	4.32	0.70	1.49	0.32
2	15	59.24	-0.02	0.63	5.27	0.21	22.29	5.34	5.41	1.62	7.87	0.00	0.06	0.57	0.24	0.81	0.02	4.42	0.76	1.39	0.27
2	16	59.17	0.35	0.51	6.87	0.06	21.61	3.74	6.03	1.67	7.84	0.05	0.05	0.74	0.31	1.05	0.01	4.27	0.53	1.55	0.28
2	17	59.91	0.09	0.27	7.34	0.23	19.83	5.98	4.45	1.91	7.94	0.01	0.03	0.79	0.33	1.13	0.03	3.92	0.85	1.14	0.32
2	18	59.35	0.11	0.01	6.48	0.06	20.93	7.44	4.07	1.55	7.88	0.02	0.00	0.70	0.30	1.00	0.01	4.14	1.06	1.05	0.26
2	19	58.92	0.27	0.48	6.35	-0.06	21.99	4.80	5.50	1.75	7.82	0.04	0.05	0.69	0.29	0.98	-0.01	4.35	0.68	1.42	0.30
2	20	59.71	0.18	0.11	1.18	-0.03	24.52	11.53	2.03	0.78	7.93	0.03	0.01	0.13	0.05	0.18	0.00	4.86	1.64	0.52	0.13
2	21	61.39	4.68	0.25	5.40	0.01	15.59	4.08	3.34	5.26	8.11	0.73	0.02	0.58	0.25	0.83	0.00	3.07	0.58	0.86	0.89
2	22	57.85	0.65	0.06	1.93	0.22	25.00	11.76	2.01	0.52	7.72	0.10	0.01	0.21	0.09	0.30	0.02	4.98	1.68	0.52	0.09
2	24	59.26	0.32	0.51	8.19	0.11	20.96	4.31	4.91	1.45	7.82	0.05	0.05	0.88	0.37	1.25	0.01	4.12	0.61	1.26	0.24
2	25	59.10	0.14	0.22	4.79	-0.01	22.62	6.99	4.64	1.51	7.86	0.02	0.02	0.52	0.22	0.74	0.00	4.48	1.00	1.20	0.26
2	26	59.05	0.21	0.38	5.45	0.09	22.30	6.98	4.16	1.39	7.84	0.03	0.04	0.59	0.25	0.84	0.01	4.41	0.99	1.07	0.24
2	27	57.78	0.49	0.36	6.92	0.06	21.71	6.24	4.69	1.76	7.70	0.08	0.04	0.75	0.32	1.07	0.01	4.31	0.89	1.21	0.30
2	29	58.52	0.89	0.35	8.46	0.16	18.49	7.16	3.67	2.31	7.79	0.14	0.04	0.92	0.39	1.30	0.02	3.67	1.02	0.95	0.39
2	30	59.23	0.08	0.12	3.72	0.03	23.67	8.41	3.69	1.06	7.87	0.01	0.01	0.40	0.17	0.57	0.00	4.69	1.20	0.95	0.18

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
3	1	59.22	0.24	0.37	6.61	0.31	19.20	8.60	3.63	1.82	7.89	0.04	0.04	0.72	0.30	1.02	0.04	3.82	1.23	0.94	0.31
3	2	58.95	0.21	0.21	6.33	0.29	20.50	7.18	4.55	1.79	7.86	0.03	0.02	0.69	0.29	0.98	0.03	4.07	1.03	1.18	0.30
3	3	58.45	0.42	-0.07	6.36	0.18	21.19	7.59	4.51	1.37	7.79	0.07	-0.01	0.69	0.29	0.98	0.02	4.21	1.08	1.17	0.23
3	4	59.79	0.10	0.34	4.76	0.19	22.02	7.07	3.94	1.79	7.94	0.02	0.03	0.51	0.22	0.73	0.02	4.36	1.01	1.01	0.30
3	5	58.86	0.34	-0.06	5.89	0.02	21.75	6.72	4.82	1.65	7.83	0.05	-0.01	0.64	0.27	0.91	0.00	4.32	0.96	1.24	0.28
3	6	58.48	0.50	0.07	5.92	0.19	21.65	7.10	4.74	1.36	7.79	0.08	0.01	0.64	0.27	0.91	0.02	4.30	1.01	1.22	0.23
3	7	59.08	0.39	0.13	5.32	0.17	22.17	6.06	5.15	1.51	7.85	0.06	0.01	0.58	0.24	0.82	0.02	4.39	0.86	1.33	0.26
3	8	59.03	0.32	0.09	6.69	-0.08	20.66	7.34	4.46	1.49	7.84	0.05	0.01	0.72	0.31	1.03	-0.01	4.09	1.05	1.15	0.25
3	9	59.15	0.38	0.13	5.60	0.13	20.91	7.69	4.24	1.78	7.88	0.06	0.01	0.61	0.26	0.86	0.01	4.15	1.10	1.09	0.30
3	10	59.62	0.39	0.05	5.18	0.08	22.44	6.18	4.43	1.62	7.90	0.06	0.00	0.56	0.24	0.79	0.01	4.43	0.88	1.14	0.27
3	11	59.12	0.26	0.17	4.75	0.26	21.79	7.30	4.60	1.76	7.88	0.04	0.02	0.52	0.22	0.73	0.03	4.33	1.04	1.19	0.30
3	12	59.33	0.41	0.06	5.35	0.10	22.05	5.95	5.14	1.60	7.88	0.06	0.01	0.58	0.24	0.82	0.01	4.37	0.85	1.32	0.27
3	13	58.05	0.11	0.22	7.06	0.22	21.35	5.28	6.10	1.61	7.75	0.02	0.02	0.77	0.32	1.09	0.02	4.25	0.76	1.58	0.27
3	14	59.02	0.29	0.01	4.50	-0.01	22.75	7.53	4.42	1.49	7.85	0.05	0.00	0.49	0.21	0.69	0.00	4.51	1.07	1.14	0.25
3	15	58.98	0.21	0.22	7.99	0.17	17.99	8.47	3.60	2.37	7.88	0.03	0.02	0.87	0.37	1.24	0.02	3.58	1.21	0.93	0.40
3	16	58.60	0.40	0.16	6.02	-0.05	20.96	7.30	4.66	1.96	7.82	0.06	0.02	0.65	0.28	0.93	-0.01	4.17	1.04	1.21	0.33
3	17	59.44	0.14	0.24	7.35	0.34	19.26	6.65	3.95	2.62	7.92	0.02	0.02	0.80	0.34	1.13	0.04	3.83	0.95	1.02	0.45
3	19	59.35	0.12	-0.06	4.67	0.19	21.94	7.71	4.51	1.58	7.91	0.02	-0.01	0.51	0.21	0.72	0.02	4.36	1.10	1.17	0.27
3	20	57.68	0.19	0.21	5.57	0.17	22.66	6.14	6.08	1.30	7.72	0.03	0.02	0.61	0.26	0.86	0.02	4.52	0.88	1.58	0.22
3	21	58.16	0.19	0.12	4.91	0.17	23.46	5.73	5.79	1.47	7.76	0.03	0.01	0.53	0.23	0.76	0.02	4.67	0.82	1.50	0.25
3	22	58.88	0.23	0.23	6.69	0.20	21.35	4.12	6.46	1.84	7.84	0.04	0.02	0.72	0.31	1.03	0.02	4.24	0.59	1.67	0.31
3	23	59.80	0.60	0.16	6.82	0.13	19.31	6.59	4.62	1.97	7.94	0.09	0.02	0.74	0.31	1.05	0.01	3.82	0.94	1.19	0.33
3	24	58.30	0.39	0.07	5.53	0.08	22.39	7.13	4.62	1.49	7.77	0.06	0.01	0.60	0.25	0.85	0.01	4.45	1.02	1.19	0.25
3	25	59.85	0.11	0.29	6.85	0.09	20.07	5.05	5.65	2.04	7.95	0.02	0.03	0.74	0.31	1.05	0.01	3.97	0.72	1.45	0.35
3	26	59.35	0.18	0.13	5.70	0.12	21.14	7.10	4.36	1.92	7.90	0.03	0.01	0.62	0.26	0.88	0.01	4.19	1.01	1.13	0.33
3	27	59.58	0.36	0.14	6.62	0.13	19.12	8.46	3.90	1.69	7.93	0.06	0.01	0.72	0.30	1.02	0.01	3.79	1.21	1.01	0.29
3	28	59.33	0.13	0.13	6.35	0.11	20.76	6.78	4.57	1.84	7.89	0.02	0.01	0.69	0.29	0.98	0.01	4.12	0.97	1.18	0.31
3	29	58.77	-0.04	0.15	4.11	0.07	23.66	7.37	4.69	1.24	7.83	-0.01	0.02	0.45	0.19	0.63	0.01	4.70	1.05	1.21	0.21
3	30	59.85	0.03	0.04	3.52	0.10	22.77	7.39	4.50	1.81	7.97	0.00	0.00	0.38	0.16	0.54	0.01	4.52	1.05	1.16	0.31
4	1	59.84	0.15	0.25	1.98	-0.14	25.33	10.42	1.61	0.56	7.90	0.02	0.02	0.21	0.09	0.30	-0.02	4.99	1.47	0.41	0.09
4	2	58.36	0.27	0.23	6.94	0.09	22.09	6.09	4.77	1.17	7.75	0.04	0.02	0.75	0.32	1.07	0.01	4.37	0.87	1.23	0.20
4	3	58.30	1.36	0.24	7.19	0.06	21.82	5.75	3.75	1.53	7.71	0.21	0.02	0.77	0.33	1.10	0.01	4.30	0.81	0.96	0.26
4	4	59.51	0.08	0.03	3.50	0.23	22.36	11.33	2.14	0.82	7.91	0.01	0.00	0.38	0.16	0.54	0.03	4.43	1.61	0.55	0.14
4	5	56.90	0.71	0.05	10.46	0.54	16.35	12.27	1.32	1.40	7.62	0.11	0.01	1.14	0.48	1.62	0.06	3.27	1.76	0.34	0.24
4	6	59.16	0.23	0.06	4.72	-0.16	22.55	8.85	3.52	1.08	7.85	0.04	0.01	0.51	0.22	0.73	-0.02	4.46	1.26	0.91	0.18
4	7	59.16	0.09	0.19	3.51	0.04	23.98	9.13	3.10	0.80	7.85	0.01	0.02	0.38	0.16	0.54	0.00	4.74	1.30	0.80	0.14
4	8	58.69	0.20	0.06	8.71	0.16	17.39	10.79	2.35	1.65	7.83	0.03	0.01	0.95	0.40	1.35	0.02	3.46	1.54	0.61	0.28
4	9	58.17	0.70	0.10	7.35	0.02	19.25	10.59	2.55	1.26	7.75	0.11	0.01	0.80	0.34	1.13	0.00	3.82	1.51	0.66	0.21
4	10	59.24	0.07	-0.01	2.45	0.16	24.27	10.74	2.29	0.78	7.88	0.01	0.00	0.26	0.11	0.38	0.02	4.81	1.53	0.59	0.13
4	11	58.40	0.20	0.21	6.67	-0.10	21.82	8.95	2.97	0.88	7.75	0.03	0.02	0.72	0.30	1.02	-0.01	4.32	1.27	0.76	0.15
4	12	58.82	0.28	-0.03	6.04	0.13	21.61	8.37	3.46	1.31	7.82	0.04	0.00	0.65	0.28	0.93	0.01	4.28	1.19	0.89	0.22
4	13	59.40	0.11	0.10	7.26	-0.11	20.87	7.98	3.49	0.91	7.85	0.02	0.01	0.78	0.33	1.11	-0.01	4.11	1.13	0.89	0.15
4	14	58.80	0.10	0.24	3.78	0.40	23.76	9.57	2.70	0.66	7.81	0.02	0.02	0.41	0.17	0.58	0.05	4.71	1.36	0.70	0.11
4	15	59.50	0.00	0.08	3.35	0.28	24.97	8.85	2.39	0.57	7.87	0.00	0.01	0.36	0.15	0.51	0.03	4.92	1.25	0.61	0.10
4	16	56.82	-0.04	0.42	5.93	0.17	21.31	11.62	3.16	0.60	7.63	-0.01	0.04	0.65	0.27	0.92	0.02	4.27	1.67	0.82	0.10
4	17	58.71	-0.01	0.06	1.96	0.31	24.82	10.99	2.39	0.78	7.83	0.00	0.01	0.21	0.09	0.30	0.04	4.94	1.57	0.62	0.13
4	19	59.85	-0.08	-0.04	1.95	0.18	23.54	11.99	1.78	0.83	7.96	-0.01	0.00	0.21	0.09	0.30	0.02	4.67	1.71	0.46	0.14
4	20	57.97	2.54	0.20	5.38	0.19	23.51	6.48	2.21	1.51	7.64	0.39	0.02	0.58	0.24	0.82	0.02	4.62	0.92	0.57	0.25
4	21	59.02	-0.12	0.10	4.59	0.00	22.61	10.54	2.38	0.87	7.85	-0.02	0.01	0.50	0.21	0.71	0.00	4.48	1.50	0.61	0.15
4	22	59.26	0.11	0.11	2.77	0.70	23.16	11.60	1.74	0.56	7.89	0.02	0.01	0.30	0.13	0.43	0.08	4.60	1.65	0.45	0.10
4	23	59.44	0.01	-0.05	2.51	0.07	24.01	10.31	2.72	0.99	7.91	0.00	-0.01	0.27	0.11	0.39	0.01	4.76	1.47	0.70	0.17
4	24	59.85	0.24	0.25	5.74	-0.06	22.59	7.66	2.86	0.87	7.88	0.04	0.02	0.61	0.26	0.88	-0.01	4.44	1.08	0.73	0.15
4	25	58.96	0.13	0.06	7.53	0.35	21.71	6.33	3.92	1.01	7.80	0.02	0.01	0.81	0.34	1.15	0.04	4.28	0.90	1.01	0.17
4	26	58.73	0.13	0.11	5.36	0.25	20.96	11.02	2.56	0.87	7.83	0.02	0.01	0.58	0.25	0.83	0.03	4.17	1.57	0.66	0.15
4	29	59.96	0.49	-0.12	7.80	-0.01	18.02	10.98	1.67	1.23	7.93	0.08	-0.01	0.84	0.36	1.19	0.00	3.55	1.56	0.43	0.21
4	30	58.18	0.09	0.21	7.81	0.32	19.60	9.90	2.76	1.13	7.76	0.01	0.02	0.85	0.36	1.21	0.04	3.89	1.41	0.71	0.19

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
5	1	59.45	0.27	0.17	5.22	0.17	19.75	11.57	2.25	1.15	7.92	0.04	0.02	0.57	0.24	0.80	0.02	3.92	1.65	0.58	0.20
5	2	58.89	0.25	0.08	3.97	0.07	22.84	9.87	2.92	1.11	7.84	0.04	0.01	0.43	0.18	0.61	0.01	4.53	1.41	0.75	0.19
5	3	58.57	0.18	0.14	4.28	0.12	22.43	10.21	2.98	1.09	7.81	0.03	0.01	0.46	0.20	0.66	0.01	4.46	1.46	0.77	0.19
5	4	59.16	0.19	0.25	3.38	-0.06	22.83	9.12	3.37	1.76	7.89	0.03	0.03	0.37	0.16	0.52	-0.01	4.54	1.30	0.87	0.30
5	5	59.45	-0.01	0.04	5.38	0.14	20.68	11.11	2.47	0.75	7.90	0.00	0.00	0.58	0.25	0.83	0.02	4.10	1.58	0.64	0.13
5	6	59.05	0.17	0.11	4.52	0.11	22.65	10.00	2.76	0.63	7.84	0.03	0.01	0.49	0.21	0.69	0.01	4.48	1.42	0.71	0.11
5	7	59.22	0.00	-0.04	5.30	-0.21	21.48	10.83	2.52	0.91	7.87	0.00	0.00	0.57	0.24	0.82	-0.02	4.25	1.54	0.65	0.15
5	8	58.34	0.17	0.23	6.43	0.10	21.11	9.92	2.82	0.89	7.76	0.03	0.02	0.70	0.29	0.99	0.01	4.19	1.41	0.73	0.15
5	9	57.97	0.33	0.12	4.84	0.05	22.91	9.70	3.12	0.95	7.73	0.05	0.01	0.52	0.22	0.75	0.01	4.55	1.39	0.81	0.16
5	10	58.83	0.31	0.16	4.74	0.02	21.99	10.62	2.28	1.05	7.82	0.05	0.02	0.51	0.22	0.73	0.00	4.36	1.51	0.59	0.18
5	11	59.04	0.34	0.08	5.28	0.15	21.68	9.80	2.83	0.79	7.84	0.05	0.01	0.57	0.24	0.81	0.02	4.29	1.39	0.73	0.13
5	12	58.79	0.18	0.15	3.65	-0.03	23.35	9.99	2.97	0.95	7.82	0.03	0.02	0.40	0.17	0.56	0.00	4.63	1.42	0.77	0.16
5	14	58.68	0.24	0.05	4.56	-0.01	23.21	9.52	2.91	0.86	7.79	0.04	0.00	0.49	0.21	0.70	0.00	4.60	1.35	0.75	0.15
5	15	59.34	0.17	0.38	5.00	0.03	20.98	10.64	2.42	1.04	7.89	0.03	0.04	0.54	0.23	0.77	0.00	4.16	1.52	0.62	0.18
5	16	59.03	0.08	0.05	5.00	0.29	21.11	11.04	2.52	0.89	7.86	0.01	0.01	0.54	0.23	0.77	0.03	4.19	1.58	0.65	0.15
5	17	59.32	0.15	0.19	4.15	0.03	22.27	10.52	2.43	0.94	7.88	0.02	0.02	0.45	0.19	0.64	0.00	4.41	1.50	0.63	0.16
5	18	58.11	0.46	0.07	5.14	0.14	22.77	8.94	3.32	1.05	7.74	0.07	0.01	0.56	0.24	0.79	0.02	4.52	1.28	0.86	0.18
5	19	58.43	0.08	0.06	4.80	0.00	22.99	8.65	3.55	1.44	7.79	0.01	0.01	0.52	0.22	0.74	0.00	4.57	1.24	0.92	0.24
5	20	58.43	0.19	0.07	6.67	-0.14	20.42	11.31	2.36	0.68	7.77	0.03	0.01	0.72	0.31	1.03	-0.02	4.05	1.61	0.61	0.12
5	21	59.19	0.08	-0.06	5.16	0.07	22.15	10.01	2.65	0.75	7.85	0.01	-0.01	0.56	0.24	0.79	0.01	4.38	1.42	0.68	0.13
5	22	58.44	0.10	0.12	4.93	0.21	23.05	8.55	3.70	0.90	7.78	0.02	0.01	0.53	0.23	0.76	0.02	4.57	1.22	0.95	0.15
5	23	59.27	0.19	0.35	5.36	0.23	21.01	9.82	2.86	0.92	7.87	0.03	0.03	0.58	0.25	0.82	0.03	4.16	1.40	0.74	0.16
5	24	58.17	0.19	0.16	5.08	0.03	22.71	9.45	3.37	0.85	7.75	0.03	0.02	0.55	0.23	0.78	0.00	4.51	1.35	0.87	0.14
5	25	58.34	0.29	0.01	4.77	-0.04	22.55	10.35	2.81	0.93	7.77	0.05	0.00	0.52	0.22	0.74	0.00	4.48	1.48	0.73	0.16
5	26	59.40	0.14	-0.06	7.12	0.06	20.28	8.98	3.10	0.98	7.87	0.02	-0.01	0.77	0.32	1.09	0.01	4.00	1.27	0.80	0.17
5	27	58.36	0.11	0.22	6.82	-0.14	22.00	6.55	4.83	1.24	7.76	0.02	0.02	0.74	0.31	1.05	-0.02	4.36	0.93	1.24	0.21
5	28	59.15	0.03	0.17	5.84	-0.01	21.71	7.62	4.26	1.23	7.86	0.00	0.02	0.63	0.27	0.90	0.00	4.30	1.08	1.10	0.21
5	29	59.32	0.17	0.06	3.61	-0.02	22.65	10.70	2.49	1.02	7.89	0.03	0.01	0.39	0.17	0.56	0.00	4.49	1.52	0.64	0.17
5	30	59.37	-0.02	0.05	4.64	0.03	22.02	10.48	2.62	0.80	7.89	0.00	0.00	0.50	0.21	0.71	0.00	4.36	1.49	0.67	0.14
6	2	58.65	0.50	0.06	6.19	0.02	21.65	5.69	5.76	1.48	7.80	0.08	0.01	0.67	0.28	0.95	0.00	4.29	0.81	1.49	0.25
6	3	59.98	0.16	0.56	8.97	0.14	17.51	7.06	3.73	1.89	7.94	0.02	0.06	0.97	0.41	1.37	0.02	3.46	1.00	0.96	0.32
6	4	58.62	0.20	-0.05	5.80	0.22	21.56	7.95	4.31	1.38	7.82	0.03	-0.01	0.63	0.27	0.90	0.02	4.29	1.14	1.11	0.23
6	6	59.40	0.01	0.15	4.55	0.01	22.52	7.32	4.58	1.46	7.90	0.00	0.02	0.49	0.21	0.70	0.00	4.46	1.04	1.18	0.25
6	7	58.65	0.09	0.17	4.37	-0.04	23.02	9.20	3.58	0.96	7.81	0.01	0.02	0.47	0.20	0.67	0.00	4.57	1.31	0.92	0.16
6	8	58.67	0.06	0.04	2.94	0.27	23.86	9.58	3.50	1.09	7.83	0.01	0.00	0.32	0.14	0.45	0.03	4.75	1.37	0.91	0.19
6	9	59.34	0.20	0.04	6.43	0.06	21.47	5.70	5.23	1.53	7.87	0.03	0.00	0.69	0.29	0.99	0.01	4.25	0.81	1.35	0.26
6	10	58.65	0.38	0.12	4.77	0.20	22.14	7.34	4.58	1.83	7.83	0.06	0.01	0.52	0.22	0.74	0.02	4.41	1.05	1.19	0.31
6	11	58.29	0.26	0.19	4.09	0.28	23.71	7.35	4.55	1.28	7.78	0.04	0.02	0.44	0.19	0.63	0.03	4.72	1.05	1.18	0.22
6	12	58.18	0.21	0.08	4.35	0.17	22.99	8.85	4.02	1.15	7.77	0.03	0.01	0.47	0.20	0.67	0.02	4.58	1.27	1.04	0.20
6	13	57.53	0.23	0.23	6.45	0.23	21.66	8.10	4.51	1.07	7.69	0.04	0.02	0.70	0.30	1.00	0.03	4.31	1.16	1.17	0.18
6	14	57.88	0.21	0.02	9.97	0.14	20.04	4.52	6.36	0.85	7.68	0.03	0.00	1.08	0.46	1.53	0.02	3.96	0.64	1.64	0.14
6	15	58.86	0.15	0.04	6.31	0.04	20.77	7.49	4.62	1.73	7.85	0.02	0.00	0.68	0.29	0.97	0.00	4.13	1.07	1.19	0.29
6	16	58.42	0.10	-0.03	5.52	0.09	21.83	8.78	4.02	1.28	7.80	0.02	0.00	0.60	0.25	0.85	0.01	4.34	1.26	1.04	0.22
6	17	58.97	0.26	0.18	5.98	0.13	21.60	6.38	4.85	1.65	7.84	0.04	0.02	0.65	0.27	0.92	0.01	4.28	0.91	1.25	0.28
6	18	58.51	0.20	0.08	5.09	0.20	22.26	7.14	4.74	1.78	7.82	0.03	0.01	0.55	0.23	0.79	0.02	4.43	1.02	1.23	0.30
6	20	58.65	0.20	0.18	4.78	0.08	22.76	7.46	4.58	1.32	7.81	0.03	0.02	0.52	0.22	0.74	0.01	4.52	1.06	1.18	0.22
6	21	58.65	0.12	0.09	6.53	0.03	21.48	6.06	5.42	1.62	7.81	0.02	0.01	0.71	0.30	1.01	0.00	4.26	0.86	1.40	0.28
6	22	58.50	0.10	0.14	7.75	0.18	19.88	7.17	4.43	1.85	7.80	0.02	0.01	0.84	0.36	1.20	0.02	3.95	1.02	1.15	0.31
6	23	57.92	0.34	0.23	4.22	0.05	23.03	7.95	4.75	1.50	7.75	0.05	0.02	0.46	0.19	0.65	0.01	4.60	1.14	1.23	0.26
6	24	59.28	0.07	0.21	7.88	0.20	19.73	5.89	4.95	1.79	7.87	0.01	0.02	0.85	0.36	1.21	0.02	3.91	0.84	1.27	0.30
6	25	58.56	0.18	0.21	5.68	0.03	22.17	5.88	5.61	1.68	7.81	0.03	0.02	0.62	0.26	0.88	0.00	4.41	0.84	1.45	0.29
6	26	58.60	0.22	0.11	9.03	0.04	20.25	3.02	7.03	1.71	7.78	0.03	0.01	0.98	0.41	1.39	0.00	4.01	0.43	1.81	0.29
6	27	58.88	0.31	0.01	5.45	0.17	21.31	8.58	3.90	1.40	7.84	0.05	0.00	0.59	0.25	0.84	0.02	4.23	1.22	1.01	0.24
6	28	58.26	0.29	0.22	6.54	0.16	21.01	8.17	3.69	1.66	7.77	0.05	0.02	0.71	0.30	1.01	0.02	4.18	1.17	0.95	0.28
6	29	59.38	0.11	0.17	6.23	0.01	21.02	5.31	5.53	2.24	7.90	0.02	0.02	0.67	0.29	0.96	0.00	4.17	0.76	1.43	0.38
6	30	58.63	0.17	0.15	5.48	0.25	22.28	7.01	4.72	1.32	7.81	0.03	0.02	0.59	0.25	0.84	0.03	4.42	1.00	1.22	0.22
6	32	59.02	0.04	0.11	5.97	0.07	21.45	7.19	4.67	1.48	7.85	0.01	0.01	0.65	0.27	0.92	0.01	4.26	1.03	1.21	0.25
6	33	59.38	-0.04	-0.01	4.80	0.12	21.64	9.26	3.54	1.31	7.91	-0.01	0.00	0.52	0.22	0.74	0.01	4.30	1.32	0.91	0.22
7	1	58.83	1.70	0.11	7.05	0.01	22.69	6.93	2.34	0.35	7.71	0.26	0.01	0.75	0.32	1.07	0.00	4.43	0.97	0.59	0.06
7	2	59.23	0.11	0.19	5.99	0.05	21.65	6.82	4.27	1.68	7.87	0.02	0.02	0.65	0.27	0.92	0.01	4.29	0.97	1.10	0.28
7	3	59.14	0.21	-0.02	6.12	0.06	21.60	8.56	3.36	0.97	7.84	0.03	0.00	0.66	0.28	0.94	0.01	4.27	1.22	0.86	0.16

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
7	4	58.93	0.20	-0.01	6.98	0.01	20.53	9.37	3.03	0.95	7.82	0.03	0.00	0.75	0.32	1.07	0.00	4.06	1.33	0.78	0.16
7	6	59.16	0.26	0.13	5.19	0.06	21.03	10.44	2.76	0.97	7.87	0.04	0.01	0.56	0.24	0.80	0.01	4.17	1.49	0.71	0.16
7	7	58.27	0.56	0.12	5.81	0.20	22.41	9.08	2.85	0.69	7.73	0.09	0.01	0.63	0.27	0.89	0.02	4.43	1.29	0.73	0.12
7	8	57.99	0.49	0.00	6.04	0.22	22.20	9.70	2.73	0.62	7.71	0.08	0.00	0.65	0.28	0.93	0.02	4.40	1.38	0.70	0.11
7	9	58.11	0.41	0.03	6.27	0.04	22.38	8.64	3.42	0.70	7.72	0.06	0.00	0.68	0.29	0.96	0.00	4.43	1.23	0.88	0.12
7	10	58.79	0.81	0.00	5.92	0.27	21.75	8.54	2.97	0.95	7.79	0.13	0.00	0.64	0.27	0.91	0.03	4.30	1.21	0.76	0.16
7	11	58.78	0.43	0.16	5.75	0.09	22.03	8.01	3.60	1.14	7.80	0.07	0.02	0.62	0.26	0.88	0.01	4.36	1.14	0.93	0.19
7	12	58.18	0.52	0.38	6.51	0.16	21.86	7.42	3.81	1.16	7.73	0.08	0.04	0.70	0.30	1.00	0.02	4.33	1.06	0.98	0.20
7	13	58.46	0.40	0.08	6.05	0.15	21.04	9.96	2.87	0.99	7.78	0.06	0.01	0.65	0.28	0.93	0.02	4.18	1.42	0.74	0.17
7	14	58.65	0.28	-0.04	5.55	0.07	22.36	8.73	3.43	0.95	7.79	0.04	0.00	0.60	0.25	0.85	0.01	4.43	1.24	0.88	0.16
7	15	59.38	0.18	0.07	5.62	0.10	21.32	10.15	2.42	0.76	7.87	0.03	0.01	0.61	0.26	0.86	0.01	4.21	1.44	0.62	0.13
7	17	59.19	0.63	0.14	6.41	0.16	22.24	7.82	2.83	0.59	7.80	0.10	0.01	0.69	0.29	0.98	0.02	4.37	1.10	0.72	0.10
7	18	58.67	0.13	0.04	5.95	0.02	20.09	12.01	2.08	1.02	7.83	0.02	0.00	0.65	0.27	0.92	0.00	3.99	1.72	0.54	0.17
7	19	58.42	0.26	0.19	5.85	0.26	20.26	11.43	2.25	1.07	7.80	0.04	0.02	0.64	0.27	0.90	0.03	4.03	1.64	0.58	0.18
7	20	58.55	0.08	0.01	6.03	0.11	20.79	11.55	2.14	0.74	7.80	0.01	0.00	0.65	0.28	0.93	0.01	4.13	1.65	0.55	0.13
7	22	59.03	0.88	0.10	6.08	0.08	22.00	9.00	2.10	0.73	7.79	0.14	0.01	0.65	0.28	0.93	0.01	4.33	1.27	0.54	0.12
7	23	58.39	0.56	0.16	5.47	0.13	22.16	9.17	2.92	1.05	7.76	0.09	0.02	0.59	0.25	0.84	0.01	4.39	1.31	0.75	0.18
7	24	58.64	0.79	0.10	5.36	0.25	22.44	9.14	2.42	0.87	7.77	0.12	0.01	0.58	0.24	0.82	0.03	4.43	1.30	0.62	0.15
7	25	58.68	0.18	0.13	6.03	0.05	21.65	9.67	2.95	0.67	7.79	0.03	0.01	0.65	0.28	0.93	0.01	4.28	1.38	0.76	0.11
7	26	59.29	-0.03	0.12	6.37	0.01	21.09	9.07	3.15	0.93	7.86	0.00	0.01	0.69	0.29	0.98	0.00	4.17	1.29	0.81	0.16
7	27	58.38	1.27	0.01	5.58	0.31	22.46	9.23	1.95	0.81	7.73	0.20	0.00	0.60	0.25	0.85	0.03	4.43	1.31	0.50	0.14
7	28	58.73	0.23	0.20	6.82	0.10	21.16	8.59	3.29	0.89	7.79	0.04	0.02	0.74	0.31	1.05	0.01	4.18	1.22	0.85	0.15
7	29	58.31	0.49	0.25	5.84	0.16	21.25	9.75	2.97	0.99	7.76	0.08	0.03	0.63	0.27	0.90	0.02	4.22	1.39	0.77	0.17
8	1	57.33	0.64	0.06	5.68	0.09	21.15	11.51	2.79	0.75	7.67	0.10	0.01	0.62	0.26	0.88	0.01	4.22	1.65	0.72	0.13
8	3	57.78	0.43	0.15	2.28	0.16	24.68	12.05	1.95	0.54	7.72	0.07	0.02	0.25	0.10	0.35	0.02	4.91	1.72	0.51	0.09
8	5	59.05	0.34	-0.02	5.88	0.22	21.80	8.92	3.12	0.68	7.82	0.05	0.00	0.63	0.27	0.90	0.02	4.31	1.27	0.80	0.11
8	6	59.02	0.15	0.04	1.83	0.12	25.37	11.15	1.84	0.48	7.84	0.02	0.00	0.20	0.08	0.28	0.01	5.02	1.59	0.47	0.08
8	7	59.13	0.10	0.17	4.15	0.30	21.14	12.38	1.87	0.75	7.88	0.02	0.02	0.45	0.19	0.64	0.03	4.20	1.77	0.48	0.13
8	9	58.77	0.22	0.02	5.92	0.23	21.64	9.25	3.10	0.85	7.81	0.03	0.00	0.64	0.27	0.91	0.03	4.29	1.32	0.80	0.14
8	11	59.09	0.31	0.32	5.51	0.08	21.36	10.02	2.59	0.72	7.84	0.05	0.03	0.59	0.25	0.85	0.01	4.22	1.42	0.67	0.12
8	12	59.02	0.37	0.14	2.55	0.12	24.45	10.69	1.84	0.81	7.84	0.06	0.01	0.28	0.12	0.39	0.01	4.84	1.52	0.47	0.14
8	13	59.05	0.14	0.08	3.11	0.18	23.00	12.17	1.71	0.55	7.86	0.02	0.01	0.34	0.14	0.48	0.02	4.56	1.74	0.44	0.09
8	14	59.42	0.06	0.00	2.32	0.06	22.52	13.45	1.51	0.65	7.92	0.01	0.00	0.25	0.11	0.36	0.01	4.48	1.92	0.39	0.11
8	15	58.78	0.12	0.07	2.79	0.01	24.40	11.30	1.98	0.55	7.81	0.02	0.01	0.30	0.13	0.43	0.00	4.84	1.61	0.51	0.09
8	16	59.02	0.10	0.25	3.83	0.14	22.57	11.28	2.08	0.73	7.85	0.02	0.03	0.41	0.18	0.59	0.02	4.48	1.61	0.54	0.12
8	17	58.95	0.24	0.15	7.03	0.07	20.82	8.30	3.65	0.78	7.81	0.04	0.01	0.76	0.32	1.08	0.01	4.11	1.18	0.94	0.13
8	18	59.32	0.16	-0.08	3.09	0.02	24.14	10.68	2.13	0.55	7.86	0.03	-0.01	0.33	0.14	0.47	0.00	4.77	1.52	0.55	0.09
8	19	59.81	0.22	0.61	7.79	0.05	19.83	4.73	5.43	1.53	7.90	0.03	0.06	0.84	0.35	1.19	0.01	3.91	0.67	1.39	0.26
8	20	58.75	0.39	0.65	7.47	0.14	21.84	4.69	5.06	1.00	7.76	0.06	0.06	0.80	0.34	1.14	0.02	4.30	0.66	1.30	0.17
8	21	57.89	0.41	-0.06	10.27	0.24	19.28	7.40	3.78	0.78	7.67	0.06	-0.01	1.11	0.47	1.58	0.03	3.81	1.05	0.97	0.13
8	22	58.64	0.57	0.17	7.69	0.09	20.33	7.44	3.86	1.21	7.78	0.09	0.02	0.83	0.35	1.18	0.01	4.02	1.06	0.99	0.20
8	23	57.95	0.26	0.11	6.22	-0.02	20.87	11.20	2.62	0.80	7.73	0.04	0.01	0.67	0.29	0.96	0.00	4.15	1.60	0.68	0.14
8	24	58.59	0.52	0.12	6.01	0.03	21.98	8.34	3.66	0.73	7.77	0.08	0.01	0.65	0.27	0.92	0.00	4.35	1.19	0.94	0.12
8	26	60.91	0.41	0.25	5.90	0.04	22.62	6.77	2.20	0.89	7.97	0.06	0.02	0.63	0.27	0.89	0.00	4.41	0.95	0.56	0.15
8	27	58.30	0.26	0.13	5.54	0.24	21.40	10.37	2.83	0.92	7.77	0.04	0.01	0.60	0.25	0.86	0.03	4.25	1.48	0.73	0.16
8	28	57.66	0.53	0.27	6.62	0.18	22.19	7.87	3.91	0.76	7.67	0.08	0.03	0.72	0.30	1.02	0.02	4.40	1.12	1.01	0.13
8	29	57.04	0.35	0.23	8.88	0.07	20.91	6.34	5.19	1.00	7.60	0.05	0.02	0.96	0.41	1.37	0.01	4.15	0.91	1.34	0.17

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
9	1	58.79	0.43	0.06	3.72	0.11	23.14	9.96	2.97	0.82	7.82	0.07	0.01	0.40	0.17	0.57	0.01	4.59	1.42	0.77	0.14
9	2	59.12	0.22	0.14	6.09	0.08	21.65	7.51	4.17	1.01	7.84	0.03	0.01	0.66	0.28	0.93	0.01	4.28	1.07	1.07	0.17
9	3	59.61	0.07	0.09	7.78	0.19	19.87	6.62	4.63	1.15	7.89	0.01	0.01	0.84	0.35	1.19	0.02	3.92	0.94	1.19	0.19
9	4	58.18	0.44	0.00	5.94	0.05	22.04	9.06	3.37	0.92	7.74	0.07	0.00	0.64	0.27	0.91	0.01	4.37	1.29	0.87	0.16
9	6	59.17	0.19	-0.04	7.01	0.16	21.57	5.19	5.64	1.11	7.84	0.03	0.00	0.76	0.32	1.08	0.02	4.26	0.74	1.45	0.19
9	7	61.40	0.37	0.16	3.70	0.09	21.04	10.37	2.01	0.85	8.09	0.06	0.02	0.40	0.17	0.56	0.01	4.13	1.46	0.51	0.14
9	8	58.46	0.44	0.13	5.95	0.09	21.94	7.96	4.12	0.92	7.77	0.07	0.01	0.64	0.27	0.92	0.01	4.35	1.13	1.06	0.16
9	9	59.30	0.20	0.18	4.57	0.13	23.02	8.58	3.25	0.78	7.85	0.03	0.02	0.49	0.21	0.70	0.01	4.55	1.22	0.83	0.13
9	10	58.88	0.45	0.35	6.26	0.15	20.79	7.89	3.93	1.31	7.82	0.07	0.03	0.68	0.29	0.96	0.02	4.12	1.12	1.01	0.22
9	11	58.87	0.17	0.04	5.71	0.02	21.91	8.48	3.78	1.02	7.82	0.03	0.00	0.62	0.26	0.88	0.00	4.34	1.21	0.97	0.17
9	12	58.68	0.34	0.19	6.15	0.17	20.74	9.50	3.21	1.01	7.81	0.05	0.02	0.67	0.28	0.95	0.02	4.11	1.35	0.83	0.17
9	13	57.57	0.51	0.34	8.21	0.23	19.65	8.36	3.86	1.27	7.68	0.08	0.03	0.89	0.38	1.27	0.03	3.91	1.20	1.00	0.22
9	14	58.82	0.23	0.11	6.82	0.04	21.08	7.95	3.90	1.04	7.81	0.04	0.01	0.74	0.31	1.05	0.00	4.17	1.13	1.00	0.18
9	15	58.97	0.28	0.18	6.44	0.04	21.08	8.04	3.79	1.19	7.83	0.04	0.02	0.70	0.29	0.99	0.00	4.17	1.14	0.98	0.20
9	16	58.60	0.37	0.05	7.24	0.07	21.53	5.85	5.25	1.04	7.77	0.06	0.00	0.78	0.33	1.11	0.01	4.26	0.83	1.35	0.18
9	17	58.85	0.63	0.44	7.49	0.10	21.12	6.67	3.88	0.82	7.77	0.10	0.04	0.80	0.34	1.14	0.01	4.16	0.94	0.99	0.14
9	18	58.77	0.23	0.03	5.50	0.17	21.93	8.39	3.92	1.06	7.82	0.04	0.00	0.60	0.25	0.85	0.02	4.35	1.20	1.01	0.18
9	19	58.94	0.35	0.11	6.44	0.11	20.45	9.28	3.31	1.01	7.83	0.05	0.01	0.70	0.29	0.99	0.01	4.05	1.32	0.85	0.17
9	20	58.37	0.44	0.02	5.04	0.14	23.23	7.76	3.96	1.04	7.76	0.07	0.00	0.54	0.23	0.78	0.02	4.60	1.11	1.02	0.18
9	22	57.54	0.41	0.15	8.04	0.11	20.21	9.17	3.37	1.00	7.67	0.06	0.02	0.87	0.37	1.24	0.01	4.02	1.31	0.87	0.17
9	23	59.01	0.42	0.13	6.10	0.09	22.05	7.56	3.74	0.90	7.81	0.07	0.01	0.66	0.28	0.93	0.01	4.35	1.07	0.96	0.15
9	24	59.20	0.33	0.10	4.10	0.06	22.68	10.04	2.61	0.88	7.86	0.05	0.01	0.44	0.19	0.63	0.01	4.49	1.43	0.67	0.15
9	25	58.99	0.18	-0.01	6.74	-0.02	21.46	7.59	4.14	0.93	7.82	0.03	0.00	0.73	0.31	1.03	0.00	4.24	1.08	1.06	0.16
9	26	59.56	0.19	0.07	6.26	0.03	21.50	8.08	3.34	0.97	7.88	0.03	0.01	0.67	0.29	0.96	0.00	4.24	1.14	0.86	0.16
9	27	59.27	0.26	0.23	6.46	0.24	20.91	8.11	3.38	1.13	7.86	0.04	0.02	0.70	0.29	0.99	0.03	4.13	1.15	0.87	0.19
9	28	58.97	0.10	-0.04	5.30	0.07	22.10	9.98	2.77	0.74	7.83	0.02	0.00	0.57	0.24	0.81	0.01	4.37	1.42	0.71	0.13
9	29	58.98	0.18	0.06	6.75	0.04	20.79	9.14	3.11	0.96	7.82	0.03	0.01	0.73	0.31	1.04	0.00	4.11	1.30	0.80	0.16
9	30	58.26	0.39	0.15	6.28	0.14	22.30	6.58	4.88	1.00	7.74	0.06	0.01	0.68	0.29	0.97	0.02	4.42	0.94	1.26	0.17
10	1	59.03	0.26	0.28	6.41	0.11	21.42	6.67	4.50	1.32	7.83	0.04	0.03	0.69	0.29	0.98	0.01	4.24	0.95	1.16	0.22
10	2	59.66	0.11	0.12	4.35	0.15	22.50	7.30	4.29	1.53	7.93	0.02	0.01	0.47	0.20	0.67	0.02	4.46	1.04	1.11	0.26
10	3	58.26	0.59	0.03	3.01	0.05	24.28	10.05	2.89	0.84	7.76	0.09	0.00	0.33	0.14	0.46	0.01	4.82	1.43	0.75	0.14
10	4	59.02	0.23	0.09	3.69	0.20	22.48	10.82	2.59	0.88	7.86	0.04	0.01	0.40	0.17	0.57	0.02	4.46	1.54	0.67	0.15
10	5	58.55	0.21	0.11	6.31	0.11	22.63	5.58	5.35	1.15	7.77	0.03	0.01	0.68	0.29	0.97	0.01	4.48	0.79	1.38	0.19
10	6	59.37	0.16	0.01	3.62	0.11	22.72	10.55	2.65	0.83	7.89	0.03	0.00	0.39	0.17	0.56	0.01	4.50	1.50	0.68	0.14
10	7	58.79	0.33	0.20	6.07	0.13	19.39	11.65	2.40	1.04	7.84	0.05	0.02	0.66	0.28	0.94	0.01	3.86	1.66	0.62	0.18
10	8	58.57	0.23	0.08	5.77	0.11	22.09	7.86	4.25	1.03	7.79	0.04	0.01	0.62	0.26	0.89	0.01	4.38	1.12	1.10	0.17
10	9	58.14	0.36	0.15	11.25	0.07	19.18	2.91	7.12	0.81	7.69	0.06	0.01	1.21	0.51	1.72	0.01	3.78	0.41	1.83	0.14
10	10	57.61	0.34	0.00	4.53	-0.03	23.77	9.48	3.42	0.89	7.69	0.05	0.00	0.49	0.21	0.70	0.00	4.73	1.36	0.88	0.15
10	11	55.53	3.78	0.41	6.84	0.12	23.44	5.24	3.76	0.88	7.34	0.59	0.04	0.74	0.31	1.05	0.01	4.62	0.74	0.96	0.15
10	12	57.99	0.59	0.05	4.34	0.10	23.37	9.35	3.34	0.86	7.73	0.09	0.01	0.47	0.20	0.67	0.01	4.64	1.33	0.86	0.15
10	13	57.54	0.69	0.22	5.96	0.16	22.45	6.97	4.59	1.44	7.68	0.11	0.02	0.65	0.27	0.92	0.02	4.47	1.00	1.19	0.25
10	14	58.33	0.22	0.04	4.79	0.07	23.09	9.75	2.94	0.78	7.76	0.03	0.00	0.52	0.22	0.74	0.01	4.58	1.39	0.76	0.13
10	15	57.40	0.43	0.33	7.04	0.17	21.17	7.53	4.66	1.29	7.67	0.07	0.03	0.76	0.32	1.09	0.02	4.22	1.08	1.21	0.22
10	16	59.09	0.04	-0.02	5.38	0.25	22.44	8.08	3.77	0.94	7.85	0.01	0.00	0.58	0.25	0.83	0.03	4.44	1.15	0.97	0.16
10	17	58.76	0.28	0.08	5.85	0.05	22.01	8.03	4.21	0.73	7.80	0.04	0.01	0.63	0.27	0.90	0.01	4.35	1.14	1.08	0.12
10	18	58.73	0.23	0.15	3.32	0.17	23.81	9.91	2.80	0.88	7.82	0.04	0.02	0.36	0.15	0.51	0.02	4.72	1.41	0.72	0.15
10	20	59.58	0.20	-0.04	4.43	0.25	22.13	9.48	3.06	0.92	7.91	0.03	0.00	0.48	0.20	0.68	0.03	4.38	1.35	0.79	0.16
10	21	59.51	0.38	0.28	6.08	0.08	21.07	7.36	4.15	1.10	7.88	0.06	0.03	0.65	0.28	0.93	0.01	4.16	1.04	1.07	0.19
10	22	59.51	0.38	0.28	6.08	0.08	21.07	7.36	4.15	1.10	7.88	0.06	0.03	0.65	0.28	0.93	0.01	4.16	1.04	1.07	0.19
10	23	59.00	0.63	0.10	4.07	0.26	21.96	10.30	2.95	0.74	7.85	0.10	0.01	0.44	0.19	0.63	0.03	4.35	1.47	0.76	0.13
10	24	59.58	0.11	0.08	2.76	0.29	23.38	10.78	2.32	0.72	7.91	0.02	0.01	0.30	0.13	0.42	0.03	4.63	1.53	0.60	0.12
10	25	59.27	0.61	0.26	6.23	0.13	20.73	6.96	4.29	1.52	7.86	0.10	0.03	0.67	0.28	0.96	0.01	4.10	0.99	1.10	0.26
10	26	59.35	0.30	0.03	6.00	0.21	21.00	7.71	4.18	1.21	7.88	0.05	0.00	0.65	0.27	0.92	0.02	4.16	1.10	1.08	0.20
10	27	59.11	0.33	-0.04	4.84	0.15	22.46	7.82	3.69	1.63	7.86	0.05	0.00	0.52	0.22	0.75	0.02	4.45	1.11	0.95	0.28
10	28	58.38	0.91	0.30	3.99	0.04	23.71	9.00	2.83	0.85	7.74	0.14	0.03	0.43	0.18	0.61	0.00	4.69	1.28	0.73	0.14
10	29	57.96	0.38	0.33	3.59	2.56	21.47	10.93	2.02	0.76	7.79	0.06	0.03	0.39	0.17	0.56	0.29	4.30	1.57	0.53	0.13
10	30	58.67	0.40	0.06	4.85	0.27	22.14	9.08	3.60	0.93	7.81	0.06	0.01	0.53	0.22	0.75	0.03	4.39	1.30	0.93	0.16

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
11	1	59.07	1.06	0.21	8.21	0.20	19.74	5.55	4.36	1.60	7.81	0.17	0.02	0.88	0.37	1.26	0.02	3.89	0.79	1.12	0.27
11	2	58.58	0.26	0.10	4.58	0.12	22.62	10.51	2.50	0.73	7.79	0.04	0.01	0.50	0.21	0.71	0.01	4.49	1.50	0.64	0.12
11	3	57.88	1.02	0.37	8.32	0.20	19.70	6.47	4.70	1.35	7.69	0.16	0.04	0.90	0.38	1.28	0.02	3.90	0.92	1.21	0.23
11	4	58.80	0.10	-0.02	9.06	0.05	20.44	5.83	4.89	0.84	7.77	0.02	0.00	0.97	0.41	1.39	0.01	4.03	0.83	1.25	0.14
11	5	58.77	0.29	0.46	6.13	0.11	21.43	7.23	4.22	1.36	7.81	0.05	0.05	0.66	0.28	0.94	0.01	4.25	1.03	1.09	0.23
11	7	58.68	0.38	0.10	6.13	0.20	21.67	9.47	2.74	0.64	7.78	0.06	0.01	0.66	0.28	0.94	0.02	4.28	1.35	0.70	0.11
11	8	59.21	0.32	0.01	6.22	0.23	21.21	8.78	3.28	0.74	7.84	0.05	0.00	0.67	0.28	0.95	0.03	4.19	1.25	0.84	0.13
11	9	58.68	0.26	0.02	7.13	0.10	21.16	7.53	4.12	1.00	7.79	0.04	0.00	0.77	0.33	1.10	0.01	4.19	1.07	1.06	0.17
11	10	59.51	0.15	-0.06	5.38	0.09	21.86	8.70	3.34	1.02	7.89	0.02	-0.01	0.58	0.25	0.83	0.01	4.32	1.24	0.86	0.17
11	11	58.74	0.02	0.14	7.74	0.17	18.73	9.35	3.39	1.70	7.84	0.00	0.01	0.84	0.36	1.20	0.02	3.73	1.34	0.88	0.29
11	12	59.08	0.10	0.19	5.08	0.09	22.38	8.72	3.45	0.91	7.84	0.02	0.02	0.55	0.23	0.78	0.01	4.43	1.24	0.89	0.15
11	13	59.42	0.11	0.09	4.98	0.21	22.42	8.89	3.02	0.85	7.87	0.02	0.01	0.54	0.23	0.76	0.02	4.43	1.26	0.78	0.14
11	15	59.53	-0.06	0.04	3.46	0.16	23.06	11.32	1.92	0.57	7.90	-0.01	0.00	0.37	0.16	0.53	0.02	4.56	1.61	0.49	0.10
11	16	59.26	0.11	-0.02	5.07	0.08	22.15	9.45	3.14	0.77	7.86	0.02	0.00	0.55	0.23	0.78	0.01	4.38	1.34	0.81	0.13
11	17	59.59	0.29	0.05	4.37	0.09	22.13	9.62	2.92	0.94	7.90	0.05	0.00	0.47	0.20	0.67	0.01	4.38	1.37	0.75	0.16
11	18	58.62	0.09	-0.05	6.75	-0.05	21.20	9.73	3.19	0.51	7.78	0.01	0.00	0.73	0.31	1.04	-0.01	4.19	1.38	0.82	0.09
11	20	59.52	0.11	-0.13	6.66	0.07	20.76	9.40	2.87	0.74	7.88	0.02	-0.01	0.72	0.30	1.02	0.01	4.10	1.33	0.74	0.12
11	22	59.27	0.15	-0.04	6.43	0.03	21.16	9.04	3.23	0.73	7.85	0.02	0.00	0.69	0.29	0.99	0.00	4.18	1.28	0.83	0.12
11	23	59.17	0.26	-0.01	4.74	0.18	22.07	10.26	2.57	0.76	7.86	0.04	0.00	0.51	0.22	0.73	0.02	4.37	1.46	0.66	0.13
11	25	59.05	0.13	0.49	9.23	0.02	19.86	5.22	5.16	0.86	7.79	0.02	0.05	0.99	0.42	1.41	0.00	3.91	0.74	1.32	0.14
11	27	59.74	0.10	0.11	7.12	0.14	20.89	7.08	3.80	1.02	7.89	0.02	0.01	0.76	0.32	1.09	0.02	4.11	1.00	0.97	0.17
11	28	58.58	0.40	0.23	6.56	-0.02	21.15	8.73	3.58	0.80	7.77	0.06	0.02	0.71	0.30	1.01	0.00	4.18	1.24	0.92	0.14
11	29	58.90	0.10	0.11	6.09	0.09	21.27	10.15	2.55	0.74	7.82	0.02	0.01	0.66	0.28	0.94	0.01	4.21	1.44	0.66	0.13
11	30	58.42	0.21	0.16	5.69	0.09	22.69	7.25	4.45	1.04	7.77	0.03	0.02	0.62	0.26	0.88	0.01	4.50	1.03	1.15	0.18
12	1	58.00	0.55	0.29	7.22	0.07	21.99	6.75	4.27	0.86	7.69	0.09	0.03	0.78	0.33	1.11	0.01	4.35	0.96	1.10	0.15
12	2	58.65	0.50	0.32	8.27	-0.12	21.97	4.93	4.71	0.77	7.73	0.08	0.03	0.89	0.38	1.26	-0.01	4.31	0.70	1.20	0.13
12	9	57.22	0.64	0.39	10.16	0.10	20.36	4.17	6.07	0.89	7.59	0.10	0.04	1.10	0.46	1.56	0.01	4.03	0.59	1.56	0.15
12	11	59.21	0.06	0.18	7.20	0.09	20.78	7.55	3.91	1.02	7.84	0.01	0.02	0.78	0.33	1.10	0.01	4.10	1.07	1.00	0.17
12	13	59.15	0.32	0.22	7.09	-0.18	22.24	5.72	4.56	0.89	7.80	0.05	0.02	0.76	0.32	1.08	-0.02	4.37	0.81	1.17	0.15
12	15	59.83	0.15	0.44	8.07	0.17	19.90	5.37	4.75	1.31	7.90	0.02	0.04	0.87	0.37	1.23	0.02	3.92	0.76	1.22	0.22
12	20	59.32	0.25	0.69	10.60	0.22	18.39	4.14	5.55	0.84	7.81	0.04	0.07	1.14	0.48	1.62	0.02	3.61	0.58	1.42	0.14
12	21	59.45	0.21	0.55	8.55	-0.01	19.98	5.11	5.43	0.73	7.84	0.03	0.05	0.92	0.39	1.30	0.00	3.93	0.72	1.39	0.12
12	22	59.26	0.92	0.28	9.14	0.12	18.66	7.86	2.82	0.94	7.81	0.14	0.03	0.98	0.41	1.39	0.01	3.67	1.11	0.72	0.16
12	26	58.21	0.30	-0.11	8.01	0.20	21.18	7.42	4.03	0.75	7.72	0.05	-0.01	0.86	0.37	1.23	0.02	4.19	1.05	1.04	0.13
12	28	58.99	0.22	0.06	5.81	0.09	22.48	6.87	4.49	1.00	7.82	0.03	0.01	0.63	0.27	0.89	0.01	4.44	0.98	1.15	0.17

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
13	1	59.32	-0.01	0.14	5.52	0.06	21.64	9.33	3.13	0.88	7.87	0.00	0.01	0.60	0.25	0.85	0.01	4.28	1.33	0.81	0.15
13	2	58.80	0.25	0.20	5.89	0.11	21.78	7.49	4.05	1.43	7.82	0.04	0.02	0.64	0.27	0.91	0.01	4.32	1.07	1.04	0.24
13	3	58.93	0.17	0.06	6.33	-0.07	22.15	7.45	4.09	0.88	7.81	0.03	0.01	0.68	0.29	0.97	-0.01	4.37	1.06	1.05	0.15
13	4	57.57	0.33	0.03	7.02	0.05	21.65	7.62	4.69	1.05	7.68	0.05	0.00	0.76	0.32	1.08	0.01	4.30	1.09	1.21	0.18
13	6	58.92	0.22	0.17	4.92	0.13	22.84	7.68	4.16	0.96	7.82	0.03	0.02	0.53	0.22	0.76	0.01	4.52	1.09	1.07	0.16
13	7	59.33	0.08	-0.04	6.67	0.11	20.65	9.52	2.95	0.74	7.86	0.01	0.00	0.72	0.30	1.02	0.01	4.08	1.35	0.76	0.13
13	8	59.45	0.24	0.08	5.66	0.05	22.07	8.43	3.17	0.85	7.86	0.04	0.01	0.61	0.26	0.87	0.01	4.35	1.19	0.81	0.14
13	9	58.06	0.07	0.19	4.80	0.17	22.38	10.09	3.16	1.07	7.76	0.01	0.02	0.52	0.22	0.74	0.02	4.46	1.44	0.82	0.18
13	10	59.32	0.01	0.09	6.45	0.15	20.09	9.88	2.82	1.19	7.88	0.00	0.01	0.70	0.30	0.99	0.02	3.98	1.41	0.73	0.20
13	11	59.21	0.01	0.00	5.11	0.08	21.93	8.97	3.58	1.12	7.87	0.00	0.00	0.55	0.23	0.79	0.01	4.35	1.28	0.92	0.19
13	12	59.17	0.13	0.11	5.47	0.10	20.81	10.17	2.92	1.12	7.87	0.02	0.01	0.59	0.25	0.84	0.01	4.13	1.45	0.75	0.19
13	14	59.26	0.10	-0.01	5.42	0.26	21.43	9.92	2.79	0.83	7.87	0.02	0.00	0.59	0.25	0.83	0.03	4.24	1.41	0.72	0.14
13	15	58.76	0.09	0.00	5.21	0.05	23.10	8.40	3.61	0.79	7.80	0.01	0.00	0.56	0.24	0.80	0.01	4.57	1.19	0.93	0.13
13	16	59.01	0.08	-0.01	6.20	0.06	21.22	8.60	3.61	1.23	7.84	0.01	0.00	0.67	0.28	0.95	0.01	4.21	1.22	0.93	0.21
13	17	58.34	0.25	0.31	8.66	0.04	19.61	8.74	3.39	0.66	7.73	0.04	0.03	0.93	0.40	1.33	0.00	3.88	1.24	0.87	0.11
13	18	59.07	0.01	0.16	5.79	-0.02	21.30	9.32	3.21	1.16	7.85	0.00	0.02	0.63	0.26	0.89	0.00	4.22	1.33	0.83	0.20
13	19	59.18	0.01	0.05	7.18	-0.03	20.89	7.35	4.31	1.05	7.84	0.00	0.00	0.77	0.33	1.10	0.00	4.13	1.04	1.11	0.18
13	20	58.92	-0.07	0.15	5.85	0.12	21.61	9.57	3.07	0.77	7.83	-0.01	0.01	0.63	0.27	0.90	0.01	4.28	1.36	0.79	0.13
13	21	58.72	0.30	-0.05	5.06	0.21	22.94	8.53	3.42	0.87	7.80	0.05	0.00	0.55	0.23	0.78	0.02	4.54	1.21	0.88	0.15
13	22	58.65	0.02	0.08	6.43	0.20	21.75	8.60	3.52	0.75	7.79	0.00	0.01	0.69	0.29	0.99	0.02	4.31	1.22	0.91	0.13
13	23	59.18	0.00	0.07	6.02	0.01	21.27	9.29	3.19	0.97	7.86	0.00	0.01	0.65	0.28	0.93	0.00	4.21	1.32	0.82	0.16
13	24	59.02	0.15	0.15	6.41	0.06	21.16	9.48	2.91	0.66	7.82	0.02	0.01	0.69	0.29	0.98	0.01	4.18	1.35	0.75	0.11
13	25	59.30	0.08	0.01	5.26	0.09	22.08	8.79	3.42	0.97	7.87	0.01	0.00	0.57	0.24	0.81	0.01	4.37	1.25	0.88	0.16
13	27	58.74	0.22	0.45	4.88	0.12	22.86	7.04	4.49	1.20	7.81	0.03	0.05	0.53	0.22	0.75	0.01	4.53	1.00	1.16	0.20
13	28	59.31	0.16	-0.12	6.54	-0.03	20.63	9.59	2.93	0.99	7.87	0.03	-0.01	0.71	0.30	1.00	0.00	4.08	1.36	0.75	0.17
13	29	58.69	0.23	0.32	8.28	0.09	20.43	7.38	3.86	0.72	7.76	0.04	0.03	0.89	0.38	1.27	0.01	4.03	1.05	0.99	0.12
13	30	58.89	0.21	0.12	6.46	0.07	22.20	7.16	4.05	0.85	7.80	0.03	0.01	0.70	0.29	0.99	0.01	4.38	1.02	1.04	0.14
14	1	57.02	0.92	0.30	5.80	0.03	22.74	8.37	3.85	0.96	7.61	0.14	0.03	0.63	0.27	0.90	0.00	4.52	1.20	1.00	0.16
14	2	58.78	0.46	0.26	6.58	0.11	21.23	7.19	4.33	1.07	7.80	0.07	0.03	0.71	0.30	1.01	0.01	4.20	1.02	1.11	0.18
14	3	57.43	0.69	0.06	5.23	0.08	23.06	8.43	4.02	1.00	7.66	0.11	0.01	0.57	0.24	0.81	0.01	4.59	1.21	1.04	0.17
14	4	56.34	0.32	0.19	6.51	0.13	22.72	8.31	4.61	0.86	7.55	0.05	0.02	0.71	0.30	1.01	0.01	4.54	1.19	1.20	0.15
14	6	58.27	0.29	0.32	6.23	0.05	21.24	8.74	3.86	1.00	7.76	0.05	0.03	0.67	0.29	0.96	0.01	4.22	1.25	1.00	0.17
14	7	58.42	0.43	0.28	5.39	-0.06	22.15	9.29	3.32	0.78	7.76	0.07	0.03	0.58	0.25	0.83	-0.01	4.39	1.32	0.86	0.13
14	8	57.79	2.34	0.05	8.45	0.13	19.28	7.40	3.54	1.02	7.64	0.36	0.00	0.91	0.38	1.29	0.01	3.80	1.05	0.91	0.17
14	9	58.43	0.68	0.12	5.43	0.23	22.40	7.71	3.94	1.05	7.76	0.11	0.01	0.59	0.25	0.84	0.03	4.44	1.10	1.02	0.18
14	10	59.00	0.19	0.19	6.71	0.08	21.40	7.39	4.04	0.99	7.82	0.03	0.02	0.72	0.31	1.03	0.01	4.23	1.05	1.04	0.17
14	11	58.82	0.78	-0.06	7.40	0.16	20.23	7.91	3.72	1.04	7.80	0.12	-0.01	0.80	0.34	1.14	0.02	4.00	1.12	0.96	0.18
14	14	58.07	0.47	0.26	5.93	-0.08	23.04	7.30	4.04	0.96	7.71	0.07	0.03	0.64	0.27	0.91	-0.01	4.56	1.04	1.04	0.16
14	15	58.96	0.38	0.37	5.68	-0.02	21.95	7.85	3.75	1.09	7.82	0.06	0.04	0.61	0.26	0.87	0.00	4.34	1.12	0.96	0.18
14	16	57.22	1.65	0.21	6.99	-0.09	22.61	6.68	3.57	1.15	7.58	0.26	0.02	0.75	0.32	1.07	-0.01	4.47	0.95	0.92	0.19
14	17	58.30	0.42	0.33	5.90	0.12	22.22	7.57	3.98	1.17	7.75	0.07	0.03	0.64	0.27	0.91	0.01	4.40	1.08	1.03	0.20
14	18	57.48	1.39	0.26	6.63	0.02	22.08	6.51	4.39	1.24	7.64	0.22	0.03	0.72	0.30	1.02	0.00	4.37	0.93	1.13	0.21
14	19	58.79	0.16	0.33	7.11	0.00	21.42	6.65	4.65	0.90	7.79	0.02	0.03	0.77	0.32	1.09	0.00	4.23	0.94	1.19	0.15
14	20	59.06	0.29	0.09	5.19	0.04	22.27	7.76	4.00	1.30	7.85	0.05	0.01	0.56	0.24	0.80	0.00	4.41	1.10	1.03	0.22
14	21	59.22	0.25	0.41	7.22	0.04	21.17	6.48	4.22	0.99	7.83	0.04	0.04	0.78	0.33	1.10	0.00	4.17	0.92	1.08	0.17
14	22	59.21	0.20	0.40	8.29	0.15	18.51	8.62	3.38	1.24	7.86	0.03	0.04	0.89	0.38	1.27	0.02	3.66	1.23	0.87	0.21
14	23	59.69	0.53	0.46	5.69	0.14	22.97	5.86	3.83	0.84	7.85	0.08	0.05	0.61	0.26	0.87	0.02	4.51	0.83	0.98	0.14
14	24	58.14	0.50	0.13	7.00	0.28	21.87	6.92	4.01	1.15	7.72	0.08	0.01	0.76	0.32	1.08	0.03	4.33	0.98	1.03	0.19
14	26	59.18	0.04	0.22	6.75	0.10	21.14	7.05	4.36	1.16	7.85	0.01	0.02	0.73	0.31	1.04	0.01	4.18	1.00	1.12	0.20
14	27	57.08	0.86	0.19	7.25	0.32	22.13	6.89	3.90	1.39	7.61	0.14	0.02	0.79	0.33	1.12	0.04	4.40	0.98	1.01	0.24
14	28	58.96	0.15	0.23	8.36	0.14	19.55	7.15	4.38	1.08	7.82	0.02	0.02	0.90	0.38	1.28	0.02	3.86	1.02	1.13	0.18
14	29	59.61	0.12	0.22	7.38	0.22	19.90	8.39	2.93	1.23	7.89	0.02	0.02	0.79	0.34	1.13	0.02	3.93	1.19	0.75	0.21
14	30	56.78	0.36	0.22	7.48	0.15	21.96	7.74	4.16	1.15	7.59	0.06	0.02	0.81	0.34	1.16	0.02	4.37	1.11	1.08	0.20

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
15	1	60.34	0.41	0.33	6.39	-0.07	21.47	7.38	2.99	0.76	7.92	0.06	0.03	0.68	0.29	0.97	-0.01	4.20	1.04	0.76	0.13
15	2	59.38	-0.06	0.00	6.18	0.02	21.37	8.29	3.79	1.04	7.88	-0.01	0.00	0.67	0.28	0.95	0.00	4.23	1.18	0.97	0.18
15	3	59.01	0.12	0.11	7.40	0.05	20.94	7.04	4.29	1.04	7.82	0.02	0.01	0.80	0.34	1.13	0.01	4.14	1.00	1.10	0.18
15	4	58.89	0.29	0.11	5.16	0.10	23.69	7.42	3.20	1.13	7.80	0.05	0.01	0.56	0.24	0.79	0.01	4.68	1.05	0.82	0.19
15	5	59.19	0.31	0.37	5.45	0.21	22.48	7.53	3.54	0.91	7.83	0.05	0.04	0.59	0.25	0.84	0.02	4.44	1.07	0.91	0.15
15	7	57.81	0.71	0.16	5.42	0.05	22.81	7.06	4.74	1.23	7.70	0.11	0.02	0.59	0.25	0.84	0.01	4.53	1.01	1.22	0.21
15	8	58.89	0.13	0.07	5.20	0.12	22.82	6.89	4.51	1.38	7.83	0.02	0.01	0.56	0.24	0.80	0.01	4.52	0.98	1.16	0.23
15	9	60.36	0.61	0.20	5.25	0.12	23.08	7.05	2.21	1.13	7.92	0.09	0.02	0.56	0.24	0.80	0.01	4.52	0.99	0.56	0.19
15	12	58.02	0.23	0.13	5.11	0.02	23.03	7.98	4.58	0.91	7.73	0.04	0.01	0.55	0.23	0.79	0.00	4.58	1.14	1.18	0.15
15	13	58.33	0.26	0.04	5.66	0.12	21.46	10.01	3.11	1.01	7.78	0.04	0.00	0.61	0.26	0.87	0.01	4.27	1.43	0.80	0.17
15	14	56.18	0.38	0.22	5.47	0.21	22.80	11.14	2.73	0.88	7.55	0.06	0.02	0.60	0.25	0.85	0.02	4.57	1.60	0.71	0.15
15	15	59.08	0.17	0.08	5.74	-0.02	21.78	7.36	4.65	1.14	7.85	0.03	0.01	0.62	0.26	0.88	0.00	4.31	1.05	1.20	0.19
15	16	58.55	0.42	0.33	7.15	0.01	21.02	8.10	3.44	0.98	7.76	0.07	0.03	0.77	0.33	1.10	0.00	4.15	1.15	0.88	0.17
15	17	58.85	0.40	0.39	5.36	0.13	23.06	6.77	4.09	0.96	7.79	0.06	0.04	0.58	0.24	0.82	0.01	4.55	0.96	1.05	0.16
15	18	58.51	0.06	0.14	6.09	0.11	21.92	8.35	3.70	1.10	7.78	0.01	0.01	0.66	0.28	0.94	0.01	4.35	1.19	0.95	0.19
15	19	58.90	0.07	0.11	5.84	0.09	21.85	8.22	3.84	1.06	7.83	0.01	0.01	0.63	0.27	0.90	0.01	4.33	1.17	0.99	0.18
15	20	59.41	0.17	0.00	6.54	0.16	20.77	8.21	3.66	1.09	7.88	0.03	0.00	0.71	0.30	1.00	0.02	4.10	1.17	0.94	0.18
15	21	58.29	0.28	0.42	5.79	-0.06	21.80	8.03	4.31	1.15	7.76	0.04	0.04	0.63	0.27	0.89	-0.01	4.33	1.15	1.11	0.20
15	22	59.08	0.90	0.27	6.30	0.12	20.53	7.81	3.50	1.48	7.84	0.14	0.03	0.68	0.29	0.97	0.01	4.06	1.11	0.90	0.25
15	23	58.24	0.32	0.32	4.99	0.01	22.45	9.35	3.60	0.71	7.75	0.05	0.03	0.54	0.23	0.77	0.00	4.46	1.33	0.93	0.12
15	24	58.47	0.27	0.14	4.89	-0.01	22.73	8.08	4.20	1.23	7.79	0.04	0.01	0.53	0.22	0.75	0.00	4.51	1.15	1.08	0.21
15	26	58.58	0.24	0.18	5.70	0.02	22.16	8.59	3.78	0.75	7.78	0.04	0.02	0.62	0.26	0.88	0.00	4.39	1.22	0.97	0.13
15	27	59.28	0.40	0.32	5.19	0.24	24.07	6.74	2.98	0.78	7.81	0.06	0.03	0.56	0.24	0.79	0.03	4.73	0.95	0.76	0.13
15	28	57.86	1.40	0.32	4.80	0.06	24.05	6.78	2.97	1.76	7.68	0.22	0.03	0.52	0.22	0.74	0.01	4.76	0.96	0.76	0.30
15	29	58.42	0.41	0.33	6.59	0.18	22.36	5.89	4.61	1.20	7.75	0.06	0.03	0.71	0.30	1.01	0.02	4.42	0.84	1.19	0.20
16	1	58.36	0.24	0.40	5.99	0.14	22.18	7.42	4.09	1.17	7.76	0.04	0.04	0.65	0.27	0.92	0.02	4.40	1.06	1.05	0.20
16	2	58.10	0.36	0.02	8.32	0.25	21.07	5.62	5.10	1.15	7.72	0.06	0.00	0.90	0.38	1.28	0.03	4.17	0.80	1.31	0.19
16	4	58.82	0.18	0.12	3.71	0.05	23.48	10.84	2.16	0.63	7.82	0.03	0.01	0.40	0.17	0.57	0.01	4.65	1.54	0.56	0.11
16	5	56.86	0.54	0.06	9.55	-0.20	20.57	6.83	4.85	0.92	7.57	0.08	0.01	1.03	0.44	1.47	-0.02	4.08	0.97	1.25	0.16
16	6	58.30	0.24	0.21	6.85	0.18	20.82	9.11	3.44	0.84	7.76	0.04	0.02	0.74	0.31	1.05	0.02	4.13	1.30	0.89	0.14
16	7	58.07	0.59	0.11	7.62	-0.05	21.24	5.92	5.62	0.88	7.71	0.09	0.01	0.82	0.35	1.17	-0.01	4.20	0.84	1.45	0.15
16	8	58.34	0.30	0.23	14.40	-0.03	18.53	2.48	5.23	0.51	7.64	0.05	0.02	1.53	0.65	2.18	0.00	3.62	0.35	1.33	0.09
16	10	57.41	0.50	0.07	7.58	0.30	22.21	5.88	4.91	1.14	7.64	0.08	0.01	0.82	0.35	1.17	0.03	4.41	0.84	1.27	0.19
16	11	58.64	0.28	0.09	4.46	0.05	24.35	6.68	4.41	1.03	7.78	0.04	0.01	0.48	0.20	0.69	0.01	4.82	0.95	1.13	0.17
16	12	58.18	0.51	0.42	7.28	0.02	21.08	7.15	4.22	1.15	7.73	0.08	0.04	0.79	0.33	1.12	0.00	4.17	1.02	1.09	0.19
16	13	59.62	0.31	0.37	6.27	0.13	21.39	7.60	3.30	1.02	7.87	0.05	0.04	0.67	0.29	0.96	0.01	4.21	1.08	0.85	0.17
16	14	59.83	0.07	0.14	3.47	0.10	21.07	12.85	1.63	0.83	7.96	0.01	0.01	0.38	0.16	0.53	0.01	4.18	1.83	0.42	0.14
16	15	59.21	0.31	0.14	8.29	0.03	20.53	5.87	4.92	0.69	7.81	0.05	0.01	0.89	0.38	1.27	0.00	4.04	0.83	1.26	0.12
16	17	60.25	0.33	-0.01	3.98	-0.05	23.79	8.67	2.37	0.68	7.93	0.05	0.00	0.43	0.18	0.61	-0.01	4.67	1.22	0.60	0.11
16	18	60.25	0.33	-0.01	3.98	-0.05	23.79	8.67	2.37	0.68	7.93	0.05	0.00	0.43	0.18	0.61	-0.01	4.67	1.22	0.60	0.11
16	19	59.03	0.35	0.20	8.98	0.10	19.58	5.55	4.75	1.46	7.81	0.05	0.02	0.97	0.41	1.38	0.01	3.86	0.79	1.22	0.25
16	20	59.59	-0.21	0.18	1.78	0.03	24.61	12.00	1.44	0.57	7.91	-0.03	0.02	0.19	0.08	0.27	0.00	4.87	1.71	0.37	0.10
16	21	59.82	0.52	0.19	7.00	0.16	21.57	6.21	3.69	0.82	7.87	0.08	0.02	0.75	0.32	1.07	0.02	4.23	0.88	0.94	0.14
16	22	59.21	0.02	0.09	4.27	0.09	23.14	9.46	2.95	0.78	7.86	0.00	0.01	0.46	0.20	0.66	0.01	4.58	1.35	0.76	0.13
16	23	58.18	0.34	0.13	8.25	0.24	18.94	9.91	2.85	1.16	7.75	0.05	0.01	0.89	0.38	1.27	0.03	3.76	1.41	0.74	0.20
16	24	59.54	0.38	0.53	5.41	-0.08	22.83	6.03	4.28	1.07	7.86	0.06	0.05	0.58	0.25	0.83	-0.01	4.49	0.85	1.10	0.18
16	25	59.19	0.23	0.21	10.38	-0.17	19.26	3.39	6.48	1.03	7.80	0.04	0.02	1.11	0.47	1.58	-0.02	3.78	0.48	1.66	0.17
16	26	59.24	0.30	0.00	9.99	0.18	19.23	3.94	6.00	1.11	7.82	0.05	0.00	1.07	0.45	1.53	0.02	3.78	0.56	1.54	0.19
16	28	60.01	0.49	0.38	4.99	0.07	22.47	7.23	3.29	1.06	7.91	0.08	0.04	0.54	0.23	0.76	0.01	4.42	1.02	0.84	0.18
16	29	58.21	0.28	0.01	5.12	0.12	23.37	8.10	4.06	0.74	7.74	0.04	0.00	0.55	0.23	0.79	0.01	4.63	1.15	1.05	0.13

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
17	1	58.41	1.61	0.25	7.79	0.11	19.13	8.07	3.54	1.08	7.74	0.25	0.02	0.84	0.36	1.19	0.01	3.78	1.15	0.91	0.18
17	2	59.01	0.42	0.11	5.48	0.15	21.43	8.04	4.20	1.17	7.84	0.07	0.01	0.59	0.25	0.84	0.02	4.25	1.15	1.08	0.20
17	3	58.44	0.45	0.14	5.65	0.18	22.14	8.48	3.53	1.00	7.77	0.07	0.01	0.61	0.26	0.87	0.02	4.39	1.21	0.91	0.17
17	4	58.72	0.44	0.18	8.74	-0.04	20.25	4.86	5.69	1.16	7.77	0.07	0.02	0.94	0.40	1.34	0.00	4.00	0.69	1.46	0.20
17	5	58.50	0.44	-0.04	9.13	-0.07	19.86	5.12	5.61	1.45	7.76	0.07	0.00	0.98	0.42	1.40	-0.01	3.93	0.73	1.44	0.25
17	8	58.41	0.37	0.32	6.48	0.46	20.93	8.39	3.79	0.84	7.77	0.06	0.03	0.70	0.30	1.00	0.05	4.15	1.20	0.98	0.14
17	9	56.30	0.53	0.16	7.80	0.33	21.69	8.25	3.98	0.96	7.53	0.08	0.02	0.85	0.36	1.21	0.04	4.33	1.18	1.03	0.16
17	10	58.92	0.49	0.10	5.20	0.07	23.08	6.95	4.28	0.91	7.80	0.08	0.01	0.56	0.24	0.80	0.01	4.56	0.99	1.10	0.15
17	11	58.51	0.41	-0.04	6.32	-0.13	21.42	8.25	4.07	1.18	7.78	0.06	0.00	0.68	0.29	0.97	-0.01	4.25	1.18	1.05	0.20
17	13	58.32	0.79	0.11	7.10	0.97	20.11	7.89	3.64	1.06	7.76	0.12	0.01	0.77	0.33	1.09	0.11	3.99	1.13	0.94	0.18
17	14	58.83	0.12	0.10	6.22	0.15	21.80	6.87	4.61	1.31	7.82	0.02	0.01	0.67	0.28	0.96	0.02	4.32	0.98	1.19	0.22
17	15	58.28	0.50	0.08	5.88	0.15	22.03	7.63	4.16	1.27	7.76	0.08	0.01	0.64	0.27	0.91	0.02	4.37	1.09	1.07	0.22
17	17	59.15	0.08	-0.19	5.95	0.06	21.18	10.02	2.80	0.96	7.86	0.01	-0.02	0.64	0.27	0.91	0.01	4.19	1.43	0.72	0.16
17	18	59.30	0.22	0.00	6.25	0.08	21.34	7.50	4.14	1.17	7.86	0.03	0.00	0.67	0.29	0.96	0.01	4.22	1.07	1.06	0.20
17	19	58.14	0.11	0.23	8.66	0.30	20.15	5.03	5.73	1.65	7.74	0.02	0.02	0.94	0.40	1.34	0.03	4.00	0.72	1.48	0.28
17	21	58.95	0.41	-0.11	6.65	0.38	20.40	7.79	4.04	1.50	7.85	0.06	-0.01	0.72	0.30	1.02	0.04	4.05	1.11	1.04	0.25
17	22	59.11	0.03	0.18	7.13	0.48	20.81	6.78	4.32	1.17	7.84	0.00	0.02	0.77	0.33	1.10	0.05	4.12	0.96	1.11	0.20
17	24	59.26	1.73	0.42	5.96	0.10	19.75	6.42	4.17	2.18	7.86	0.27	0.04	0.64	0.27	0.92	0.01	3.91	0.91	1.07	0.37
17	25	59.08	0.38	0.31	7.71	0.43	20.58	5.02	4.98	1.52	7.83	0.06	0.03	0.83	0.35	1.18	0.05	4.07	0.71	1.28	0.26
17	26	58.63	0.23	0.07	9.07	-0.02	19.56	6.78	4.38	1.29	7.78	0.04	0.01	0.98	0.41	1.39	0.00	3.87	0.96	1.13	0.22
17	27	58.30	0.38	0.29	6.16	0.16	22.26	4.23	6.58	1.63	7.77	0.06	0.03	0.67	0.28	0.95	0.02	4.42	0.60	1.70	0.28
17	28	58.60	0.02	0.16	7.71	0.15	21.03	5.18	5.35	1.79	7.80	0.00	0.02	0.83	0.35	1.19	0.02	4.17	0.74	1.38	0.30
17	29	58.95	0.14	0.17	5.92	0.12	21.59	7.40	4.38	1.33	7.84	0.02	0.02	0.64	0.27	0.91	0.01	4.28	1.05	1.13	0.23
17	30	58.65	0.45	0.04	6.45	0.04	21.59	7.32	4.43	1.04	7.79	0.07	0.00	0.70	0.29	0.99	0.00	4.27	1.04	1.14	0.18
18	1	58.91	0.17	0.06	6.57	0.16	20.86	8.18	3.93	1.16	7.83	0.03	0.01	0.71	0.30	1.01	0.02	4.13	1.17	1.01	0.20
18	2	59.62	0.33	0.12	6.75	0.19	21.19	7.49	3.22	1.08	7.87	0.05	0.01	0.73	0.31	1.03	0.02	4.17	1.06	0.82	0.18
18	4	57.85	0.31	0.12	5.63	0.12	22.43	8.40	4.04	1.09	7.72	0.05	0.01	0.61	0.26	0.87	0.01	4.46	1.20	1.05	0.19
18	5	58.65	0.20	0.33	6.84	0.33	20.65	7.18	4.36	1.45	7.81	0.03	0.03	0.74	0.31	1.05	0.04	4.10	1.02	1.13	0.25
18	7	58.90	0.12	0.14	7.78	0.03	20.43	7.69	3.82	1.10	7.81	0.02	0.01	0.84	0.36	1.19	0.00	4.04	1.09	0.98	0.19
18	8	58.74	0.23	0.07	8.32	0.12	20.09	6.84	4.50	1.09	7.79	0.04	0.01	0.90	0.38	1.28	0.01	3.97	0.97	1.16	0.18
18	9	56.84	0.43	0.08	8.09	1.00	19.33	9.94	3.24	1.05	7.63	0.07	0.01	0.88	0.37	1.26	0.11	3.87	1.43	0.84	0.18
18	11	58.69	0.25	0.06	5.37	0.07	22.29	8.71	3.71	0.84	7.80	0.04	0.01	0.58	0.25	0.83	0.01	4.42	1.24	0.96	0.14
18	12	59.49	0.31	0.53	6.51	0.00	20.07	6.45	4.62	2.03	7.90	0.05	0.05	0.70	0.30	1.00	0.00	3.98	0.92	1.19	0.34
18	13	59.28	0.31	0.24	8.17	0.28	19.44	6.09	4.68	1.50	7.86	0.05	0.02	0.88	0.37	1.25	0.03	3.84	0.87	1.20	0.25
18	14	58.83	0.28	0.13	6.20	0.26	21.34	8.05	3.85	1.07	7.82	0.04	0.01	0.67	0.28	0.95	0.03	4.23	1.15	0.99	0.18
18	15	59.40	0.21	0.27	11.40	0.24	15.42	8.95	2.58	1.54	7.87	0.03	0.03	1.23	0.52	1.75	0.03	3.04	1.27	0.66	0.26
18	16	58.62	0.19	0.23	7.09	0.10	21.18	6.69	4.58	1.31	7.79	0.03	0.02	0.77	0.32	1.09	0.01	4.19	0.95	1.18	0.22
18	17	58.87	0.37	0.12	7.99	0.07	20.80	5.03	5.71	1.03	7.79	0.06	0.01	0.86	0.36	1.22	0.01	4.11	0.71	1.47	0.17
18	18	58.73	0.10	0.03	8.94	0.24	20.24	4.01	6.59	1.12	7.79	0.02	0.00	0.96	0.41	1.37	0.03	4.00	0.57	1.69	0.19
18	21	59.21	0.22	-0.04	6.30	0.04	20.99	7.39	4.57	1.33	7.87	0.03	0.00	0.68	0.29	0.97	0.00	4.16	1.05	1.18	0.23
18	22	58.94	0.05	0.04	6.50	0.19	20.30	10.28	2.81	0.89	7.84	0.01	0.00	0.70	0.30	1.00	0.02	4.03	1.47	0.72	0.15
18	23	58.71	0.37	0.10	5.27	0.10	21.85	9.14	3.29	1.17	7.81	0.06	0.01	0.57	0.24	0.81	0.01	4.33	1.30	0.85	0.20
18	24	59.02	0.01	-0.02	7.31	-0.02	20.07	8.70	3.72	1.21	7.84	0.00	0.00	0.79	0.33	1.12	0.00	3.98	1.24	0.96	0.21
18	25	59.49	0.19	-0.01	5.99	-0.07	21.64	7.47	4.15	1.16	7.88	0.03	0.00	0.65	0.27	0.92	-0.01	4.27	1.06	1.07	0.20
18	26	58.46	0.06	0.27	8.18	0.16	20.50	5.49	5.34	1.54	7.77	0.01	0.03	0.88	0.37	1.26	0.02	4.06	0.78	1.38	0.26
18	27	58.76	0.09	0.21	7.13	0.33	20.76	5.70	5.42	1.61	7.82	0.01	0.02	0.77	0.33	1.10	0.04	4.12	0.81	1.40	0.27
18	28	59.04	0.23	0.25	7.39	0.16	20.37	6.88	4.37	1.32	7.83	0.04	0.02	0.80	0.34	1.13	0.02	4.03	0.98	1.12	0.22
18	29	57.65	0.31	0.12	8.19	0.08	19.56	9.34	3.35	1.41	7.70	0.05	0.01	0.89	0.38	1.27	0.01	3.89	1.34	0.87	0.24
18	30	59.15	0.21	0.01	5.22	-0.01	22.29	7.87	4.10	1.15	7.85	0.03	0.00	0.56	0.24	0.80	0.00	4.41	1.12	1.06	0.19

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
19	2	56.65	0.69	0.05	5.76	0.07	22.54	10.20	3.31	0.73	7.58	0.11	0.01	0.63	0.27	0.89	0.01	4.50	1.46	0.86	0.12
19	3	56.72	1.28	0.25	5.84	0.31	22.95	8.90	2.83	0.91	7.56	0.20	0.03	0.63	0.27	0.90	0.04	4.56	1.27	0.73	0.15
19	4	59.07	0.23	0.06	5.92	0.01	21.00	10.48	2.46	0.76	7.84	0.04	0.01	0.64	0.27	0.91	0.00	4.15	1.49	0.63	0.13
19	5	57.20	0.67	0.02	6.22	0.14	21.04	11.17	2.70	0.83	7.65	0.11	0.00	0.68	0.29	0.96	0.02	4.20	1.60	0.70	0.14
19	6	58.95	0.23	0.20	6.08	0.13	21.34	9.41	2.97	0.67	7.82	0.04	0.02	0.66	0.28	0.93	0.01	4.22	1.34	0.76	0.11
19	7	57.47	0.33	-0.08	7.16	0.16	21.22	10.70	2.42	0.62	7.66	0.05	-0.01	0.78	0.33	1.10	0.02	4.22	1.53	0.63	0.11
19	8	58.02	0.38	0.09	5.95	0.03	21.80	10.40	2.72	0.62	7.72	0.06	0.01	0.64	0.27	0.92	0.00	4.32	1.48	0.70	0.11
19	9	57.58	0.25	0.15	5.88	0.24	20.74	12.73	1.88	0.56	7.70	0.04	0.02	0.64	0.27	0.91	0.03	4.14	1.82	0.49	0.10
19	10	54.78	0.96	0.20	7.25	0.30	20.88	12.00	2.70	0.94	7.40	0.15	0.02	0.80	0.34	1.13	0.03	4.20	1.74	0.71	0.16
19	13	58.25	0.44	0.13	5.45	0.13	22.05	9.85	2.79	0.91	7.75	0.07	0.01	0.59	0.25	0.84	0.01	4.37	1.40	0.72	0.15
19	14	58.55	0.53	0.05	5.32	0.18	22.74	8.65	3.25	0.74	7.77	0.08	0.00	0.57	0.24	0.82	0.02	4.50	1.23	0.84	0.13
19	15	57.90	0.02	0.19	9.55	0.19	17.45	11.88	1.94	0.88	7.72	0.00	0.02	1.04	0.44	1.47	0.02	3.47	1.70	0.50	0.15
19	16	58.41	0.46	0.03	6.18	0.00	20.55	11.06	2.44	0.87	7.78	0.07	0.00	0.67	0.28	0.95	0.00	4.08	1.58	0.63	0.15
19	18	57.95	0.41	0.24	6.45	0.18	21.22	9.79	2.93	0.82	7.72	0.06	0.02	0.70	0.30	0.99	0.02	4.21	1.40	0.76	0.14
19	19	57.33	0.83	0.13	5.29	0.07	22.86	9.42	3.28	0.79	7.64	0.13	0.01	0.57	0.24	0.82	0.01	4.54	1.35	0.85	0.13
19	20	58.91	0.18	0.00	6.27	0.05	21.39	10.11	2.50	0.58	7.81	0.03	0.00	0.68	0.29	0.96	0.01	4.23	1.44	0.64	0.10
19	21	58.38	0.26	0.17	6.25	0.21	20.65	10.55	2.72	0.81	7.78	0.04	0.02	0.68	0.29	0.96	0.02	4.10	1.51	0.70	0.14
19	22	58.18	0.37	0.04	6.23	0.21	21.71	9.67	2.90	0.68	7.74	0.06	0.00	0.67	0.29	0.96	0.02	4.30	1.38	0.75	0.12
19	23	58.93	0.14	0.18	6.12	0.16	20.94	9.73	2.85	0.96	7.83	0.02	0.02	0.66	0.28	0.94	0.02	4.15	1.39	0.73	0.16
19	24	58.71	0.30	0.13	5.27	0.22	22.17	9.66	2.78	0.76	7.80	0.05	0.01	0.57	0.24	0.81	0.02	4.39	1.37	0.72	0.13
19	25	58.15	0.17	0.02	6.81	0.10	21.55	10.12	2.56	0.52	7.72	0.03	0.00	0.74	0.31	1.05	0.01	4.27	1.44	0.66	0.09
19	26	57.95	0.44	-0.02	5.47	0.19	22.56	9.53	3.03	0.84	7.72	0.07	0.00	0.59	0.25	0.84	0.02	4.48	1.36	0.78	0.14
19	27	59.18	0.13	0.08	5.17	0.22	22.23	9.29	2.86	0.84	7.85	0.02	0.01	0.56	0.24	0.79	0.02	4.40	1.32	0.74	0.14
19	29	57.78	0.32	0.05	6.52	-0.10	20.69	10.92	2.94	0.88	7.71	0.05	0.01	0.71	0.30	1.01	-0.01	4.12	1.56	0.76	0.15
19	30	59.37	0.61	0.00	5.62	0.03	21.64	8.55	3.11	1.05	7.86	0.10	0.00	0.61	0.26	0.86	0.00	4.27	1.21	0.80	0.18
20	1	59.51	0.04	0.08	2.53	0.09	22.67	13.42	1.21	0.46	7.92	0.01	0.01	0.27	0.12	0.39	0.01	4.50	1.91	0.31	0.08
20	4	59.48	0.19	0.11	1.37	0.02	24.45	12.65	1.39	0.35	7.90	0.03	0.01	0.15	0.06	0.21	0.00	4.84	1.80	0.36	0.06
20	5	58.57	0.27	0.06	4.79	0.04	23.09	10.35	2.25	0.59	7.77	0.04	0.01	0.52	0.22	0.74	0.00	4.57	1.47	0.58	0.10
20	6	59.15	0.14	0.12	2.84	0.01	23.32	12.44	1.62	0.37	7.86	0.02	0.01	0.31	0.13	0.44	0.00	4.62	1.77	0.42	0.06
20	7	59.47	0.10	0.18	3.36	0.09	22.50	12.10	1.72	0.48	7.90	0.02	0.02	0.36	0.15	0.52	0.01	4.45	1.72	0.44	0.08
20	8	58.87	0.14	0.09	2.11	0.00	25.04	11.67	1.62	0.45	7.82	0.02	0.01	0.23	0.10	0.32	0.00	4.96	1.66	0.42	0.08
20	9	57.74	0.74	0.03	5.30	0.02	23.39	10.12	2.23	0.41	7.66	0.12	0.00	0.57	0.24	0.81	0.00	4.63	1.44	0.57	0.07
20	11	59.54	0.17	0.08	2.50	0.10	22.91	13.16	1.18	0.35	7.91	0.03	0.01	0.27	0.11	0.38	0.01	4.54	1.87	0.30	0.06
20	13	59.50	0.15	0.20	3.96	0.04	22.26	11.93	1.52	0.44	7.89	0.02	0.02	0.43	0.18	0.61	0.00	4.40	1.69	0.39	0.07
20	15	59.66	0.02	0.10	2.33	0.11	24.64	11.33	1.48	0.33	7.90	0.00	0.01	0.25	0.11	0.36	0.01	4.86	1.61	0.38	0.06
20	16	58.00	0.42	0.15	2.43	0.26	24.52	12.14	1.67	0.41	7.74	0.07	0.02	0.26	0.11	0.38	0.03	4.88	1.74	0.43	0.07
20	18	59.14	0.00	0.16	3.99	0.16	22.65	11.76	1.71	0.43	7.85	0.00	0.02	0.43	0.18	0.61	0.02	4.48	1.67	0.44	0.07
20	19	59.87	0.21	-0.02	1.92	0.12	22.67	13.70	1.10	0.43	7.96	0.03	0.00	0.21	0.09	0.30	0.01	4.49	1.95	0.28	0.07
20	20	59.97	0.04	0.09	2.41	0.12	23.50	12.16	1.30	0.42	7.94	0.01	0.01	0.26	0.11	0.37	0.01	4.64	1.73	0.33	0.07
20	22	57.86	0.76	-0.01	10.35	0.19	19.39	7.44	3.58	0.45	7.65	0.12	0.00	1.11	0.47	1.58	0.02	3.82	1.05	0.92	0.08
20	23	59.32	0.11	0.04	4.93	0.08	22.71	10.40	1.99	0.43	7.85	0.02	0.00	0.53	0.22	0.75	0.01	4.48	1.47	0.51	0.07
20	24	59.22	0.11	0.06	6.63	0.08	20.83	10.13	2.36	0.59	7.84	0.02	0.01	0.71	0.30	1.02	0.01	4.11	1.44	0.61	0.10
20	26	58.87	0.10	0.15	3.80	0.13	23.13	11.51	1.86	0.46	7.82	0.02	0.01	0.41	0.17	0.58	0.01	4.58	1.64	0.48	0.08
20	29	58.33	0.13	0.21	4.01	-0.02	23.45	11.46	1.91	0.52	7.76	0.02	0.02	0.43	0.18	0.62	0.00	4.65	1.63	0.49	0.09
20	30	59.61	0.08	0.00	2.28	0.09	22.94	13.35	1.17	0.47	7.93	0.01	0.00	0.25	0.10	0.35	0.01	4.55	1.90	0.30	0.08

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
21	1	58.93	0.12	0.24	9.51	0.19	18.93	7.35	3.88	0.84	7.80	0.02	0.02	1.02	0.43	1.46	0.02	3.73	1.04	1.00	0.14
21	2	57.44	0.41	0.03	7.90	0.03	21.31	7.90	4.11	0.87	7.65	0.06	0.00	0.86	0.36	1.22	0.00	4.23	1.13	1.06	0.15
21	3	57.19	0.42	0.13	7.86	0.17	20.85	9.61	2.98	0.79	7.62	0.07	0.01	0.85	0.36	1.21	0.02	4.14	1.37	0.77	0.13
21	4	59.14	0.28	0.30	7.80	0.05	20.17	7.20	4.14	0.91	7.82	0.04	0.03	0.84	0.36	1.19	0.01	3.98	1.02	1.06	0.15
21	5	58.51	0.36	0.01	6.85	0.13	21.72	7.68	3.94	0.81	7.76	0.06	0.00	0.74	0.31	1.05	0.01	4.29	1.09	1.01	0.14
21	6	58.87	0.22	0.09	6.50	0.22	21.69	7.25	4.38	0.79	7.81	0.03	0.01	0.70	0.30	1.00	0.02	4.29	1.03	1.13	0.13
21	8	58.37	0.49	0.19	7.33	0.22	20.51	8.69	3.20	1.00	7.75	0.08	0.02	0.79	0.34	1.13	0.02	4.06	1.24	0.82	0.17
21	9	59.13	0.14	0.07	7.98	0.17	20.45	7.50	3.96	0.59	7.82	0.02	0.01	0.86	0.36	1.22	0.02	4.03	1.06	1.02	0.10
21	10	58.93	0.23	0.02	6.85	0.14	20.46	9.98	2.62	0.76	7.82	0.04	0.00	0.74	0.31	1.05	0.02	4.05	1.42	0.67	0.13
21	11	58.80	0.21	0.40	7.53	0.01	20.75	7.39	4.08	0.83	7.79	0.03	0.04	0.81	0.34	1.15	0.00	4.10	1.05	1.05	0.14
21	12	58.86	0.27	0.25	6.11	0.08	22.32	8.49	2.92	0.70	7.79	0.04	0.02	0.66	0.28	0.94	0.01	4.40	1.20	0.75	0.12
21	13	58.97	-0.04	0.12	7.92	0.10	20.49	7.53	4.19	0.71	7.81	-0.01	0.01	0.85	0.36	1.21	0.01	4.05	1.07	1.08	0.12
21	15	59.12	0.01	0.19	8.28	0.04	20.06	7.99	3.70	0.61	7.82	0.00	0.02	0.89	0.38	1.27	0.00	3.95	1.13	0.95	0.10
21	16	58.17	0.14	0.27	9.67	0.05	20.23	6.15	4.74	0.58	7.69	0.02	0.03	1.04	0.44	1.48	0.01	3.99	0.87	1.22	0.10
21	18	57.13	0.39	0.18	8.04	0.14	21.31	8.44	3.72	0.66	7.61	0.06	0.02	0.87	0.37	1.24	0.02	4.23	1.20	0.96	0.11
21	19	59.13	0.14	-0.02	8.82	0.01	20.12	6.25	4.94	0.61	7.81	0.02	0.00	0.95	0.40	1.35	0.00	3.96	0.88	1.27	0.10
21	20	58.56	0.53	0.21	7.49	0.09	21.14	6.99	4.04	0.96	7.75	0.08	0.02	0.81	0.34	1.15	0.01	4.17	0.99	1.04	0.16
21	21	58.64	0.16	0.07	5.90	0.10	22.49	8.35	3.54	0.76	7.78	0.03	0.01	0.64	0.27	0.91	0.01	4.45	1.19	0.91	0.13
21	22	58.13	0.35	0.07	7.58	0.13	20.84	9.02	3.22	0.65	7.72	0.05	0.01	0.82	0.35	1.17	0.01	4.13	1.28	0.83	0.11
21	23	58.33	0.28	0.01	3.73	0.22	23.95	10.06	2.68	0.74	7.77	0.04	0.00	0.40	0.17	0.57	0.02	4.75	1.44	0.69	0.13
21	24	58.92	0.20	0.07	6.46	0.25	20.95	8.82	3.21	1.12	7.83	0.03	0.01	0.70	0.30	0.99	0.03	4.15	1.26	0.83	0.19
21	25	58.26	0.13	0.16	10.34	0.03	19.16	7.30	3.89	0.72	7.71	0.02	0.02	1.11	0.47	1.58	0.00	3.78	1.04	1.00	0.12
21	27	58.41	0.32	0.03	8.38	0.10	20.51	7.23	4.30	0.72	7.74	0.05	0.00	0.90	0.38	1.29	0.01	4.05	1.03	1.10	0.12
21	28	56.92	1.10	0.19	8.09	0.23	20.30	9.23	3.01	0.93	7.59	0.17	0.02	0.88	0.37	1.25	0.03	4.03	1.32	0.78	0.16
21	29	57.68	0.74	0.26	7.65	0.09	21.34	6.65	4.71	0.88	7.66	0.12	0.03	0.83	0.35	1.18	0.01	4.23	0.95	1.21	0.15
21	30	56.91	0.91	0.10	7.91	0.16	21.91	7.25	4.15	0.71	7.57	0.14	0.01	0.86	0.36	1.22	0.02	4.34	1.03	1.07	0.12
22	1	59.12	0.41	0.00	5.80	0.40	20.13	10.12	2.68	1.35	7.87	0.06	0.00	0.63	0.27	0.89	0.05	4.00	1.44	0.69	0.23
22	3	57.27	0.30	0.28	7.87	0.18	19.93	10.21	3.19	0.77	7.65	0.05	0.03	0.85	0.36	1.22	0.02	3.97	1.46	0.83	0.13
22	4	58.82	0.32	0.20	4.09	0.46	23.00	8.25	3.85	1.01	7.83	0.05	0.02	0.44	0.19	0.63	0.05	4.56	1.18	0.99	0.17
22	5	58.58	0.00	0.30	6.58	0.32	22.08	7.27	4.07	0.81	7.77	0.00	0.03	0.71	0.30	1.01	0.04	4.37	1.03	1.05	0.14
22	6	58.18	0.30	-0.12	4.50	0.19	22.81	9.79	3.35	0.98	7.77	0.05	-0.01	0.49	0.21	0.70	0.02	4.54	1.40	0.87	0.17
22	7	59.55	0.36	-0.26	4.92	-0.02	20.56	10.65	2.89	1.35	7.93	0.06	-0.03	0.53	0.23	0.76	0.00	4.08	1.52	0.75	0.23
22	8	59.76	0.30	0.08	7.20	-0.17	19.63	8.52	3.45	1.23	7.91	0.05	0.01	0.77	0.33	1.10	-0.02	3.87	1.21	0.89	0.21
22	9	58.15	0.22	0.66	5.68	0.19	22.04	6.10	4.77	2.20	7.77	0.03	0.07	0.62	0.26	0.88	0.02	4.39	0.87	1.24	0.37
22	10	58.65	0.21	-0.18	8.14	0.17	21.16	5.25	5.70	0.90	7.77	0.03	-0.02	0.88	0.37	1.25	0.02	4.18	0.75	1.46	0.15
22	11	59.15	0.71	-0.15	5.73	-0.18	21.89	8.44	3.40	1.02	7.83	0.11	-0.01	0.62	0.26	0.88	-0.02	4.32	1.20	0.87	0.17
22	12	58.78	0.05	0.14	6.43	-0.01	21.71	7.18	4.23	1.50	7.81	0.01	0.01	0.70	0.29	0.99	0.00	4.30	1.02	1.09	0.25
22	13	58.72	0.21	0.28	4.55	0.63	22.92	5.24	5.21	2.24	7.85	0.03	0.03	0.49	0.21	0.70	0.07	4.57	0.75	1.35	0.38
22	14	58.76	0.44	-0.04	5.59	0.21	21.79	9.62	2.93	0.69	7.80	0.07	0.00	0.60	0.26	0.86	0.02	4.31	1.37	0.75	0.12
22	15	58.69	0.21	-0.03	8.67	0.25	19.00	9.28	2.71	1.22	7.80	0.03	0.00	0.94	0.40	1.33	0.03	3.76	1.32	0.70	0.21
22	16	58.25	0.24	0.10	8.80	0.08	18.52	7.33	5.91	0.76	7.76	0.04	0.01	0.95	0.40	1.36	0.01	3.68	1.05	1.53	0.13
22	17	59.04	0.53	0.08	4.14	0.21	22.42	9.19	3.13	1.25	7.85	0.08	0.01	0.45	0.19	0.64	0.02	4.45	1.31	0.81	0.21
22	18	59.61	0.23	1.20	5.26	0.16	18.82	9.63	2.98	2.10	7.95	0.04	0.12	0.57	0.24	0.81	0.02	3.74	1.38	0.77	0.36
22	19	59.56	0.37	-0.26	5.91	0.04	21.30	8.47	3.71	0.90	7.89	0.06	-0.03	0.64	0.27	0.91	0.00	4.21	1.20	0.95	0.15
22	20	60.00	0.19	0.04	7.61	0.28	19.71	5.72	4.65	1.82	7.94	0.03	0.00	0.82	0.35	1.17	0.03	3.89	0.81	1.19	0.31
22	21	59.25	0.18	0.04	5.77	0.22	21.47	9.33	2.76	0.98	7.86	0.03	0.00	0.62	0.26	0.89	0.02	4.25	1.33	0.71	0.17
22	22	59.55	0.12	-0.13	6.01	0.11	21.13	7.48	4.14	1.60	7.91	0.02	-0.01	0.65	0.27	0.92	0.01	4.18	1.06	1.07	0.27
22	23	58.26	0.23	-0.16	4.71	0.35	23.20	8.83	3.60	0.98	7.77	0.04	-0.02	0.51	0.22	0.73	0.04	4.61	1.26	0.93	0.17
22	24	58.50	0.61	0.22	5.16	0.49	22.05	8.18	3.60	1.18	7.79	0.10	0.02	0.56	0.24	0.80	0.06	4.38	1.17	0.93	0.20
22	25	58.73	0.42	0.49	5.40	0.34	21.37	9.08	3.17	0.99	7.81	0.07	0.05	0.58	0.25	0.83	0.04	4.24	1.29	0.82	0.17
22	26	58.14	0.10	0.15	4.82	-0.03	23.46	8.18	4.31	0.88	7.74	0.02	0.02	0.52	0.22	0.74	0.00	4.66	1.17	1.11	0.15
22	27	58.52	0.21	-0.10	5.07	0.29	21.71	9.11	3.75	1.45	7.82	0.03	-0.01	0.55	0.23	0.78	0.03	4.32	1.30	0.97	0.25
22	29	59.00	0.35	-0.26	5.73	-0.21	22.98	7.76	3.79	0.86	7.81	0.05	-0.03	0.62	0.26	0.88	-0.02	4.53	1.10	0.97	0.15
22	30	59.20	0.22	0.03	3.05	0.55	22.95	9.18	3.43	1.40	7.90	0.03	0.00	0.33	0.14	0.47	0.06	4.57	1.31	0.89	0.24

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
23	1	58.45	0.20	0.31	5.04	0.16	22.68	6.75	4.85	1.57	7.79	0.03	0.03	0.55	0.23	0.78	0.02	4.51	0.96	1.25	0.27
23	2	57.57	0.44	0.01	6.87	0.18	21.61	7.11	4.90	1.32	7.69	0.07	0.00	0.75	0.32	1.06	0.02	4.30	1.02	1.27	0.22
23	3	59.28	-0.06	-0.08	7.51	0.25	20.67	5.43	5.14	1.86	7.88	-0.01	-0.01	0.81	0.34	1.16	0.03	4.09	0.77	1.32	0.32
23	4	59.34	0.12	0.43	4.11	0.10	22.66	9.90	2.67	0.67	7.87	0.02	0.04	0.44	0.19	0.63	0.01	4.48	1.41	0.69	0.11
23	5	58.48	0.09	0.19	4.34	0.17	23.01	10.37	2.69	0.65	7.78	0.01	0.02	0.47	0.20	0.67	0.02	4.57	1.48	0.69	0.11
23	6	59.48	-0.07	0.12	8.03	0.31	19.67	6.53	4.30	1.63	7.89	-0.01	0.01	0.87	0.37	1.23	0.03	3.89	0.93	1.11	0.28
23	7	59.46	0.00	-0.03	2.81	0.00	24.77	10.55	1.94	0.50	7.87	0.00	0.00	0.30	0.13	0.43	0.00	4.89	1.50	0.50	0.08
23	8	59.19	0.02	0.05	2.70	-0.06	24.83	10.27	2.34	0.66	7.85	0.00	0.00	0.29	0.12	0.41	-0.01	4.91	1.46	0.60	0.11
23	9	58.51	0.19	-0.04	4.63	0.24	22.82	9.27	3.52	0.85	7.79	0.03	0.00	0.50	0.21	0.71	0.03	4.53	1.32	0.91	0.14
23	10	59.26	0.02	0.13	1.94	0.32	23.85	12.49	1.44	0.55	7.89	0.00	0.01	0.21	0.09	0.30	0.04	4.73	1.78	0.37	0.09
23	11	58.90	2.05	0.14	5.13	0.14	20.37	7.40	4.04	1.83	7.82	0.32	0.01	0.55	0.23	0.79	0.02	4.03	1.05	1.04	0.31
23	13	59.05	0.04	0.13	4.90	0.32	22.31	8.79	3.57	0.89	7.85	0.01	0.01	0.53	0.22	0.75	0.04	4.42	1.25	0.92	0.15
23	14	58.41	0.07	0.10	3.91	-0.01	23.53	11.46	2.04	0.49	7.77	0.01	0.01	0.42	0.18	0.60	0.00	4.67	1.63	0.53	0.08
23	15	58.53	0.09	0.01	4.23	0.08	23.96	9.40	3.04	0.65	7.78	0.01	0.00	0.46	0.19	0.65	0.01	4.75	1.34	0.78	0.11
23	16	59.09	0.09	0.36	6.21	-0.03	22.45	6.23	4.83	0.77	7.82	0.01	0.04	0.67	0.28	0.95	0.00	4.43	0.88	1.24	0.13
23	17	59.15	-0.03	0.04	5.65	0.29	20.92	10.51	2.66	0.82	7.87	0.00	0.00	0.61	0.26	0.87	0.03	4.15	1.50	0.69	0.14
23	18	59.45	0.01	-0.01	3.14	0.08	22.87	11.95	1.95	0.56	7.90	0.00	0.00	0.34	0.14	0.48	0.01	4.53	1.70	0.50	0.09
23	21	59.13	0.10	0.11	7.52	0.24	20.52	7.34	4.19	0.85	7.83	0.02	0.01	0.81	0.34	1.15	0.03	4.05	1.04	1.08	0.14
23	22	58.36	0.09	0.27	5.27	-0.03	23.22	8.88	3.30	0.65	7.75	0.01	0.03	0.57	0.24	0.81	0.00	4.60	1.26	0.85	0.11
23	23	59.07	0.08	0.11	5.85	0.17	21.81	9.47	2.73	0.71	7.83	0.01	0.01	0.63	0.27	0.90	0.02	4.31	1.35	0.70	0.12
23	24	59.21	0.05	0.11	2.35	0.17	23.87	11.89	1.81	0.55	7.88	0.01	0.01	0.25	0.11	0.36	0.02	4.73	1.69	0.47	0.09
23	26	59.11	0.10	0.03	5.02	-0.03	22.97	7.64	4.21	0.94	7.84	0.02	0.00	0.54	0.23	0.77	0.00	4.54	1.09	1.08	0.16
23	27	58.69	0.02	0.29	4.85	0.06	22.67	9.07	3.48	0.88	7.81	0.00	0.03	0.52	0.22	0.75	0.01	4.49	1.29	0.90	0.15
23	28	59.59	-0.01	0.05	1.86	-0.03	24.64	11.75	1.63	0.51	7.91	0.00	0.00	0.20	0.08	0.29	0.00	4.87	1.67	0.42	0.09
23	29	59.34	-0.15	0.11	2.09	0.05	23.72	12.75	1.56	0.52	7.90	-0.02	0.01	0.23	0.10	0.32	0.01	4.71	1.82	0.40	0.09
24	1	58.14	0.45	-0.06	5.86	0.12	22.32	8.26	3.87	1.04	7.74	0.07	-0.01	0.63	0.27	0.90	0.01	4.43	1.18	1.00	0.18
24	2	57.79	0.74	0.19	5.06	0.22	22.53	8.54	3.84	1.09	7.71	0.12	0.02	0.55	0.23	0.78	0.02	4.48	1.22	0.99	0.19
24	3	59.20	0.40	0.01	6.67	0.11	21.12	6.88	4.44	1.17	7.85	0.06	0.00	0.72	0.30	1.02	0.01	4.17	0.98	1.14	0.20
24	4	58.86	0.36	0.14	5.40	0.07	21.89	8.79	3.33	1.16	7.82	0.06	0.01	0.58	0.25	0.83	0.01	4.34	1.25	0.86	0.20
24	5	58.87	0.26	0.10	5.88	0.13	22.23	6.64	4.82	1.07	7.81	0.04	0.01	0.63	0.27	0.90	0.01	4.40	0.94	1.24	0.18
24	6	57.08	0.32	0.08	7.53	0.16	19.47	10.58	3.79	0.99	7.66	0.05	0.01	0.82	0.35	1.17	0.02	3.89	1.52	0.99	0.17
24	7	58.30	0.38	0.18	5.89	0.14	21.78	9.46	2.88	1.00	7.75	0.06	0.02	0.64	0.27	0.91	0.02	4.32	1.35	0.74	0.17
24	8	59.00	0.27	0.13	6.28	0.14	20.90	9.22	3.03	1.03	7.83	0.04	0.01	0.68	0.29	0.97	0.02	4.14	1.31	0.78	0.17
24	9	58.90	0.34	0.12	4.73	0.17	22.56	8.14	3.88	1.17	7.83	0.05	0.01	0.51	0.22	0.73	0.02	4.47	1.16	1.00	0.20
24	11	58.77	0.20	0.32	6.99	0.22	20.68	8.96	3.08	0.79	7.79	0.03	0.03	0.75	0.32	1.07	0.02	4.09	1.27	0.79	0.13
24	12	59.29	0.34	0.00	5.14	0.22	21.20	9.35	3.26	1.20	7.88	0.05	0.00	0.56	0.24	0.79	0.02	4.20	1.33	0.84	0.20
24	13	59.57	0.47	0.06	6.52	0.11	21.44	6.66	4.03	1.14	7.87	0.07	0.01	0.70	0.30	1.00	0.01	4.22	0.94	1.03	0.19
24	14	59.31	0.18	0.24	6.96	0.17	20.95	6.20	4.58	1.40	7.86	0.03	0.02	0.75	0.32	1.07	0.02	4.14	0.88	1.18	0.24
24	15	58.92	0.26	0.08	4.99	0.19	22.37	9.08	3.21	0.89	7.83	0.04	0.01	0.54	0.23	0.77	0.02	4.43	1.29	0.83	0.15
24	16	58.92	0.32	0.10	5.60	0.10	22.12	8.04	3.82	0.99	7.82	0.05	0.01	0.60	0.26	0.86	0.01	4.38	1.14	0.98	0.17
24	17	57.71	0.22	0.16	6.20	0.11	22.48	7.47	4.43	1.22	7.70	0.03	0.02	0.67	0.28	0.96	0.01	4.47	1.07	1.15	0.21
24	18	58.38	0.28	-0.01	5.19	0.25	22.31	8.87	3.55	1.20	7.78	0.04	0.00	0.56	0.24	0.80	0.03	4.43	1.27	0.92	0.20
24	19	59.21	0.03	0.01	6.38	-0.01	21.38	8.32	3.74	0.93	7.85	0.00	0.00	0.69	0.29	0.98	0.00	4.23	1.18	0.96	0.16
24	20	59.26	0.41	0.13	5.86	0.04	20.65	9.36	2.95	1.34	7.87	0.06	0.01	0.63	0.27	0.90	0.00	4.09	1.33	0.76	0.23
24	21	58.37	0.37	0.17	7.26	0.27	21.05	8.09	3.59	0.82	7.75	0.06	0.02	0.78	0.33	1.12	0.03	4.17	1.15	0.92	0.14
24	22	58.90	0.26	0.21	6.21	0.16	21.83	7.78	3.71	0.93	7.81	0.04	0.02	0.67	0.28	0.95	0.02	4.31	1.11	0.95	0.16
24	23	58.71	0.24	0.09	6.29	-0.03	22.13	7.20	4.44	0.94	7.79	0.04	0.01	0.68	0.29	0.97	0.00	4.38	1.02	1.14	0.16
24	24	58.77	0.31	0.23	5.40	0.11	21.60	9.55	3.09	0.94	7.81	0.05	0.02	0.58	0.25	0.83	0.01	4.28	1.36	0.80	0.16
24	25	59.05	0.04	0.07	5.70	0.11	22.53	7.68	4.01	0.82	7.83	0.01	0.01	0.61	0.26	0.87	0.01	4.45	1.09	1.03	0.14
24	26	59.21	0.32	-0.03	6.89	0.14	20.68	7.99	3.61	1.19	7.85	0.05	0.00	0.74	0.31	1.06	0.02	4.09	1.14	0.93	0.20
24	27	58.87	0.26	0.21	6.20	-0.03	21.87	7.08	4.42	1.11	7.81	0.04	0.02	0.67	0.28	0.95	0.00	4.33	1.01	1.14	0.19
24	28	58.55	0.53	0.07	7.30	0.06	19.19	10.11	3.05	1.15	7.80	0.08	0.01	0.79	0.33	1.13	0.01	3.81	1.44	0.79	0.20
24	29	58.21	0.42	0.00	4.89	0.22	23.10	8.13	4.02	1.01	7.75	0.07	0.00	0.53	0.22	0.75	0.02	4.59	1.16	1.04	0.17
24	30	59.15	0.04	-0.01	7.11	0.21	20.92	7.40	4.15	1.03	7.84	0.01	0.00	0.77	0.32	1.09	0.02	4.14	1.05	1.07	0.17

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
25	1	58.06	0.26	0.01	4.24	-0.01	23.68	9.07	3.79	0.90	7.74	0.04	0.00	0.46	0.19	0.65	0.00	4.71	1.30	0.98	0.15
25	4	58.90	0.09	0.14	6.64	0.01	21.38	5.15	5.81	1.89	7.84	0.01	0.01	0.72	0.30	1.02	0.00	4.24	0.73	1.50	0.32
25	5	57.77	0.08	0.00	8.09	0.06	17.97	11.53	2.88	1.61	7.75	0.01	0.00	0.88	0.37	1.26	0.01	3.60	1.66	0.75	0.28
25	6	56.22	0.22	0.01	5.68	0.15	22.22	10.16	4.15	1.19	7.58	0.03	0.00	0.62	0.26	0.89	0.02	4.46	1.47	1.08	0.20
25	8	58.26	0.24	0.03	4.61	0.09	23.20	8.73	3.83	1.02	7.76	0.04	0.00	0.50	0.21	0.71	0.01	4.61	1.25	0.99	0.17
25	9	57.51	0.28	0.05	6.46	0.08	20.94	9.79	3.67	1.22	7.70	0.04	0.01	0.70	0.30	1.00	0.01	4.18	1.40	0.95	0.21
25	10	57.94	0.31	0.14	4.45	-0.02	23.34	9.01	3.83	0.99	7.73	0.05	0.01	0.48	0.20	0.69	0.00	4.64	1.29	0.99	0.17
25	12	58.03	0.33	0.07	4.18	0.04	23.79	8.79	3.86	0.90	7.74	0.05	0.01	0.45	0.19	0.65	0.00	4.73	1.26	1.00	0.15
25	14	59.31	0.09	0.34	7.35	0.03	20.00	5.39	5.11	2.37	7.89	0.01	0.03	0.80	0.34	1.13	0.00	3.97	0.77	1.32	0.40
25	15	58.74	0.04	0.00	4.77	0.12	22.05	10.48	2.93	0.85	7.83	0.01	0.00	0.52	0.22	0.74	0.01	4.38	1.50	0.76	0.14
25	16	58.04	0.14	0.10	4.66	0.08	22.65	10.15	3.26	0.93	7.75	0.02	0.01	0.51	0.21	0.72	0.01	4.51	1.45	0.84	0.16
25	19	58.36	0.21	0.04	5.14	0.11	22.79	8.62	3.84	0.87	7.77	0.03	0.00	0.56	0.24	0.79	0.01	4.52	1.23	0.99	0.15
25	20	57.88	0.51	-0.03	4.31	0.03	23.83	9.33	3.33	0.81	7.71	0.08	0.00	0.47	0.20	0.66	0.00	4.73	1.33	0.86	0.14
25	21	56.76	0.23	0.21	4.75	0.10	22.70	10.39	3.86	1.00	7.63	0.04	0.02	0.52	0.22	0.74	0.01	4.55	1.50	1.01	0.17
25	22	58.69	0.06	0.05	3.91	0.17	23.60	8.17	4.23	1.11	7.82	0.01	0.01	0.42	0.18	0.60	0.02	4.69	1.17	1.09	0.19
25	23	57.98	0.31	0.10	5.46	0.10	21.94	9.00	3.88	1.24	7.74	0.05	0.01	0.59	0.25	0.84	0.01	4.37	1.29	1.00	0.21
25	24	59.29	0.09	0.07	5.27	0.09	22.37	6.25	4.80	1.78	7.88	0.01	0.01	0.57	0.24	0.81	0.01	4.43	0.89	1.24	0.30
25	25	58.30	0.16	0.09	5.22	0.12	22.50	9.55	3.20	0.87	7.76	0.03	0.01	0.57	0.24	0.80	0.01	4.47	1.36	0.83	0.15
25	26	57.43	0.11	0.04	5.50	0.18	22.84	8.31	4.51	1.08	7.68	0.02	0.00	0.60	0.25	0.85	0.02	4.56	1.19	1.17	0.18
25	27	58.14	0.27	0.05	4.81	0.06	23.32	9.01	3.48	0.87	7.74	0.04	0.01	0.52	0.22	0.74	0.01	4.63	1.29	0.90	0.15
25	28	57.80	0.23	0.19	3.92	0.04	23.90	10.23	2.93	0.75	7.71	0.04	0.02	0.43	0.18	0.61	0.00	4.75	1.46	0.76	0.13
25	29	57.04	0.23	0.11	5.65	0.00	22.69	8.02	5.22	1.04	7.64	0.04	0.01	0.62	0.26	0.88	0.00	4.53	1.15	1.36	0.18
25	30	59.08	0.04	0.05	5.62	0.04	20.27	11.31	2.54	1.04	7.87	0.01	0.01	0.61	0.26	0.87	0.00	4.03	1.62	0.66	0.18
26	1	59.08	0.14	0.02	5.07	0.09	22.45	7.33	4.42	1.38	7.86	0.02	0.00	0.55	0.23	0.78	0.01	4.45	1.04	1.14	0.23
26	2	59.00	0.08	0.19	6.54	0.05	21.62	6.43	4.46	1.62	7.84	0.01	0.02	0.71	0.30	1.01	0.01	4.28	0.92	1.15	0.27
26	3	58.64	0.10	0.05	5.11	0.22	22.66	7.84	4.06	1.33	7.81	0.02	0.01	0.55	0.23	0.79	0.02	4.50	1.12	1.05	0.23
26	4	59.30	0.10	0.07	5.63	-0.01	22.13	8.95	3.12	0.72	7.85	0.02	0.01	0.61	0.26	0.86	0.00	4.37	1.27	0.80	0.12
26	5	57.86	0.48	0.12	6.40	0.07	22.39	7.76	3.90	1.03	7.69	0.08	0.01	0.69	0.29	0.99	0.01	4.44	1.11	1.01	0.17
26	6	56.94	0.44	0.04	8.36	0.17	21.26	7.67	4.27	0.84	7.59	0.07	0.00	0.91	0.38	1.29	0.02	4.23	1.10	1.10	0.14
26	7	59.27	0.18	0.09	5.30	0.03	22.03	8.91	3.23	0.96	7.86	0.03	0.01	0.57	0.24	0.81	0.00	4.36	1.27	0.83	0.16
26	8	58.90	0.17	0.11	5.64	0.10	22.21	8.14	3.79	0.95	7.82	0.03	0.01	0.61	0.26	0.87	0.01	4.39	1.16	0.98	0.16
26	9	58.81	0.03	0.05	4.68	0.07	23.39	8.46	3.61	0.89	7.81	0.00	0.00	0.51	0.21	0.72	0.01	4.63	1.20	0.93	0.15
26	10	59.22	0.12	0.23	5.79	-0.02	21.50	8.63	3.45	1.07	7.86	0.02	0.02	0.62	0.26	0.89	0.00	4.25	1.23	0.89	0.18
26	11	57.84	0.29	0.10	6.83	0.21	21.56	8.14	4.03	1.00	7.71	0.05	0.01	0.74	0.31	1.05	0.02	4.28	1.16	1.04	0.17
26	12	58.34	0.12	0.26	4.15	0.08	22.37	10.10	3.17	1.41	7.80	0.02	0.03	0.45	0.19	0.64	0.01	4.46	1.45	0.82	0.24
26	13	58.63	0.15	0.18	7.42	0.22	20.20	8.59	3.26	1.36	7.80	0.02	0.02	0.80	0.34	1.14	0.02	4.01	1.22	0.84	0.23
26	14	58.82	0.43	0.06	8.41	0.27	19.99	4.39	6.09	1.54	7.81	0.07	0.01	0.91	0.38	1.29	0.03	3.96	0.62	1.57	0.26
26	15	58.19	0.29	0.23	12.00	0.18	17.35	6.54	4.24	0.98	7.70	0.05	0.02	1.29	0.55	1.84	0.02	3.42	0.93	1.09	0.17
26	16	59.25	0.20	0.23	5.57	-0.02	21.70	9.00	3.17	0.92	7.85	0.03	0.02	0.60	0.25	0.85	0.00	4.29	1.28	0.81	0.16
26	17	57.95	0.33	0.05	5.33	0.15	23.19	7.30	4.35	1.33	7.73	0.05	0.01	0.58	0.24	0.82	0.02	4.61	1.04	1.12	0.23
26	18	58.60	0.27	0.02	5.65	0.10	22.83	8.21	3.24	1.08	7.78	0.04	0.00	0.61	0.26	0.87	0.01	4.52	1.17	0.83	0.18
26	19	58.02	0.63	0.03	5.52	0.10	22.53	8.03	3.71	1.43	7.73	0.10	0.00	0.60	0.25	0.85	0.01	4.48	1.15	0.96	0.24
26	20	59.45	0.09	0.16	4.88	0.14	22.36	7.77	3.78	1.36	7.89	0.01	0.02	0.53	0.22	0.75	0.02	4.43	1.11	0.97	0.23
26	21	59.84	0.09	0.16	5.84	0.00	22.27	7.84	3.10	0.87	7.89	0.01	0.02	0.63	0.27	0.89	0.00	4.38	1.11	0.79	0.15
26	22	59.15	0.58	0.19	7.74	0.03	20.90	5.52	4.04	1.84	7.82	0.09	0.02	0.83	0.35	1.19	0.00	4.12	0.78	1.04	0.31
26	23	58.61	0.04	0.04	6.04	0.13	22.30	7.86	3.98	0.99	7.79	0.01	0.00	0.65	0.28	0.93	0.01	4.42	1.12	1.03	0.17
26	24	59.72	0.13	0.18	6.06	0.04	21.92	7.11	3.89	0.93	7.89	0.02	0.02	0.65	0.28	0.93	0.00	4.32	1.01	1.00	0.16
26	25	58.56	0.19	0.45	6.22	0.00	21.88	6.87	4.68	1.16	7.78	0.03	0.04	0.67	0.28	0.96	0.00	4.33	0.98	1.21	0.20
26	26	59.01	0.35	0.47	5.99	0.06	22.11	6.26	4.54	1.22	7.82	0.05	0.05	0.65	0.27	0.92	0.01	4.37	0.89	1.17	0.21
26	27	59.55	0.01	0.27	6.22	0.11	21.33	7.27	4.22	1.02	7.89	0.00	0.03	0.67	0.28	0.95	0.01	4.21	1.03	1.08	0.17
26	28	59.68	0.17	0.06	5.59	0.00	20.97	9.05	3.05	1.43	7.92	0.03	0.01	0.60	0.26	0.86	0.00	4.15	1.29	0.78	0.24
26	29	58.85	0.03	0.03	9.97	0.08	19.38	5.48	5.03	1.16	7.79	0.00	0.00	1.07	0.45	1.53	0.01	3.82	0.78	1.29	0.20
26	30	58.26	0.12	0.19	5.49	0.06	22.97	6.76	4.73	1.42	7.76	0.02	0.02	0.59	0.25	0.85	0.01	4.56	0.97	1.22	0.24

Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
27	1	57.69	0.26	0.06	7.08	0.22	21.27	9.91	2.94	0.57	7.68	0.04	0.01	0.77	0.32	1.09	0.02	4.22	1.41	0.76	0.10
27	2	58.92	0.17	-0.05	5.02	0.08	23.02	9.02	3.16	0.67	7.81	0.03	0.00	0.54	0.23	0.77	0.01	4.55	1.28	0.81	0.11
27	3	57.94	0.12	0.04	6.20	0.25	22.27	8.88	3.38	0.92	7.72	0.02	0.00	0.67	0.28	0.96	0.03	4.42	1.27	0.87	0.16
27	4	57.28	0.20	0.17	6.24	0.27	21.49	10.66	2.89	0.80	7.66	0.03	0.02	0.68	0.29	0.97	0.03	4.29	1.53	0.75	0.14
27	5	58.10	0.12	0.04	5.72	0.13	22.54	9.39	3.22	0.74	7.73	0.02	0.00	0.62	0.26	0.88	0.01	4.47	1.34	0.83	0.13
27	6	58.84	0.15	-0.08	5.90	0.06	22.30	9.01	3.15	0.67	7.80	0.02	-0.01	0.64	0.27	0.91	0.01	4.41	1.28	0.81	0.11
27	7	58.84	0.18	0.23	4.54	0.05	23.18	8.69	3.53	0.76	7.81	0.03	0.02	0.49	0.21	0.70	0.01	4.59	1.24	0.91	0.13
27	8	58.72	0.04	0.08	4.49	0.19	23.20	9.35	3.13	0.81	7.81	0.01	0.01	0.49	0.21	0.69	0.02	4.60	1.33	0.81	0.14
27	9	59.40	0.04	0.06	5.26	0.04	21.76	10.03	2.72	0.69	7.87	0.01	0.01	0.57	0.24	0.81	0.00	4.30	1.42	0.70	0.12
27	10	59.09	0.04	0.18	5.65	0.08	21.40	9.92	2.71	0.92	7.85	0.01	0.02	0.61	0.26	0.87	0.01	4.24	1.41	0.70	0.16
27	11	59.09	0.08	0.13	5.45	0.21	21.62	9.36	2.98	1.09	7.85	0.01	0.01	0.59	0.25	0.84	0.02	4.28	1.33	0.77	0.18
27	12	59.20	0.00	0.19	6.10	0.20	21.45	8.99	3.10	0.76	7.85	0.00	0.02	0.66	0.28	0.94	0.02	4.24	1.28	0.80	0.13
27	13	58.98	0.05	0.13	5.98	0.06	21.52	8.21	3.70	1.38	7.84	0.01	0.01	0.65	0.27	0.92	0.01	4.27	1.17	0.95	0.23
27	14	59.21	0.03	0.08	5.93	0.01	21.39	9.51	3.10	0.74	7.85	0.00	0.01	0.64	0.27	0.91	0.00	4.23	1.35	0.80	0.13
27	15	59.03	0.15	0.06	4.72	0.12	22.57	8.96	3.43	0.97	7.84	0.02	0.01	0.51	0.22	0.73	0.01	4.47	1.28	0.88	0.16
27	16	59.23	0.05	0.21	5.19	0.16	22.29	9.23	2.89	0.75	7.85	0.01	0.02	0.56	0.24	0.80	0.02	4.40	1.31	0.74	0.13
27	17	57.47	0.15	0.27	6.15	0.08	20.85	10.67	3.52	0.84	7.70	0.02	0.03	0.67	0.28	0.95	0.01	4.16	1.53	0.91	0.14
27	18	59.31	0.12	0.26	5.03	0.24	21.90	9.36	2.75	1.03	7.87	0.02	0.03	0.54	0.23	0.77	0.03	4.33	1.33	0.71	0.17
27	19	59.22	0.08	0.14	4.98	0.24	22.08	9.43	2.93	0.90	7.86	0.01	0.01	0.54	0.23	0.77	0.03	4.37	1.34	0.75	0.15
27	20	57.97	0.23	0.11	4.08	0.10	24.00	9.39	3.41	0.71	7.73	0.04	0.01	0.44	0.19	0.63	0.01	4.77	1.34	0.88	0.12
27	21	59.40	0.03	0.09	5.70	0.02	20.29	11.38	2.27	0.82	7.89	0.00	0.01	0.62	0.26	0.88	0.00	4.02	1.62	0.58	0.14
27	22	58.97	0.06	0.19	4.52	0.03	23.36	8.64	3.39	0.83	7.83	0.01	0.02	0.49	0.21	0.69	0.00	4.62	1.23	0.87	0.14
27	23	58.82	0.00	0.05	7.06	0.22	20.14	10.08	2.89	0.74	7.82	0.00	0.00	0.76	0.32	1.09	0.02	3.99	1.44	0.74	0.13
27	24	59.21	0.04	0.05	5.54	0.09	20.25	12.20	2.01	0.60	7.88	0.01	0.01	0.60	0.25	0.85	0.01	4.02	1.74	0.52	0.10
27	25	59.49	-0.04	0.03	4.38	0.10	22.31	10.28	2.58	0.87	7.90	-0.01	0.00	0.47	0.20	0.67	0.01	4.42	1.46	0.66	0.15
27	26	59.56	0.11	0.13	4.89	0.09	21.93	10.15	2.32	0.81	7.89	0.02	0.01	0.53	0.22	0.75	0.01	4.33	1.44	0.60	0.14
27	27	58.39	0.20	0.06	5.24	0.05	22.35	10.28	2.76	0.68	7.77	0.03	0.01	0.57	0.24	0.81	0.01	4.43	1.47	0.71	0.12
27	28	59.00	0.17	0.08	6.53	0.17	21.28	8.39	3.77	0.62	7.82	0.03	0.01	0.70	0.30	1.00	0.02	4.20	1.19	0.97	0.10
27	29	58.73	0.19	0.11	7.16	0.16	21.18	8.42	3.19	0.85	7.78	0.03	0.01	0.77	0.33	1.10	0.02	4.18	1.20	0.82	0.14
27	30	59.16	0.18	0.16	5.54	0.11	21.45	9.19	3.12	1.08	7.86	0.03	0.02	0.60	0.25	0.85	0.01	4.25	1.31	0.80	0.18
28	1	59.02	0.55	0.18	5.87	0.10	21.54	5.52	5.45	1.77	7.85	0.09	0.02	0.63	0.27	0.90	0.01	4.27	0.79	1.41	0.30
28	2	57.69	0.26	0.02	6.12	0.01	22.34	7.60	4.72	1.24	7.70	0.04	0.00	0.66	0.28	0.95	0.00	4.45	1.09	1.22	0.21
28	3	59.31	0.20	0.13	8.49	-0.19	19.89	5.87	4.90	1.40	7.85	0.03	0.01	0.91	0.39	1.30	-0.02	3.92	0.83	1.26	0.24
28	4	58.66	0.08	0.04	7.22	0.17	20.10	9.03	3.58	1.14	7.81	0.01	0.00	0.78	0.33	1.11	0.02	3.99	1.29	0.92	0.19
28	5	56.01	1.16	0.61	8.80	-0.08	20.67	6.72	4.72	1.38	7.48	0.18	0.06	0.96	0.40	1.36	-0.01	4.12	0.96	1.22	0.24
28	6	57.08	0.27	0.36	8.20	0.16	20.08	7.25	4.70	1.92	7.65	0.04	0.04	0.89	0.38	1.27	0.02	4.01	1.04	1.22	0.33
28	7	57.13	0.25	0.35	6.25	0.07	21.72	7.38	4.79	2.06	7.67	0.04	0.04	0.68	0.29	0.97	0.01	4.35	1.06	1.25	0.35
28	8	58.69	0.12	0.02	6.49	0.02	21.87	6.46	4.96	1.35	7.80	0.02	0.00	0.70	0.30	1.00	0.00	4.33	0.92	1.28	0.23
28	9	59.18	0.02	0.16	7.02	0.13	20.72	6.81	4.54	1.42	7.86	0.00	0.02	0.76	0.32	1.08	0.01	4.10	0.97	1.17	0.24
28	10	57.82	0.40	-0.02	6.00	0.16	22.57	7.05	4.84	1.16	7.71	0.06	0.00	0.65	0.28	0.93	0.02	4.49	1.01	1.25	0.20
28	11	57.35	0.39	0.51	6.58	0.17	22.05	5.57	5.47	1.91	7.67	0.06	0.05	0.72	0.30	1.02	0.02	4.40	0.80	1.42	0.33
28	12	59.27	0.44	0.23	6.36	0.35	20.88	5.18	5.52	1.76	7.88	0.07	0.02	0.69	0.29	0.98	0.04	4.14	0.74	1.42	0.30
28	13	59.70	0.11	0.04	5.15	0.14	20.99	9.52	3.23	1.11	7.93	0.02	0.00	0.56	0.24	0.79	0.02	4.16	1.35	0.83	0.19
28	14	59.19	0.54	0.09	6.03	0.51	20.48	6.33	5.04	1.78	7.88	0.08	0.01	0.65	0.28	0.93	0.06	4.07	0.90	1.30	0.30
28	15	57.81	1.06	0.23	8.49	0.23	18.35	9.14	2.98	1.71	7.71	0.17	0.02	0.92	0.39	1.31	0.03	3.65	1.31	0.77	0.29
28	16	59.33	0.16	-0.01	6.76	0.13	20.46	7.30	4.27	1.60	7.88	0.03	0.00	0.73	0.31	1.04	0.01	4.05	1.04	1.10	0.27
28	17	59.03	0.36	0.20	6.75	0.09	21.69	5.83	4.90	1.17	7.82	0.06	0.02	0.73	0.31	1.03	0.01	4.28	0.83	1.26	0.20
28	18	58.28	0.24	0.32	6.38	0.17	21.83	5.42	6.02	1.34	7.76	0.04	0.03	0.69	0.29	0.98	0.02	4.34	0.77	1.56	0.23
28	19	59.25	0.35	0.24	6.10	0.07	20.84	6.40	4.79	1.96	7.88	0.05	0.02	0.66	0.28	0.94	0.01	4.13	0.91	1.24	0.33
28	20	58.83	0.11	0.12	6.76	0.04	20.82	7.65	4.51	1.17	7.82	0.02	0.01	0.73	0.31	1.04	0.00	4.13	1.09	1.16	0.20
28	21	58.63	0.51	0.00	6.20	0.31	21.26	6.81	4.74	1.54	7.81	0.08	0.00	0.67	0.28	0.96	0.03	4.22	0.97	1.22	0.26
28	22	58.74	0.32	0.03	6.77	0.45	20.88	5.85	5.08	1.88	7.83	0.05	0.00	0.73	0.31	1.04	0.05	4.15	0.84	1.31	0.32
28	23	58.95	0.12	0.33	3.24	0.14	23.66	5.91	5.67	1.99	7.88	0.02	0.03	0.35	0.15	0.50	0.02	4.71	0.85	1.47	0.34
28	24	58.33	0.28	-0.06	6.60	0.10	21.90	6.82	4.84	1.18	7.76	0.04	-0.01	0.71	0.30	1.02	0.01	4.34	0.97	1.25	0.20
28	25	57.97	0.38	0.05	6.98	0.08	21.45	6.34	5.15	1.59	7.73	0.06	0.01	0.76	0.32	1.08	0.01	4.26	0.91	1.33	0.27
28	26	58.43	0.72	0.15	4.61	-0.03	22.81	9.16	3.31	0.83	7.76	0.11	0.01	0.50	0.21	0.71	0.00	4.52	1.30	0.85	0.14
28	27	58.87	0.04	0.06	6.12	0.13	21.75	8.19	3.84	0.98	7.82	0.01	0.01	0.66	0.28	0.94	0.01	4.31	1.17	0.99	0.17
28	28	59.48	0.23	0.12	6.76	0.05	19.81	8.62	3.52	1.42	7.90	0.04	0.01	0.73	0.31	1.04	0.01	3.92	1.23	0.91	0.24
28	29	59.81	0.31	0.12	7.27	0.30	20.45	4.08	5.79	1.86	7.92	0.05	0.01	0.78	0.33	1.11	0.03	4.04	0.58	1.49	0.31
29	1	59.25	0.17	0.14	8.58	0.01	19.91	3.37	6.57	2.00	7.86	0.03	0.01	0.93	0.39	1.32	0.00	3.94	0.48	1.69	0.34
29	2	60.42	0.10	0.22	6.68	-0.29	20.13	6.97	4.35	1.43	7.98	0.02	0.02	0.72	0.30	1.02	-0.03	3.96	0.99	1.11	0.24

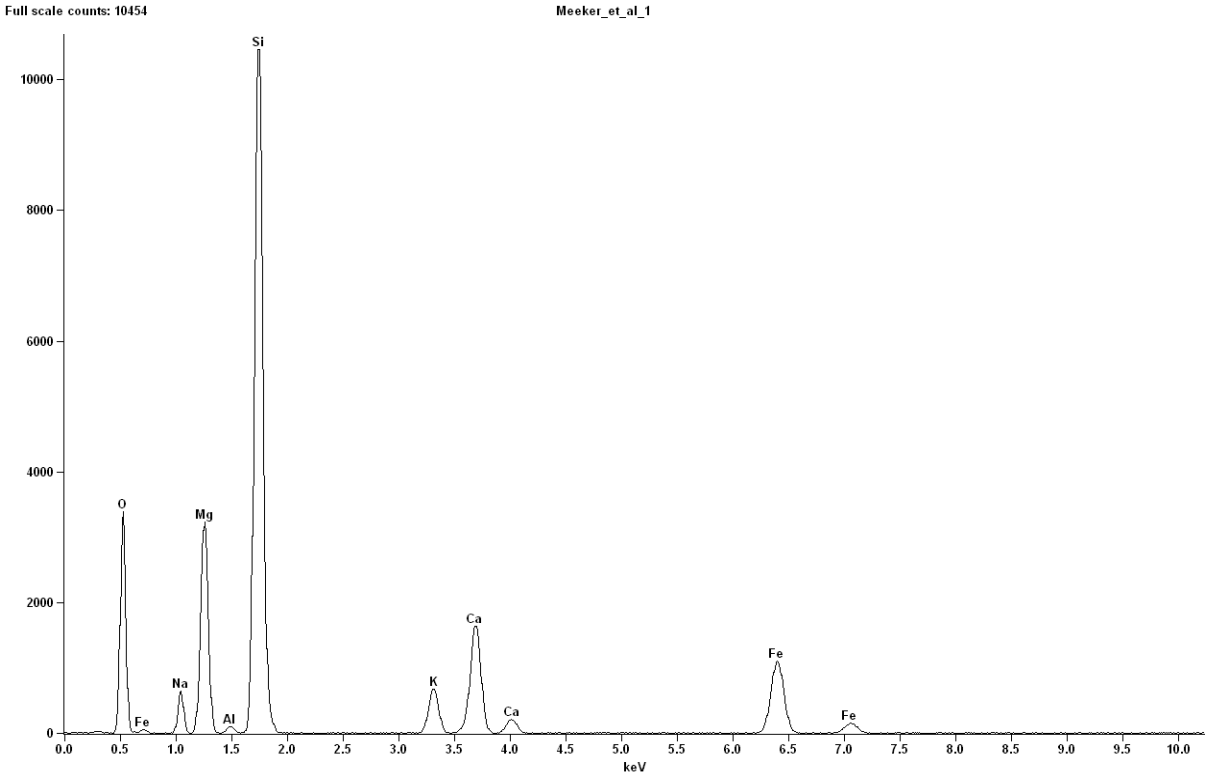
Sample		Weight Percent									apfu										
Location	Reading #	Si02	Al2O3	TiO2	FeO	MnO	MgO	CaO	Na2O	K2O	Si4+	Al3+	Ti4+	Fe3+	Fe2+	FeTot	Mn2+	Mg2+	Ca2+	Na1+	K1+
29	3	57.63	0.60	-0.02	4.83	0.28	23.25	6.82	4.82	1.79	7.71	0.09	0.00	0.53	0.22	0.75	0.03	4.64	0.98	1.25	0.31
29	4	59.04	0.55	0.43	2.39	0.43	23.12	6.98	5.13	1.93	7.90	0.09	0.04	0.26	0.11	0.37	0.05	4.61	1.00	1.33	0.33
29	5	59.24	1.69	0.09	7.02	0.01	20.25	5.53	4.59	1.56	7.82	0.26	0.01	0.75	0.32	1.07	0.00	3.99	0.78	1.18	0.26
29	6	59.30	0.42	0.82	6.48	0.29	20.81	4.51	5.80	1.57	7.86	0.07	0.08	0.70	0.30	0.99	0.03	4.11	0.64	1.49	0.27
29	7	58.85	0.47	0.08	4.29	0.20	22.48	7.02	5.28	1.33	7.85	0.07	0.01	0.47	0.20	0.66	0.02	4.47	1.00	1.36	0.23
29	8	58.40	0.26	-0.27	6.59	0.14	21.84	5.91	5.67	1.46	7.78	0.04	-0.03	0.71	0.30	1.02	0.02	4.34	0.84	1.47	0.25
29	10	59.18	0.26	-0.13	7.58	0.33	19.57	6.51	4.94	1.76	7.88	0.04	-0.01	0.82	0.35	1.17	0.04	3.88	0.93	1.27	0.30
29	11	59.63	0.34	0.38	6.76	-0.03	19.78	6.48	4.11	2.55	7.93	0.05	0.04	0.73	0.31	1.04	0.00	3.92	0.92	1.06	0.43
29	12	59.22	0.21	-0.32	7.77	0.14	20.59	6.28	4.57	1.53	7.85	0.03	-0.03	0.84	0.35	1.19	0.02	4.07	0.89	1.18	0.26
29	13	60.07	0.61	0.54	7.00	0.08	20.07	3.64	6.21	1.77	7.94	0.10	0.05	0.75	0.32	1.07	0.01	3.95	0.52	1.59	0.30
29	15	59.42	0.08	0.12	9.53	0.33	18.75	4.99	5.22	1.57	7.87	0.01	0.01	1.03	0.43	1.46	0.04	3.70	0.71	1.34	0.27
29	16	59.78	0.16	0.56	8.33	0.43	18.13	4.64	5.54	2.43	7.95	0.03	0.06	0.90	0.38	1.28	0.05	3.59	0.66	1.43	0.41
29	17	59.33	0.61	0.15	4.16	0.00	22.65	7.06	4.06	1.98	7.89	0.10	0.02	0.45	0.19	0.64	0.00	4.49	1.01	1.05	0.34
29	18	59.58	0.18	-0.04	8.77	0.13	19.42	5.05	5.30	1.61	7.89	0.03	0.00	0.94	0.40	1.34	0.01	3.83	0.72	1.36	0.27
29	19	59.19	0.25	-0.01	4.46	0.05	23.30	5.97	5.30	1.49	7.87	0.04	0.00	0.48	0.20	0.69	0.01	4.62	0.85	1.37	0.25
29	20	58.91	0.36	-0.05	6.02	-0.03	21.45	6.45	5.14	1.75	7.84	0.06	-0.01	0.65	0.28	0.93	0.00	4.26	0.92	1.33	0.30
29	21	59.78	0.40	0.52	7.32	0.41	20.22	4.56	5.57	1.23	7.90	0.06	0.05	0.79	0.33	1.12	0.05	3.98	0.65	1.43	0.21
29	22	60.80	0.63	-0.21	3.77	0.31	21.00	9.24	3.30	1.16	8.05	0.10	-0.02	0.41	0.17	0.58	0.03	4.15	1.31	0.85	0.20
29	23	58.53	0.15	-0.30	6.68	0.35	21.64	6.28	4.97	1.71	7.80	0.02	-0.03	0.72	0.31	1.03	0.04	4.30	0.90	1.28	0.29
29	25	59.04	0.12	0.19	4.65	0.16	22.44	6.09	5.61	1.70	7.87	0.02	0.02	0.50	0.21	0.72	0.02	4.46	0.87	1.45	0.29
29	26	59.34	0.96	-0.23	3.12	0.11	21.25	9.27	4.04	2.14	7.94	0.15	-0.02	0.34	0.14	0.48	0.01	4.24	1.33	1.05	0.37
29	27	58.63	0.31	0.22	4.01	0.44	23.43	6.58	4.67	1.72	7.82	0.05	0.02	0.44	0.18	0.62	0.05	4.66	0.94	1.21	0.29
29	28	58.27	0.48	0.26	7.08	0.05	21.44	5.12	6.10	1.20	7.75	0.08	0.03	0.77	0.32	1.09	0.01	4.25	0.73	1.57	0.20
29	29	59.93	0.48	0.37	4.15	0.06	22.59	6.22	4.83	1.38	7.93	0.07	0.04	0.45	0.19	0.64	0.01	4.46	0.88	1.24	0.23
29	30	58.09	0.37	0.20	6.04	-0.16	21.87	6.93	5.06	1.59	7.75	0.06	0.02	0.66	0.28	0.93	-0.02	4.35	0.99	1.31	0.27
30	1	59.84	0.36	0.51	9.09	0.00	18.75	5.27	4.42	1.76	7.90	0.06	0.05	0.98	0.41	1.39	0.00	3.69	0.75	1.13	0.30
30	2	58.11	1.21	0.03	5.78	0.16	22.03	7.45	4.21	1.02	7.72	0.19	0.00	0.62	0.26	0.89	0.02	4.36	1.06	1.08	0.17
30	3	59.67	0.50	0.63	6.53	0.09	21.86	4.16	5.12	1.43	7.87	0.08	0.06	0.70	0.30	1.00	0.01	4.30	0.59	1.31	0.24
30	4	58.07	1.11	0.12	6.32	0.19	21.41	7.50	4.17	1.12	7.72	0.17	0.01	0.68	0.29	0.97	0.02	4.24	1.07	1.07	0.19
30	5	56.45	1.70	0.60	12.26	0.11	19.62	1.63	6.60	1.02	7.46	0.26	0.06	1.32	0.56	1.87	0.01	3.86	0.23	1.69	0.17
30	6	59.08	0.23	0.08	6.02	0.07	21.56	8.23	3.83	0.89	7.84	0.04	0.01	0.65	0.27	0.92	0.01	4.26	1.17	0.99	0.15
30	7	59.13	0.13	0.14	6.48	0.27	22.05	6.43	4.11	1.26	7.83	0.02	0.01	0.70	0.30	0.99	0.03	4.35	0.91	1.06	0.21
30	8	58.80	0.25	0.06	5.88	0.00	22.55	6.51	4.51	1.44	7.81	0.04	0.01	0.64	0.27	0.90	0.00	4.46	0.93	1.16	0.24
30	9	59.26	0.09	0.19	6.34	0.01	21.81	5.09	5.25	1.96	7.87	0.01	0.02	0.68	0.29	0.97	0.00	4.32	0.72	1.35	0.33
30	10	59.42	-0.06	0.51	6.06	0.04	21.43	6.05	4.81	1.74	7.89	-0.01	0.05	0.65	0.28	0.93	0.00	4.24	0.86	1.24	0.29
30	11	59.85	0.07	0.53	7.36	0.00	19.44	5.73	4.81	2.21	7.94	0.01	0.05	0.79	0.34	1.13	0.00	3.85	0.81	1.24	0.37
30	12	57.01	-0.03	0.08	9.87	-0.07	18.96	10.63	2.50	1.05	7.61	0.00	0.01	1.07	0.45	1.53	-0.01	3.77	1.52	0.65	0.18
30	13	58.33	0.14	0.07	6.12	-0.03	22.96	7.15	4.34	0.92	7.74	0.02	0.01	0.66	0.28	0.94	0.00	4.54	1.02	1.12	0.16
30	15	56.99	0.55	0.18	11.62	0.01	15.71	10.84	2.37	1.74	7.63	0.09	0.02	1.26	0.54	1.80	0.00	3.13	1.55	0.62	0.30
30	16	58.34	0.13	0.05	6.20	0.18	22.36	8.07	3.96	0.72	7.75	0.02	0.00	0.67	0.28	0.95	0.02	4.43	1.15	1.02	0.12
30	17	58.39	0.09	-0.01	6.05	-0.07	22.70	8.19	3.73	0.91	7.76	0.01	0.00	0.65	0.28	0.93	-0.01	4.50	1.17	0.96	0.15
30	19	59.16	0.08	0.19	5.79	0.24	21.93	7.26	4.14	1.22	7.85	0.01	0.02	0.63	0.26	0.89	0.03	4.34	1.03	1.07	0.21
30	20	59.47	0.15	0.29	8.40	0.04	20.43	4.52	5.35	1.36	7.85	0.02	0.03	0.90	0.38	1.28	0.00	4.02	0.64	1.37	0.23
30	21	58.22	0.11	0.22	6.90	0.10	21.78	6.33	5.10	1.26	7.75	0.02	0.02	0.75	0.32	1.06	0.01	4.32	0.90	1.32	0.21
30	22	60.15	-0.03	0.00	7.33	0.03	20.57	4.35	5.52	2.07	7.96	0.00	0.00	0.79	0.33	1.12	0.00	4.06	0.62	1.42	0.35
30	23	59.58	0.06	0.06	8.95	0.08	19.88	5.30	5.03	1.05	7.86	0.01	0.01	0.96	0.41	1.37	0.01	3.91	0.75	1.29	0.18
30	24	59.40	0.10	0.01	6.99	-0.02	20.80	7.69	3.85	1.19	7.87	0.02	0.00	0.75	0.32	1.07	0.00	4.11	1.09	0.99	0.20
30	25	59.49	0.02	0.36	9.82	0.28	16.78	7.31	3.20	2.74	7.92	0.00	0.04	1.06	0.45	1.51	0.03	3.33	1.04	0.83	0.47
30	26	58.88	0.21	0.04	6.72	0.16	23.08	3.84	5.57	1.49	7.80	0.03	0.00	0.72	0.31	1.03	0.02	4.56	0.54	1.43	0.25
30	27	59.37	0.11	0.21	8.56	0.17	19.70	5.15	5.09	1.63	7.86	0.02	0.02	0.92	0.39	1.31	0.02	3.89	0.73	1.31	0.28
30	29	58.74	0.08	0.16	6.91	0.22	20.71	7.18	4.69	1.29	7.82	0.01	0.02	0.75	0.32	1.06	0.02	4.11	1.02	1.21	0.22

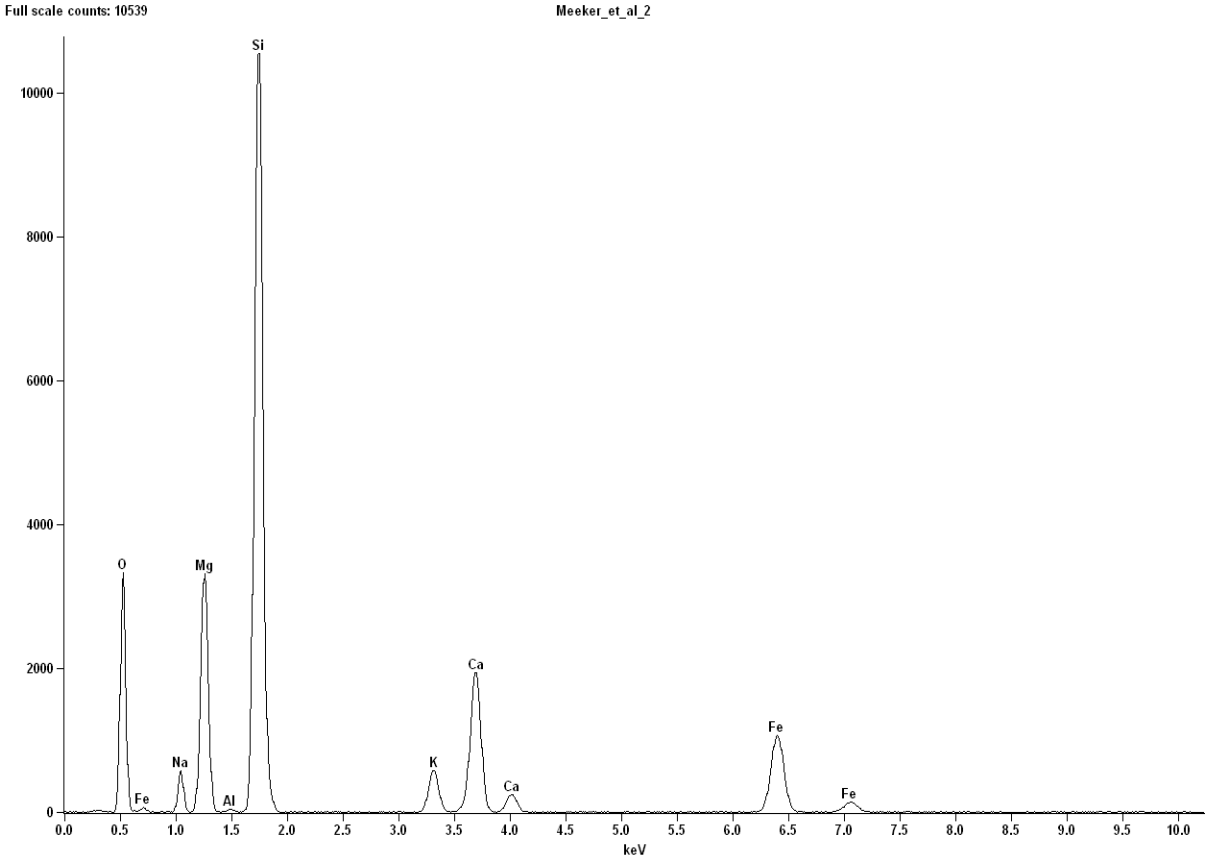
Attachment 2

WDS Spectra from Meeker *et al* 2003

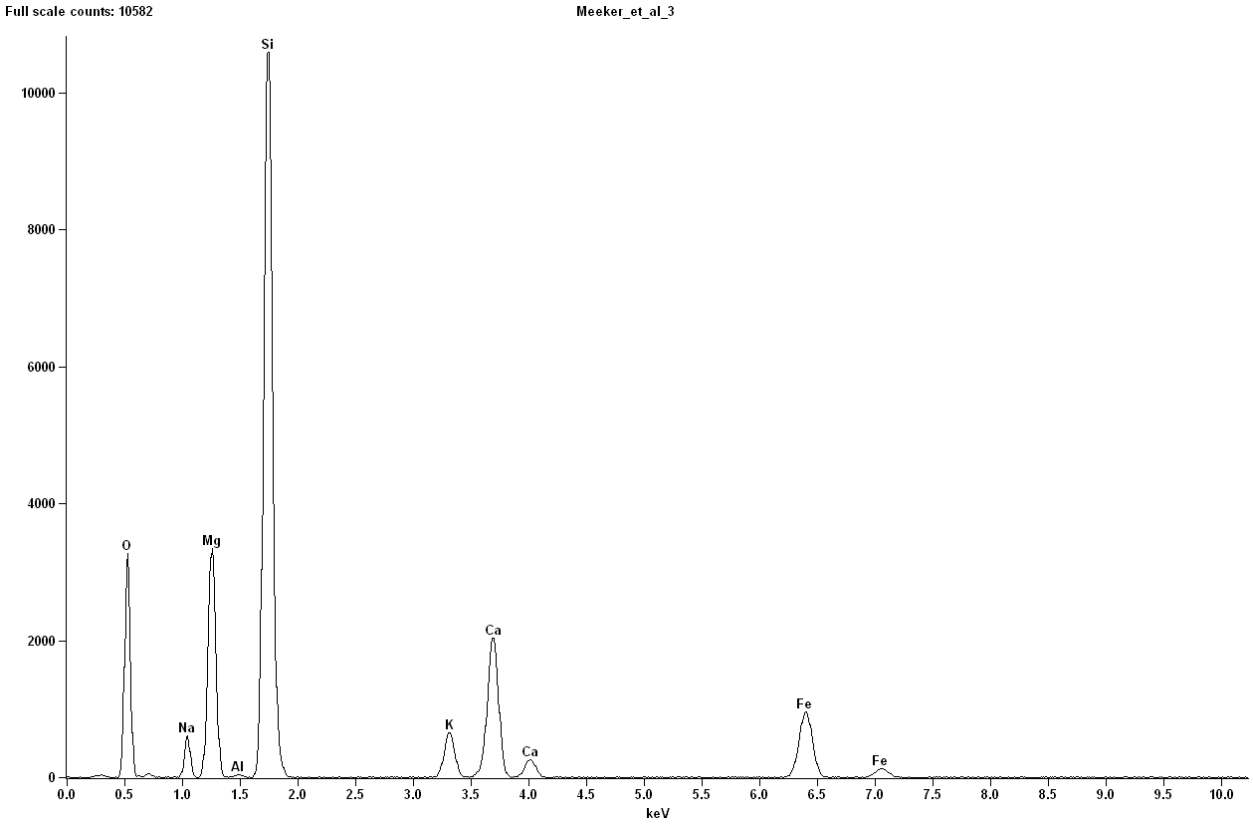
Sample Locations 1-30

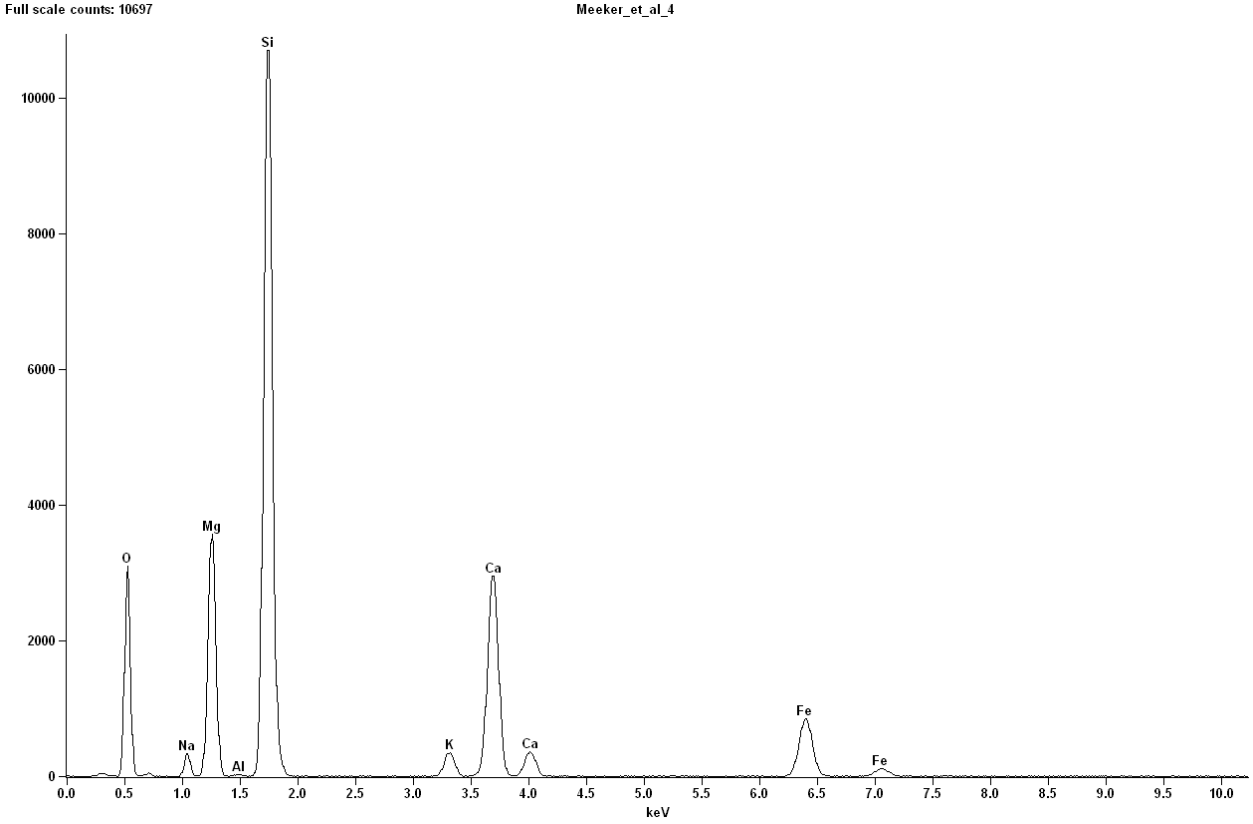
Samples 1-2


Full scale counts: 10454
Meeker_et_al_1
Si
O
Mg
Fe
Na
Al
K
Ca
Ca
Fe
Fe
keV

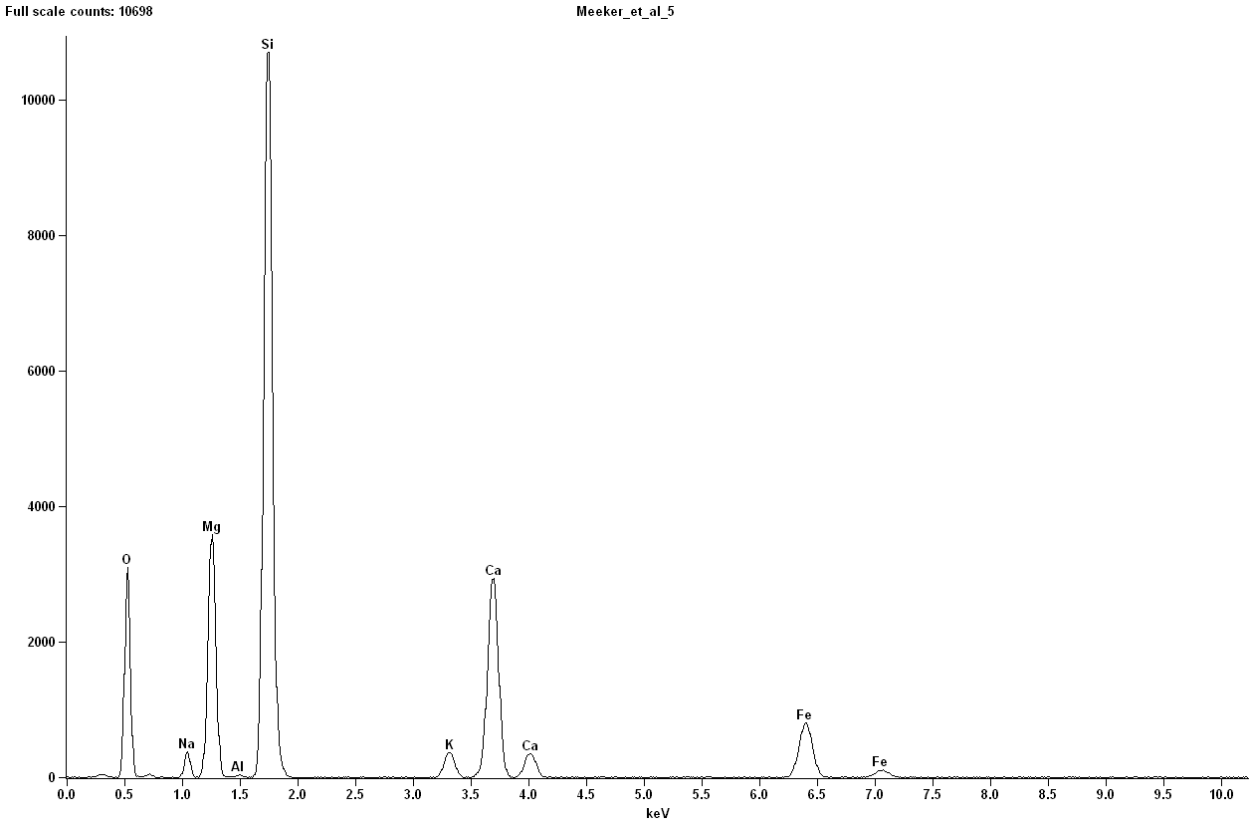

Full scale counts: 10539
Meeker_et_al_2
Si
O
Mg
Fe
Na
Al
K
Ca
Ca
Fe
Fe
keV

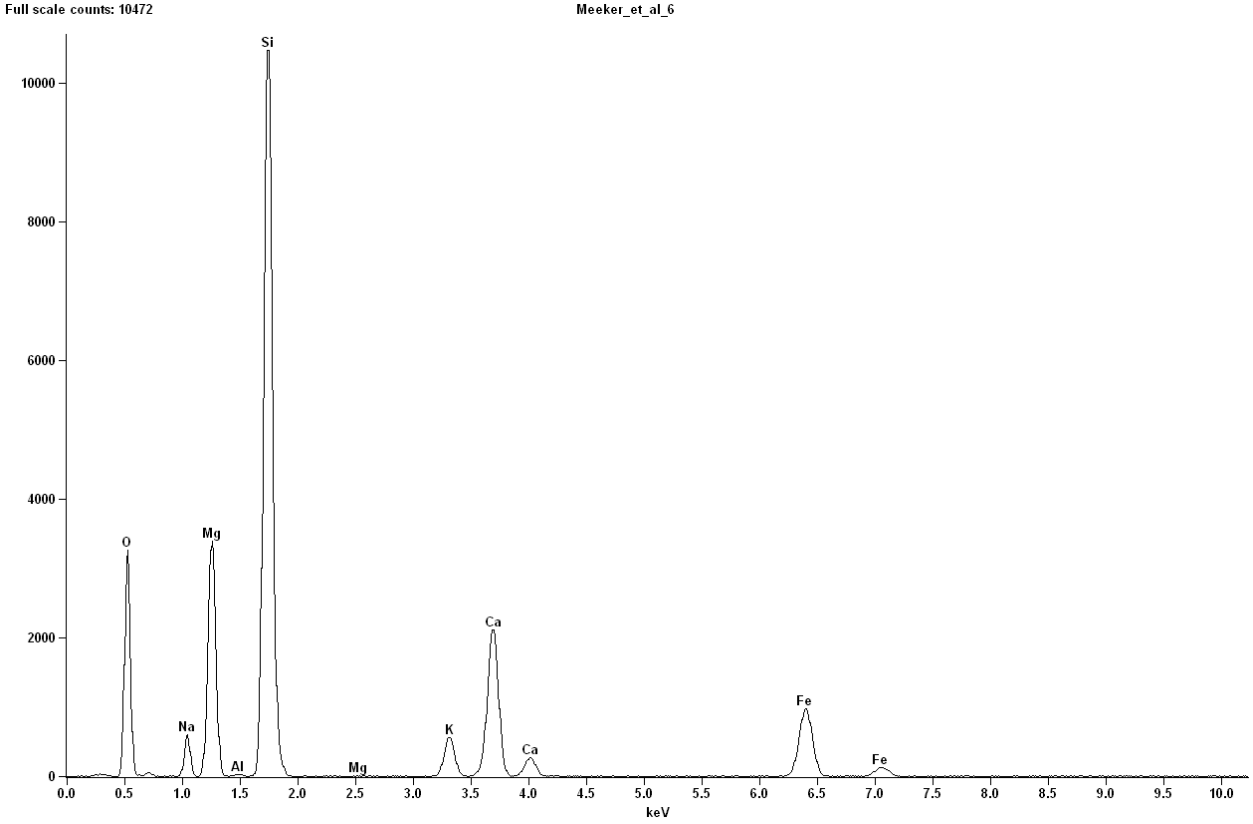
Samples 3-4


Full scale counts: 10582
Meeker_et_al_3
Si
O
Mg
Na
Al
K
Ca
Ca
Fe
Fe
keV

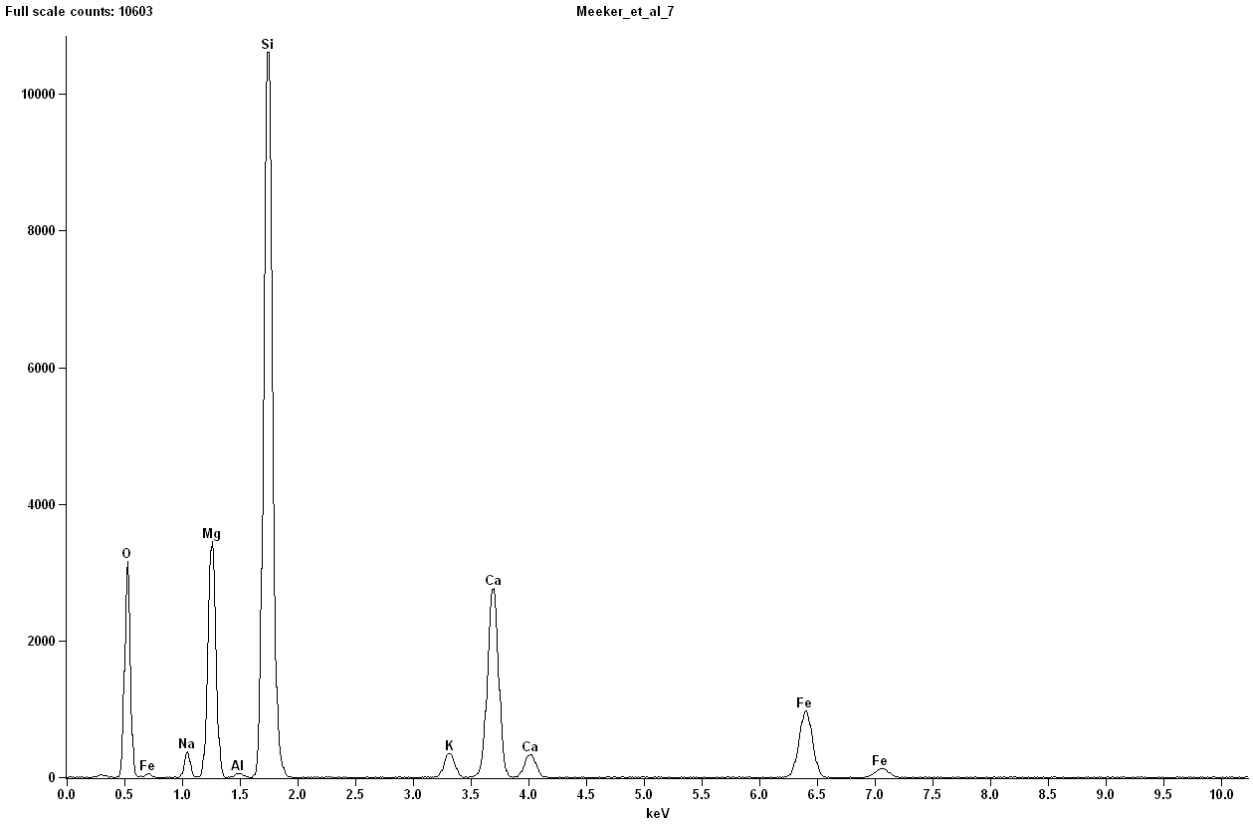

Full scale counts: 10697
Meeker_et_al_4
Si
O
Mg
Na
Al
K
Ca
Ca
Fe
Fe
keV

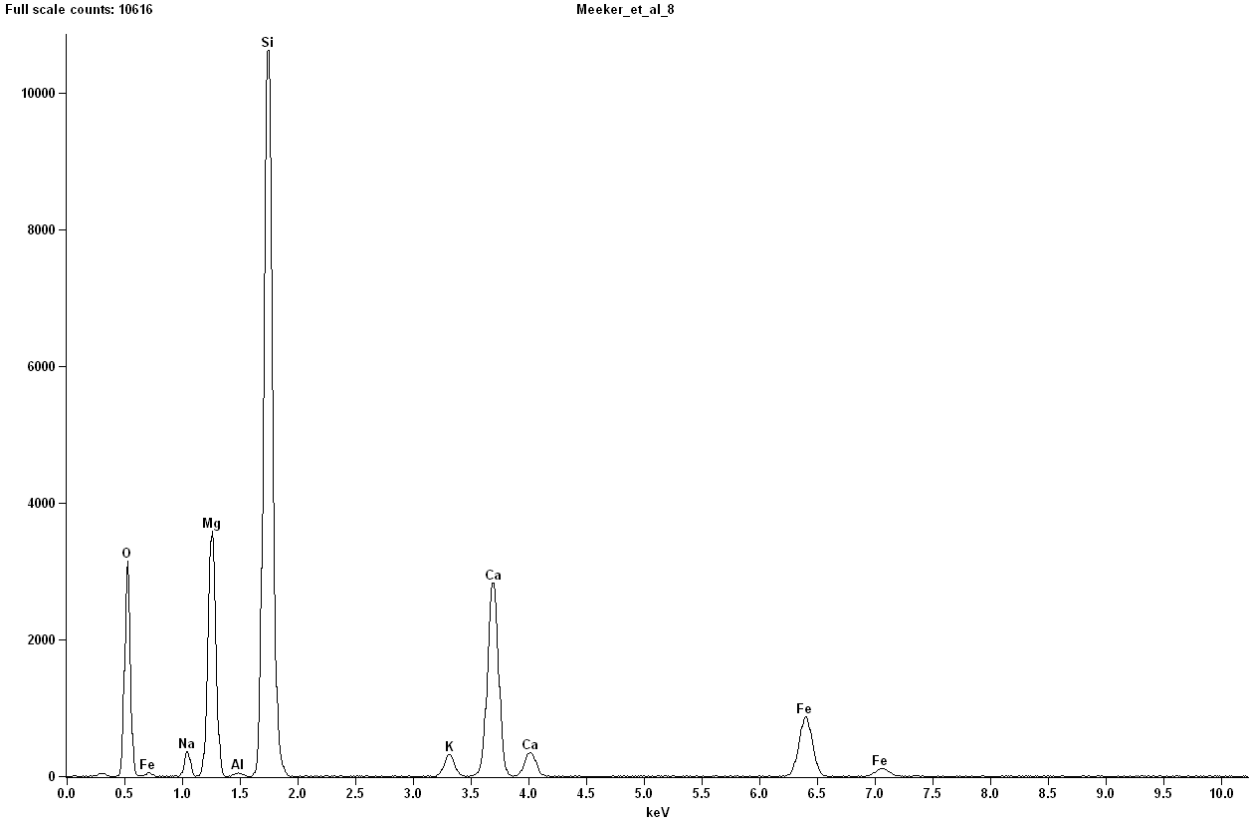
Samples 5-6


Full scale counts: 10698
Meeker_et_al_5
Si
O
Mg
Na
Al
K
Ca
Ca
Fe
Fe
keV

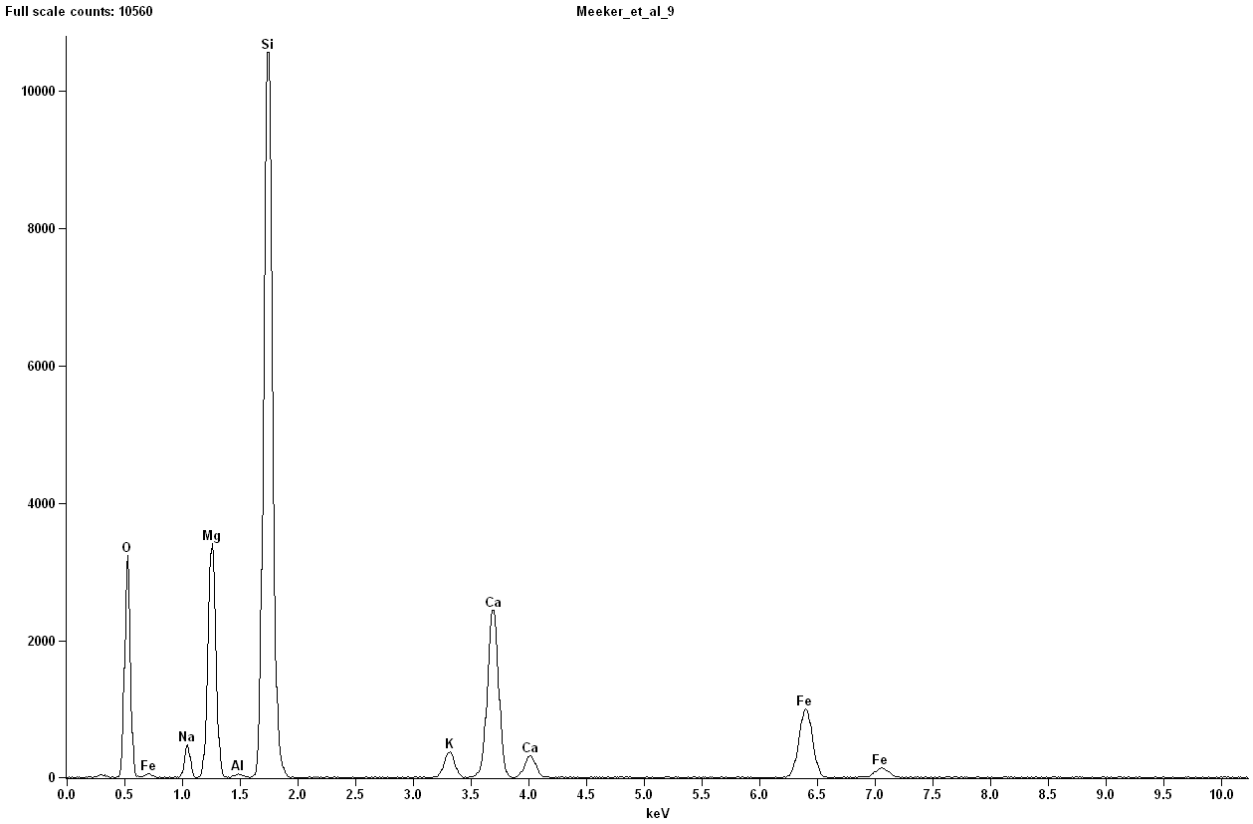

Full scale counts: 10472
Meeker_et_al_6
Si
O
Mg
Na
Al
Mg
K
Ca
Ca
Fe
Fe
keV

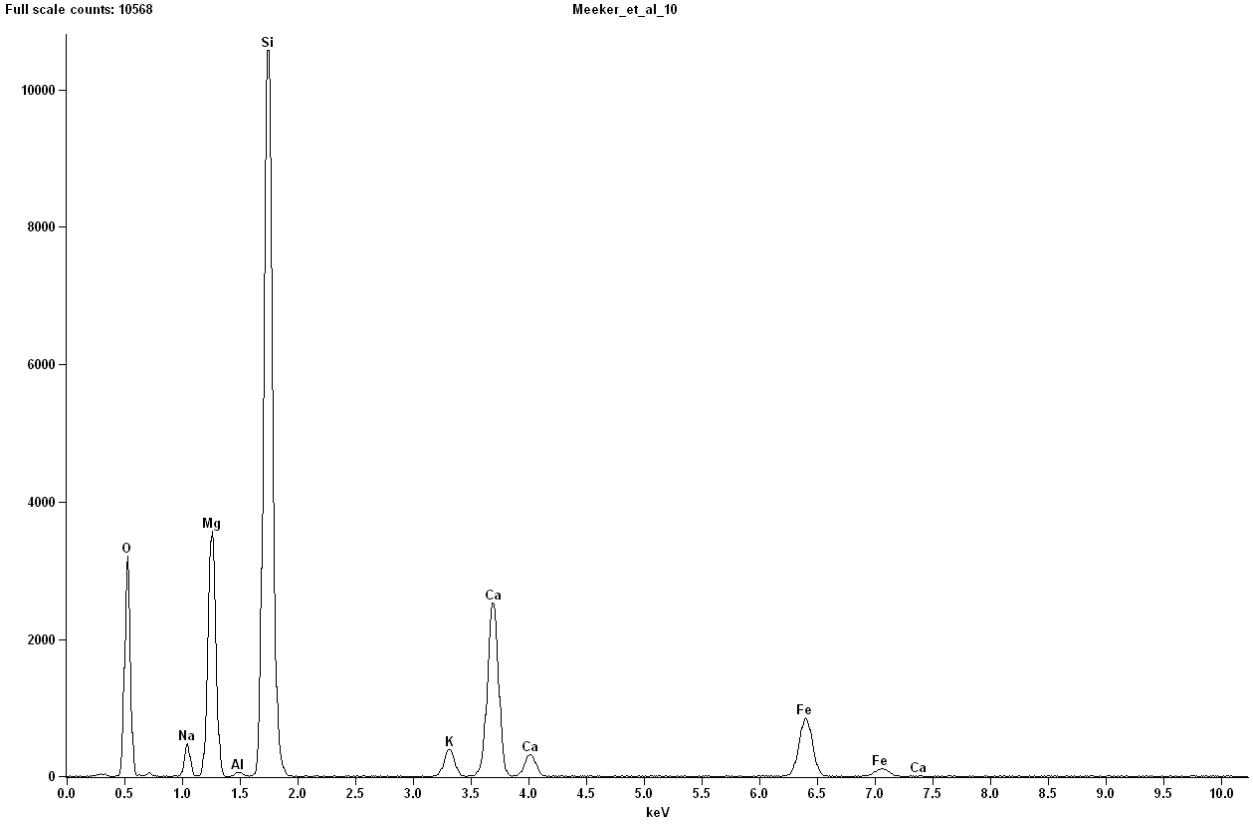
Samples 7-8


Full scale counts: 10603
Meeker_et_al_7
Si
O
Mg
Fe
Na
Al
K
Ca
Ca
Fe
Fe
keV

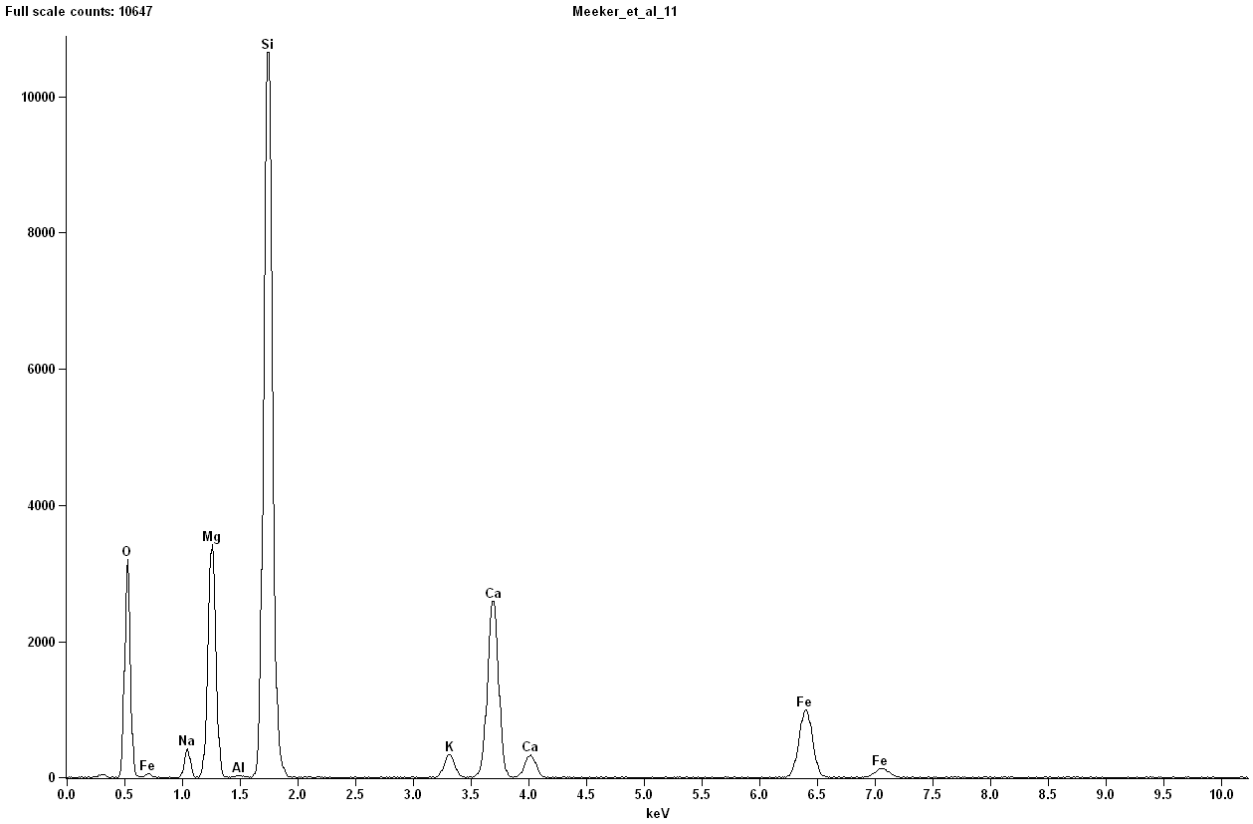

Full scale counts: 10616
Meeker_et_al_8
Si
O
Mg
Fe
Na
Al
K
Ca
Ca
Fe
Fe
keV

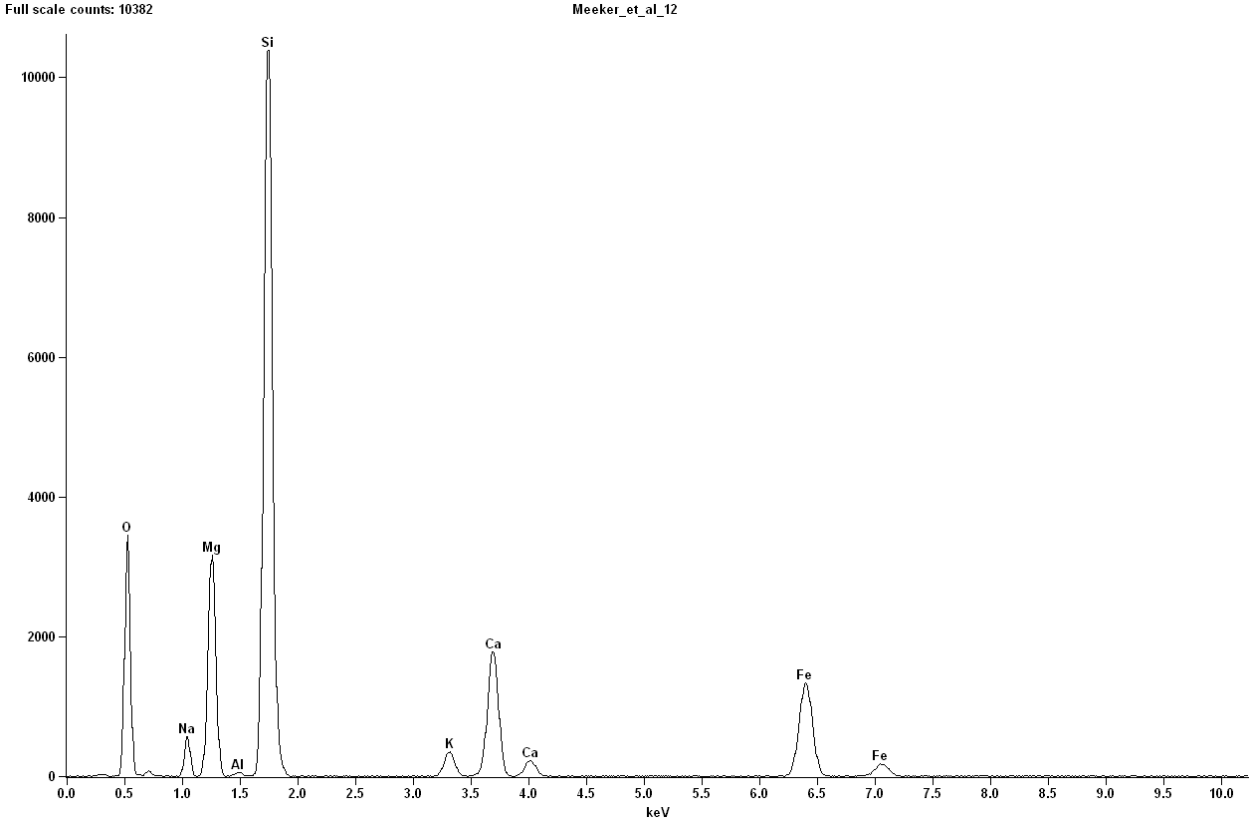
Samples 9-10


Full scale counts: 10560
Meeker_et_al_9
Si
O
Mg
Fe
Na
Al
K
Ca
Ca
Fe
Fe
keV

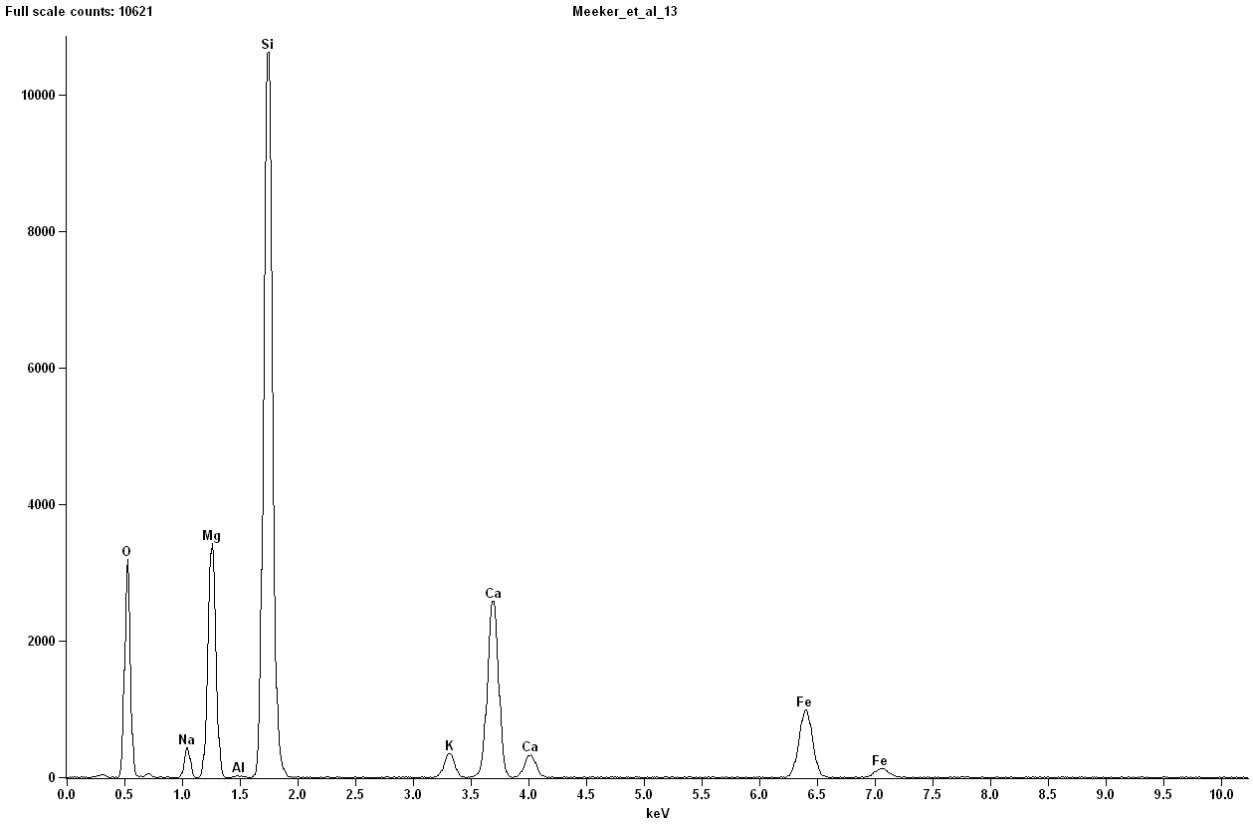

Full scale counts: 10568
Meeker_et_al_10
Si
O
Mg
Na
Al
K
Ca
Ca
Fe
Fe
Ca
keV

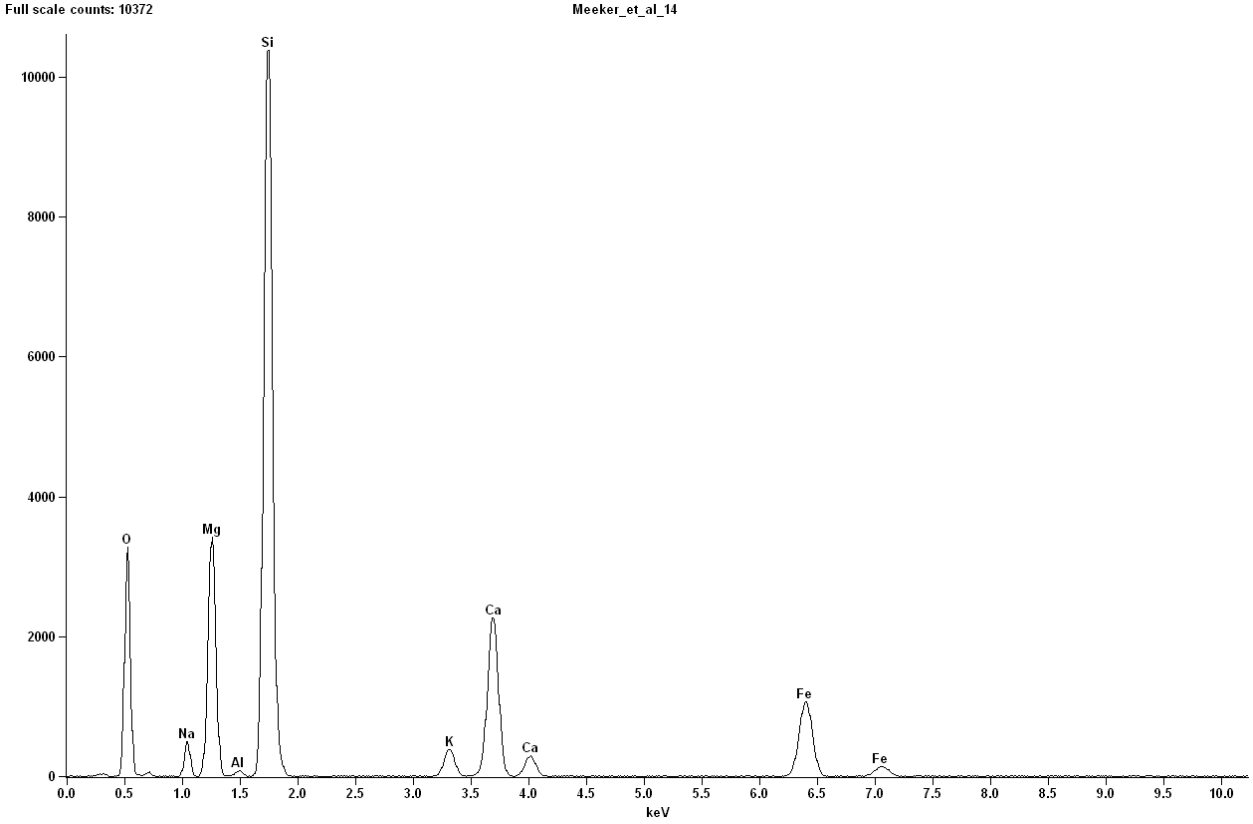
Samples 11-12



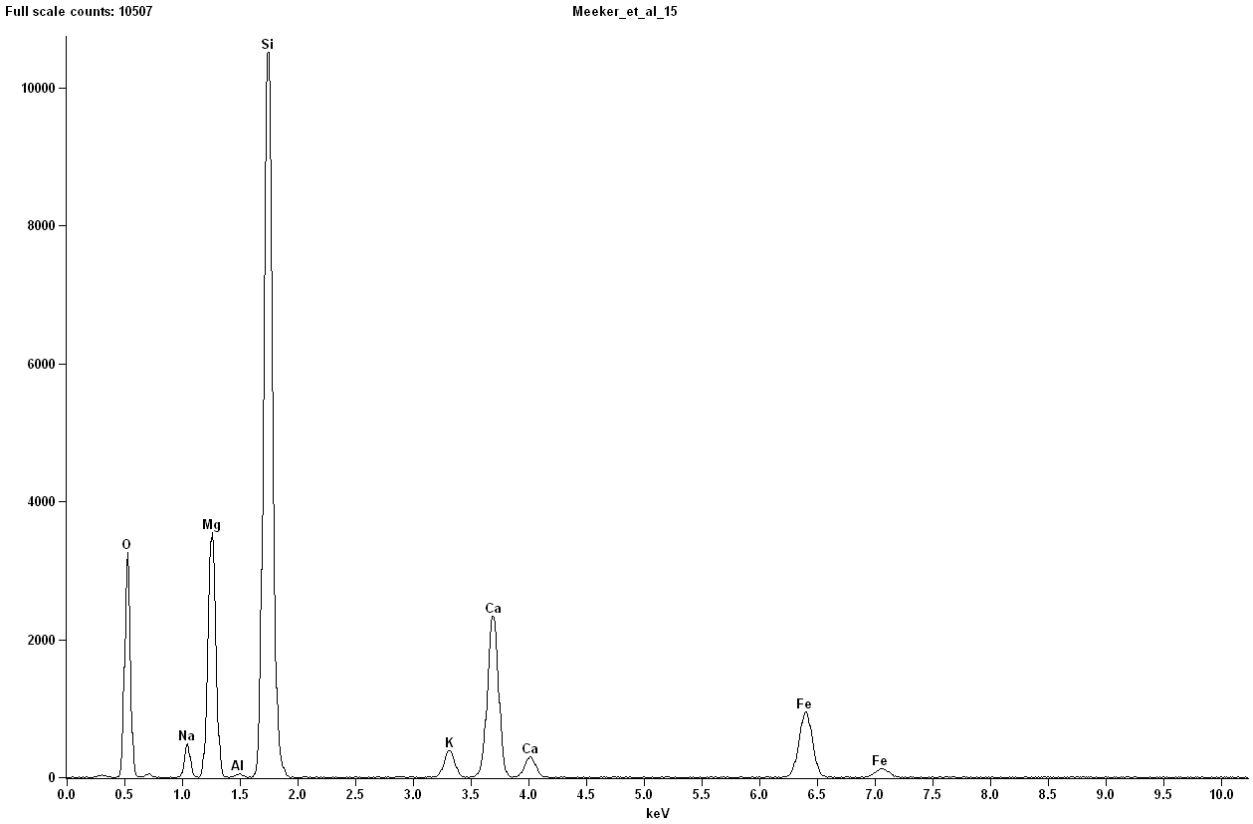


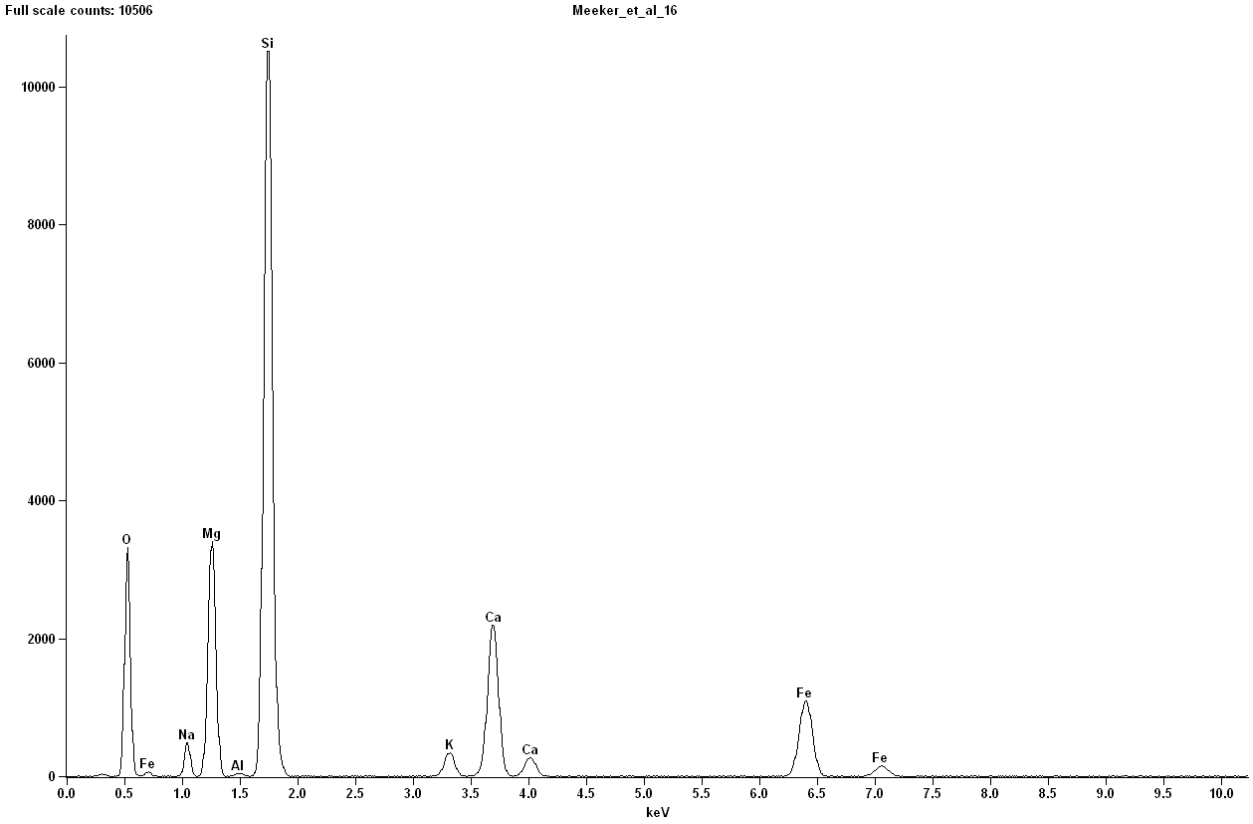
Samples 13-14



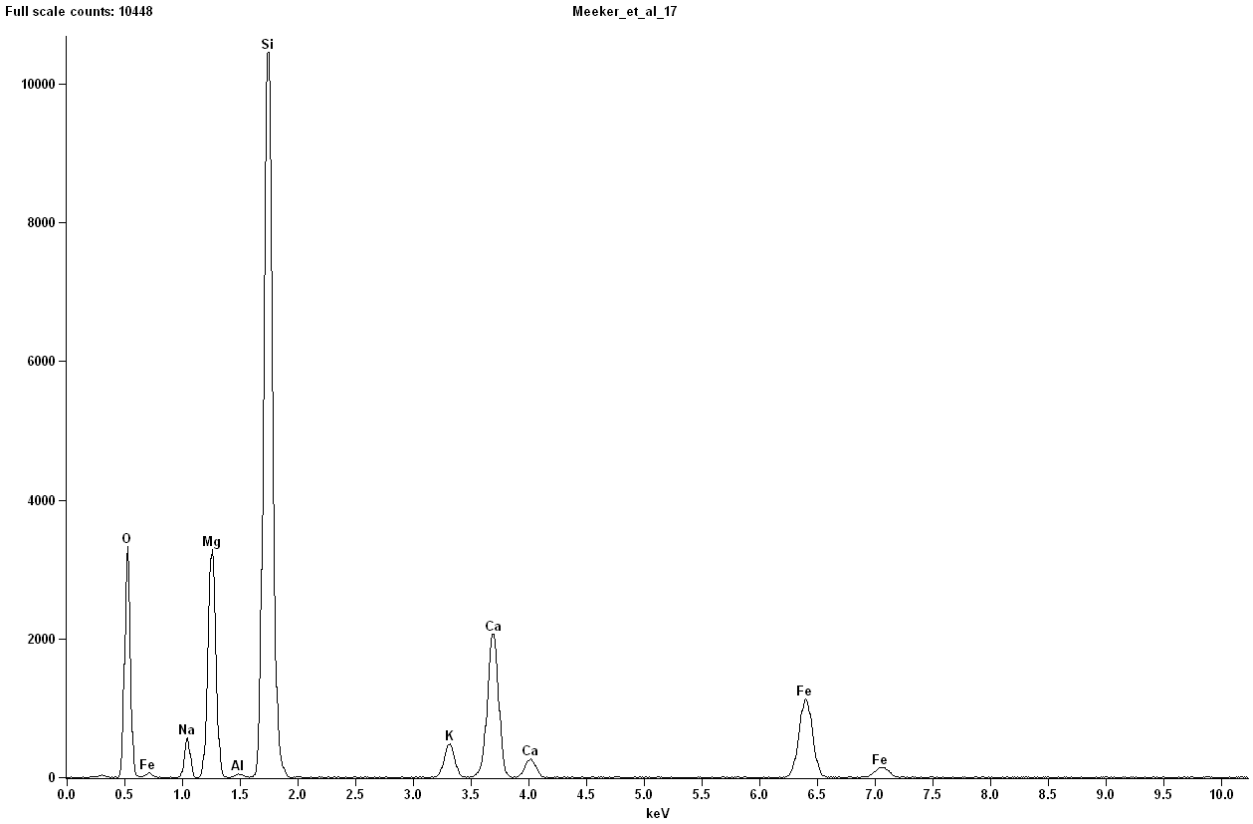


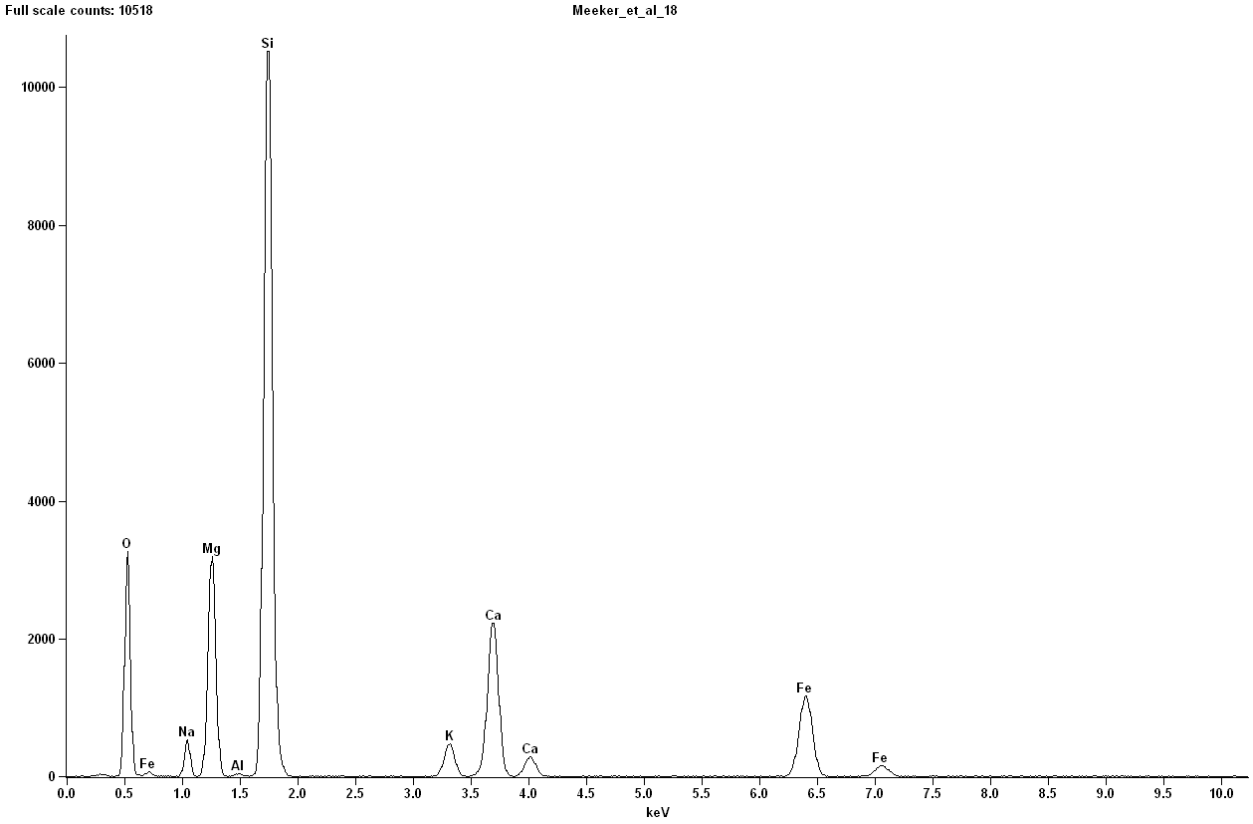
Samples 15-16



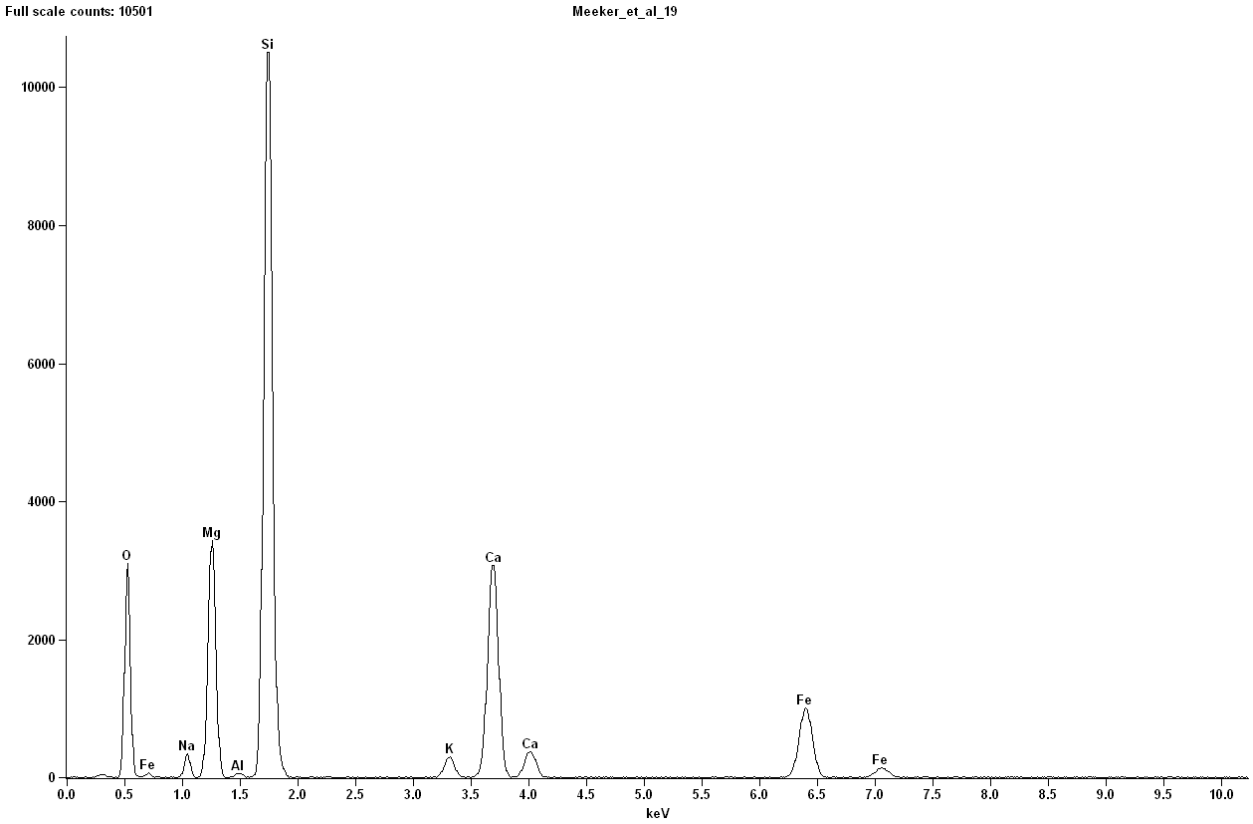


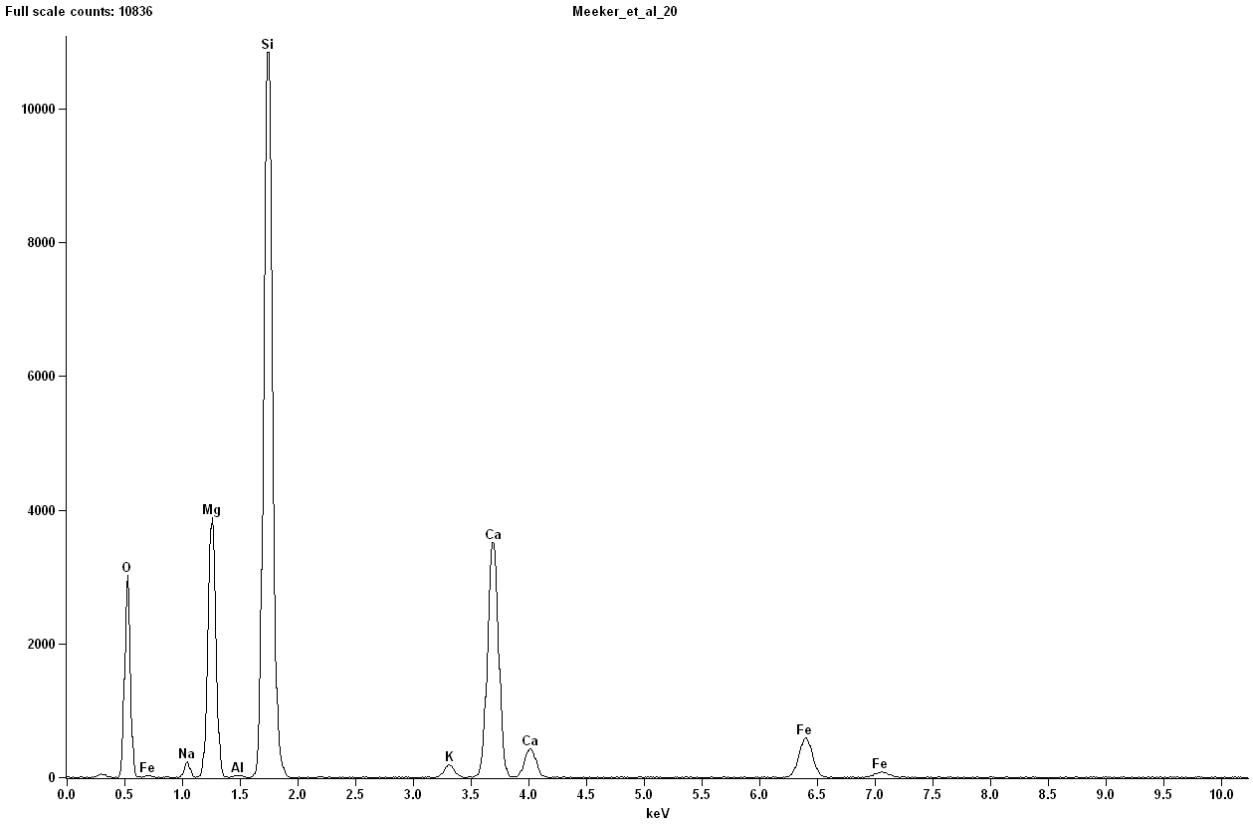
Samples 17-18



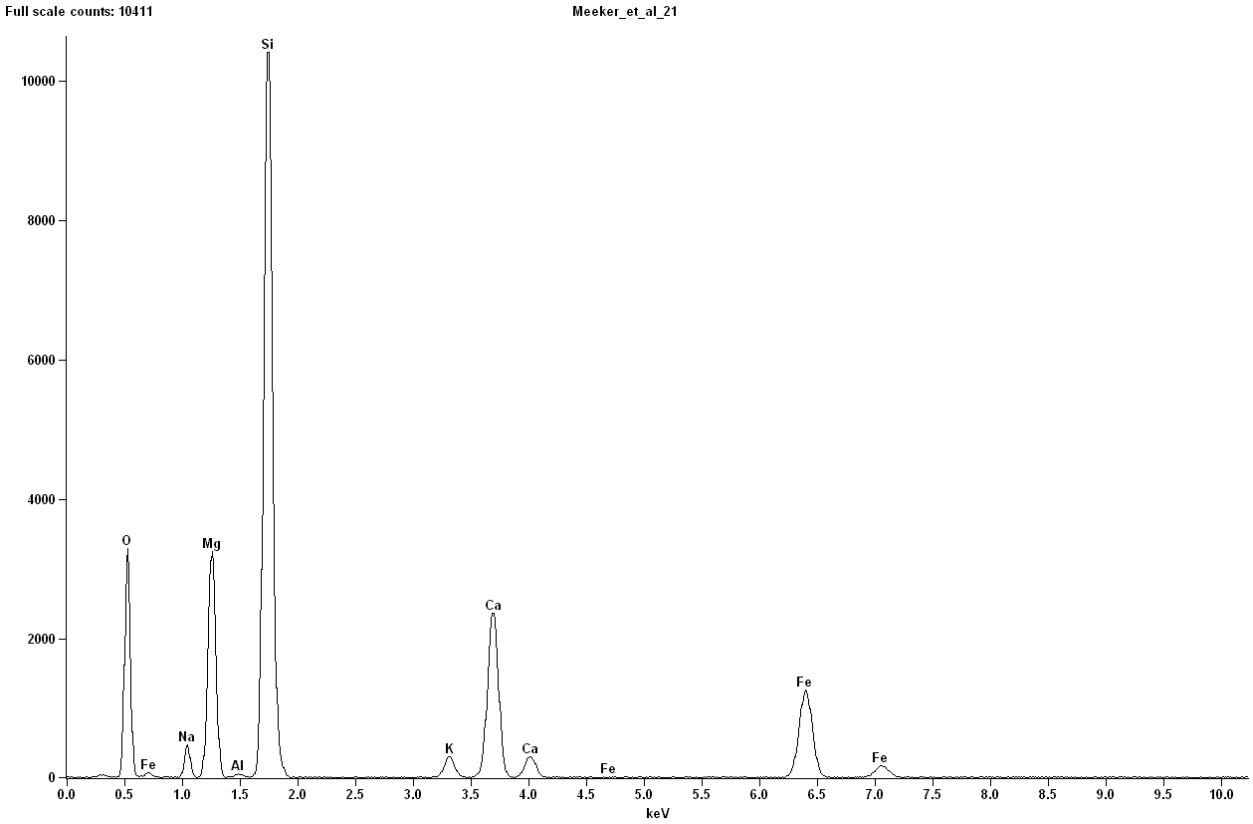


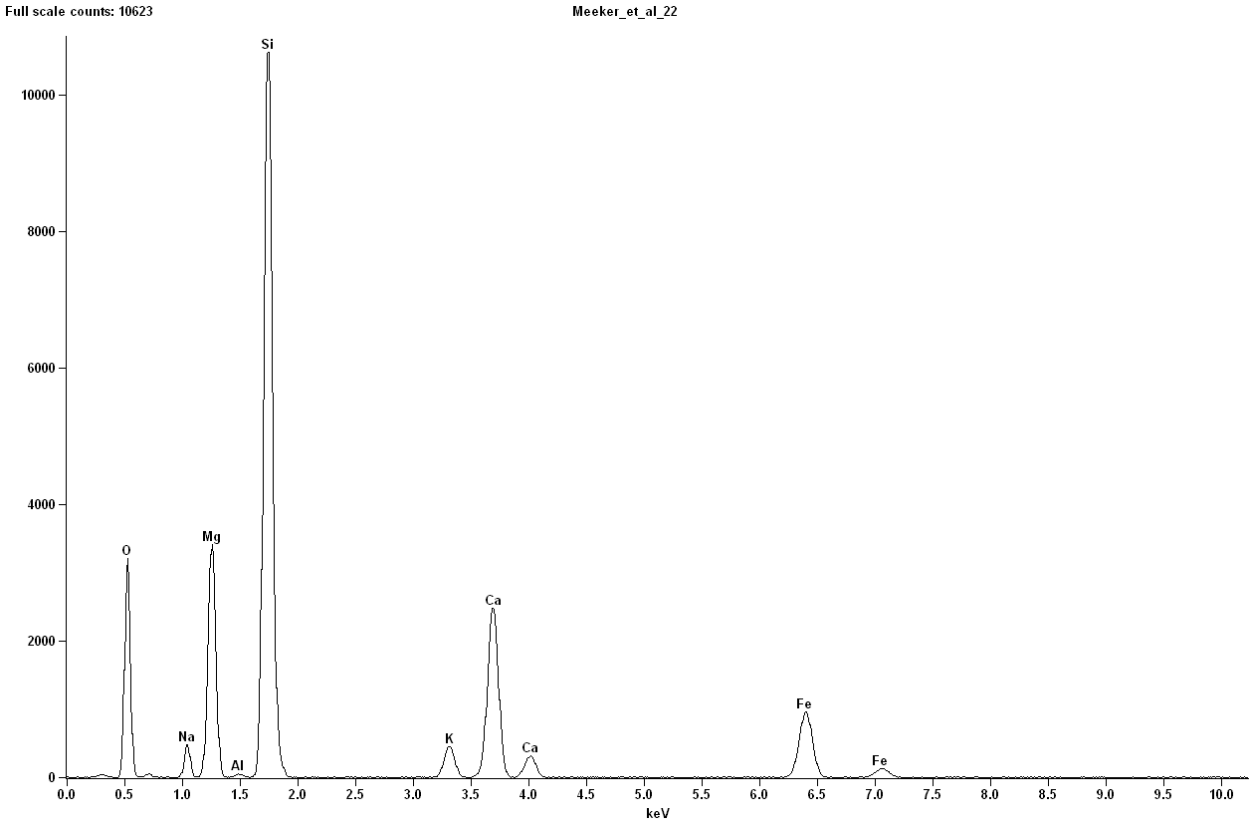
Samples 19-20



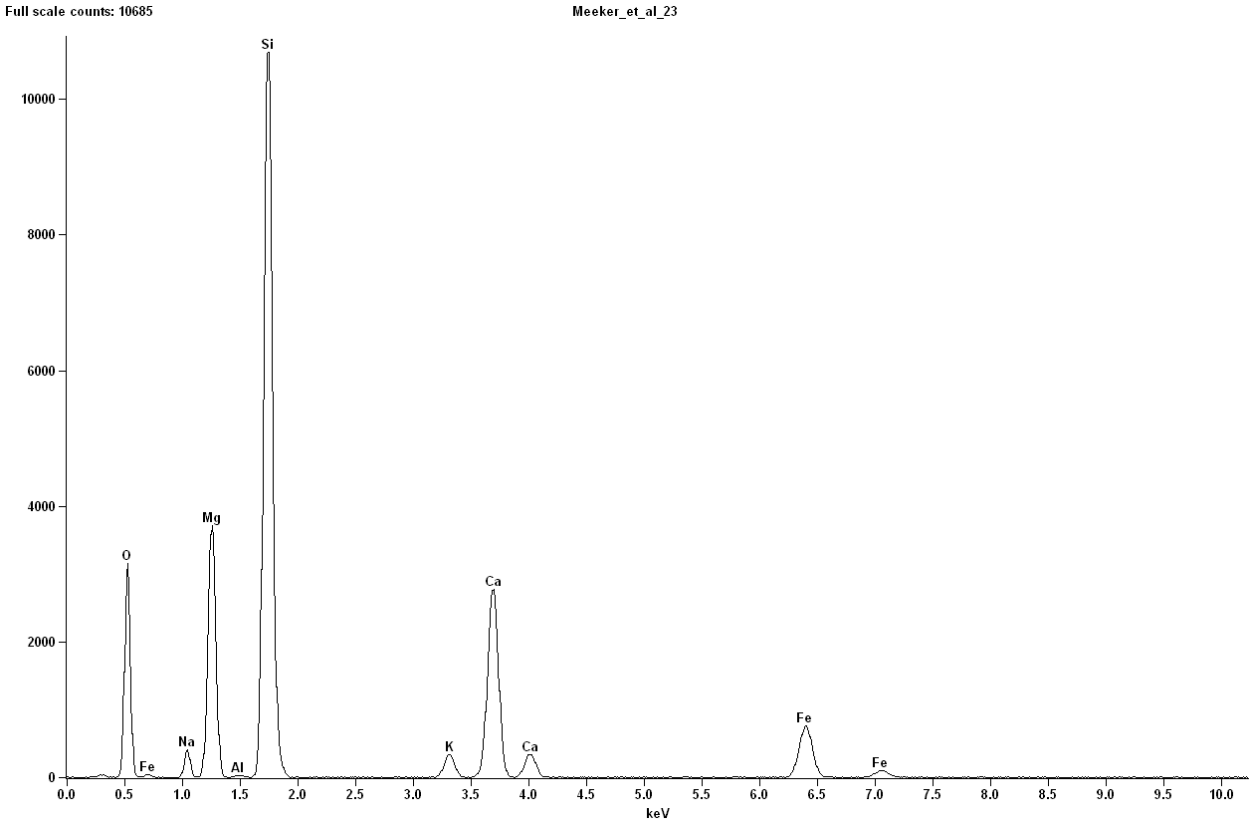


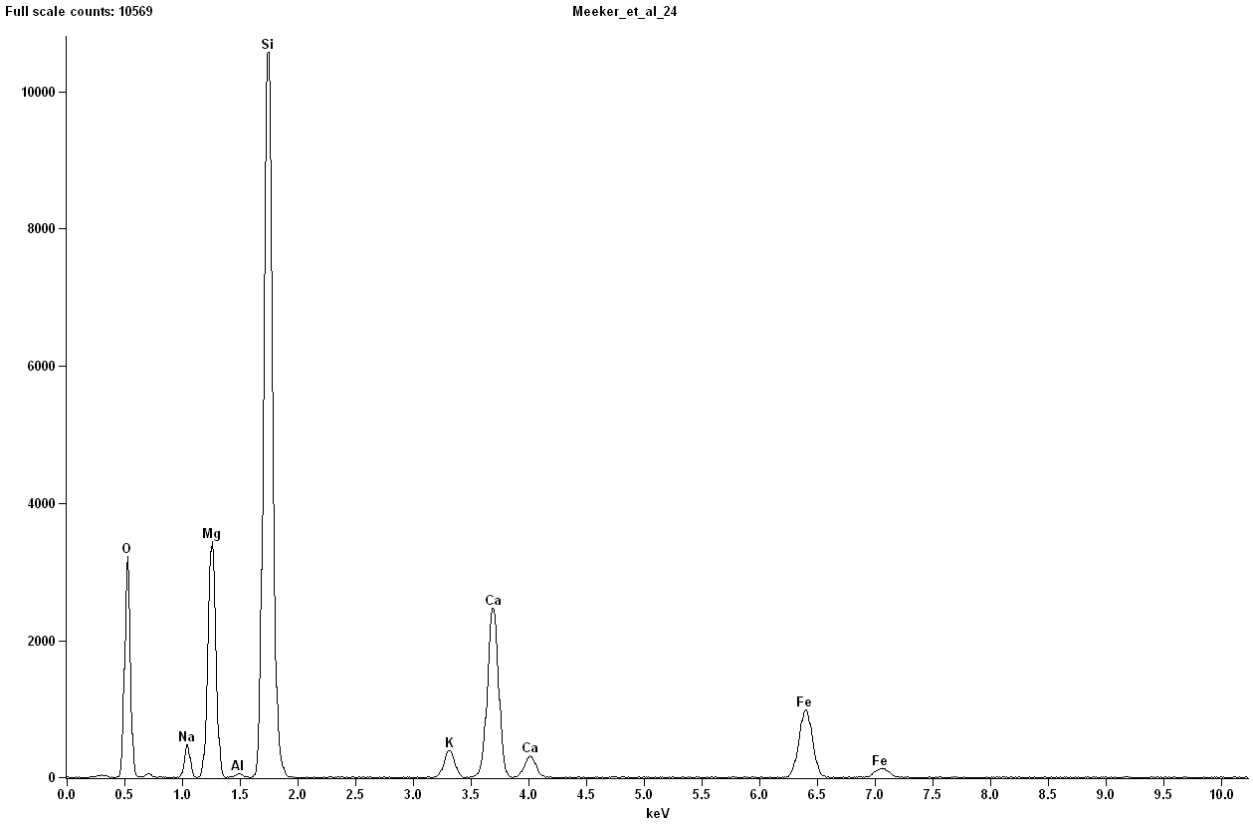
Samples 21-22



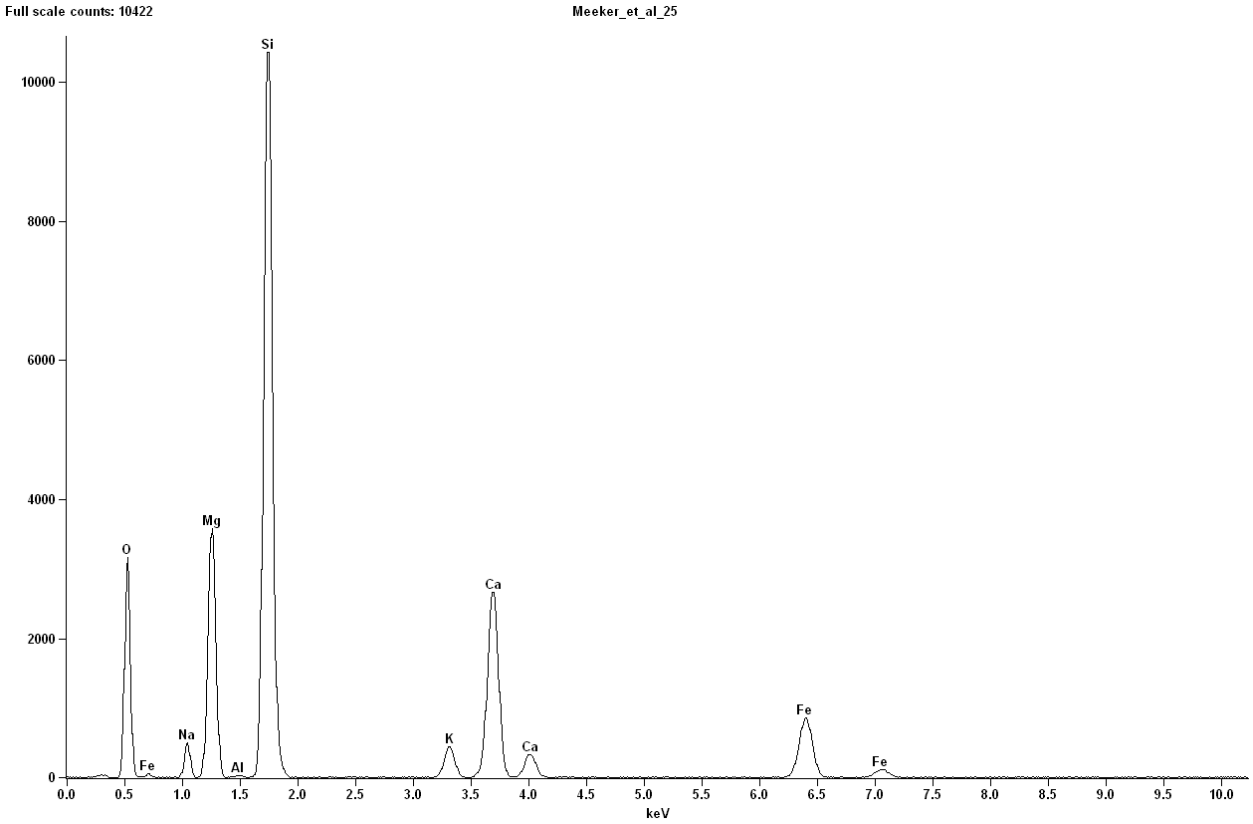


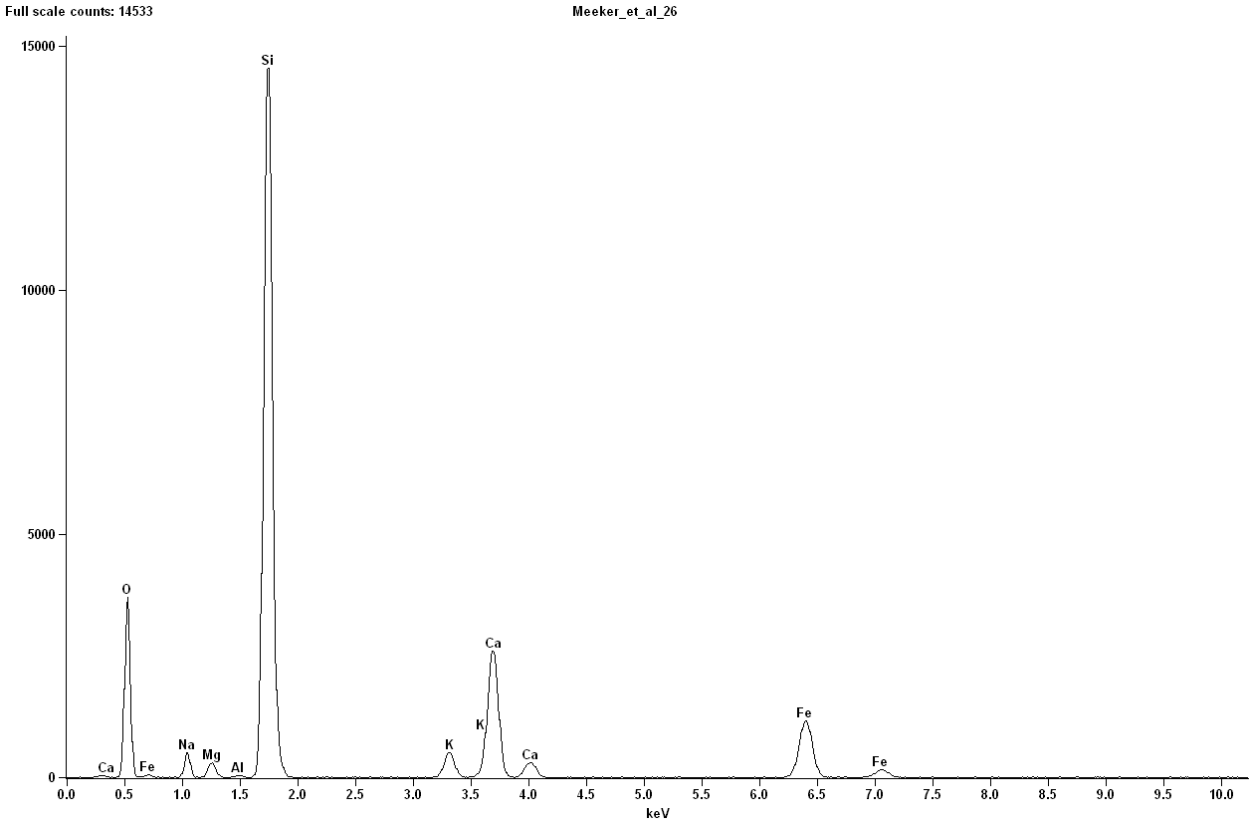
Samples 23-24



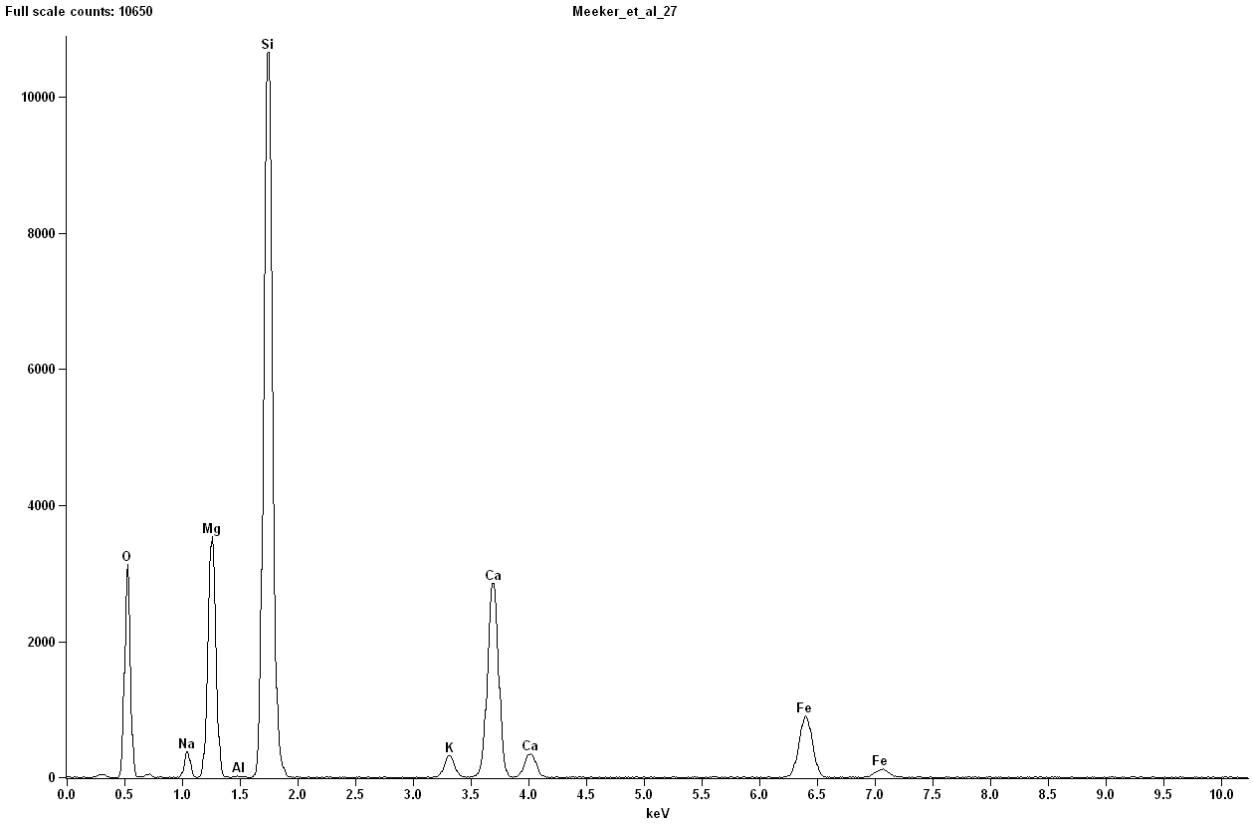


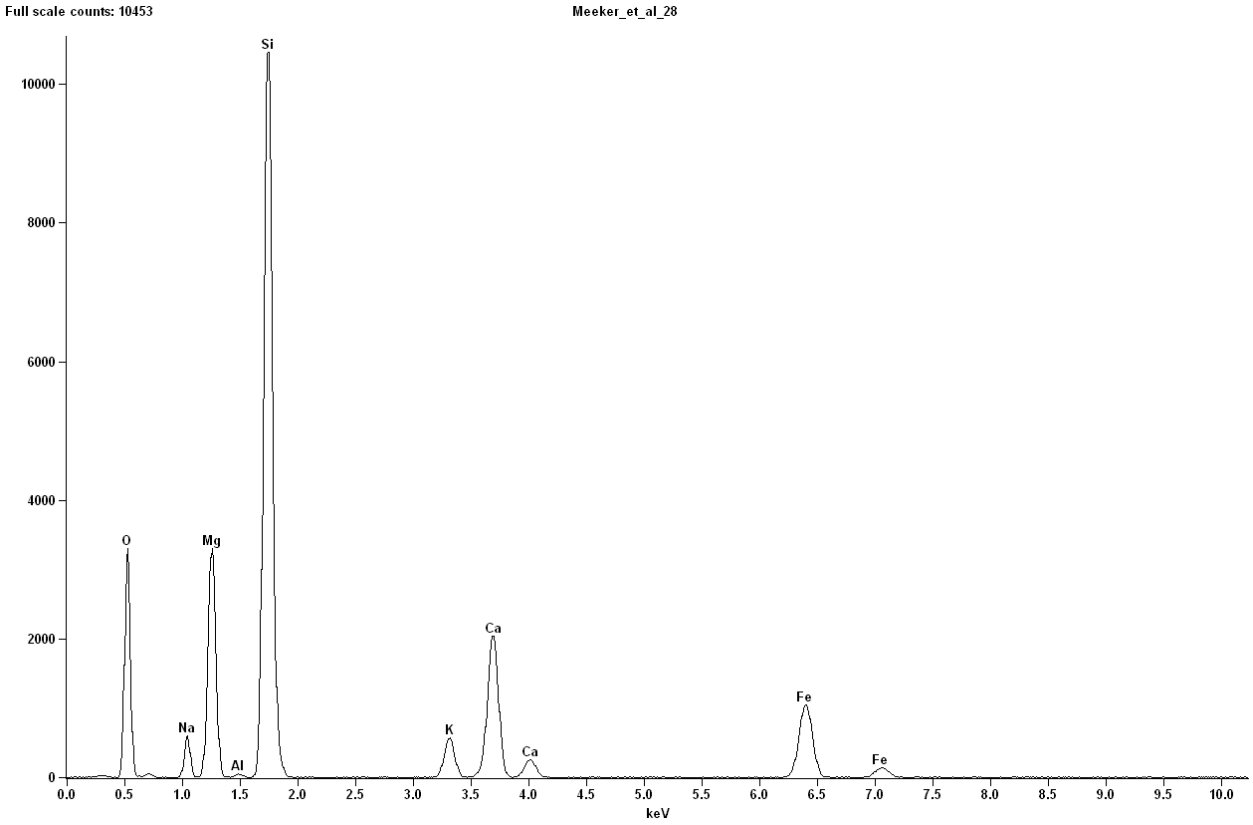
Samples 25-26



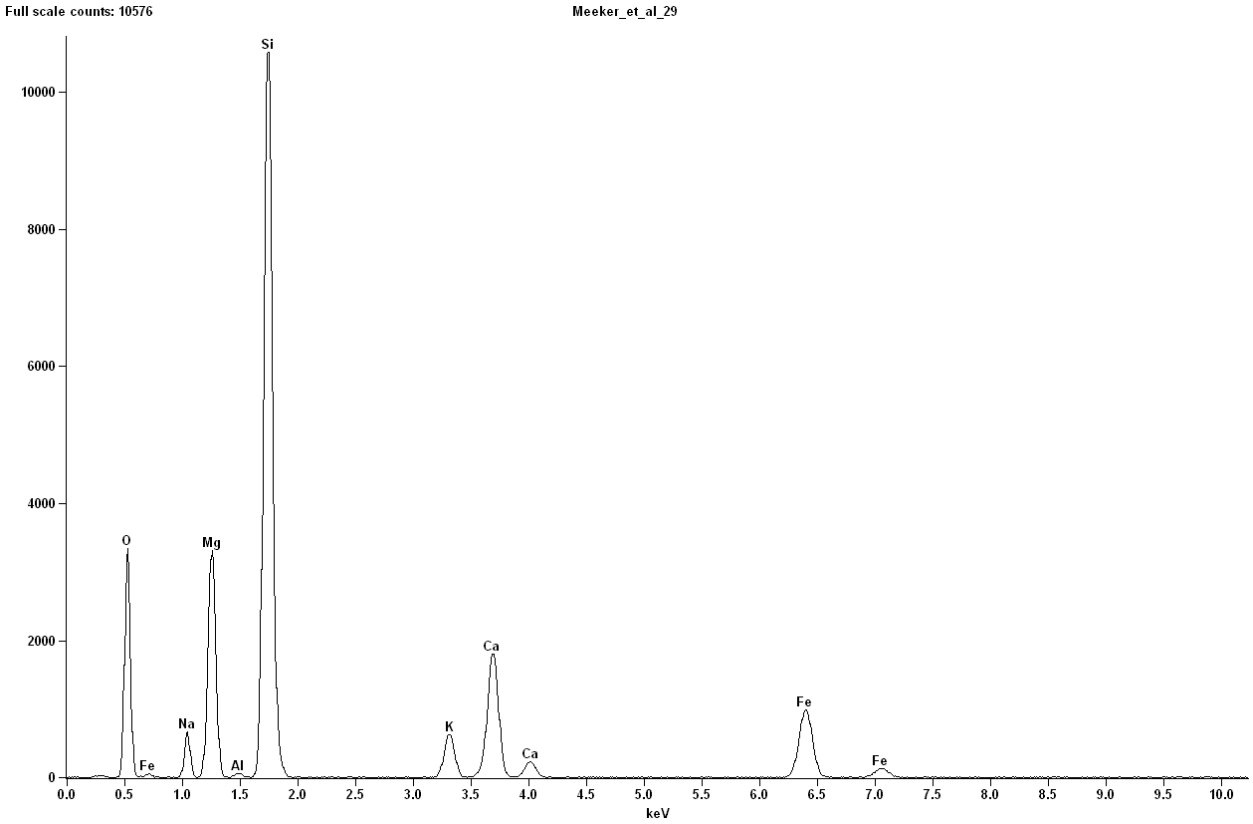


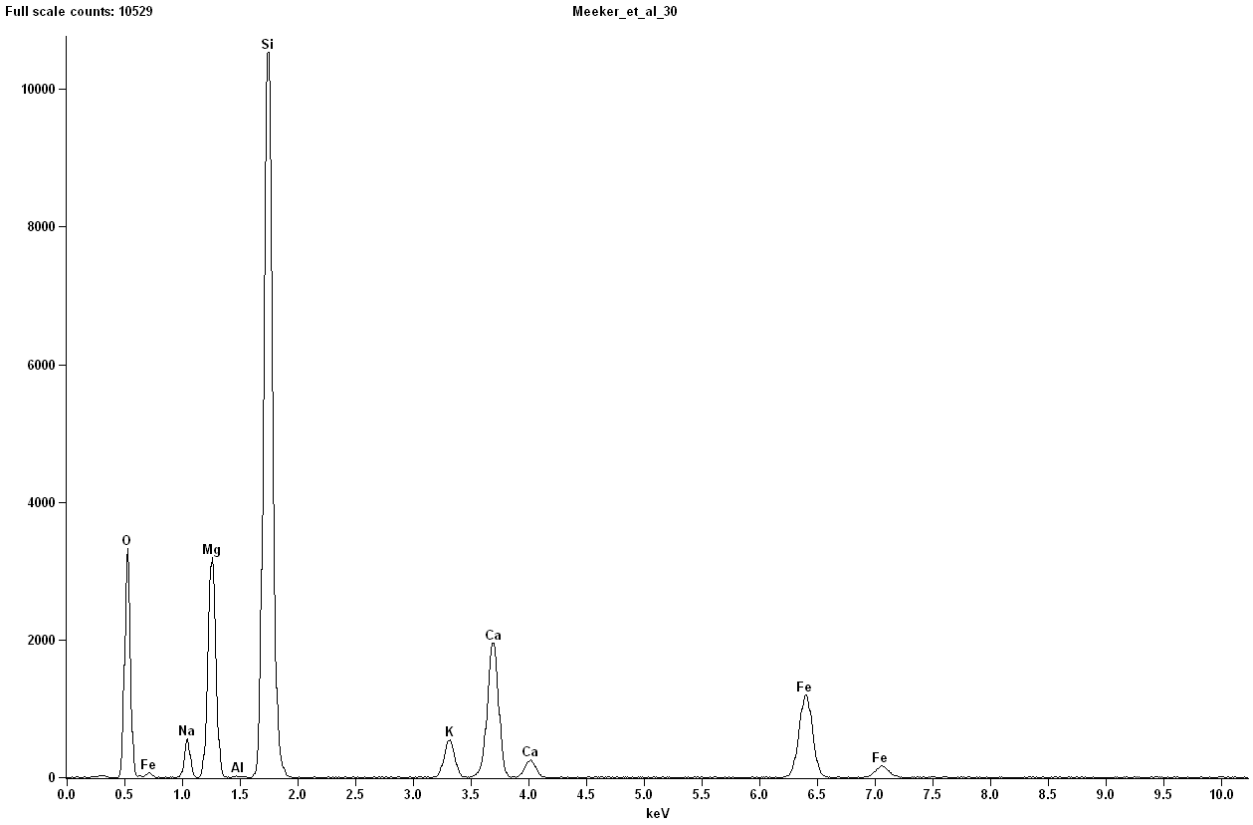
Samples 27-28





Samples 29-30



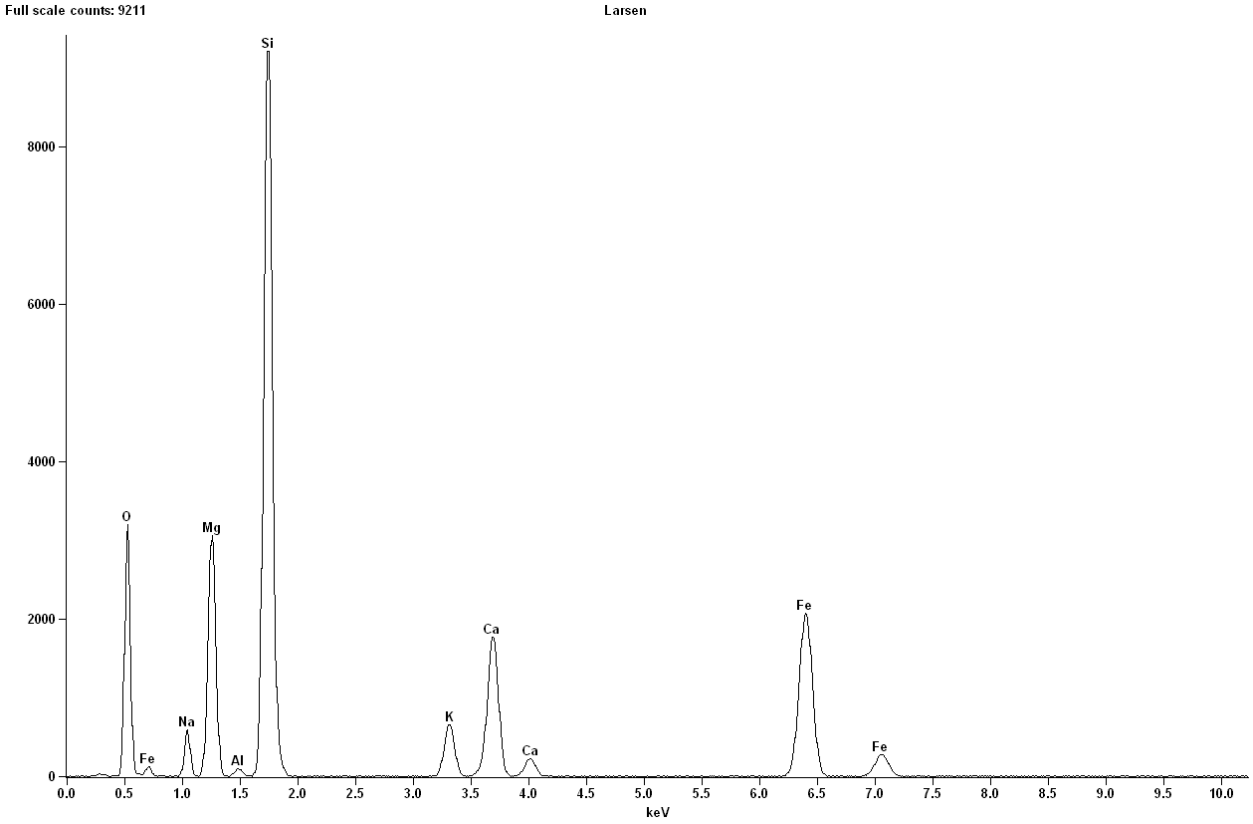


Attachment 3

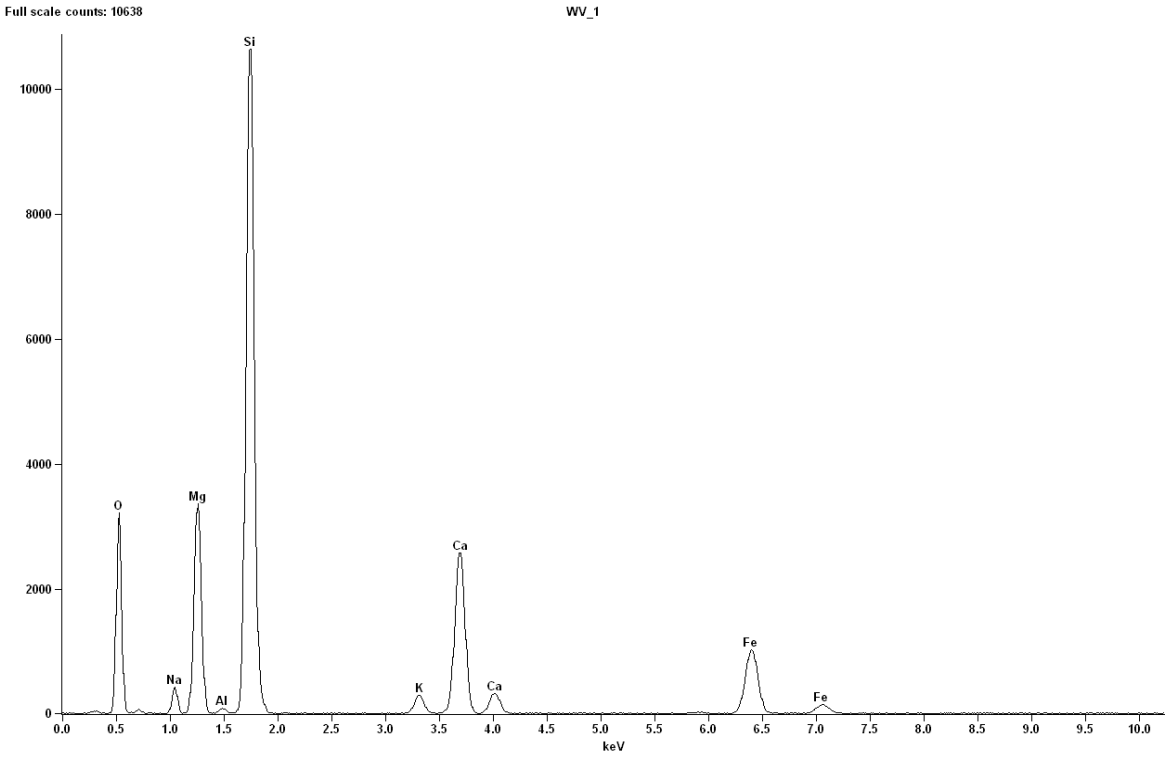
WDS Spectra from Historical Samples

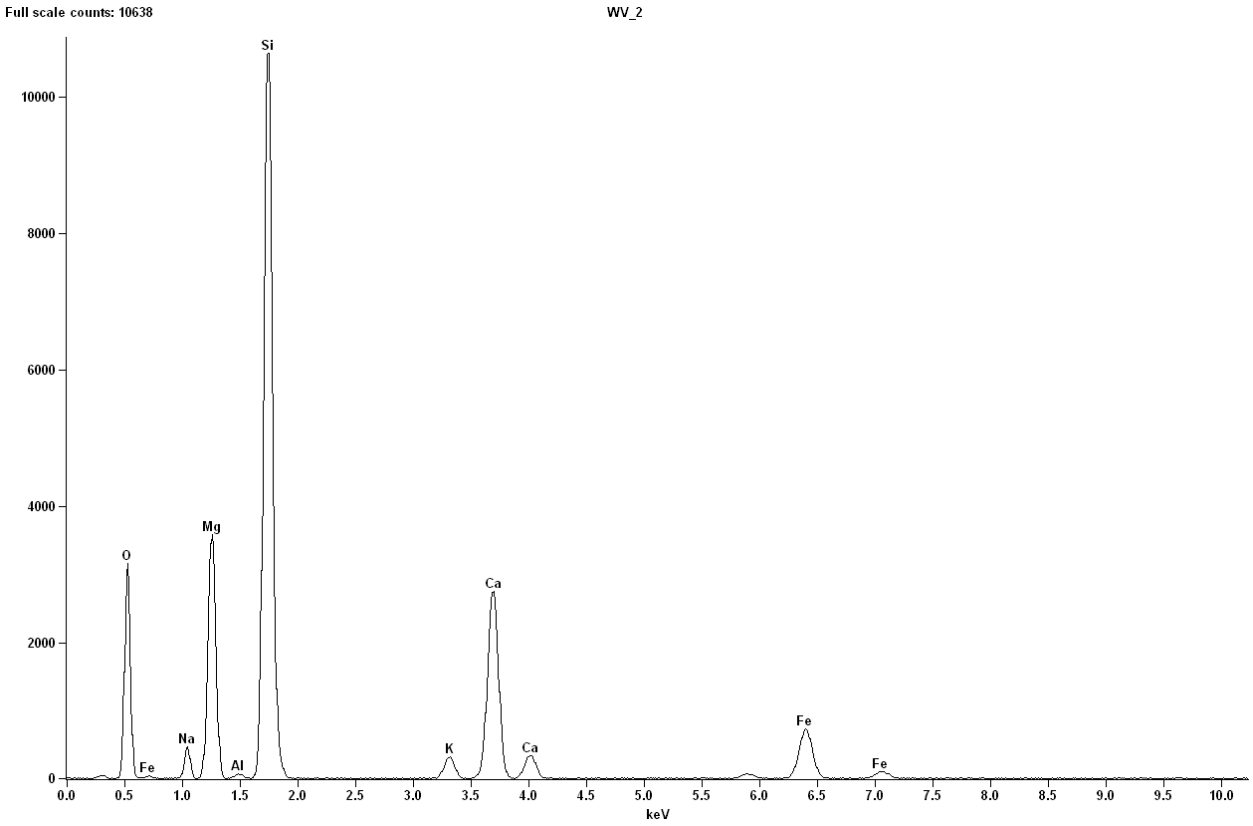
and Samples from Other Key Publications

WDS Spectra from samples in Larsen 1942



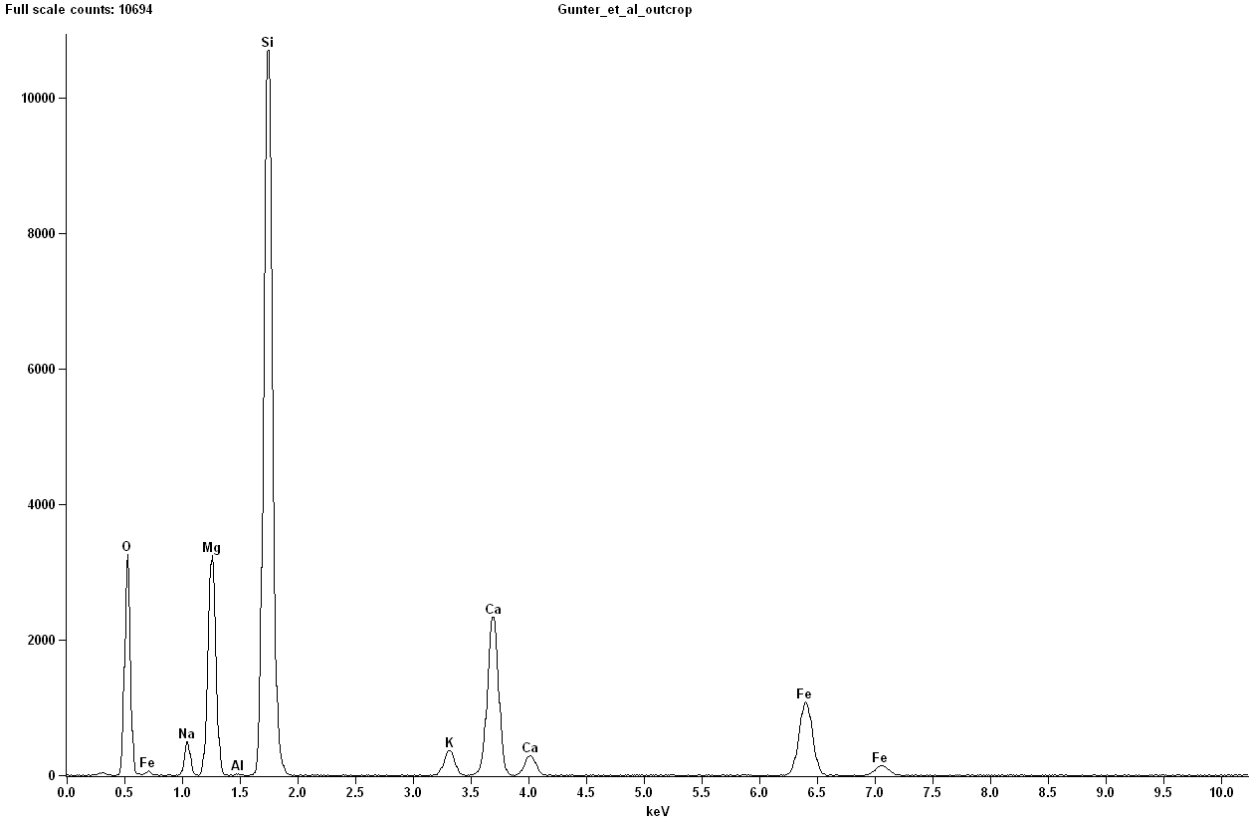
WDS Spectra from samples in Wylie and Verkouteren 2000



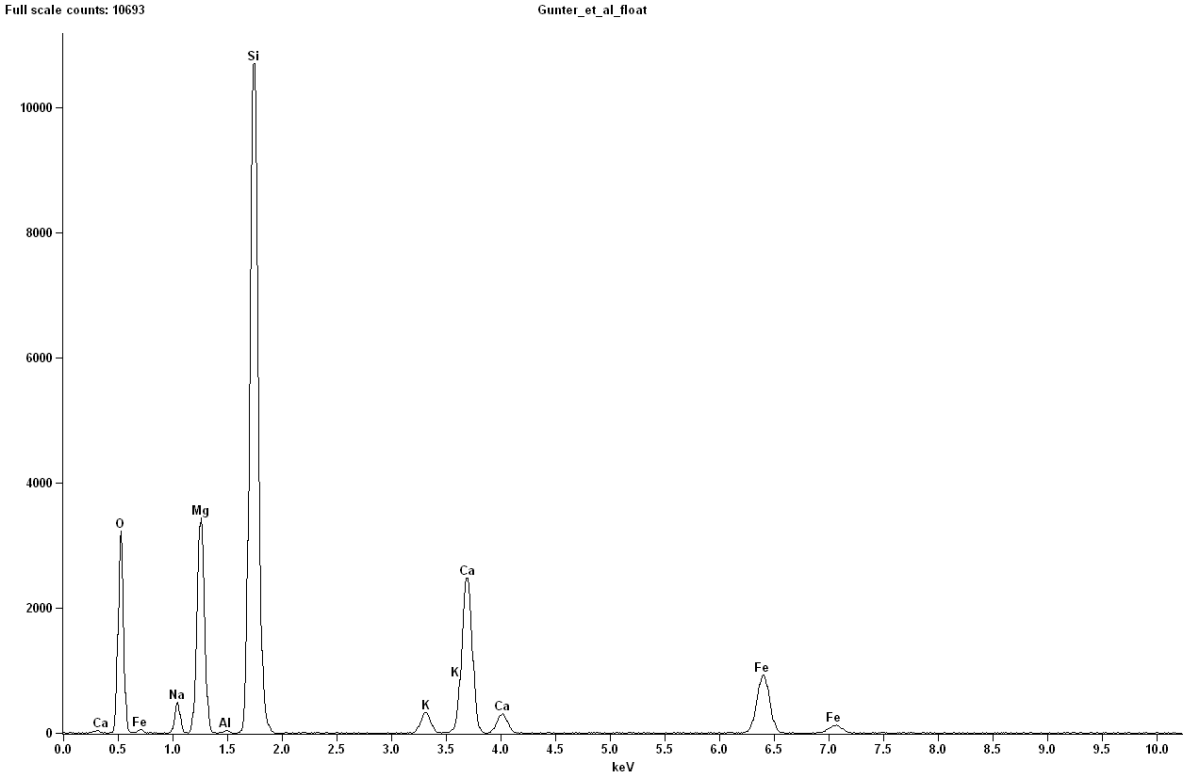


WDS Spectra from samples in Gunter *et al* 2003

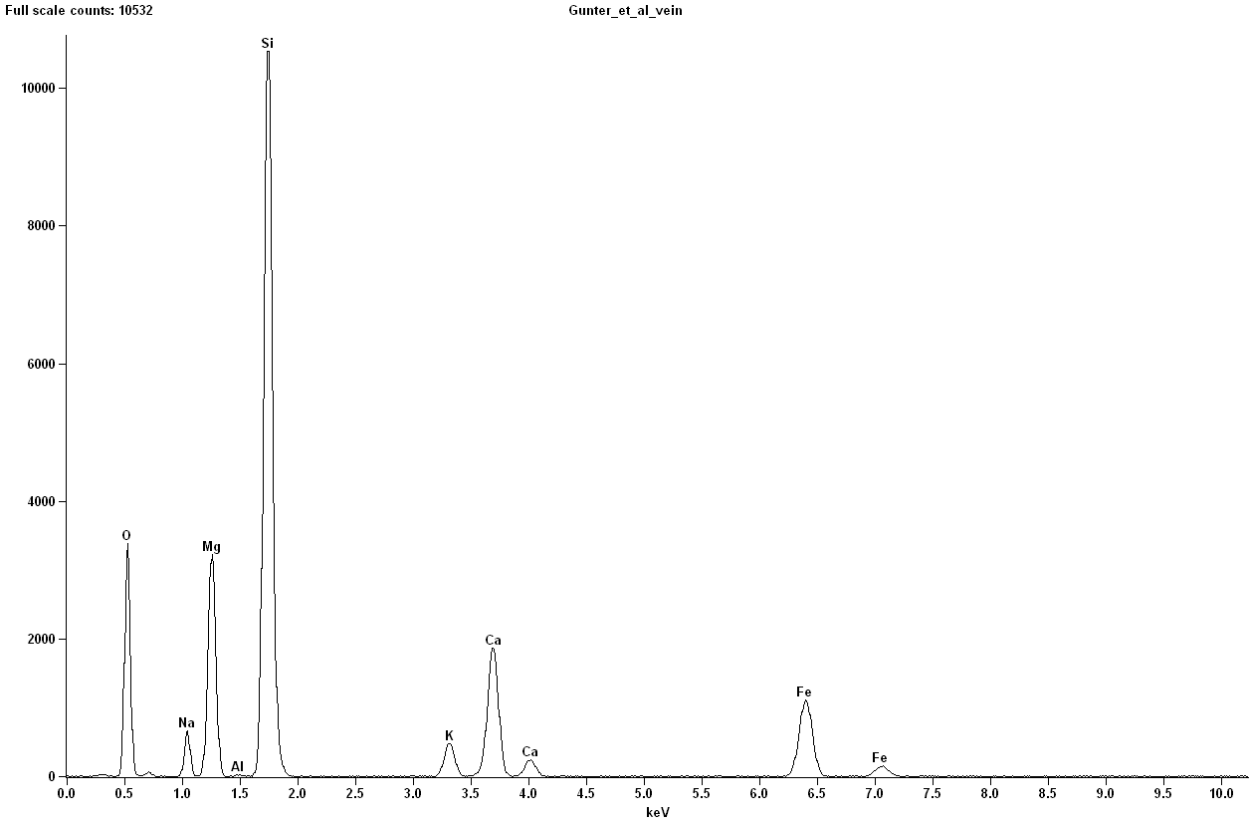
Outcrop



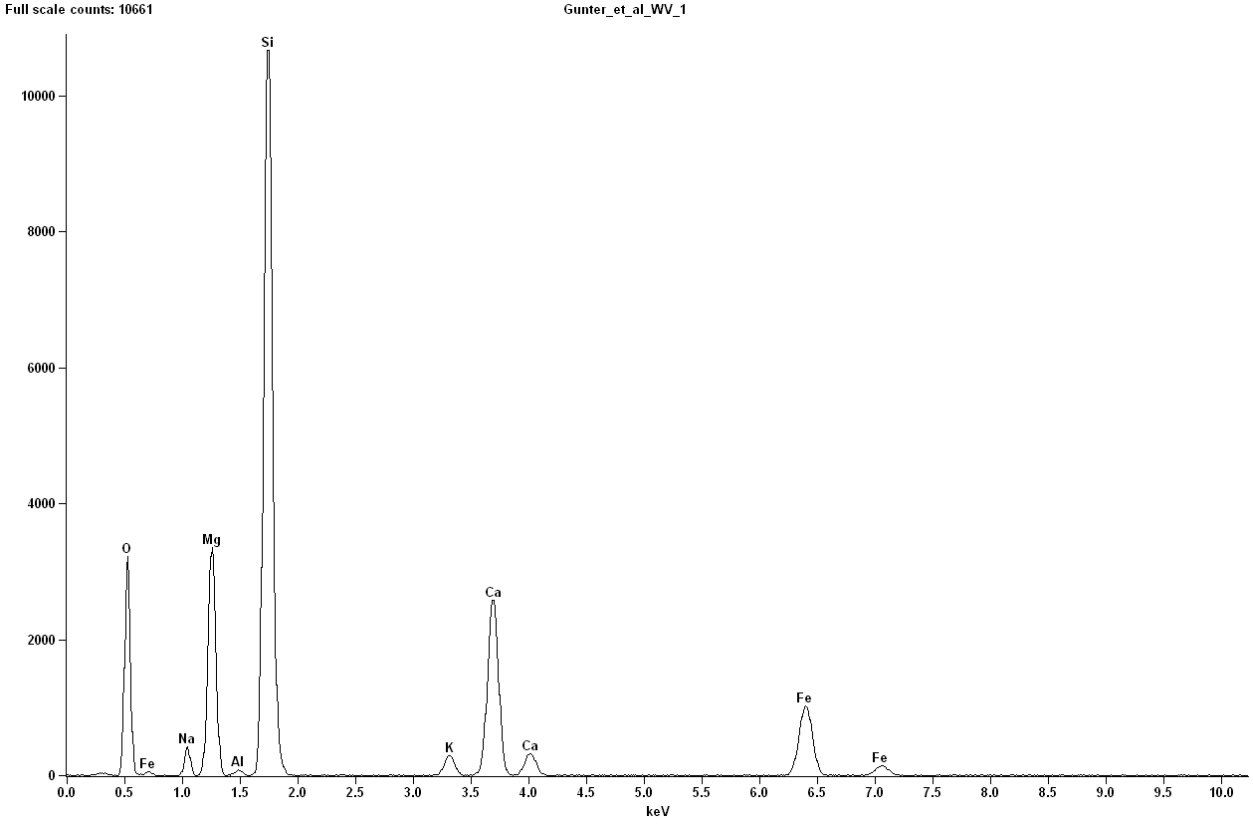
Float



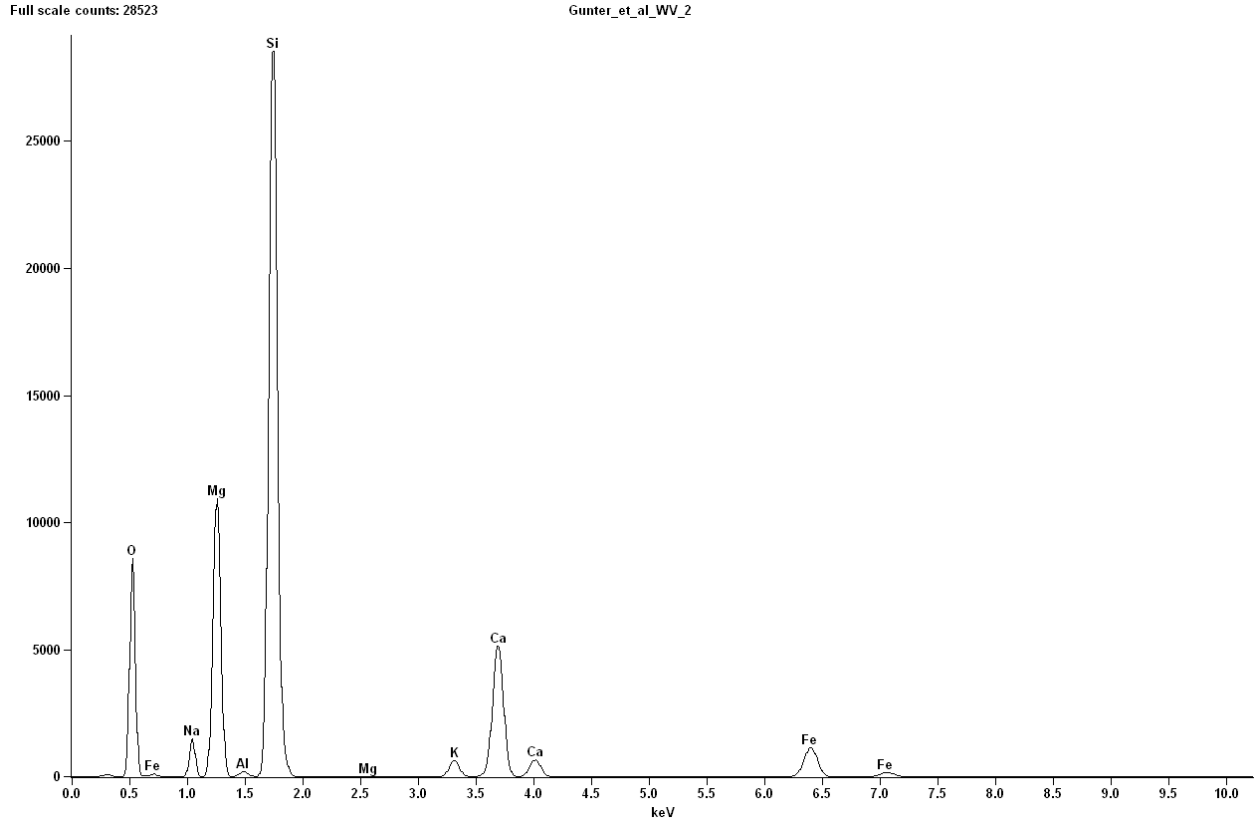
Vein



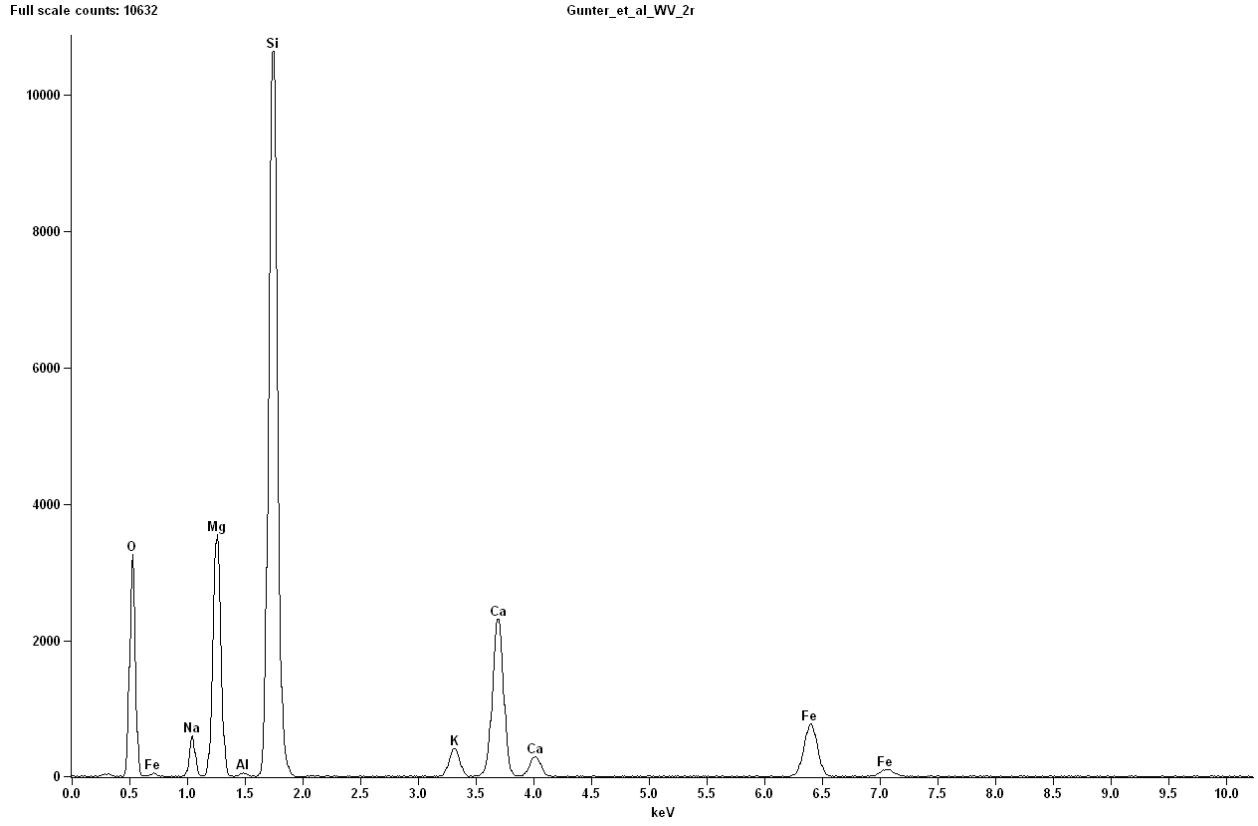
WylieVerkouteren 1



WylieVerkouteren 2

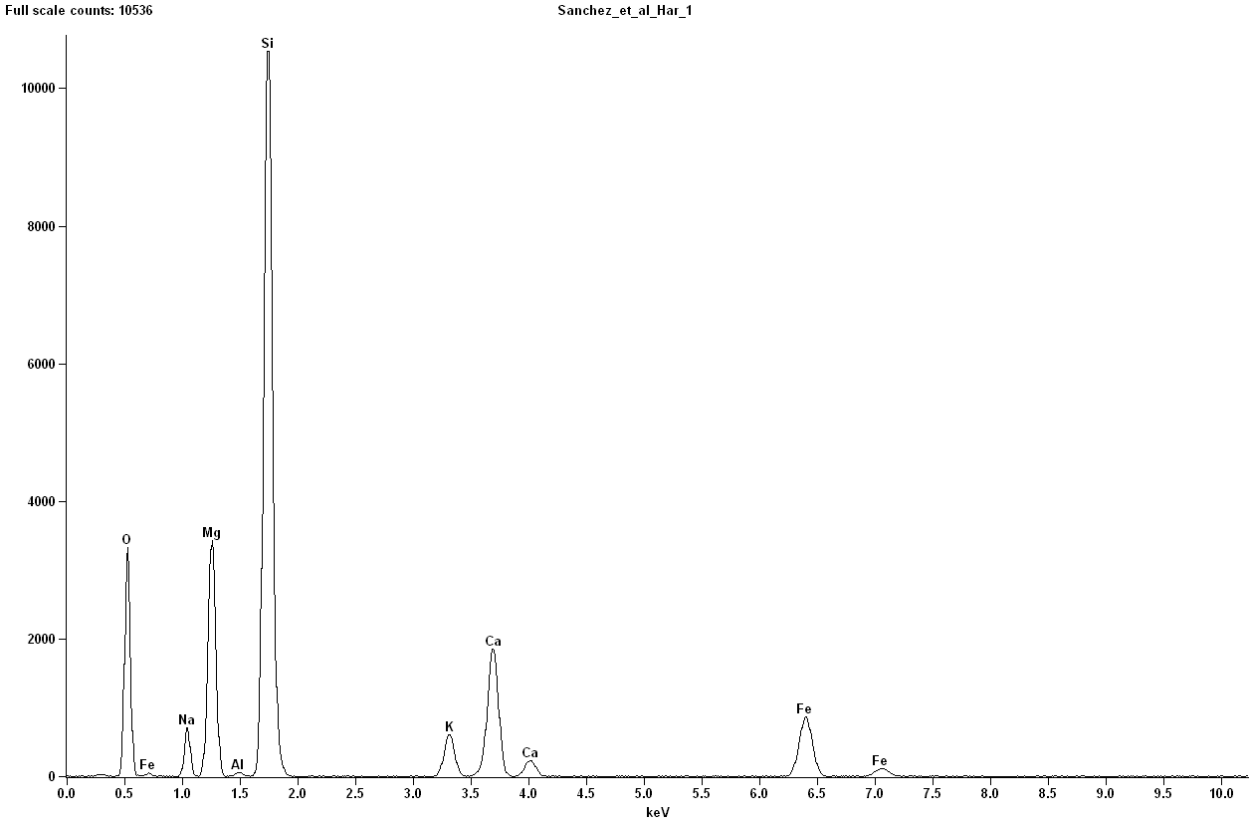


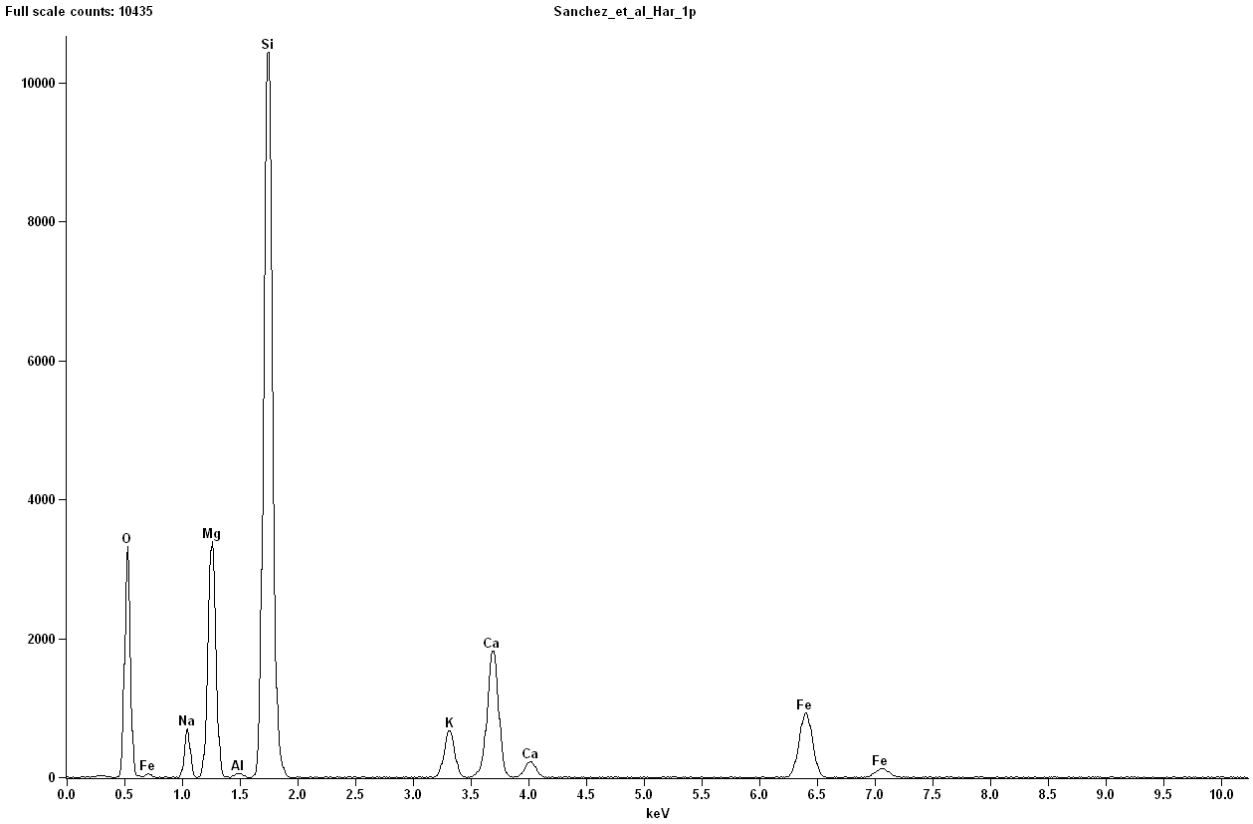
WylieVerkouteren 2



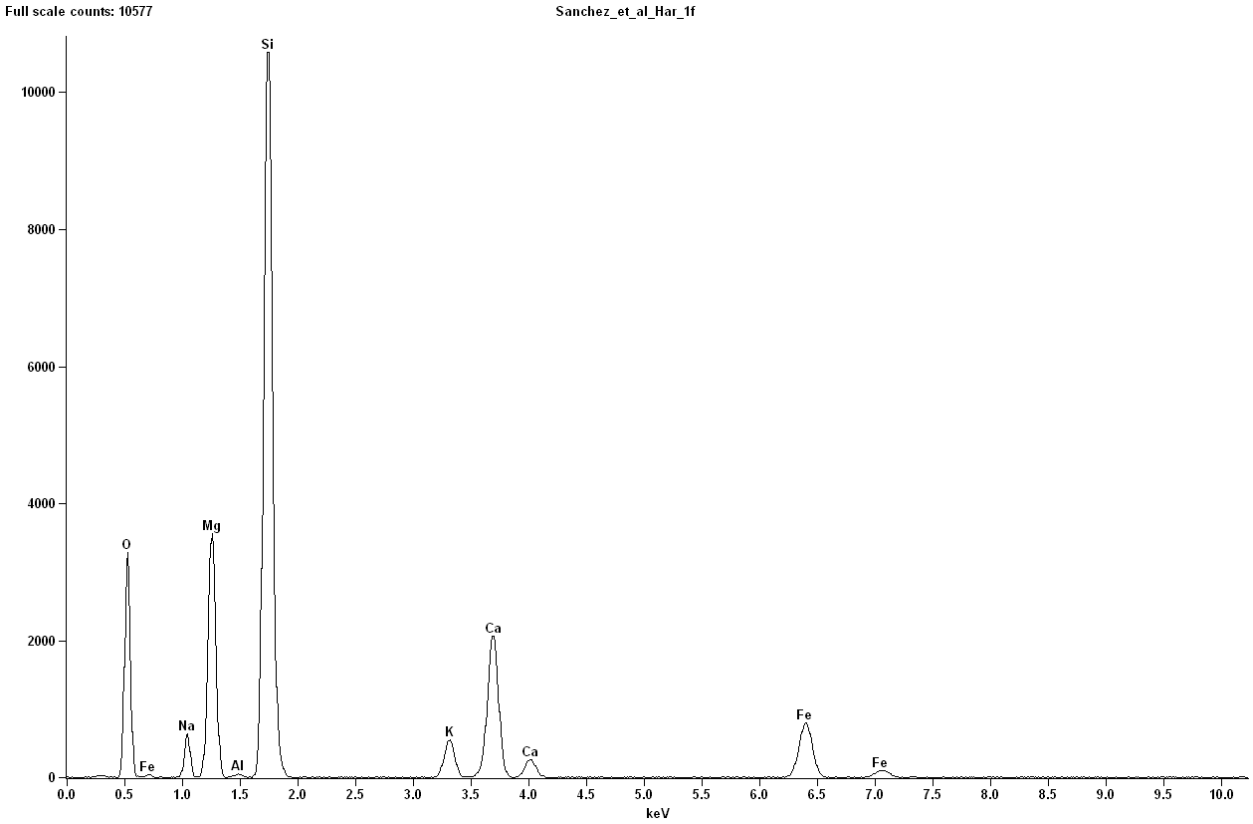
WDS Spectra from samples in Sanchez *et al* 2008

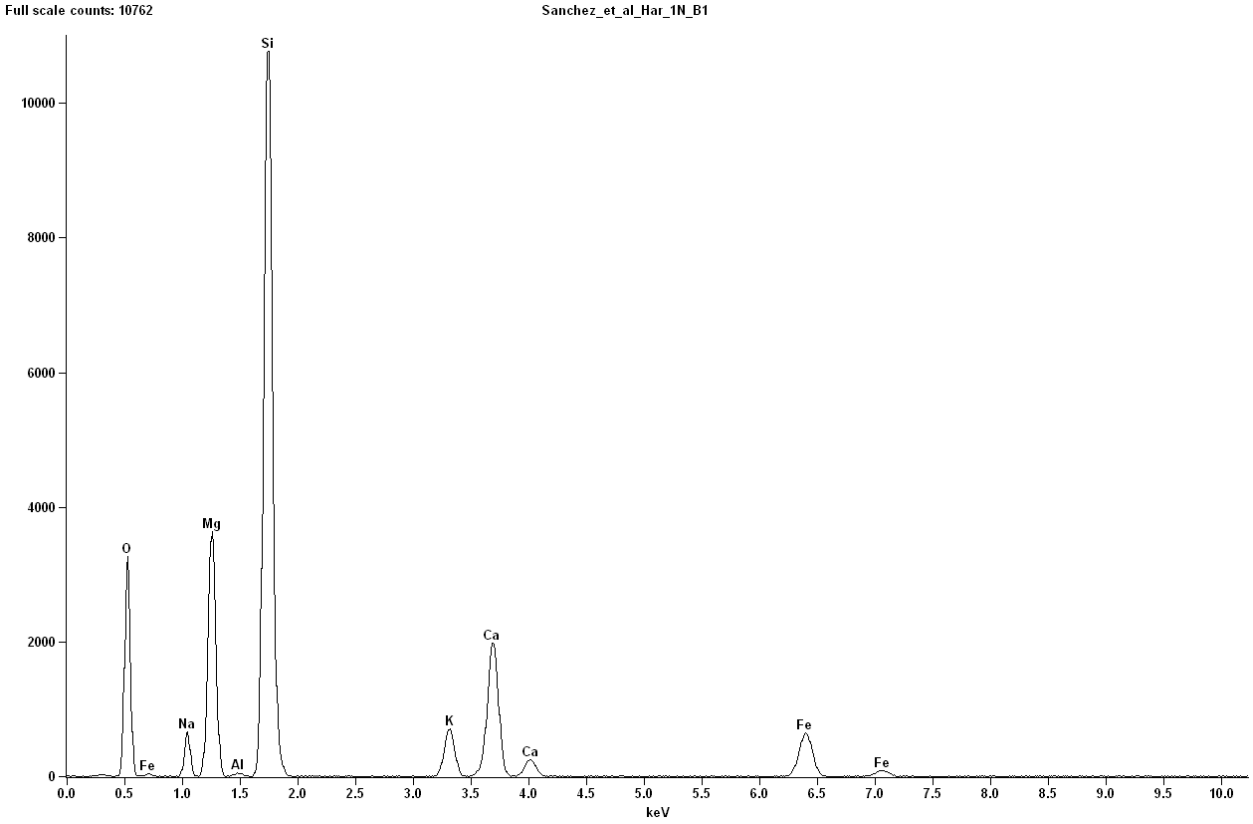
Harvard 1



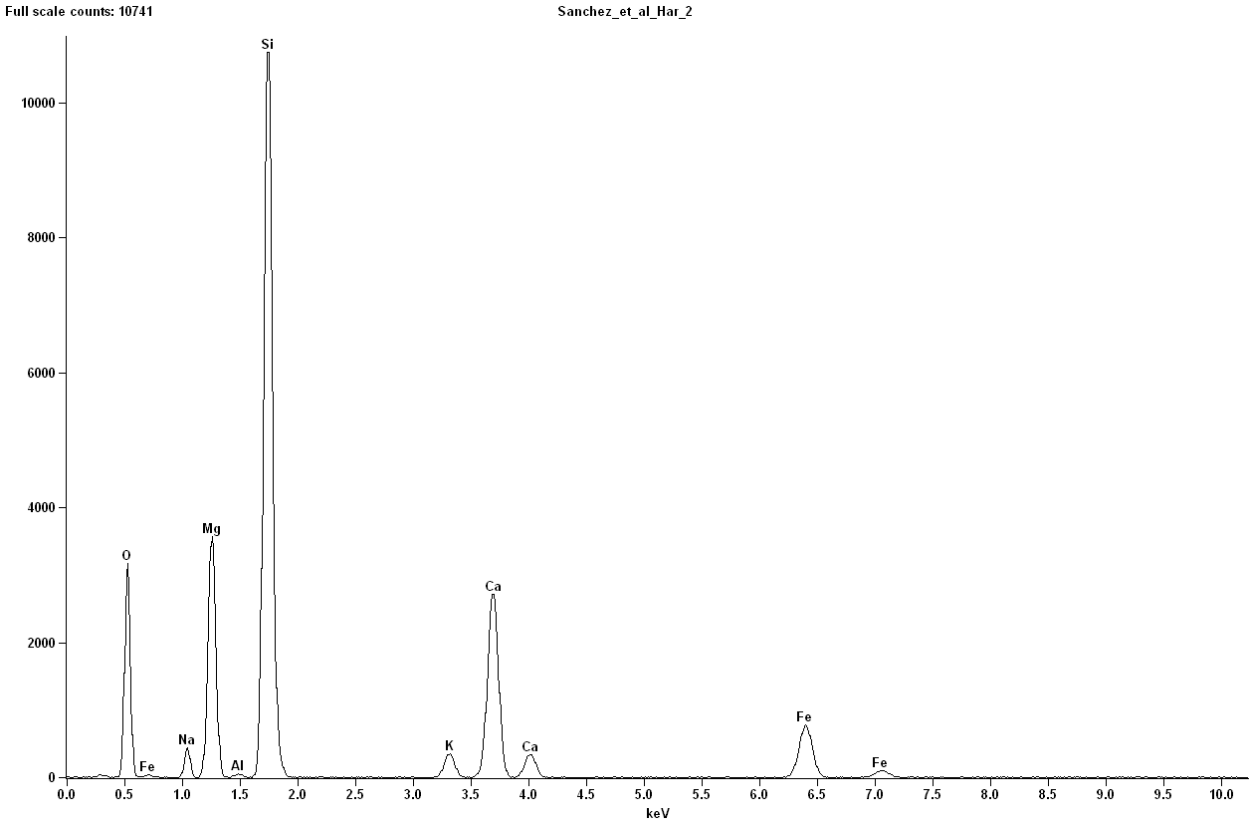


Harvard 1

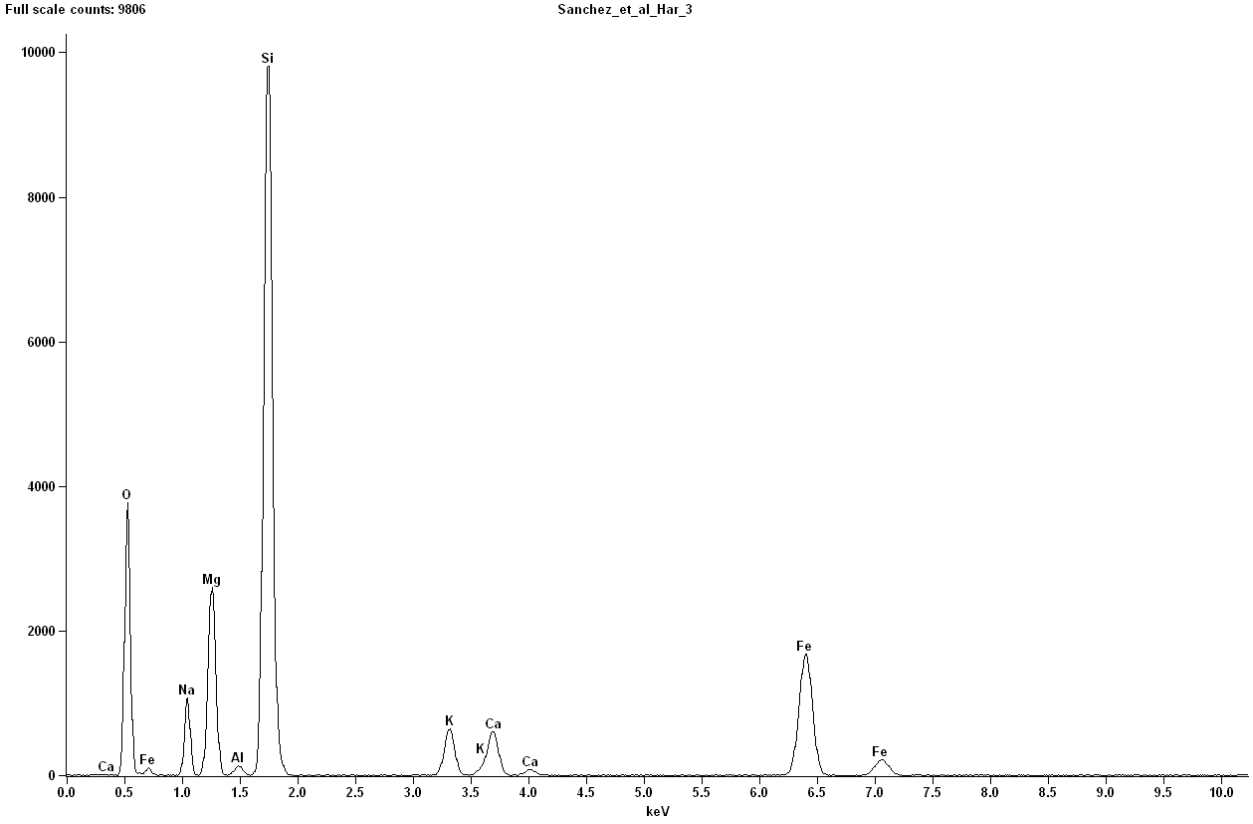

Full scale counts: 10577
Sanchez_et_al_Har_1f
Si
O
Mg
Na
Fe
Al
K
Ca
Ca
Fe
Fe
keV


Full scale counts: 10762
Sanchez_et_al_Har_1N_B1
Si
O
Mg
Na
Fe
Al
K
Ca
Ca
Fe
Fe
keV

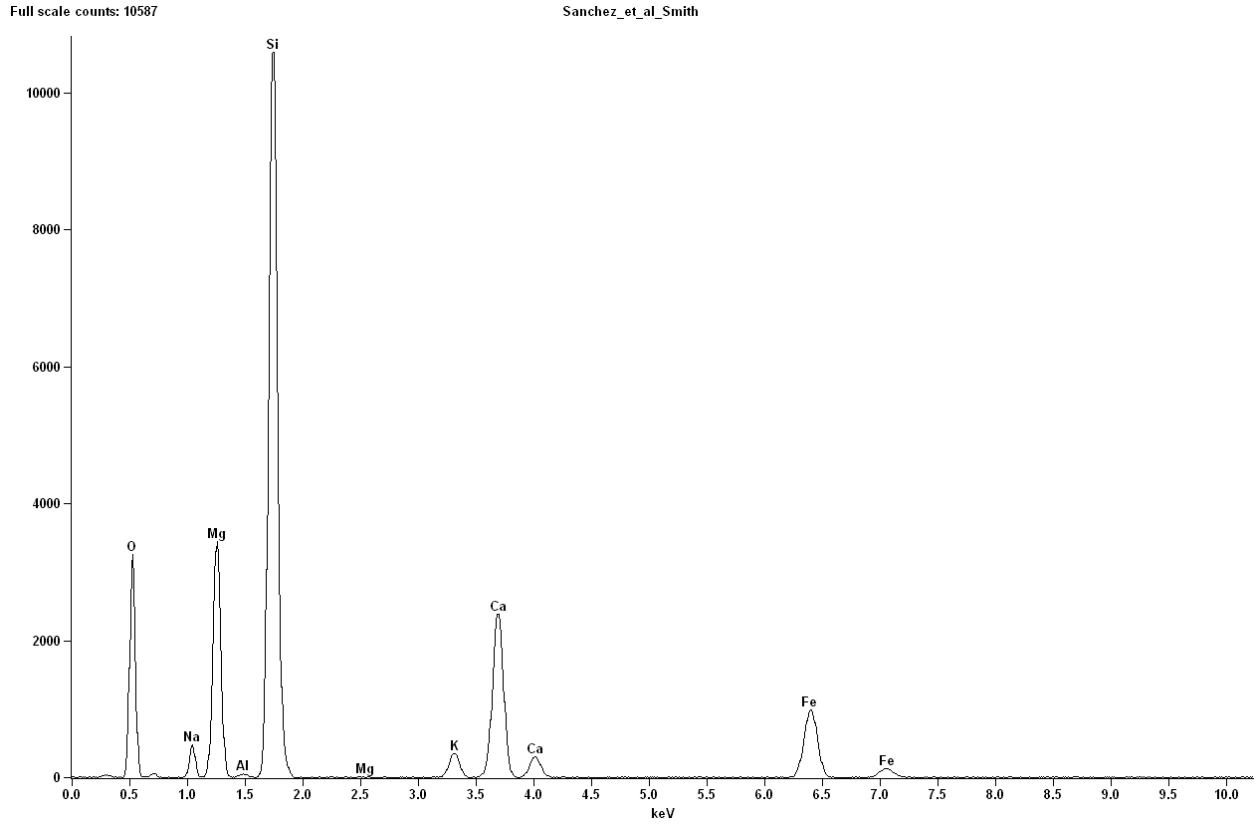
Harvard 2



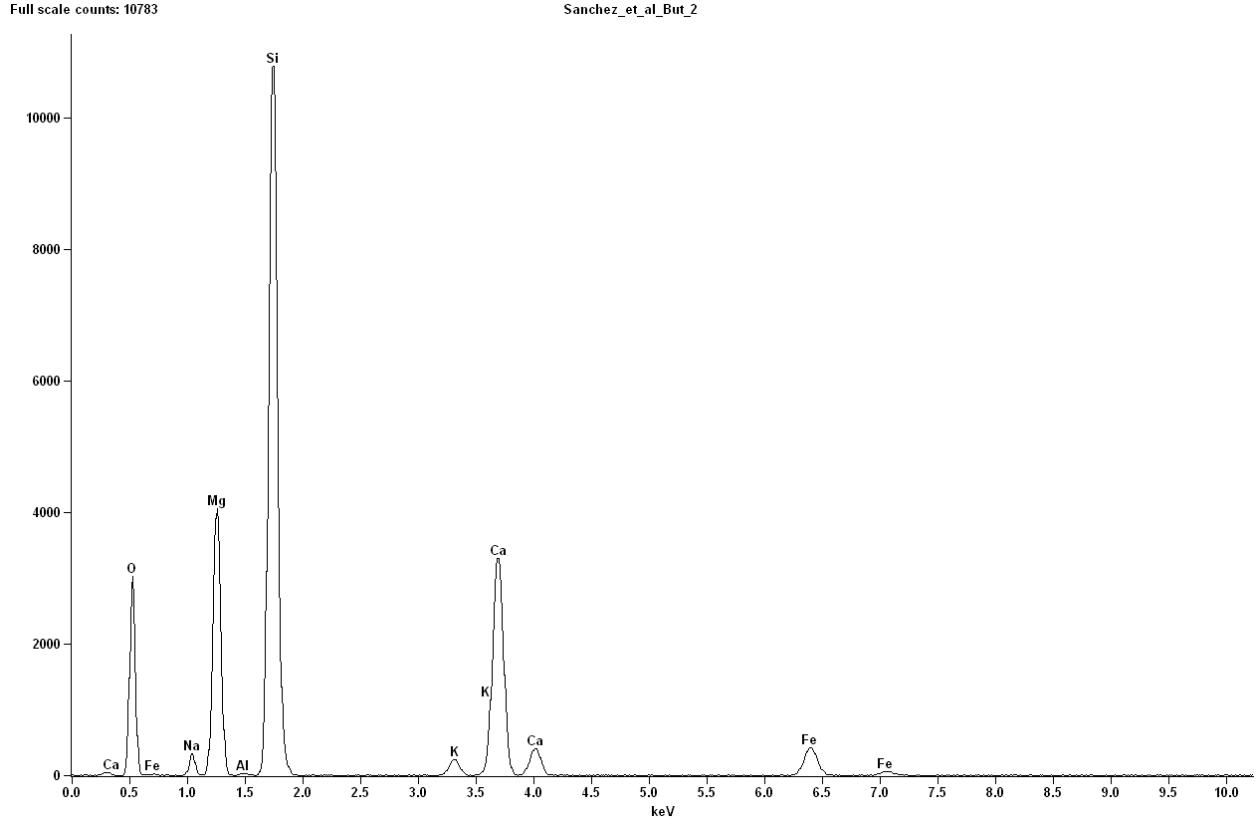
Harvard 3



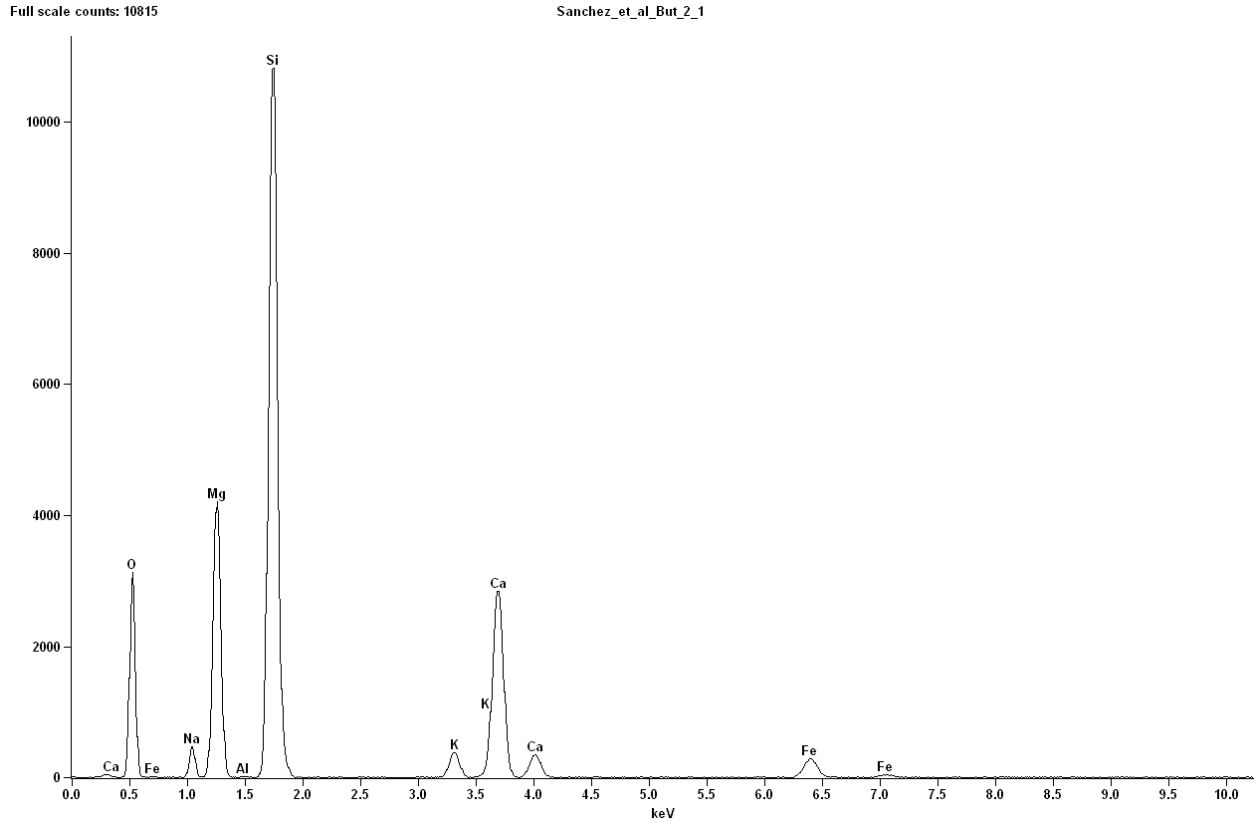
Smithsonian



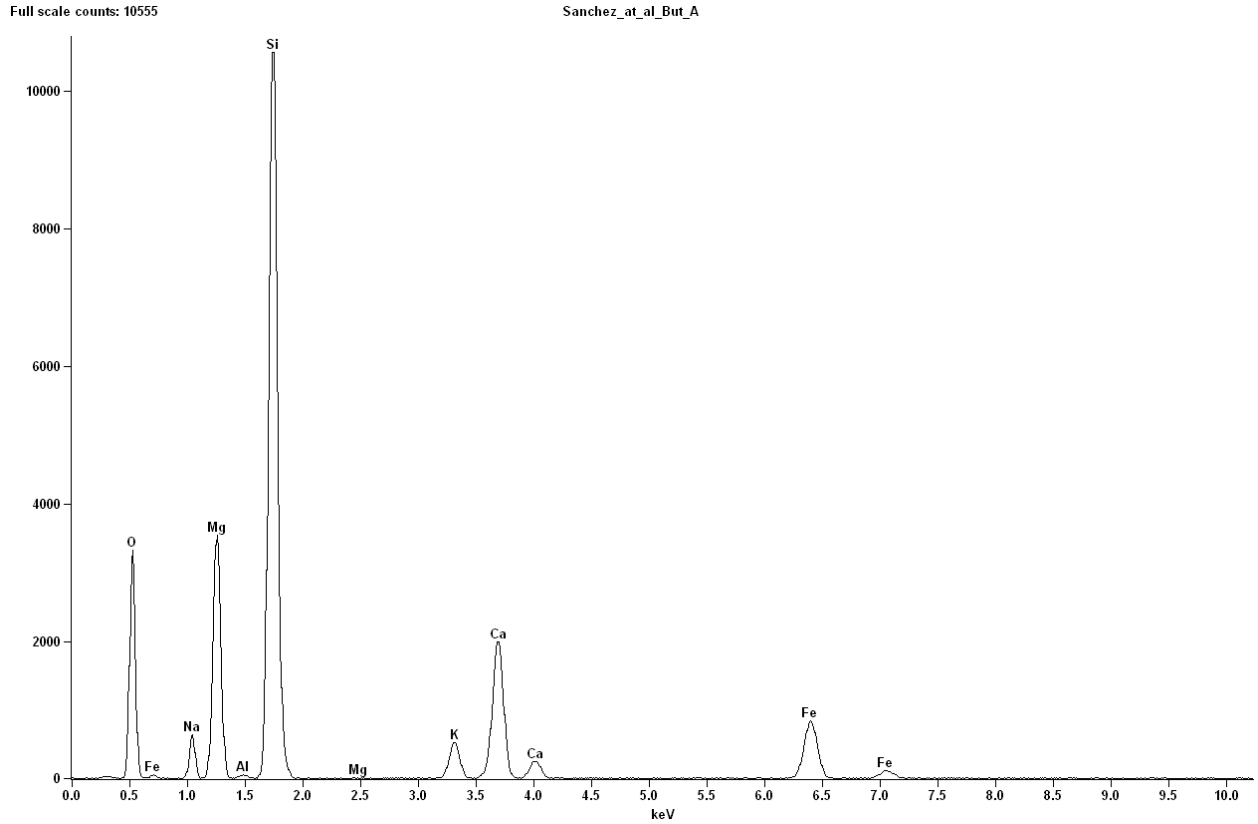
Butte 2



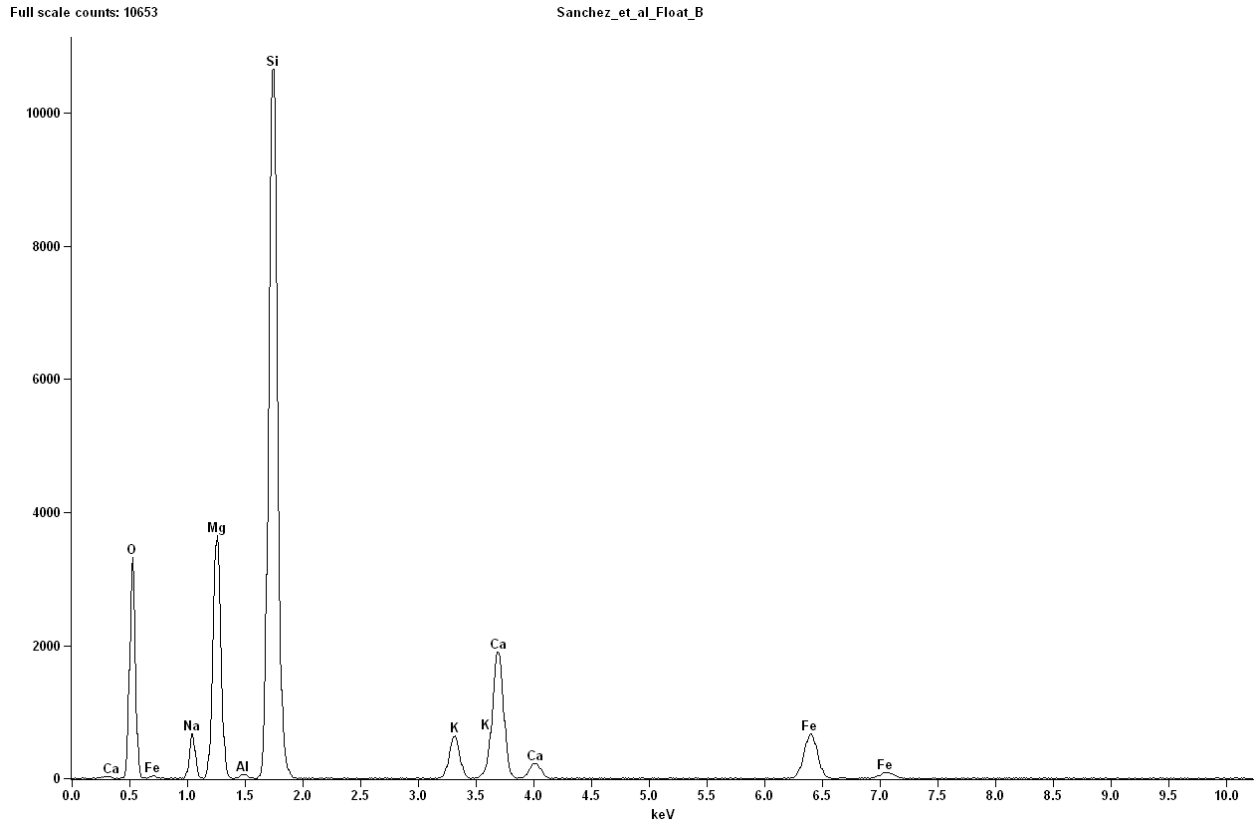
Butte 2



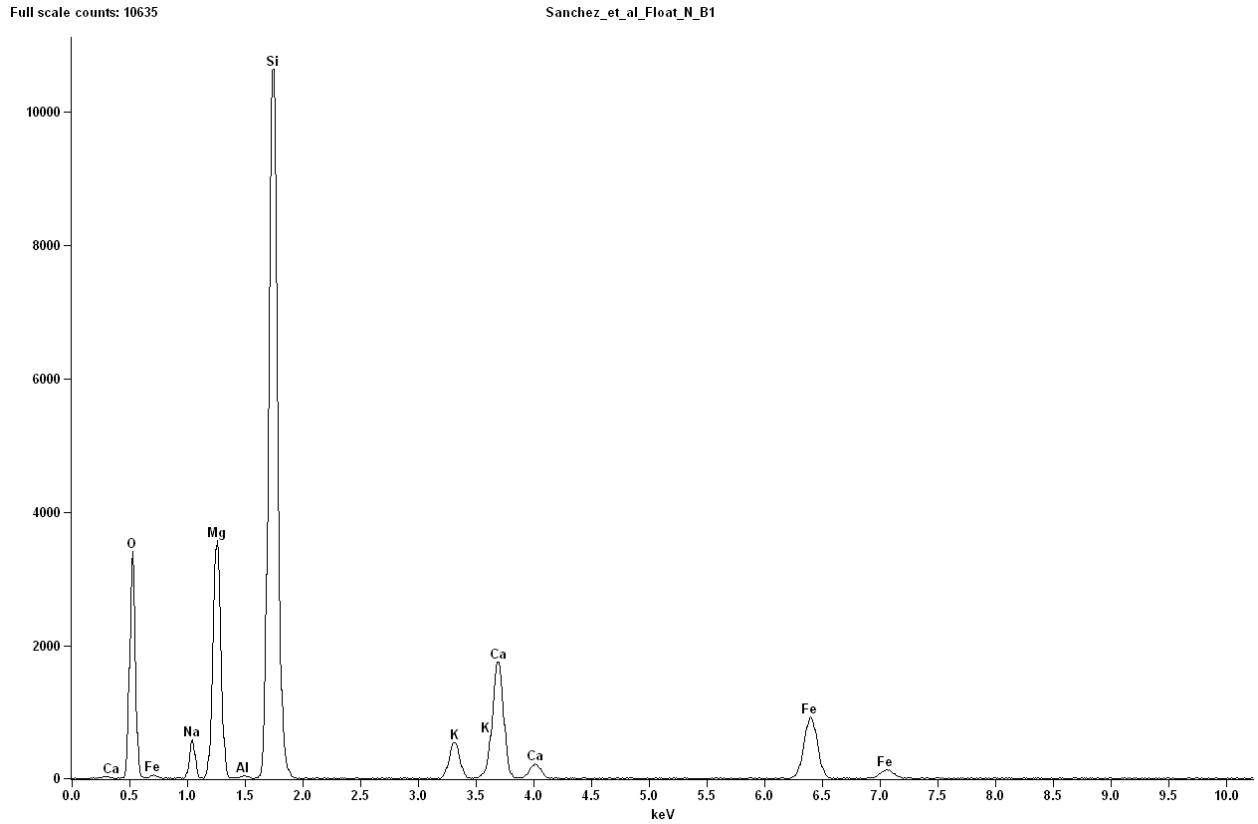
Butte A



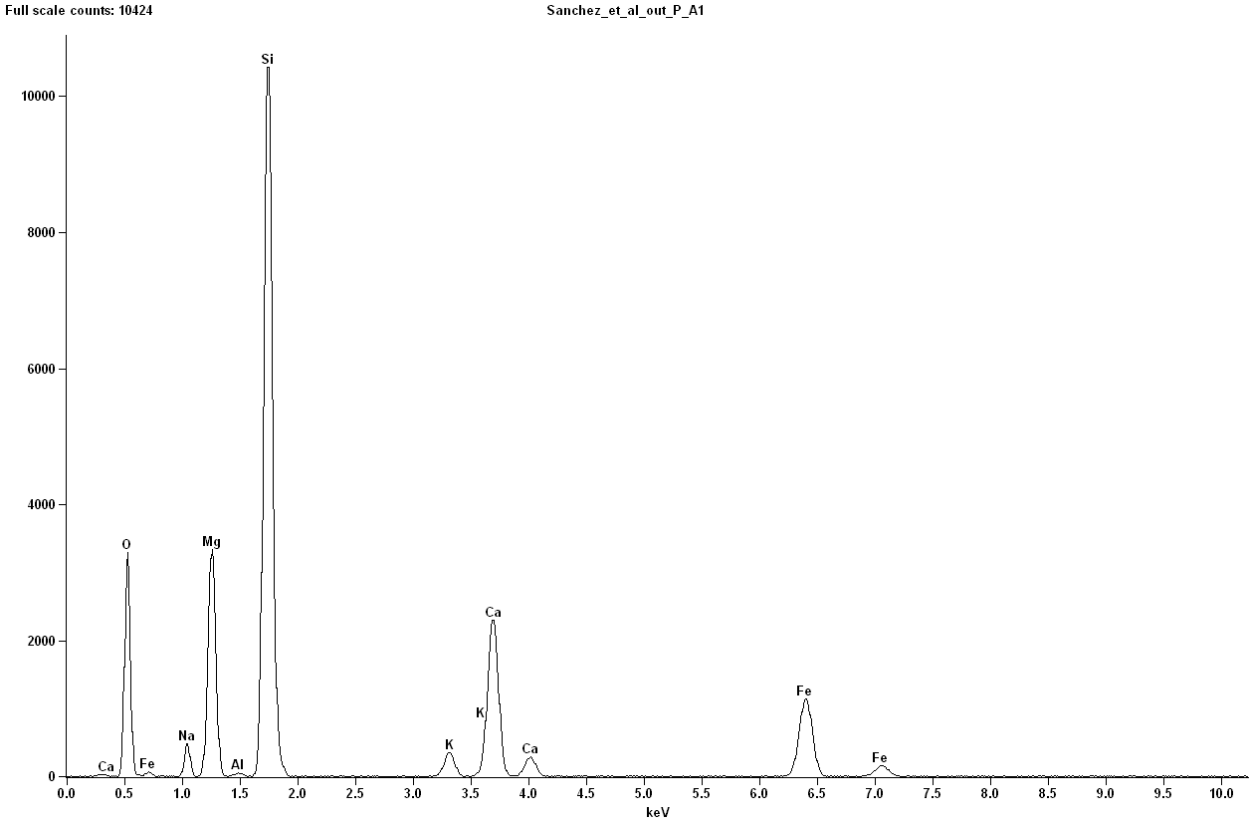
Float


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O
Mg
Na
Al
Ca
Fe
K
keV

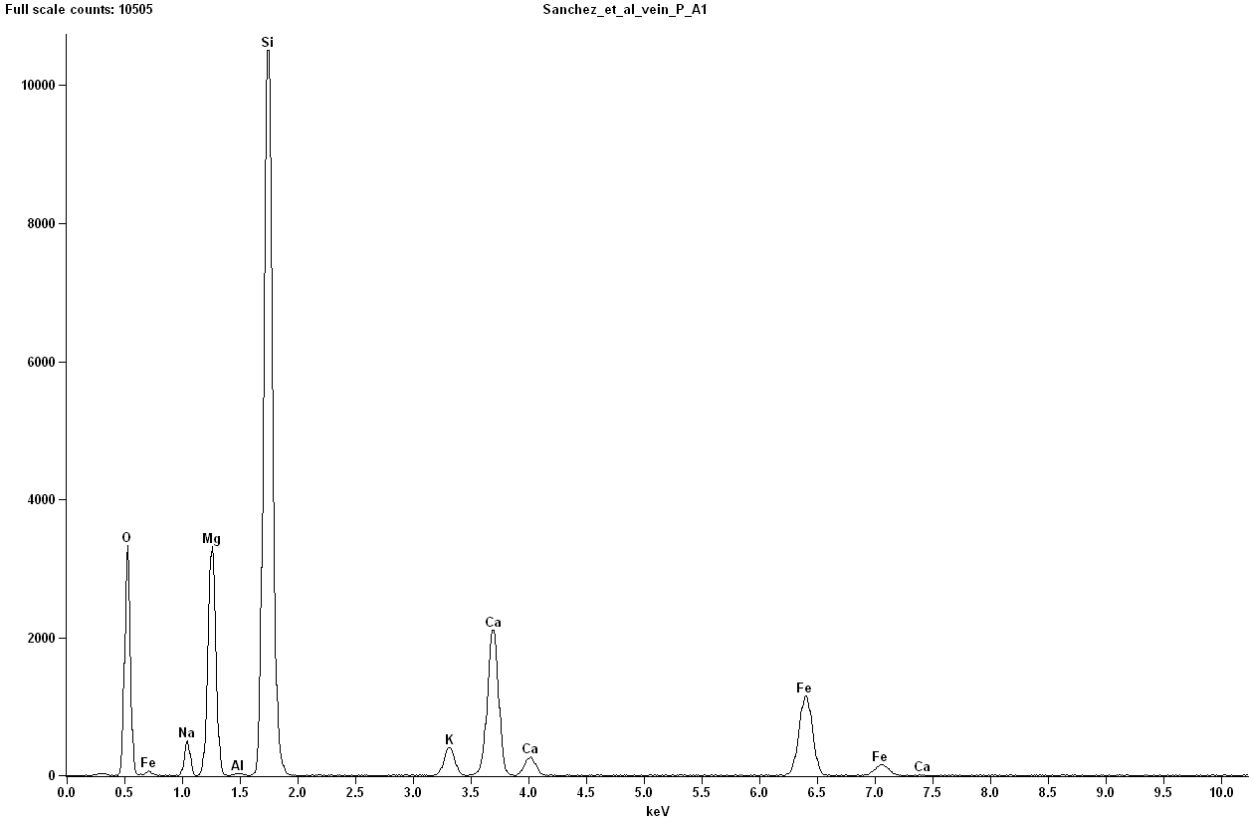
Float


Full scale counts: 10635
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O
Mg
Na
Al
Ca
Fe
K
keV

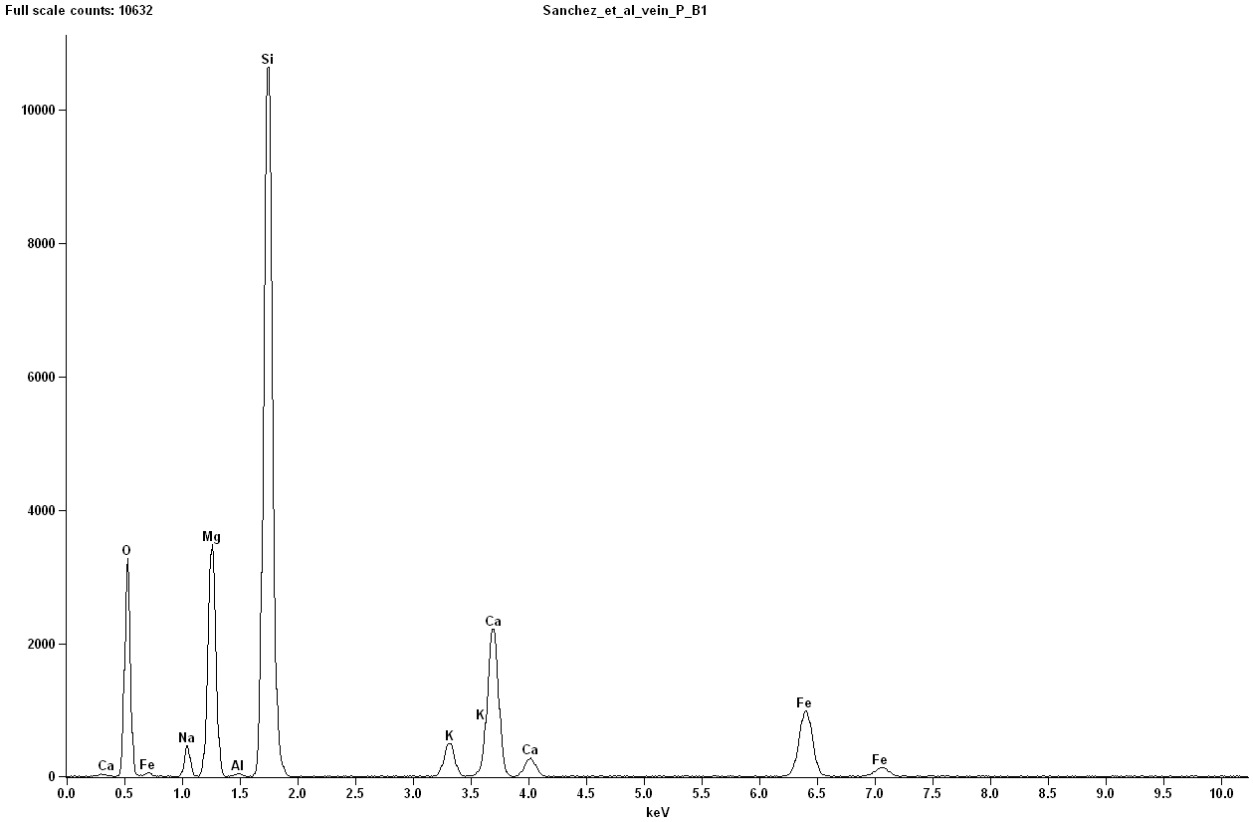
Outcrop



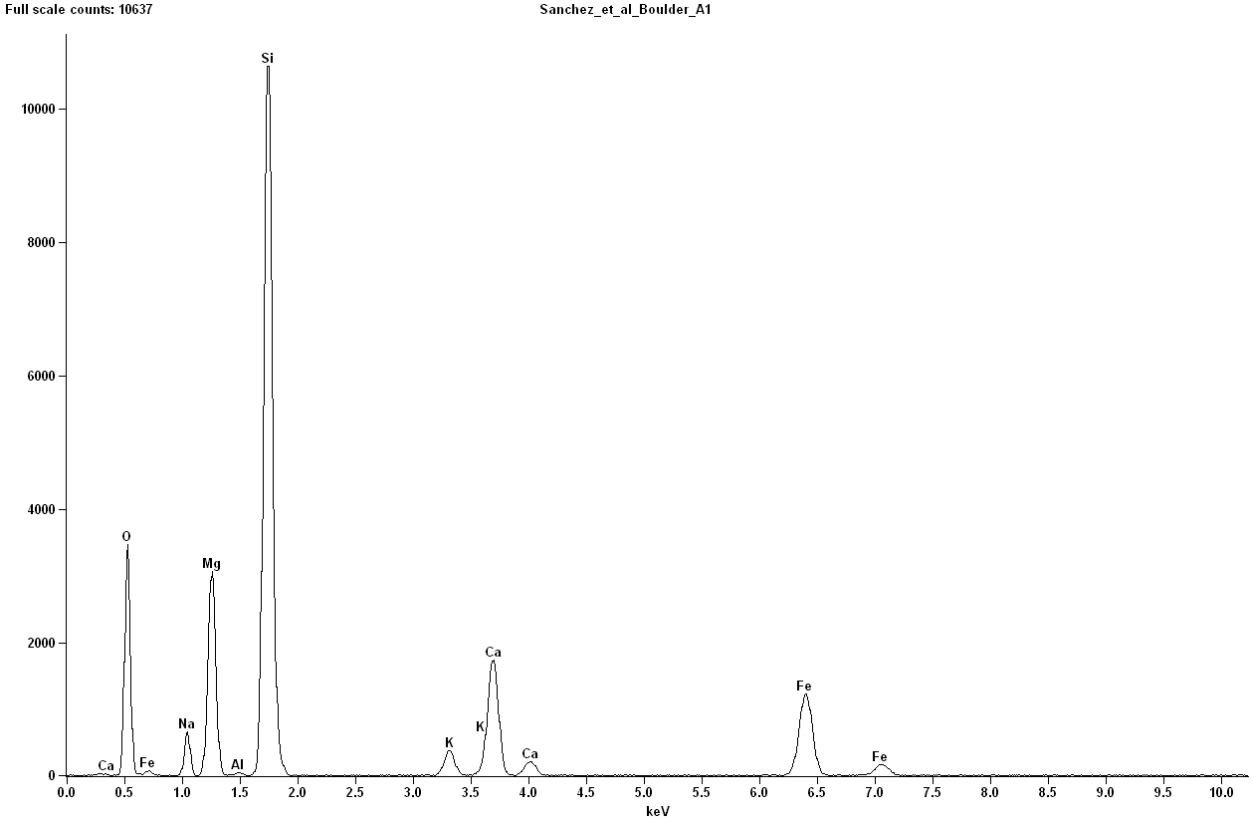
Vein



Vein

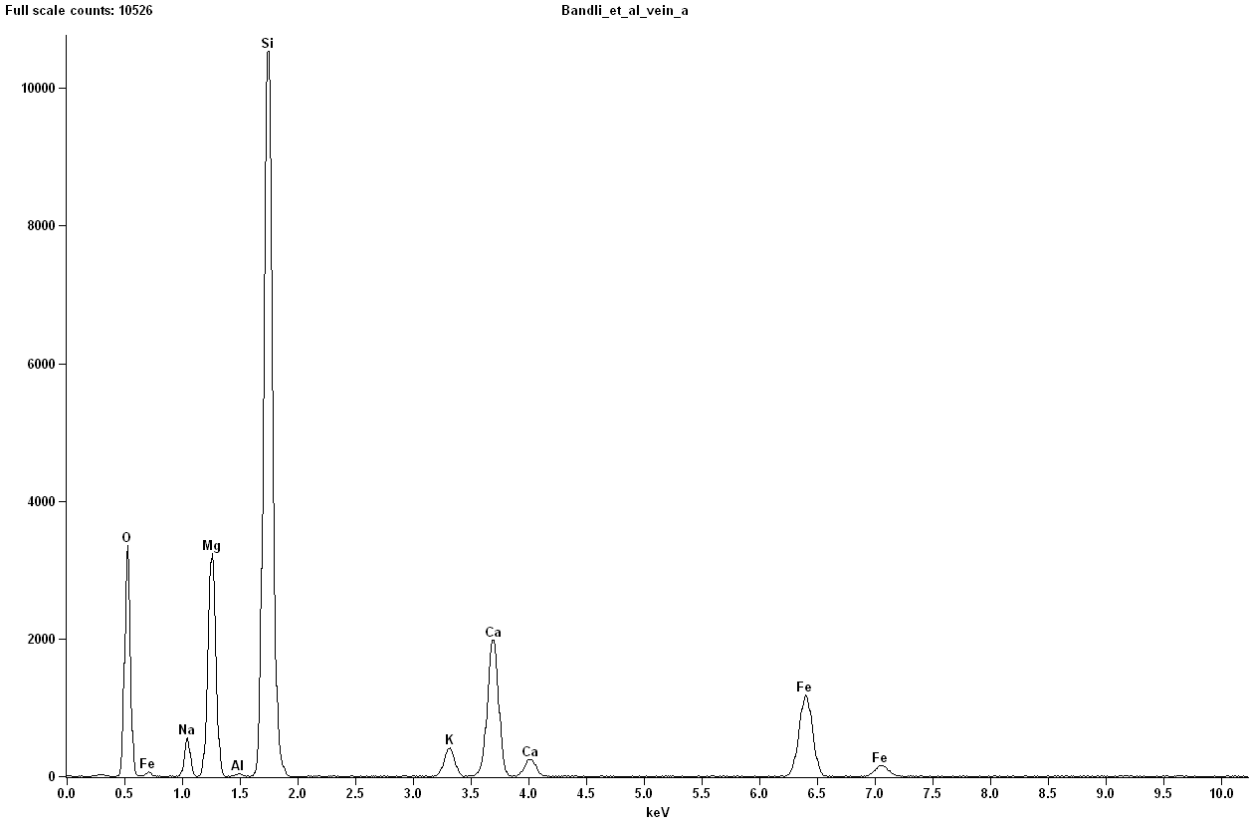


Boulder

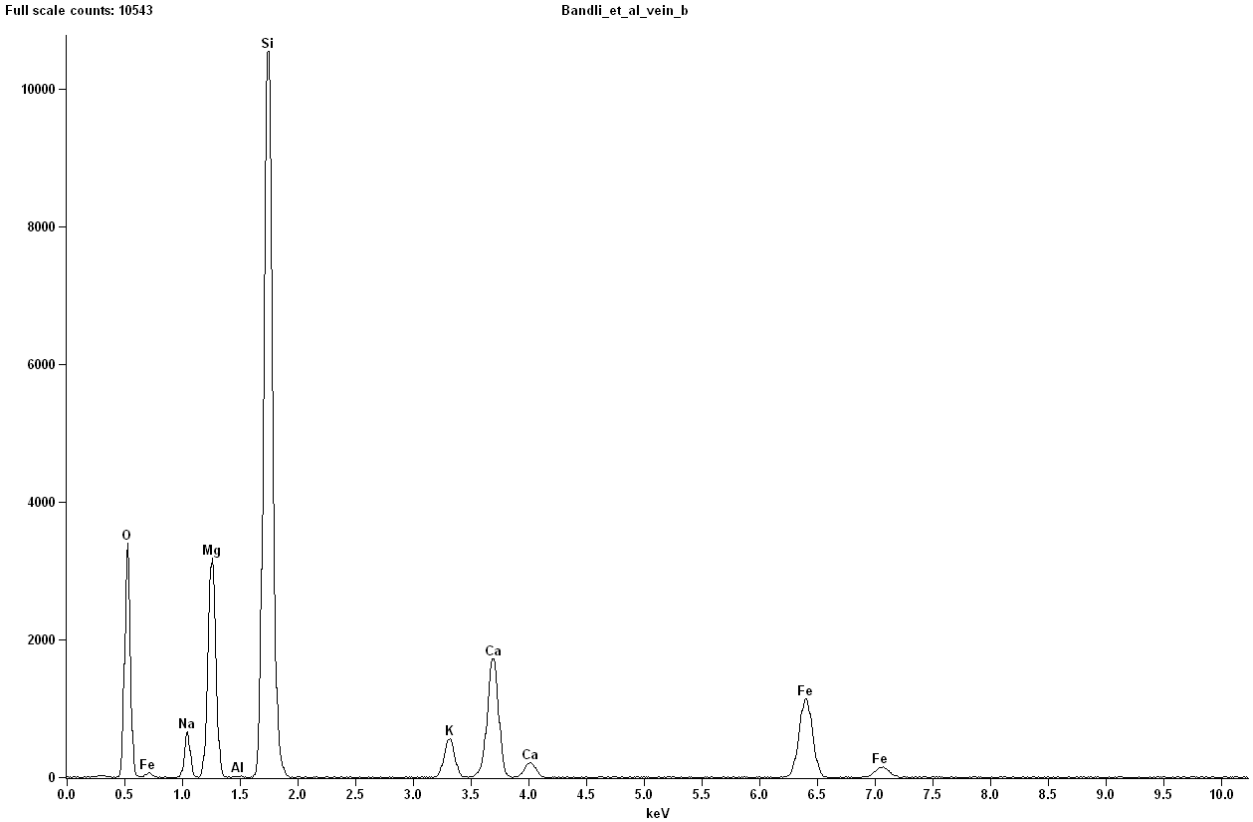


WDS Spectra from samples in Bandli *et al* 2003

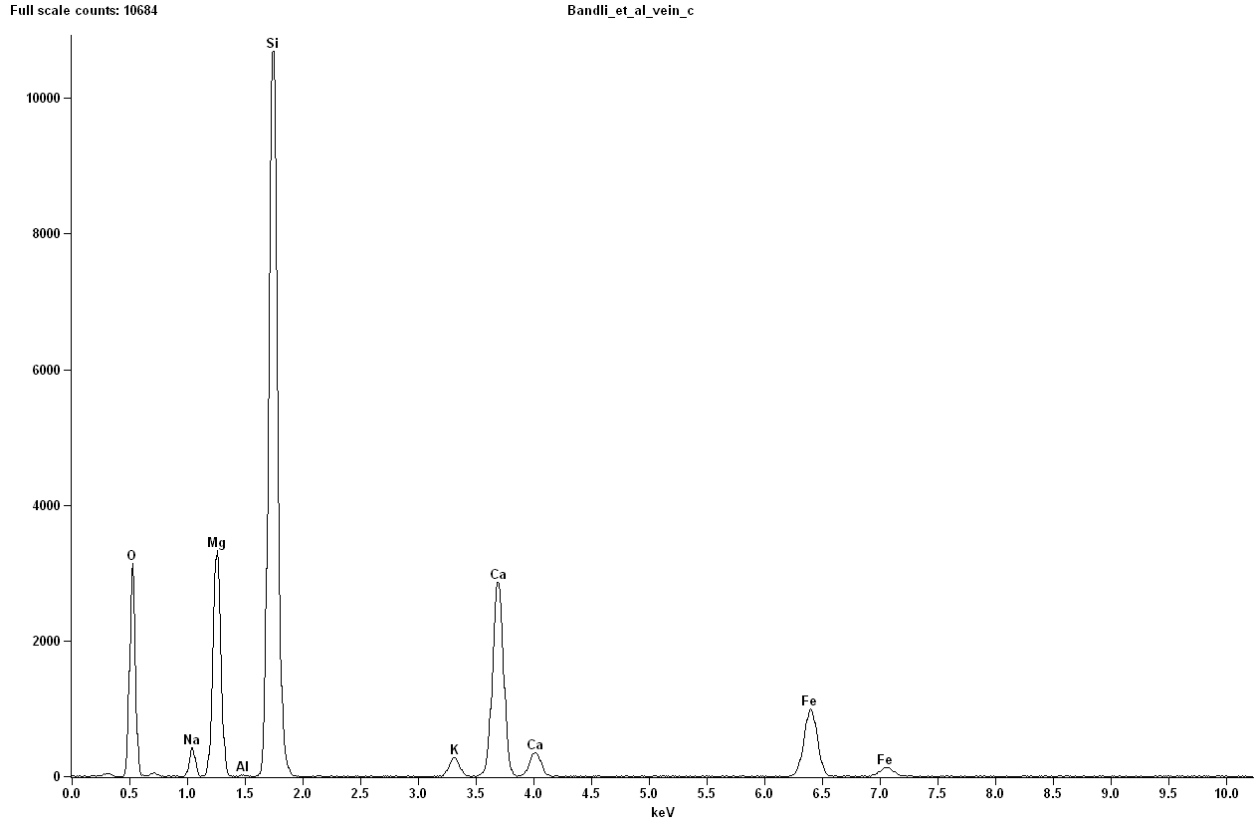
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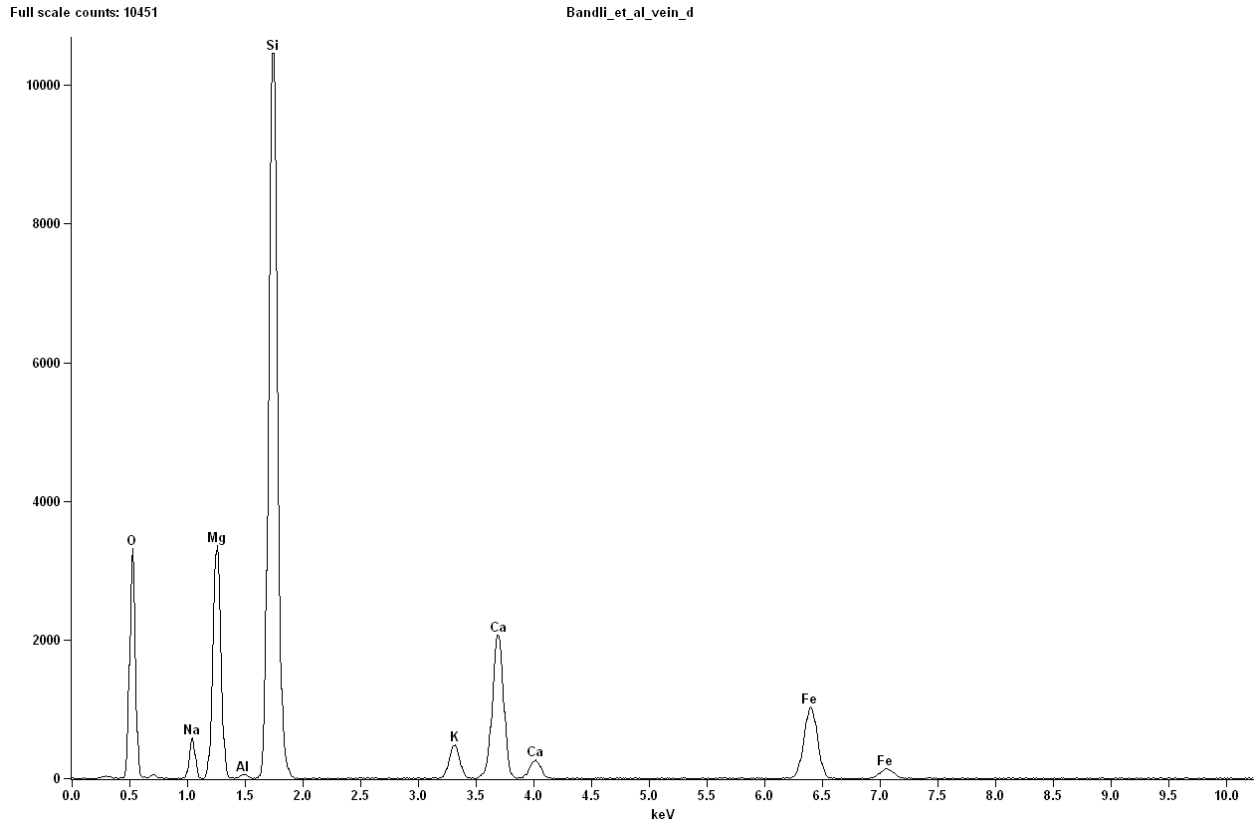
Vein



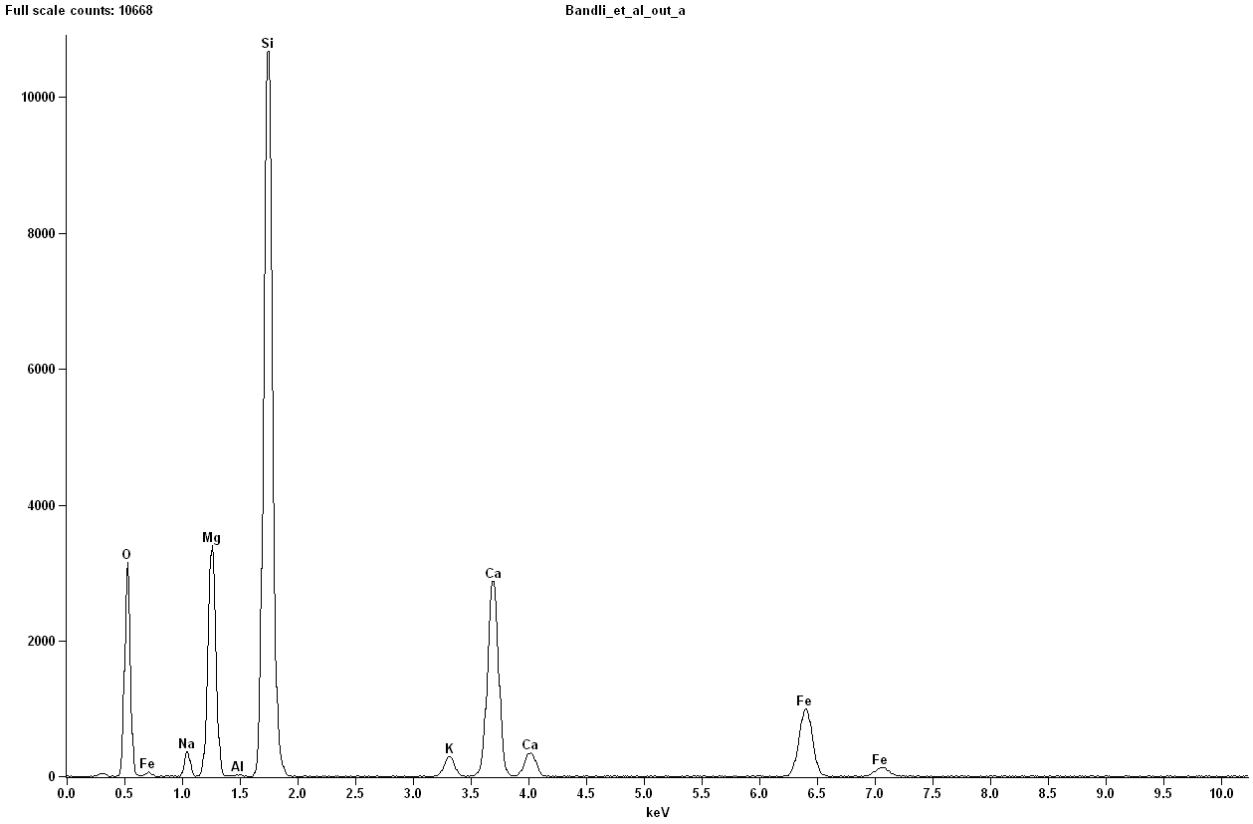
Vein


Full scale counts: 10684
Bandli_et_al_vein_c
Si
O
Mg
Na
Al
K
Ca
Ca
Fe
Fe
keV

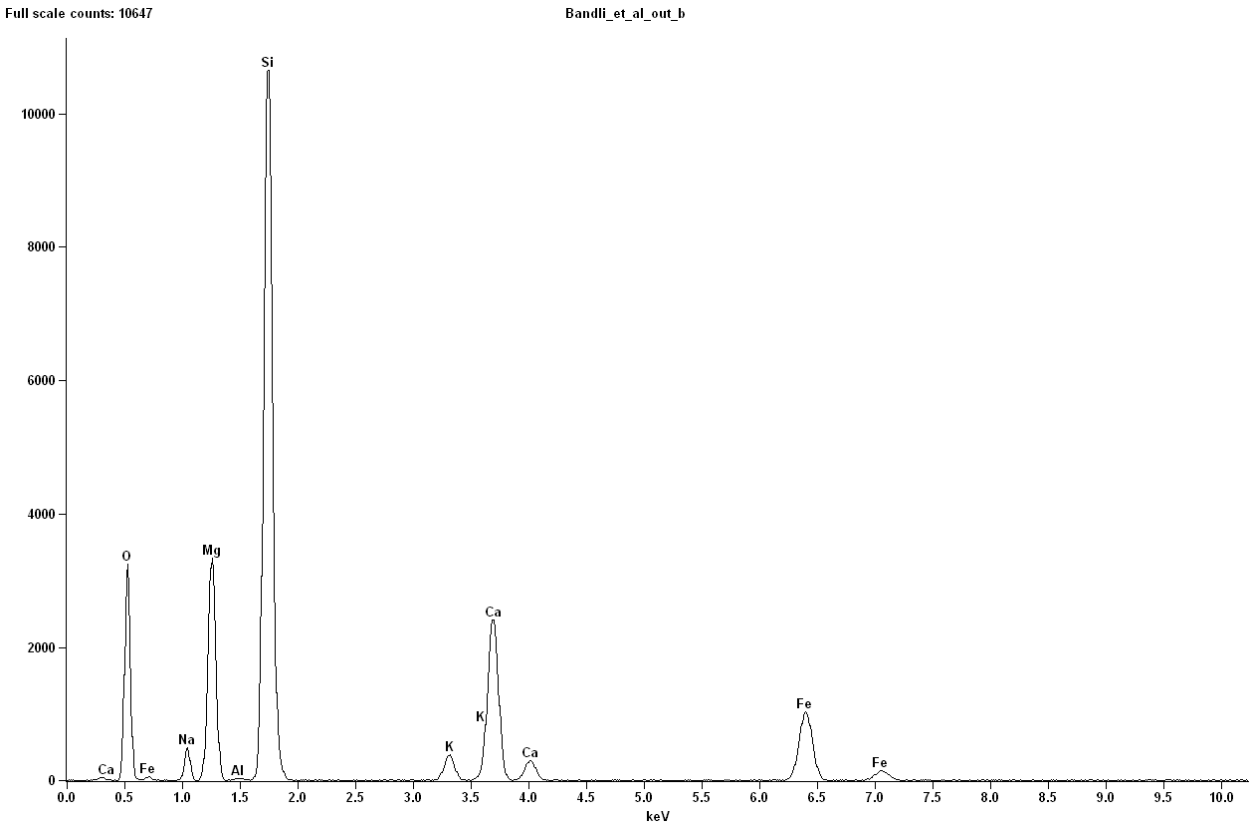
Vein


Full scale counts: 10451
Bandli_et_al_vein_d
Si
O
Mg
Na
Al
K
Ca
Ca
Fe
Fe
keV

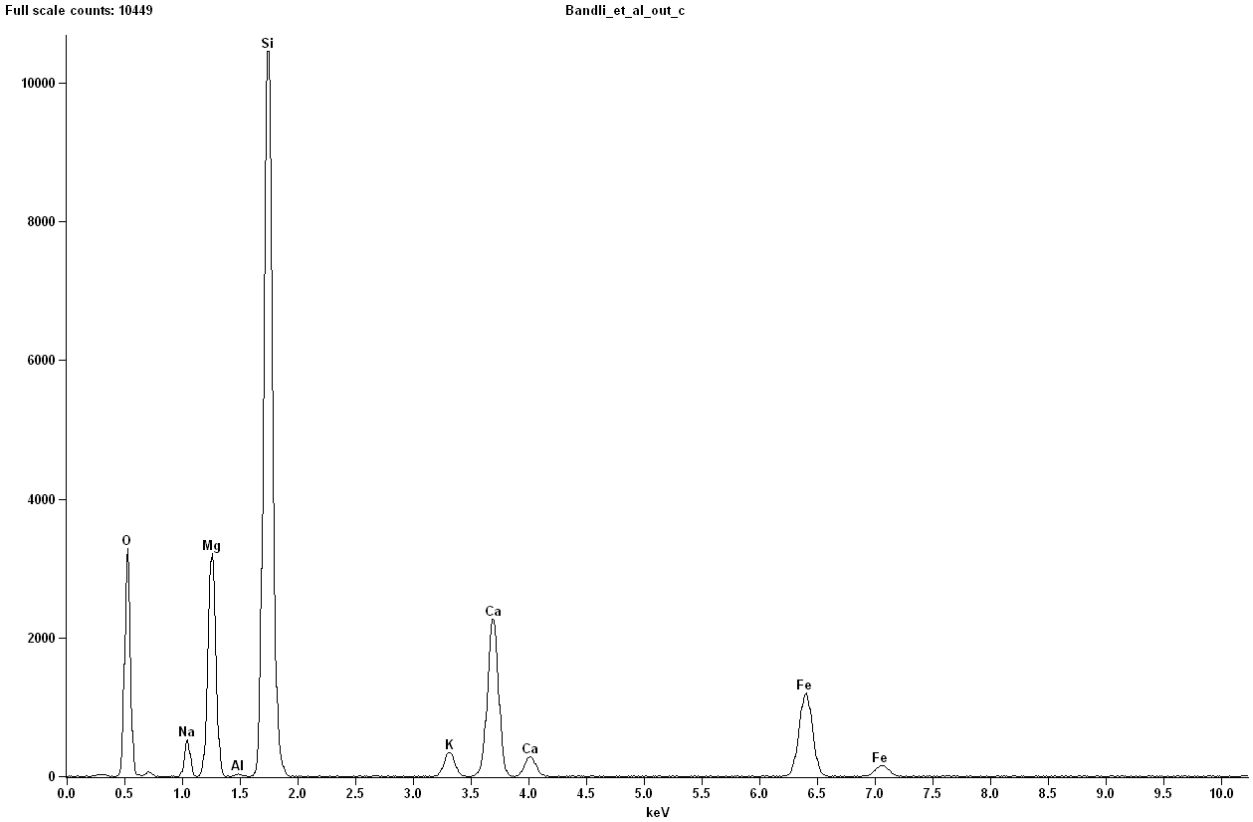
Outcrop



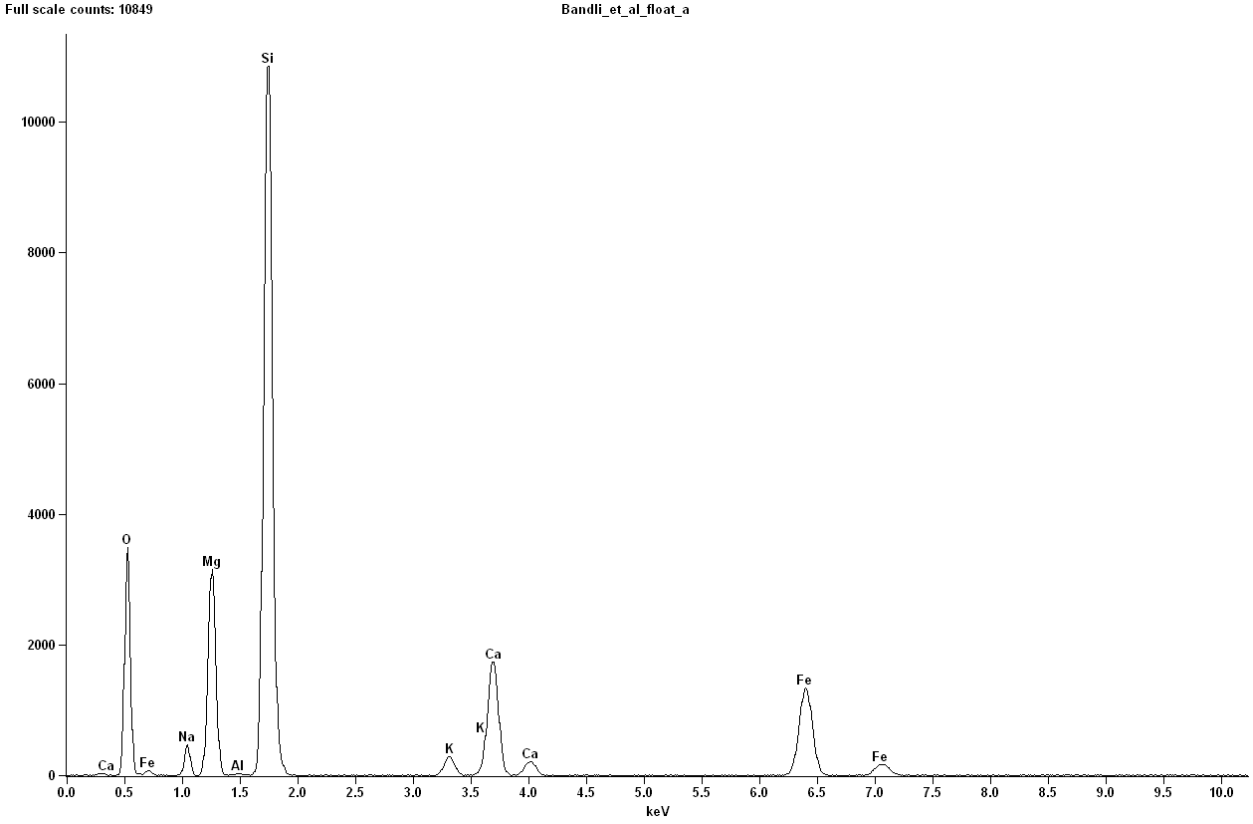
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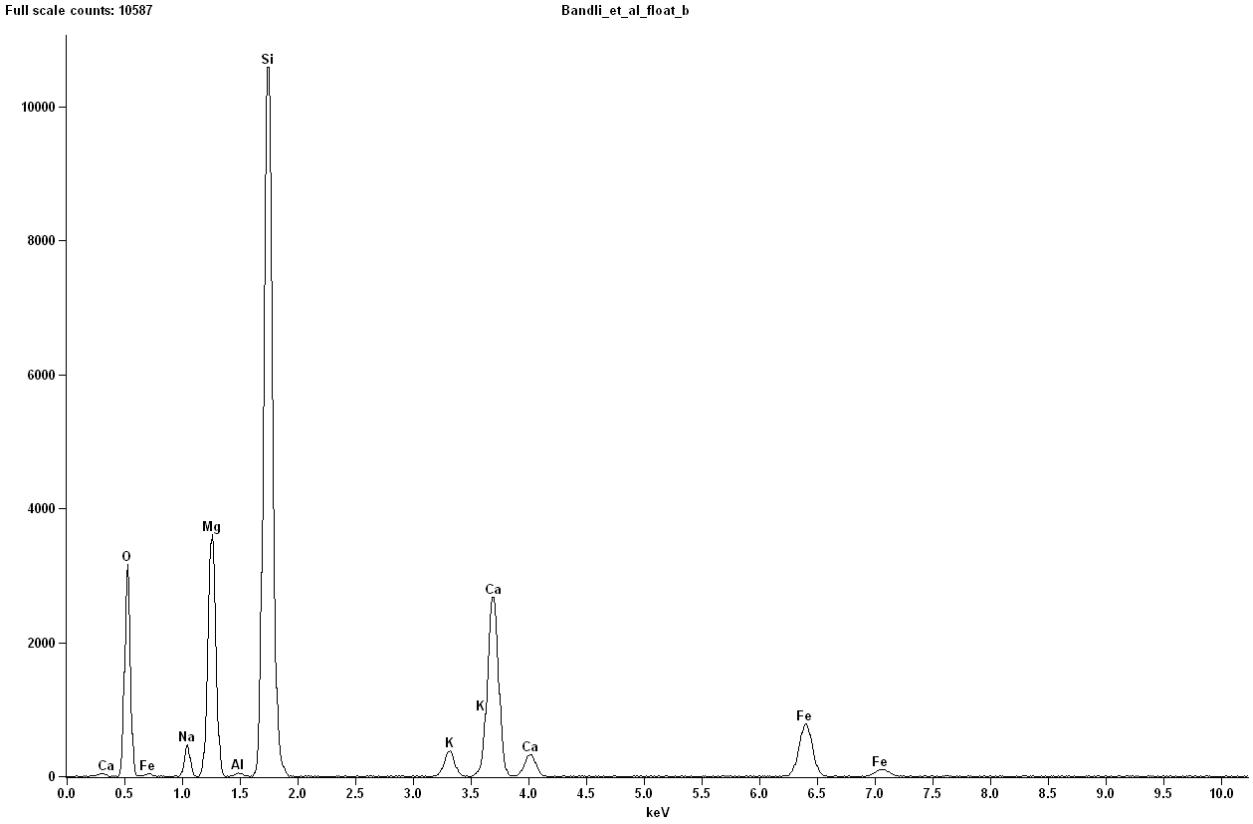
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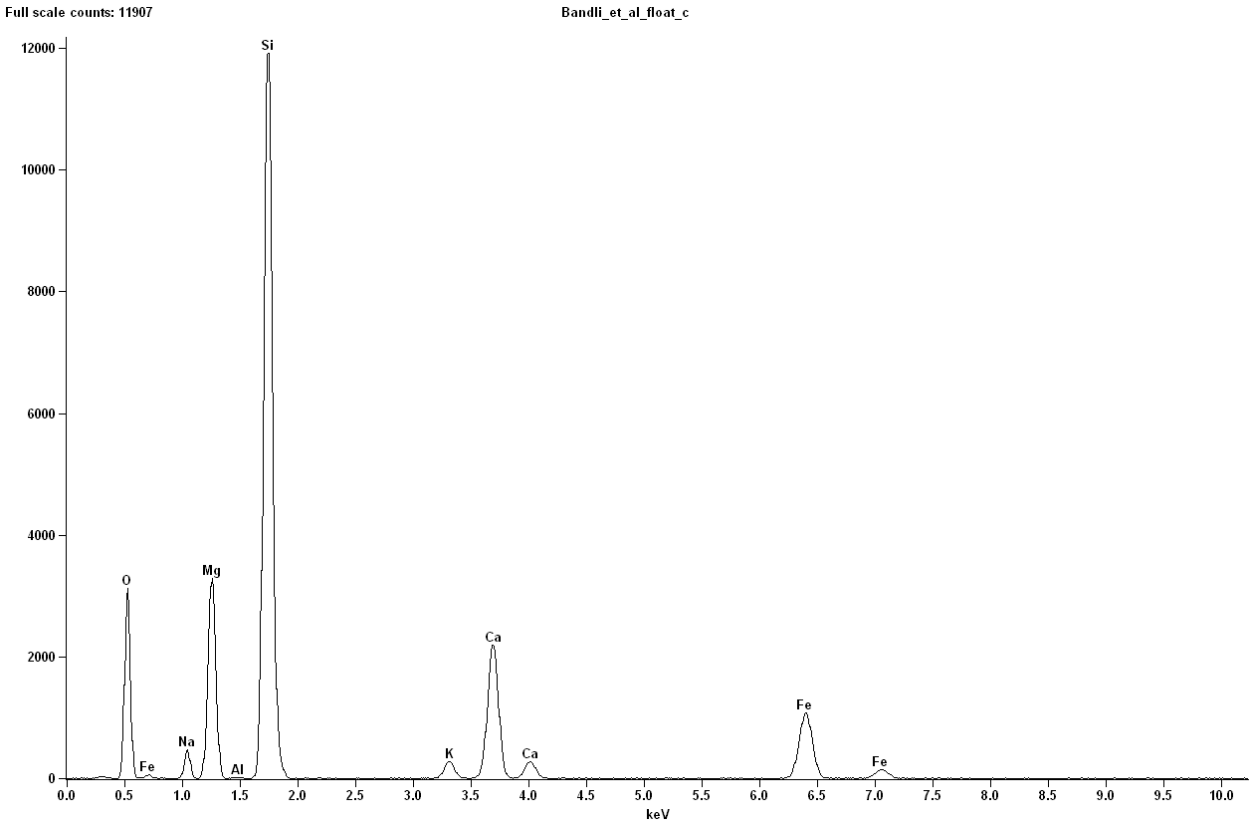
Float



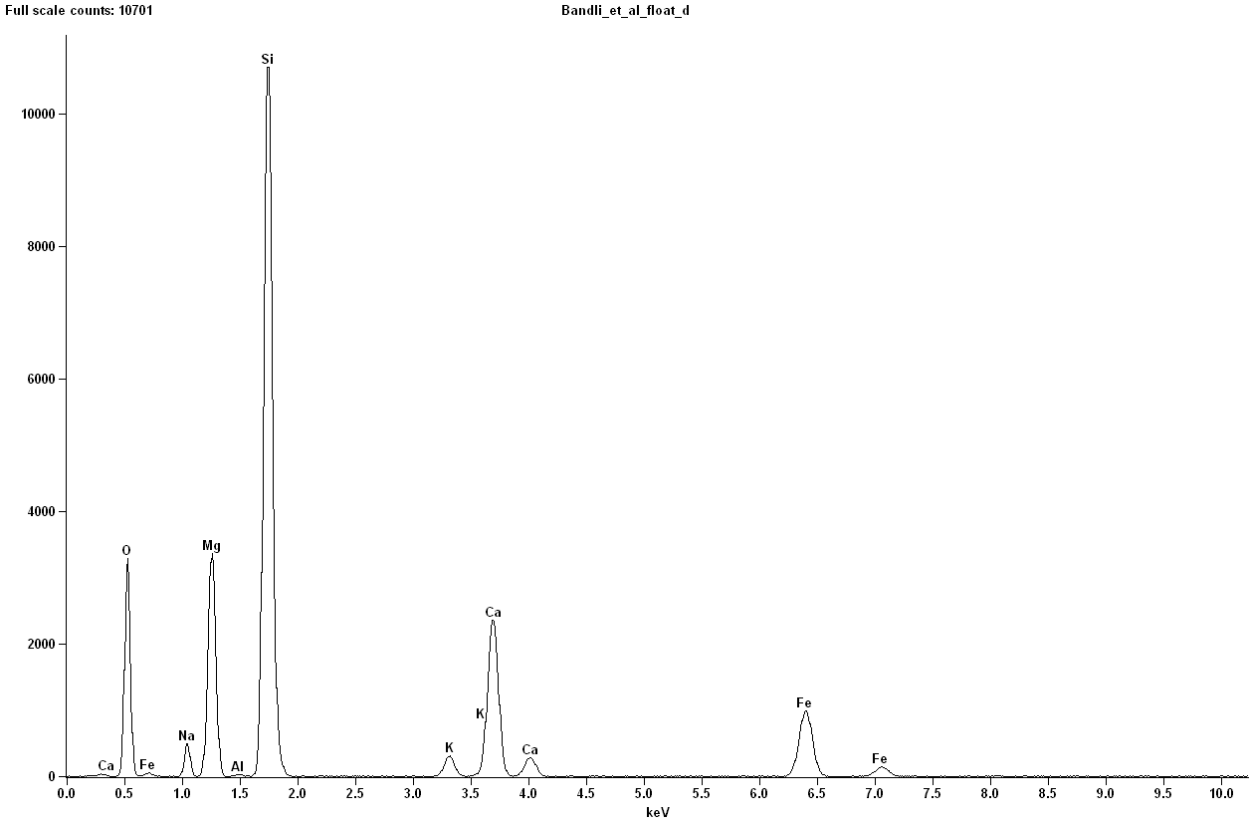
Float


Full scale counts: 10587
Bandli_et_al_float_b
Si
O
Mg
Ca
K
Na
Ca
Fe
Ca
Fe
Al
K
Fe
0
2000
4000
6000
8000
10000
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0
keV

Float


Full scale counts: 11907
Bandli_et_al_float_c
Si
O
Mg
Ca
Na
Fe
Ca
Fe
Al
K
Fe
0
2000
4000
6000
8000
10000
12000
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0
keV

Float


Full scale counts: 10701
Bandli_et_al_float_d
Si
O
Mg
Ca
Na
K
Fe
Ca
Fe
Al
K
Ca
Fe
Fe
10000
8000
6000
4000
2000
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
6.5
7.0
7.5
8.0
8.5
9.0
9.5
10.0
keV



Appendix B-2

OU3 Study Area Project Database

[provided electronically in attached access file to this PDF]

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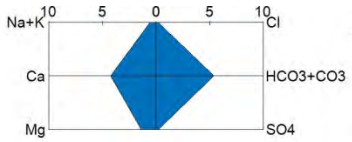
Appendix C

Stiff Diagram Time Series

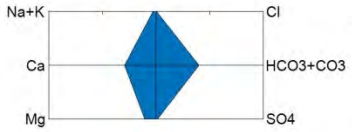
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Appendix C - Surface Water and Groundwater Stiff Diagram Time Series

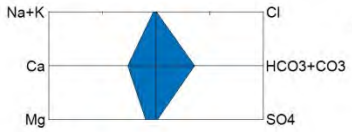
Cations Anions



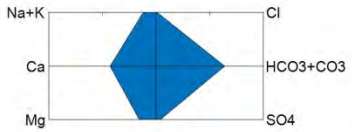
BH-01A-1-2015-4-17



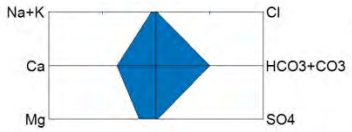
BH-01A-2-2015-4-19



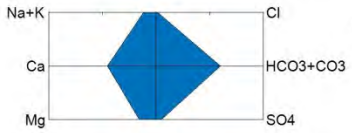
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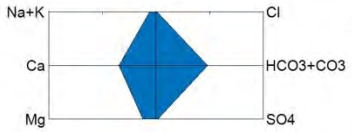
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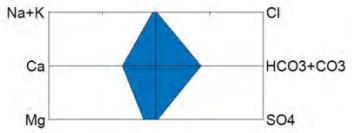
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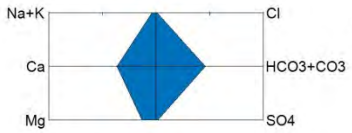
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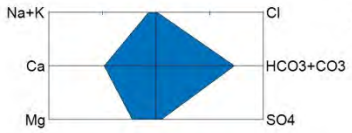
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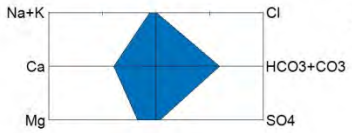
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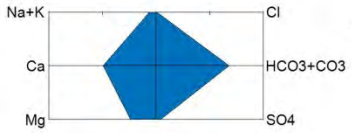
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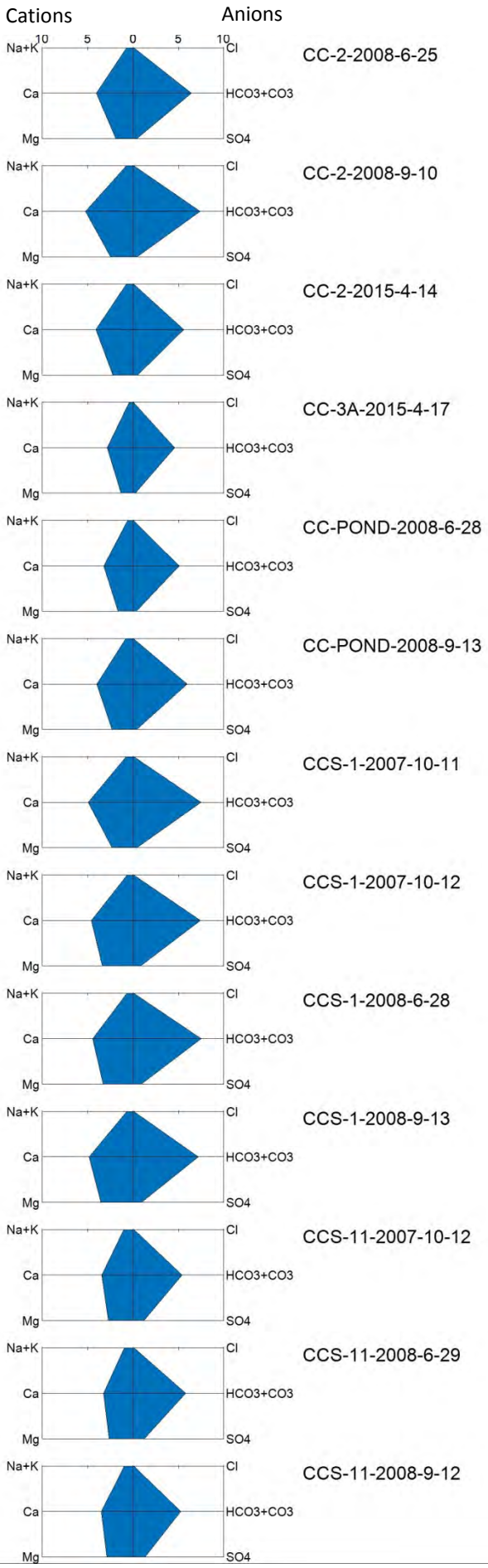


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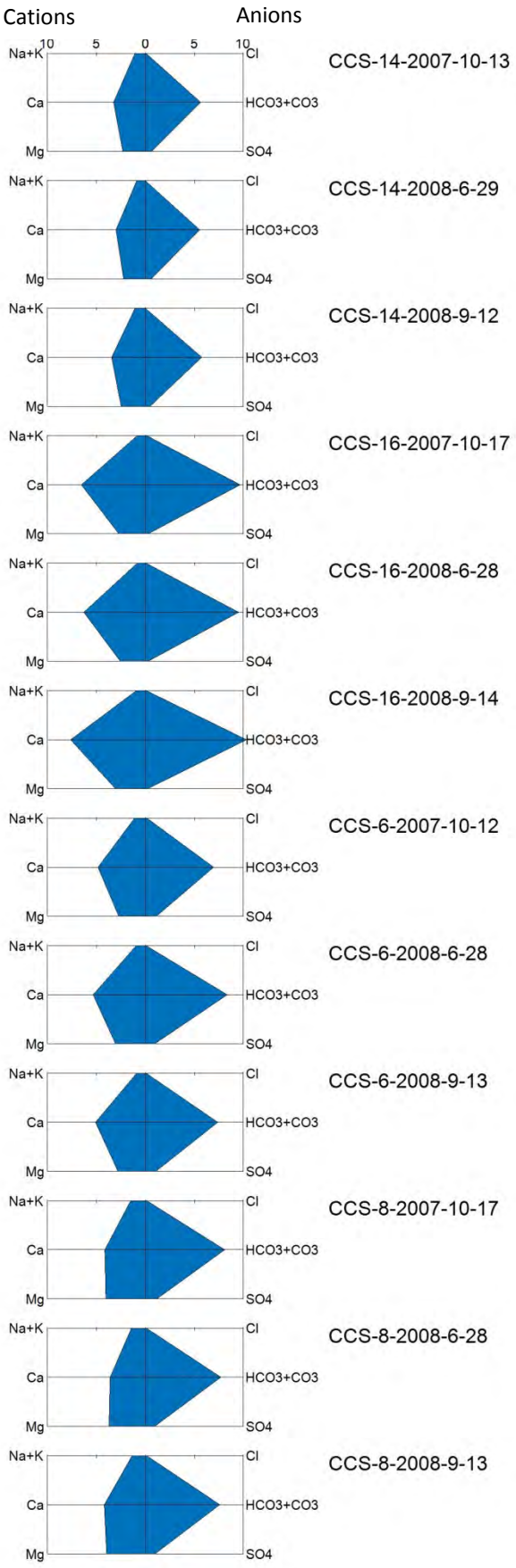


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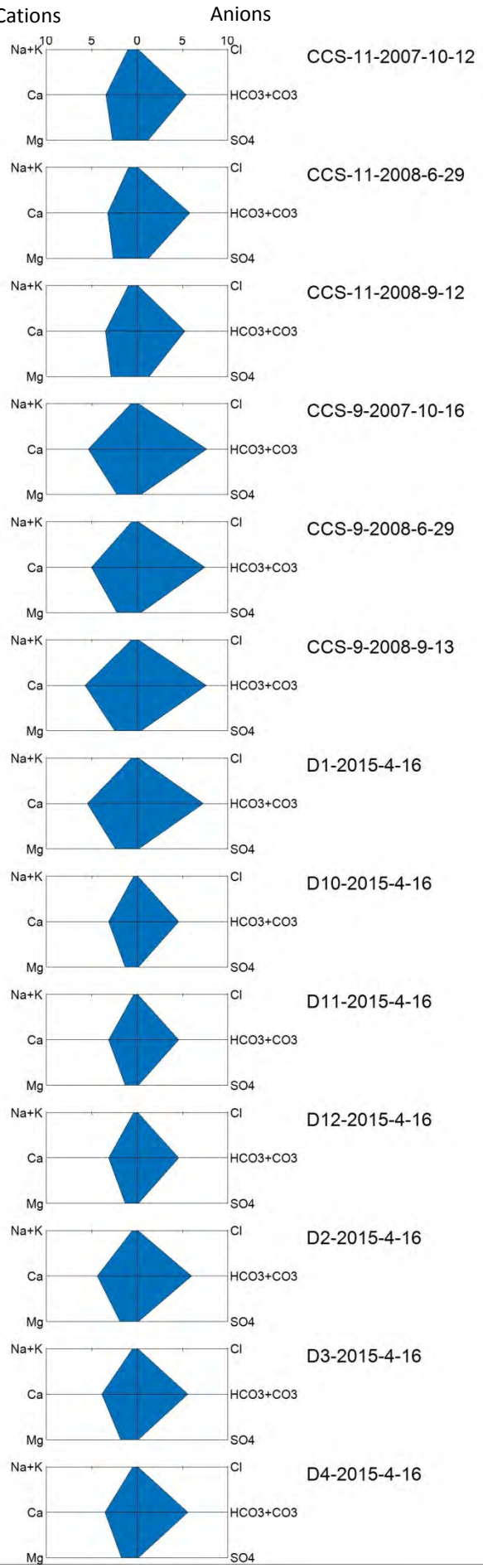
Appendix C - Surface Water and Groundwater Stiff Diagram Time Series



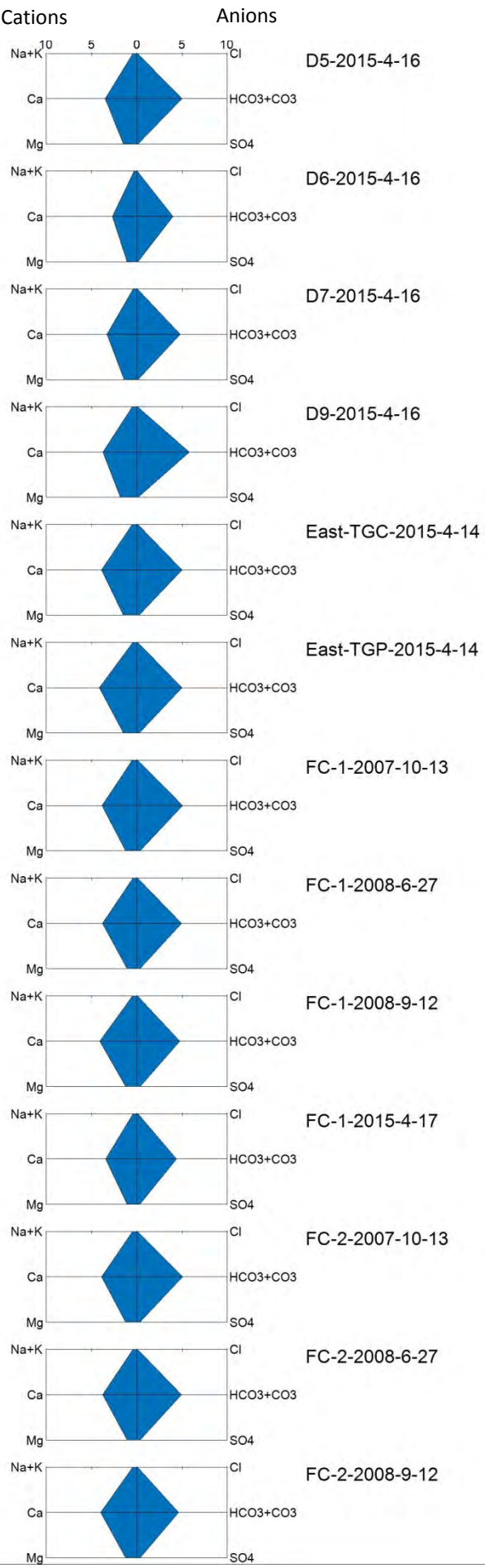
Appendix C- Surface Water and Groundwater Stiff Diagram Time Series



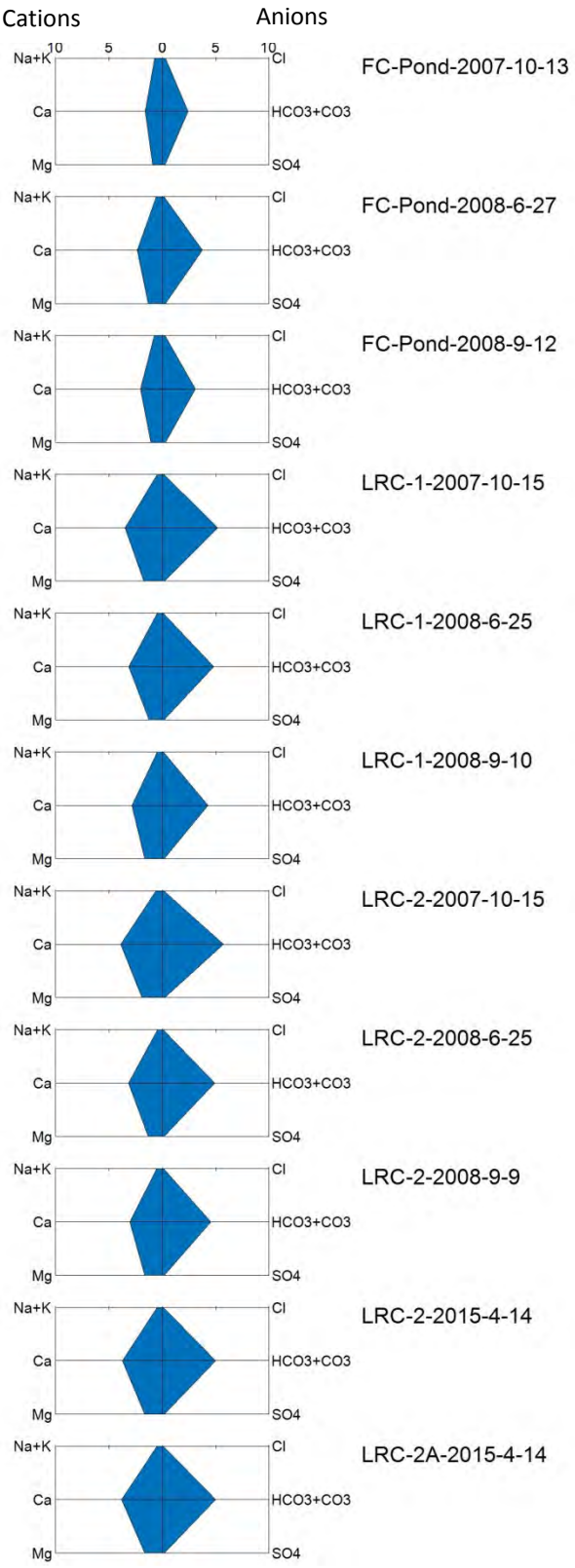
Appendix C - Surface Water and Groundwater Stiff Diagram Time Series



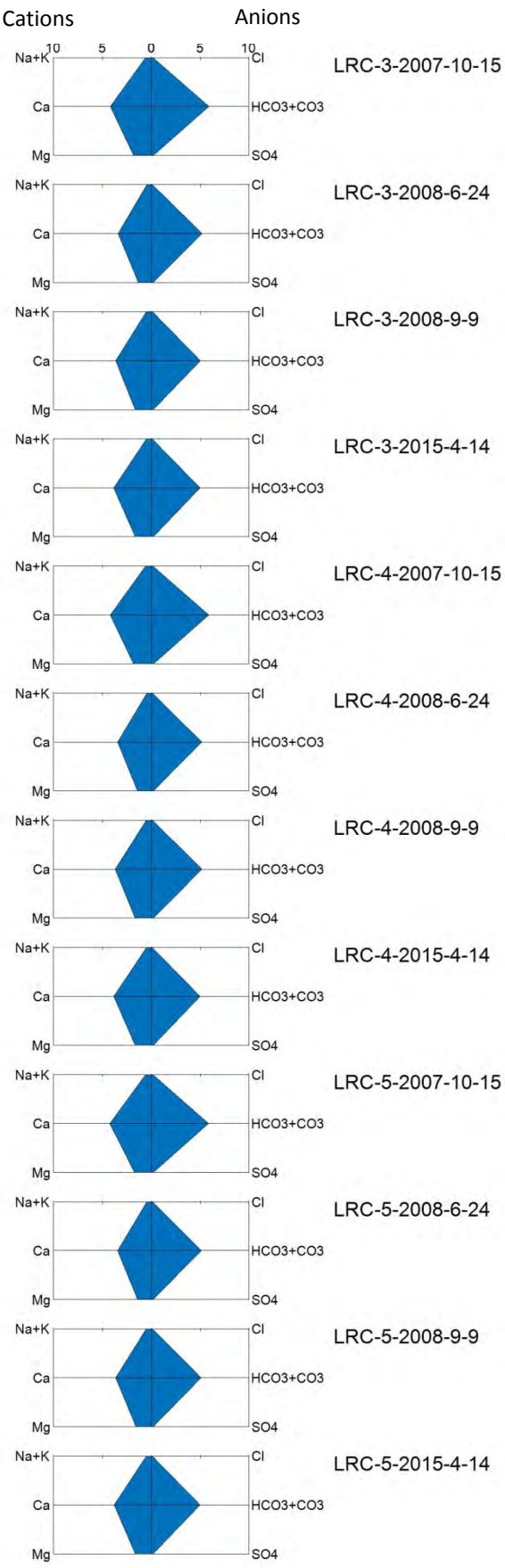
Appendix C - Surface Water and Groundwater Stiff Diagram Time Series



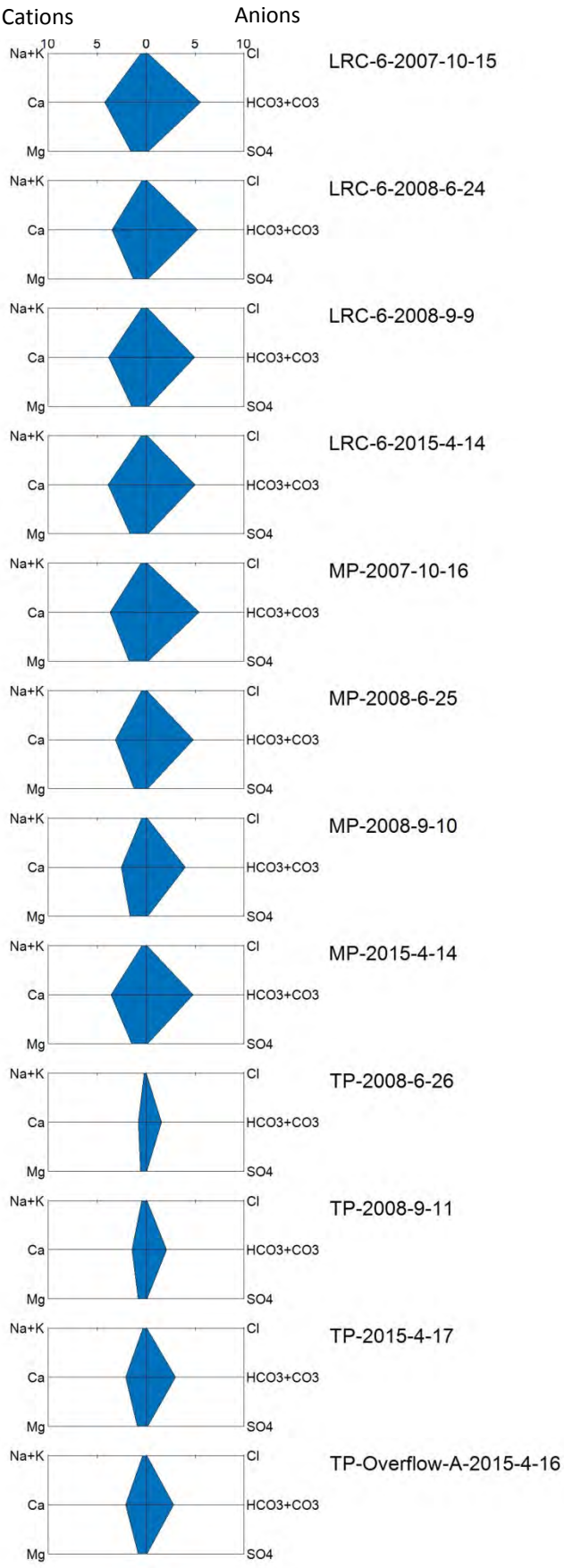
Appendix C - Surface Water and Groundwater Stiff Diagram Time Series



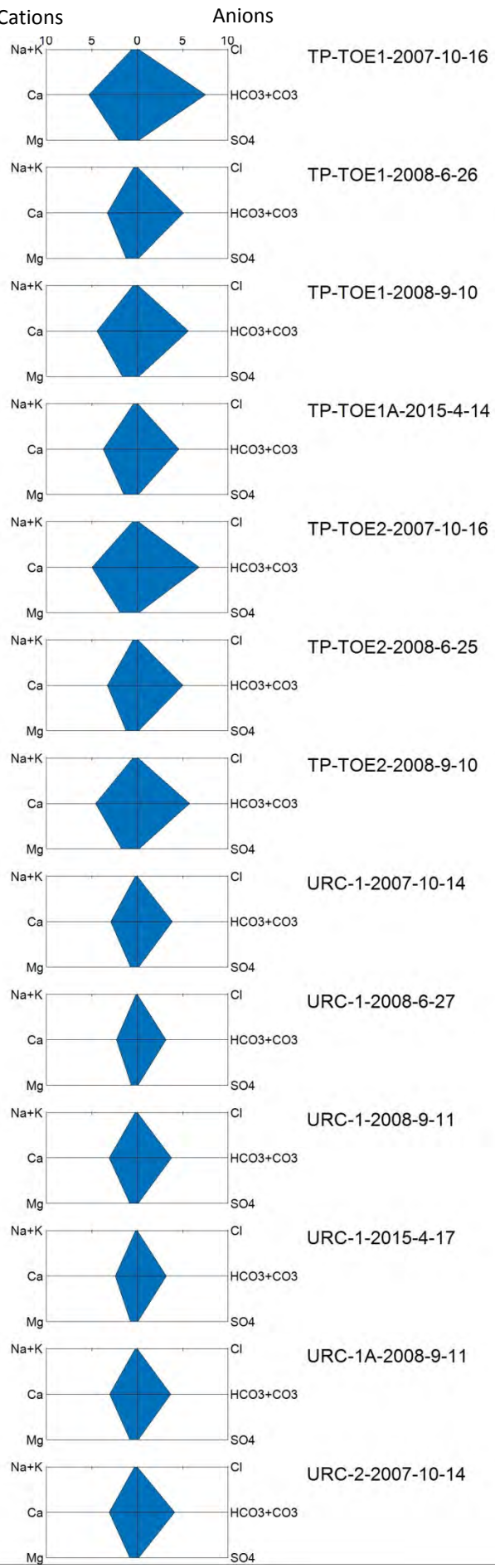
Appendix C - Surface Water and Groundwater Stiff Diagram Time Series



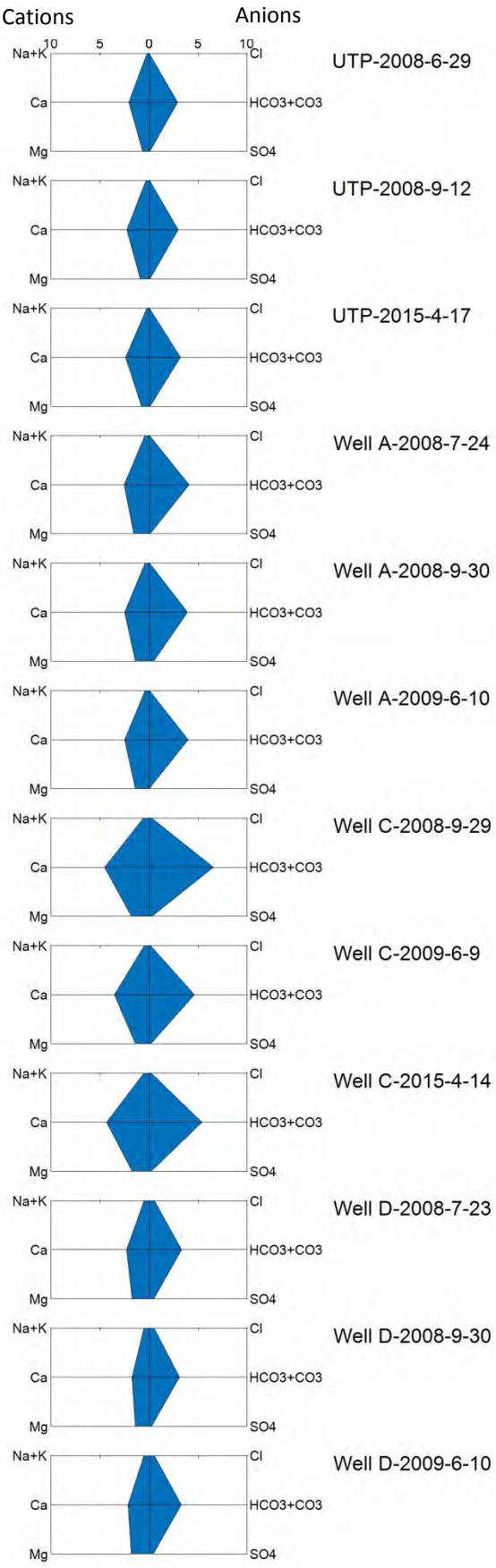
Appendix C - Surface Water and Groundwater Stiff Diagram Time Series



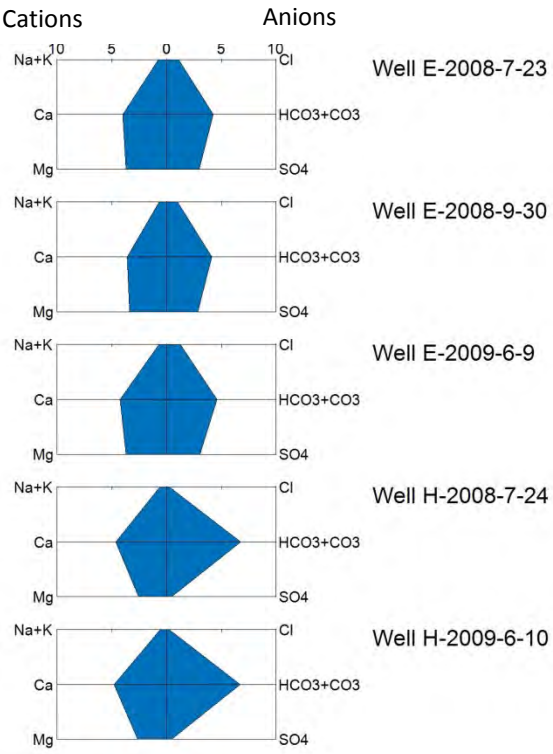
Appendix C - Surface Water and Groundwater Stiff Diagram Time Series



Appendix C - Surface Water and Groundwater Stiff Diagram Time Series



Appendix C - Surface Water and Groundwater Stiff Diagram Time Series





Appendix D

Species that Occur or may Potentially Occur within OU3 Study Area

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Table D-1 FISH SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	General Habitat Description	Food Habits	Global Rank	State Rank	Observation in Lincoln, Co., Montana		
					Oldest	Most Recent	Number
Black Bullhead (*Ameirurus melas*)	Turbid, mud bottomed lakes and ponds; also pools and backwaters of streams. Tolerates high water temperatures and low levels of dissolved oxygen.	Omnivorous. Mostly aquatic insects, crustaceans, mollusks, fish, and vegetation matter. Young feed during day, while adults feed at night.	G5	SNA	1996	1996	1
Brook Trout (*Salvelinus fontinalis*)	Prefers small spring fed streams and ponds with sand or gravel bottom and vegetation. Clear, cool water . Spawns over gravel in either streams or lakes with percolation;spring areas in lakes.	Feed mainly on aquatic insects and other small aquatic invertebrates throughout life. Larger individuals may eat small fish	G5	SNA	1960	2006	86
Brown Trout (*Salmo trutta*)	Valley portions of larger rivers where gradients are low and Summer temperatures range from 60-70 degrees F. Also reservoirs and lakes at similar elevation with suitable spawning trib.	Feeds largely on underwater aquatic insects. Also uses many other small organisms available and large individuals eat many small fish	G5	SNA	2006	2006	2
Bull Trout (*Salvelinus confluentus*)	Sub-adult and adult fluvial bull trout reside in larger streams and rivers and spawn in smaller tributary streams, whereas adfluvial bull trout reside in lakes and spawn in tributaries. They spawn in headwater streams with clear gravel or rubble bottom.	Young feed on aquatic insects. The adults are piscivorous.	G3	S2	1960	2004	40
Burbot (*Lota lota*)	Large rivers and cold, deep lakes and reservoirs. Spawn in shallow water, usually in rocky areas.	Young feed on aquatic invertebrates. Adults are piscivorous	G5	SNA	1993	1993	1
Channel Catfish (*Ictalurus punctatus*)	Prefers large rivers and lowland lakes. Thrives at water temperatures above 70 degrees. Tolerates turbid water.	Omnivorous feeder. Uses almost any living or dead organisms available.	G5	S5	2006	2006	1
Common Carp (*Cyprinus carpio*)	Primarily lakes and reservoirs, moderately warm water and shallows. Also rivers, pools and backwaters. Congregates in areas of organic enrichment. Tolerates turbid water and low dissolved oxygen; avoids cold and swift, rocky streams. Spawns in shallow weedy areas	An omnivorous feeder with vegetation and detritus making up bulk of diet. May feed on any available aquatic organism including eggs.	G5	SNA	2006	2006	2
Fathead Minnow (*Pimephales promelas*)	Habitat is highly variable but found mostly in small turbid creeks and shallow ponds of flatlands. Very tolerant of extreme conditions found in a prairie environment (turbid water, high temperature, and low dissolved oxygen).	Variety of minute aquatic plants and animals.	G5	S4S5	1998	1998	1
Kokanee Salmon (*Oncorhynchus nerka*)	Cold, clear lakes and reservoirs and Kokanee Salmon are found at all depths. They spawn over loose rubble, gravel, and sand in lower portions of tributary streams or along lake shores	The diet consists mostly of plankton. Micro-crustacea are most important, but midges and other aquatic insects are often taken	G5	SNA	2002	2002	1
Largescale Sucker (*Catostomus macrocheilus*)	Found in both streams and lakes. Spawns in gravel riffles with strong current or along lake margins	Almost any available organism found on the substrate	G5	S5	1993	2003	3

Table D-1. FISH SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	General Habitat Description	Food Habits	Global Rank	State Rank	Observation in Lincoln, Co., Montana		
					Oldest	Most Recent	Number
Longnose Dace (*Rhinichthys cataractae*)	Habitat variable. Found in lakes, streams, springs. Preferred habitat is riffles with a rocky substrate	Eats mostly immature aquatic insects picked off the rocks. Small amounts of algae and a few fish eggs are also eaten	G5	S5	2000	2006	8
Longnose Sucker (*Catostomus catostomus*)	Cold, clear streams and lakes; sometimes moderately warm waters and turbid waters. Spawns over loose gravel beds in riffle areas.	Considerable algae, midge larvae, and most aquatic invertebrates	G5	S5	1996	2006	3
Mottled Sculpin (*Cottus bairdi*)	Prefer riffle areas of fast-flowing streams that are clear and have rocky bottoms.	Variety of immature aquatic organisms, but midge and acddis larvae are by far the most important. A study in southwest Montana showed bottom-dwelling aquatic insects comprising 99.7% of the diet.	G5	S5	1953	1991	5
Mountain Whitefish (*Prosopium williamsoni*)	Medium to large cold mountain streams. Also found in lakes and reservoirs. Normally a stream spawner in riffles over gravel or small rubble but has been seen spawning along lake shorelines.	Mostly on aquatic insects but also takes terrestrial insects which fall into water. May eat fish eggs, but rarely fishes Feeds actively in Winter. Zooplankton important in lakes.	G5	S5	1969	2006	14
Northern Pikeminnow (*Ptychocheilus oregonensis*)	Prefers lakes and slow - flowing streams of moderate size. Young usually school in shallow water near lake shores and in quiet backwaters of streams	Most kinds of aquatic invertebrates. Adults frequently eat small fish. Considered a serious predator on young salmon and trout	G5	S5	1952	2006	3
Peamouth (*Mylocheilus caurinus*)	Shallow weedy zones of lakes or rivers.	Young feed mainly on micro-crustaceans. Adults eat micro-crustaceans, snails, adult aquatic and terrestrial insects. Occasionally small fish.	G5	S5	2006	2006	1
Rainbow Trout (*Oncorhynchus mykiss*)	Cool clean streams, lakes, res., farm ponds. Able to withstand wider range of temperatures than most trout. Spawns in streams over gravel beds.	Feed mainly on aquatic insects but eat what is available to them. Large adults also eat fish. River populations mostly insect eaters while zooplankton and forage fish are important in Lake Koocanusa.	G5	S5	1976	2006	80
Redside Shiner (*Richardsonius balteatus*)	Lakes, ponds, and larger rivers where current is weak or lacking.	Young feed mainly on plankton and adults eat mostly aquatic insects and snails.	G5	S5	2002	2006	4
River Carpsucker (*Carpiodes carpio*)	Reservoirs and the pools and backwaters of rivers. Spawn in larger streams with backwater areas.	Mostly diatoms, desmids, and filamentous algae. Also aquatic invertebrate larvae.	G5	S5	2006	2006	1
Slimy Sculpin (*Cottus cognatus*)	Rocky riffles of cold, clear streams, but it is sometimes found along the rubble beaches of lakes, especially near the mouths of inlet streams	Mostly immature aquatic insects and invertebrates, but also includes any small fish available	G5	S5	1950	2006	58
Smallmouth Bass (*Micropterus dolomieu*)	Prefers clear cool water and rocky substrates in both rivers and lakes. In streams, it prefers riffle areas with clean bottoms. In lakes, it prefers rocky shorelines, reefs, out- croppings, gravel bars, etc.	Feeds on most available item. Fry feed on zooplankton and small mayflies. Adults feed heavily on fish, frogs, and aquatic invertebrates. Seems to prefer crayfish, if available.	G5	SNA	2006	2006	2

Table D-1. FISH SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	General Habitat Description	Food Habits	Global Rank	State Rank	Observation in Lincoln, Co., Montana		
					Oldest	Most Recent	Number
Torrent Sculpin (*Cottus rhotheus*)	Riffles of cold, clear streams, but are also taken in lakes. They hide near stones on the bottom.	The fry eat mostly plankton. Adults feed mainly on aquatic insects and a variety of invertebrates, but also include plankton. Larger individuals often eat small fish.	G5	S3	1950	2006	89
Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*)	Spawning and rearing streams tend to be cold and nutrient poor. Seek gravel substrate in riffles and pool crests for spawning. Sensitive to fine sediment. Require cold water. Thrive in streams with more pool habitat and cover than uniform, simple habitat. Juveniles overwinter in the interstitial spaces of large stream substrate. Adult need deep, slow moving pools that do not fill with anchor ice in order to survive the winter.	NA	G4T3	S2	1960	2006	60
White Sturgeon - *Acipenser transmontanus*							

Montana Species Ranking Codes: Montana employs a standardized ranking system to denote global (G - range-wide) and state status (S) (NatureServe 2003). Species are assigned numeric ranks ranging from 1 (critically imperiled) to 5 (demonstrably secure), reflecting the relative degree to which they are "at-risk". Rank definitions are given below. A number of factors are considered in assigning ranks - the number, size and distribution of known "occurrences" or populations, population trends (if known), habitat sensitivity, and threat.
Data are taken from: http://fieldguide.mt.gov/
NA = not available

G1 S1
At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.

G2 S2
At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state.

G3 S3
Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas.

G4 S4
Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern.

G5 S5
Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.

Table originated in the OU3 Non-Asbestos BERA (CDM 2013b); presented herein with permission from the EPA and CDM Smith.

TABLE D-2 INVERTEBRATE SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	General Habitat Description		Global Rank	State Rank	Observation in Lincoln, Co., Montana		
					Oldest	Most Recent	Number
Freshwater Sponge (*Heteromeyenia baileyi*)	Aquatic	NA	G5	S1S3	1997	1997	1
Stonefly (*Utacapnia columbiana*)	Aquatic	The larvae occur on the upper surfaces and sides of cobbles and boulders in moderate gradient, fast flowing, foothills to mountain streams. Inhabits streams with moreintermediate characteristics between the higher elevation, cold mountain streams (more likely to find Glossosoma & Anagapetus), and the large warmer transitional rivers downstream (more likely to find Prototila). Generally the riparian canopy of the occupied streams is mostly (>50%) open, and less shaded than mountain streams. In clear streams and rivers during low flows, it is typical to be able to locate & identify *Agapetus* larvae on the tops of rocks. In relation to trophic status, A. montanus larvae scrape, graze and digest algae and diatoms from the surfaces of rocks.	G4	S2			1
Banded Tigersnail (*Anguispira kochi*)	Terrestrial	NA	G5	SNR	2005	2007	39
Blue Glass (*Nesovitrea binneyana*)	Terrestrial	NA	G5	SNR	2007	2007	7
Brown Hive (*Euconulus fulvus*)	Terrestrial	NA	G5	SNR	2005	2007	17
Coeur d'Alene Oregonian (*Cryptomastix mullani*)	Terrestrial	NA	G4	SNR	2005	2007	20
Land Snail, Cross Vertigo (*Vertigo modesta*)	Terrestrial	NA	G5	SNR	2006	2007	5
Land Snail, Fir Pinwheel (*Radiodiscus abietum*)	Terrestrial	NA	G4	S2S3	1959	2007	32
Land Snail, Forest Disc (*Discus whitneyi*)	Terrestrial	NA	G5	SNR	2005	2007	12
Slug, Giant Gardenslug (*Limax maximus*)	Terrestrial	Common in gardens and buildings, and margins of native forests, does not seem to penetrate far into undistrubed forests, although it can be abundant in modified forest remnants and secondary forests. This nocturnal slug feeds primarily on decaying plant material and fungi, but because it shows aggresive behavior towards other slugs, it is often erroneously regarded as a predator	G5	SNA	2005	2005	1
Slug, Gray Fieldslug (*Deroceras reticulatum*)	Terrestrial	NA	G5	SNA	2007	2007	1
Land snail, Hedgehog Arion (*Arion intermedius*)	Terrestrial	Often locally abundant in pastures, hedgerows, plantation forests, and in native forests. It can penetrate deep into undisturbed forest from areas disturbed by humans	G5	SNR	2007	2007	3

TABLE D-2 INVERTEBRATE SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	General Habitat Description		Global Rank	State Rank	Observation in Lincoln, Co., Montana		
					Oldest	Most Recent	Number
Land snail, Idaho Forestsnail (*Allogona ptychophora*)	Terrestrial	NA	G5	SNR	2005	2007	15
Slug, Magnum Mantleslug (*Magnipelta mycophaga*)	Terrestrial	Low- to mid-elevation sites, often with water in the general vicinity. Moist, cool sites in relatively undisturbed forest with an intact duff layer, such as are found in moist valleys, ravines, and talus areas, are preferred. Forest canopy composition at sites includes *Picea engelmannii, Pseudotsuga menziesii, Pinus ponderosa, Pinus albicaulis, Larix occidentalis, Abies lasiocarpa* , and *Abies grandis* , often with *Alnus* present; spruce-fir appears to be the most frequent forest association. Often found on the ground under pieces of loose bark, logs, loose stones, and in rotted wood; surface active on cool (10-16wet and overcast days, probably most active at night.	G3	S1S3	2005	2007	8
Slug, Meadow Slug (*Deroceras laeve*)	Terrestrial	Cliff, Cropland/hedgerow, Forest - Conifer, Forest - Hardwood, Forest - Mixed, Forest Edge, Forest/Woodland, Grassland/herbaceous, Old field, Savanna, Shrubland/chaparral, Suburban/orchard, Urban/edificarian, Woodland - Conifer, Woodland - Hardwood, Woodland - Mixed	G5	SNA	2005	2007	5
Land snail, Multirib Vallonia (*Vallonia gracilicosta*)	Terrestrial	NA	G5Q	SNR	2007	2007	1
Land snail, Orange-banded Arion (*Arion fasciatus*)	Terrestrial	Damp areas and wet meadows adjacent to streams	GNR	SNR	2007	2007	3
Darner damselfly, Paddle-tailed Darner (*Aeshna palmata*)	Terrestrial	Found in most habitats, including warm springs; found far from water	G5	S5	1994	1994	1
Slug, Pale Jumping-slug (*Hemphillia camelus*)	Terrestrial	NA	G4	S1S3	2005	2007	10
Slug, Pygmy Slug (*Kootenaia burkei*)	Terrestrial	Forest - Mixed, Fallen log/debris, forested and adjacent to a perennial water body. Found on forest floor mostly, either on or under woody debris, mats of moss, or deciduous tree leaves; two specimens collected 0.2 m aboveground on moss-covered tree trunk along stream edge	G2	S1S2	2005	2007	17
Land Snail, Quick Gloss (*Zonitoides arboreus*)	Terrestrial	NA	G5	SNR	2005	2007	26
Land Snail, Robust Lancetooth (*Haplotrema vancouverense*)	Terrestrial	NA	G5	S1S2	2006	2006	16

TABLE D-2 INVERTEBRATE SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	General Habitat Description		Global Rank	State Rank	Observation in Lincoln, Co., Montana		
					Oldest	Most Recent	Number
Land Snail, Rocky Mountainsnail (*Oreohelix strigosa*)	Terrestrial	Composition of the plant community appears to be of little importance, dominant plant species ranges from sagebrush to a wide variety of deciduous shrubs and trees and a similarly wide variety of coniferous shrubs and trees. Substrate, however, is of great importance, the presence of exposed limestone being almost critical for occurrence; exceptions, however, are well known, there being documented occurrences on sandstone, and occurrences on other substrates probably exist. Slope, too, has been considered to be of importance. Herbivorous.	G5	SNR	2005	2006	6
Slug, Sheathed Slug (*Zacoleus idahoensis*)	Terrestrial	Moist microsites in relatively intact *Pseudotsuga menziesii* , *Pinus ponderosa* , and *Picea engelmannii* forests in moist valleys, ravines, and talus on both north- and south-facing slopes. Meadows and cedar swamps, white pine stands, spruce valleys, rockslides, and near springs.	G3G4	S2S3	1959	2007	18
Land Snail, Smoky Taildropper (*Prophysaon humile*)	Terrestrial	NA	G3	S1S3	2005	2007	22
Land Snail, Spruce Snail (*Microphysula ingersolli*)	Terrestrial	NA	G4G5	SNR	2005	2007	29
Land Snail, Striate Disc (*Discus shimekii*)	Terrestrial	Found most often in litter in rich lowland forest, generally on shaded, north-facing slope bases, often bordering or ranging slightly onto stream floodplain. Usually on limestone soils. Species will crawl on downed wood and is sometimes seen on rock surfaces. Primarily feeds on partially decayed deciduous tree leaves and degraded herbaceous vegetation.	G5	S1	1959	1959	1
Land Snail, Subalpine Mountainsnail (*Oreohelix subrudis*)	Terrestrial	NA	G5	SNR	2007	2007	6
Western Pearlshell (*Margaritifera falcata*)	Aquatic	Cool-coldwater running streams that are generally wider than 4 m, perferrable habitat is stable sand or gravel substrates. Found in hard as well as soft water. This species occurs in sand, gravel and even among cobble and boulders in low to moderate gradient streams up to larger rivers.	G4	S2S4	1992	1996	7

Data are taken from: http://fieldguide.mt.gov/
NA = not available

G1 S1
At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.

G2 S2
At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state.

G3 S3
Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas.

G4 S4
Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern.

G5 S5
Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.

Table originated in the OU3 Non-Asbestos BERA (CDM 2013b); presented herein with permission from the EPA and CDM Smith.

TABLE D-3 AMPHIBIAN SPECIES OCCURING WITHIN THE LIBBY OU3 SITE PAGE

		Habitat Group											Observation in Lincoln, Co., Montana		
Group	**Common Name (Genus/species)**	**Foraging**	**Nesting**	**General Habitat Description**	**Feeding Guild**	**Food**	**Migration/ Hibernation**	**Longevity**	**Size**		**Global Rank**	**State Rank**	**Oldest**	**Most Recent**	**Number**
Chorus Frogs (Hylidae)	Pacific Treefrog (*Pseudacris regilla*)	Aquatic	Aquatic	Regularly found in the water only during the breeding period in spring. In western Montana they breed in temporary ponds in lower elevation forests and intermountain valleys shortly after snowmelt. Eggs hatch in 2 to 3 weeks and tadpoles take 8 to 10 week	NA	NA	NA/NP	NA	NA		G5	S4	1946	2006	101
Family Woodland Salamanders (Plethodontidae)	Coeur d'Alene Salamander (*Plethodon idahoensis*)	Aquatic	Aquatic	Springs and seeps, waterfall spray zones, and stream edges. More specifically, primary habitats are seepages and streamside talus; they also inhabit talus far from free water (deep talus mixed with moist soil on well-shaded north-facing slopes). In wet w	Invertivore	When above ground, Coeur d'Alene salamanders feed primarily on insects (11 orders documented) and other invertebrates, including millipeds, mites, spiders, harvestmen, snails, and segmented worms. They appear to be opportunistic feeders and generally rest	NA	NA	NA		G4	S2	1962	2006	102
Tailed Frogs (Ascaphidae)	Rocky Mountain Tailed Frog (*Ascaphus montanus*)	Aquatic	Aquatic	Small, swift, cold mountain streams. Eggs are laid during late summer and take approximately 4 weeks to hatch. Tadpoles take 1 - 4 years to metamorphose, depending on water temperature. Sexual maturity in Montana is attained at 6 or 7 years of age (the la	Insectivore	Larva feed almost exclusively on diatoms, though also pollen opportunistic; forage at night. Adults in forest near streams. Prey on invertebrates, mainly terres. but also aquatic forms	NA/NP	NA	NA		G4	S4	1949	2006	43
True Frogs (Ranidae)	Columbia Spotted Frog (*Rana luteiventris*)	Aquatic	Aquatic	Spotted frogs are regularly found at water's edge in or near forest openings. Wetlands at or near treeline are also used, but populations are uncommon in large, open intermountain valleys. Breeding takes place in lakes, ponds (temporary and permanent), sp	NA	Larvae: veg (Callitriche/Spirogyra) in Yellowstone. Adults: mainly ground insects in W MT: coleoptera 35%, hymenoptera 22%, arachnid 15%; others < 10%	NA	NA	NA		G4	S4	1922	2007	309
True Salamanders Plethodontidae)	Long-toed Salamander (*Ambystoma macrodactylum*)	Aquatic	Aquatic	Variety of habitats from sagebrush to alpine. They typically breed in ponds or lakes, usually those without fish present.	Insectivore	Larv: ostracods/cyclops; also red water mites, insect egg masses, algae. Adult: terres. arthropods (mostly formicid coleop, diptera) 74%; aq. insect larv. (mostly tri- chop) 37%	NA	NA	NA		G5	S4	1962	2007	246
True Frogs (Ranidae)	Northern Leopard Frog (*Rana pipiens*)	Aquatic	Aquatic	Low elevation and valley bottom ponds, spillway ponds, beaver ponds, stock reservoirs, lakes, creeks, pools in intermittent streams, warm water springs, potholes, and marshes. There is no evidence that this species in Montana has occupied high elevation wetlands, in contrast to Wyoming and Colorado	Invertivore	Metamorphosed frogs eat various small invertebrates, including various insects, spiders, leeches, and snails obtained along the water's edge or in nearby meadows or fields. They rarely eat small vertebrates. Larvae eat algae, plant tissue, organic debris, and probably some small invertebrates. In Montana, adults have been documented feeding on 10 orders of insects, spiders, mites, harvestmen, centipedes, millipedes, snails, and newly metamorphosed boreal toads	NA	NA	NA		G5	S1S3	1922	2006	14
True Toads (Bufonidae)	Western Toad (*Bufo boreas*)	Aquatic	Aquatic	Habitats used by boreal toads in Montana are similar to those reported for other regions, and include low elevation beaver ponds, reservoirs, streams, marshes, lake shores, potholes, wet meadows, and marshes, to high elevation ponds, fens	Insectivore	Five insect orders; spiders, daddy longlegs, and millipeds	NA/NP	NA	NA		G4	S2	1949	2006	126

Montana Species Ranking Codes: Montana employs a standardized ranking system to denote global (G - range-wide) and state status (S) (NatureServe 2003). Species are assigned numeric ranks ranging from 1 (critically imperiled) to 5 (demonstrably secure), reflecting the relative degree to which they are "at-risk". Rank definitions are given below. A number of factors are considered in assigning ranks - the number, size and distribution of known "occurrences" or populations, population trends (if known), habitat sensitivity, and threat.

G1 S1
At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.
G2 S2
At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state.
G3 S3
Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas.
G4 S4
Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern.
G5 S5
Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.

Table originated in the OU3 Non-Asbestos BERA (CDM 2013b); presented herein with permission from the EPA and CDM Smith.

TABLE D-4 AQUATIC INVERTEBRATE SPECIES COLLECTED FROM EMAP SAMPLING LOCATIONS IN KOOTENAI RIVER (AUGUST 2002)

Phylum	Class	Order	Family	Genus	Species	Abundance
ANNELIDA	HIRUDINEA	RHYNCHOBDELLIDA	PISCICOLIDAE	NA	NA	1
	OLIGOCHAETA	NA	NA	NA	NA	59
ARTHROPODA	ARACHNIDA	TROMBIDIFORMES	HYGROBATIDAE	*HYGROBATES*	NA	1
			TORRENTICOLIDAE	*TORRENTICOLA*	NA	3
COELENTERATA	INSECTA	DIPTERA	CHIRONOMIDAE	NA	NA	8
				CRICOTOPUS	*BICINCTUS*	20
				CRICOTOPUS	NA	17
				CRYPTOCHIRONOMUS	NA	1
				DICROTENDIPES	NA	3
				EUKIEFFERIELLA	NA	8
				MICROPSECTRA	NA	16
				NA	NA	85
				PAGASTIA	NA	10
				PARACHIRONOMUS	NA	7
				PARAKIEFFERIELLA	NA	4
				NA	NA	1
				PHAENOPSECTRA	NA	57
				POTTHASTIA	*GAEDII*	2
				POTTHASTIA	*LONGIMANA*	7
				PROCLADIUS	NA	1
				PSECTROCLADIUS	NA	1
				SYNORTHOCLADIUS	NA	7
				TANYTARSUS	NA	73
				THIENEMANNIMYIA	NA	7
				TVETENIA	*DISCOLORIPES*	17
			TIPULIDAE	*TIPULA*	NA	1
		EPHEMEROPTERA	BAETIDAE	*BAETIS*	NA	10
				BAETIS	*TRICAUDATUS*	17
			EPHEMERELLIDAE	*DRUNELLA*	*GRANDIS*	1
				EPHEMERELLA	NA	13
				SERRATELLA	*TIBIALIS*	2
			SIPHLONURIDAE	NA	NA	1
		HEMIPTERA	CORIXIDAE	NA	NA	18
		TRICHOPTERA	HYDROPTILIDAE	*HYDROPTILA*	NA	3
			LEPTOCERIDAE	*MYSTACIDES*	*ALAFIMBRIATA*	1
				OECETIS	NA	1
			LIMNEPHILIDAE	NA	NA	1
				PSYCHOGLYPHA	NA	1
	OSTRACODA	NA	NA	NA	NA	1
	HYDROZOA	HYDROIDA	HYDRIDAE	*HYDRA*	NA	12
MOLLUSCA	GASTROPODA	BASOMMATOPHORA	LYMNAEIDAE	NA	NA	1
			LYMNAEIDAE	*STAGNICOLA*	NA	2
			PHYSIDAE	*PHYSA*	NA	7
NEMATODA	NA	NA	NA	NA	NA	2

EMAP = Environmental Monitoring and Assessment Program
NA = not available

Table originated in the OU3 Non-Asbestos BERA (CDM 2013b); presented herein with permission from the EPA and CDM Smith.

TABLE D-5 FISH SPECIES COLLECTED FROM EMAP SAMPLING LOCATIONS IN KOOTENAI RIVER (AUGUST 2002)

Common Name	Genus	Species	Abundance
Longnose Dace	*Catostomus*	*catostomus*	24
Largescale Sucker	*Catostomus*	*macrocheilus*	21
Slimy Sculpin	*Cottus*	*cognatus*	1
Torrent Sculpin	*Cottus*	*rhotheus*	2
Cutthroat trout	*Oncorhynchus*	*clarki*	4
Rainbow trout	*Oncorhynchus*	*mykiss*	39
Sockeye Salmon	*Oncorhynchus*	*nerka*	17
Mountain Whitefish	*Prosopium*	*williamsoni*	587
Longnose Dace	*Rhinichthys*	*cataractae*	1
Redside Shiner	*Richardsonius*	*balteatus*	9
Bull Trout	*Salvelinus*	*confluentus*	1

EMAP = Environmental Monitoring and Assessment Program

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TABLE D-6 REPTILE SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	General Habitat Description	Food Habits	Global Rank	State Rank	Observation in Lincoln, Co., Montana		
					Oldest	Most Recent	Number
Common Gartersnake (*Thamnophis sirtalis*)	Found in nearly all habitats, but most commonly at lower elevations around water. Prefer moist habitats and are found most often along the borders of streams, ponds and lakes. They may travel long distances (4 to 17 kilometers) from hibernacula to forage in preferred habitat	Variety of vertebrates and invertebrates.	G5	S4	1954	2006	55
Eastern Racer (*Coluber constrictor*)	Associated with relatively open habitats either in shortgrass prairie or forested areas. Very fast and active, prey on insects and small vertebrates such as mice and frogs. Females lay a clutch of three to seven eggs in summer. In the NW racers generally absent from dense forest/hi mtns.	Orthopterans can form a major part of diet and have been re- ported as food in NC MT. Small mammals, lizards, orthopterans, anurans are all major components of diet.	G5	S5	1991	1991	4
Gophersnake (*Pituophis catenifer*)	Dry habitats, including open pine forests. Occasionally climb trees.	Rodents, rabbits, ground-dwelling birds, and to a lesser extent lizards.	G5	S5	1993	1994	3
Northern Alligator Lizard (*Elgaria coerulea*)	Little specific information on habitat associations in Montana. South-facing slopes in fine to course talus, sometimes in the open, but often with some canopy cover of Douglas-fir, ponderosa pine, a variety of shrubby species (serviceberry, ninebark, mock orange), and a litter layer of dried leaves and conifer needles	An invertivore, northern alligator lizards feed on insects, ticks, spiders, centipedes, millipedes, slugs and snails.	G5	S3	1949	2006	12
Painted Turtle (*Chrysemys picta*)	NA (web page not available)	NA (web page not available)	G5	S4	1955	2006	44
Rubber Boa (*Charina bottae*)	Usually found under logs and rocks in either moist or dry forest habitats. They are primarily nocturnal, but occasionally may be observed sunning on roads, trails, or in open areas.	Feed primarily on small mice but also take shrews, salamanders, snakes, and lizards.	G5	S4	1980	2004	15
Terrestrial Gartersnake (*Thamnophis elegans*)	Found in nearly all habitats, but most commonly at lower elevations around water. Common near water but also found away from water. At high elev. common on rocky cliffs/ brushy talus .	They eat a variety of vertebrates and invertebrates.	G5	S5	1952	2006	51

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Data are taken from: http://fieldguide.mt.gov/
NA = not available

G1 S1
At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.

G2 S2
At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state.

G3 S3
Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas.

G4 S4
Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern.

G5 S5
Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.

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TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
American Bittern (*Botaurus lentiginosus*)	Riparian	Riparian	Freshwater wetlands with tall, emergent vegetation. Sparsely vegetated wetlands occasionally, tidal marshes rarely.	Aquatic Invertivore	Mainly insects, amphibians, crayfish and small fish and mammals.	Migratory	NA	706 g	NA	G4	S4B	1991	2006	3
American Coot (*Fulica americana*)	Riparian	Riparian	Marshy borders of ponds	Herbivore	Grains, grasses, and agricultural crops on land; however, it generally forages in or under water, where it is almost exclusively an herbivore	Migratory	NA	724 g	NA	G5	S5B	1991	2006	9
American Crow (*Corvus brachyrhynchos*)	Scavenger	NA	One of the most widespread of North American birds. Found in a wide variety of habitats, particularly in open landscapes, with scattered trees and small woodlots. Uses both natural habitats and those created by humans (logged, areas, agricultural fields, cities, and villages). Generally avoids large areas of forest	Omnivore	Wide variety of invertebrates (terrestrial and intertidal marine); amphibians; reptiles; small birds and mammals; birds' eggs, nestlings and fledglings; grain crops ; seeds and fruits; carrion; and discarded human food	Migratory	NA	316-575 g	Spring-summer home range averaged 2.6 sq km	G5	S5B	1992	2006	40
American Dipper (*Cinclus mexicanus*)	Riparian	Riparian	Prefers fast-moving, clear streams along with waterfalls. Species prefers sand, pebble, or rocky stream bottoms, which provide sufficient aquatic invertebrates. Shorelines with large boulders, fallen trees, and rubble provide good shelter and protection from predators.	Aquatic Invertivore	aquatic invertebrates, insects, and insect larvae. O	Non-Migratory	NA	6 g	Reported defense of up to 320 meters of stream in breeding season, and from 46-820 meters in nonbreeding season. Year-round density was 1.3 to 2.9 birds per kilometer of stream.	G5	S5	1991	2005	20
American Goldfinch (*Carduelis tristis*)	Arboreal/Shrub/Ground	NA	Widely distributed in temperate North America. Common in weedy fields, river flood plains, early second growth forest, and also cultivated lands, roadsides, orchards and gardens. in shaded locations under canopy of leaves or dense cluster of needles.	Grainivore	Feeds on seeds (e.g., birches, alders, conifers, thistles, goldenrod, etc.); eats some berries and insects. Small seeds of various trees. Insects only as encountered.	Migratory	NA	13 g	NA	G5	S5B	1991	1998	15
American Kestrel *(Falco sparverius*)	Ground	Arboreal/Cliffs/Cavity	Found in nearly all habitats in Montana. Nests are often located in cavities in trees, banks, cliffs, and buildings. They also use man-made nest boxes. They usually hunt in open habitat. Kestrels often perch on overhead wires or posts while looking for prey, or hover in midair. In Bozeman area, summer birds are concentrated in the valley, but some birds are found far up mountain canyons; wintering birds tend to frequent irrigated areas	Carnivore	During the summer, kestrels feed heavily on large insects such as grasshoppers. Other prey includes small birds, rodents, and snakes. During winter they feed primarily on small birds and rodents.	Migratory	NA	160 g	Average territory size was 109.4 ha and 129.6 ha in two western U.S. studies (Cade 1982); home range diameter during the breeding season ranged from about 0.5 to 2.4 km in different regions	G5	S5B	1991	2006	49
American Redstart (*Setophaga ruticilla*)	Arboreal	Shrub	Prefers second growth, deciduous woodlands usually near water. Often found in shrubby areas, along with alder and willow thickets	Invertivore	mainly of insects. In late summer months, small berries and fruits. Eats mostly forest tree insects, also spiders and some fruits and seeds	Migratory	NA	9 g	Less than 2 ha	G5	S5B	1991	2005	38
American Robin (*Turdus migratorius*)	Ground	Arboreal/Shrub	Most widespread North American thrush. Frequents forest, woodland, and gardens, breeding primarily where lawns and other short-grass areas are interspersed with shrubs and trees, such as residential areas, towns, farmyards, and parks.	Invertivore	Eats worms, insects, and other invertebrates (mostly obtained on ground), and small fruits	Migratory	NA	77 g	Territory sizes average 3.65 acres in Douglas fir forests in western Montana.	G5	S5B	1991	2006	828
American Three-toed Woodpecker (*Picoides dorsalis*)	Arboreal	Dead tree - Cavity	Nesting habitat includes coniferous forests (with spruce, larch, or fir trees), or logged areas and swamps. A cavity nest is dug by both sexes and is placed 1.5 to 15 meters (5 to 50 feet) high in a stump or other dead or dying trees, often near water.	Invertivore	larvae of bark beetles. Also, tree sap and insects.	NA	NA	NA	Breeding density hit 13.5 birds per 100 acres in lodgepole pine during a pine beetle epidemic, probably due to the ability of birds to nest in lodgepole pine. In Oregon, home ranges for 3 radioed individuals were 751, 351, and 131 acres	G5	S3S4	1992	2005	57
American Wigeon (*Anas americana*)	Riparian	Riparian	Breeds near shallow, freshwater wetlands: sloughs, ponds, small lakes, marshes, and rivers. For nesting prefers areas with upland cover of brush/grass vegetation in the vicinity of lakes or marshy sloughs.		During winter and migration almost entirely vegetarian - stems and leafy parts of acquatic plants, leafy parts of upland grasses and leafy parts and seeds of various agricultural crops. During breeding season there is a shift toward a greater proportion of seeds and fruits and a substgantial shift toward more nonplant foods - insects, mollusks and crustaceans.	Migratory	NA	792 g	NA	G5	S5B	1986	2005	5

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Bald Eagle (*Haliaeetus leucocephalus*)	Riparian	Arboreal	Riparian and lacustrine habitats (forested areas along rivers and lakes), especially during the breeding season. Important year-round habitat includes wetlands, major water bodies, spring spawning streams, ungulate winter ranges and open water areas. Nesting sites are generally located within larger forested areas near large lakes and rivers where nests are usually built in the tallest, oldest, large diameter trees. Nesting site selection is dependent upon maximum local food availability and minimum disturbance from human activity	Piscivore	The majority of diet is comprised of fish. Important prey for Bald Eagles are waterfowl, especially in the winter, salmonids, suckers, whitefish, carrion and small mammals and birds	Non Migratory	First breeds in 5-6 yr	5244 g	Defended territories are 11-45 hectares and average 23 ha and territory radius around active nests averaged 0.6 km. Feeding home ranges 7 square kilometers breeding home ranges averaged 21.6 square kilometers	G5	S3	1983	2005	325
Bank Swallow (*Riparia riparia*)	Riparian	Ground	Breeds primarily in lowland areas along ocean coasts, rivers, streams, lakes, reservoirs, and wetlands. Nesting colonies also found in artificial sites such as sand and gravel quarries and road cuts. Most rivers and streams with nesting habitats are low-gradient, meandering waterways with eroding streamside banks.	Aquatic Invertivore	Takes flying or jumping insects almost exclusively on the wing. Occasionally eats terrestrial and aquatic insects or larvae. Rare consumption of vegetable matter appears to be accidental.	Migratory	1 -2 yr	15 g	Most foraging flights within 0.8 kilometers of colony	G5	S5B	1993	1999	8
Barn Swallow (*Hirundo rustica*)	Aerial	Buildings	Originally nesting primarily in caves, it has almost completely converted to breeding under the eves of or inside artificial structures such as buildings and bridges. Presently found in various habitats, including agricultural areas, cities, suburbs, and along highways. Breeding habitat usually contains open areas (fields and meadows) for foraging, a nest site	Aerial Invertivore	Flying insects. Flies over open land and water and forages on insects; forages nearer to the ground than other swallows (usually not greater than 10 meters and often less than 1 meter above the ground) Feeds opportunistically on a	Migratory	NA	17-20 g	Usually forages within a few hundred meters of nest when breeding.	G5	S5B	1991	2005	14
Barred Owl (*Strix varia*)	Carnivore	NA	Restricted to forested areas, ranging from swamps and riparian areas to upland regions. Large, unfragmented blocks of forests preferred. Throughout its range, found in association with mature and old growth forests, typically of mixed deciduous-coniferous composition	Carnivore	An opportunistic predator, consuming small mammals and rabbits, birds up to the size of grouse, amphibians, reptiles, and invertebrates	Non-Migratory	NA	801 g	Home range usually is less than 400 ha (but up to 760 ha) over 2-7 months, average 273 hectares	G5	S4	1995	2004	13
Barrow's Goldeneye (*Bucephala islandica*)	Riparian	NA	Chiefly a bird of the western montane region of North America. This species is generally restricted to areas west of the Continental Divide. Prefers alkaline to freshwater lakes in parkland areas; to lesser extent, subalpine and alpine lakes, beaver ponds, and small sloughs. In summer usually found in small, scattered groups. In winter often seen in large flocks.	Aquatic Invertivore	Aquatic invertebrates (insects, mollusks, crustaceans) and fish eggs. Seeds and tubers provide a small fraction of the diet	Non Migratory	NA	1090 g	NA	G5	S5B	1987	1995	6
Belted Kingfisher (*Megaceryle alcyon*)	Riparian	Riparian - Burrow	Inhabits streams, rivers, ponds, lakes, and estuaries or calm marine waters in which prey are clearly visible. Availability of suitable nesting sites - earthen banks where nesting burrows can be excavated - appears critical for the distribution and local abundance of this species. Prefers to excavate a nesting burrow near its fishing territory. Needs clear still waters for fishing.	Piscivore	Chiefly fish. Also mollusks, crustaceans, insects, amphibians, reptiles, young birds, small mammals, even berries.	Migratory	NA	148 g	Regularly forages up to 8 km from the nest	G5	S5B	1991	2006	15
Black-backed Woodpecker (*Picoides arcticus*)	Arboreal	Arboreal	Early successional, burned forest of mixed conifer, lodgepole pine, Douglas-fir, and spruce-fir (Hutto 1995a, 1995b), although they are more numerous in lower elevation Douglas-fir and pine forest habitats than in higher elevation subalpine spruce forest habitats	Invertivore	Bulk of the diet is wood-boring beetle larvae (including Monochamus spp. and Englemann spruce beetle, Dendroctonus englamanni), but they also feed on other insects (e.g., weevils, beetles, spiders, ants). Occasionally they will eat fruits, nuts, sap, and cambium. obtain food by flaking bark from trees (usually dead conifers) and logs, sometimes by picking gleaning. They feed primarily on logs and low on large-diameter tree trunks (more than 7.5 centimeter diameter at breast height; but most often 15-25 centimeter dbh)	Non Migratory	NA	72 g	178, 307, and 810 acres	G5	S2	1987	2005	37

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Black-billed Magpie (*Pica hudsonia*)	Ground	Arboreal	Historically, it frequently followed Native Americans and lived on the refuse of their hunts. In breeding season will be found in thickets in riparian areas, often associated with open meadows, grasslands, or sagebrush for foraging. Less specific in its habitat requirements in nonbreeding season. Frequently numerous near human habitats such as livestock feedlots, barnyards, landfills, sewage lagoons, and grain elevators. Nests are durable, domed structures of sticks, with mud cup and anchor. Generally prefers high trees. Have been know to nest on utility poles	Omnivore	Ground-dwelling arthropods, seeds, and carrion	Non Migratory	NA	189 g	NA	G5	S5	1993	1998	12
Black-capped Chickadee (*Poecile atricapillus*)	Arboreal/ Shrubs	Arboreal - Cavity	Deciduous and mixed deciduous/coniferous woodland, open woods and parks, willow thickets, and cottonwood groves. Also disturbed areas such as old fields or suburban areas. Generally more common near edges of wooded areas. Nests in cavities. Natural sites typically in trees, especially dead snags or rotten branches, sometimes old woodpecker holes or even in bird boxes.	Invertivore	Eats mainly insects and other small invertebrates, and their eggs and immature stages, and seeds and fruits; forages mainly on woody twigs, branches, and stems	Non Migratory	NA	11 g	Territory size averaged about 8-9 ha	G5	S5	1992	2006	316
Black-chinned Hummingbird (*Archilochus alexandri*)	Shrub/Ground	Riparian	In the arid western portion of range, nests in environments that often include cottonwood, sycamore, willow, salt-cedar, sugar-berry, and oak. In most regions, its preferred habitat is a canyon or flood-plain riparian community. Nests typically in riparian habitats. Nest is a cup shape, primarily composed of plant down.	Nectarivore	Main foods taken include nectar from flowers; small insects and spiders; sugar water from feeders provided by humans	Migratory	NA	4 g	NA	G5	S4B	1993	2006	19
Black-headed Grosbeak (Pheucticus melanocephalus)	Arboreal	Arboreal	Occupies diverse habitats. Cottonwood/willow groves and other riparian habitats in desert and dry grassland; openings in mature pine forest; aspen groves; deciduous growth especially in mountain valleys/canyons; pinyon-juniper woodlands; oak savanna; gardens; orchards. Relatively tolerant of human disturbance. Nests widely reported to be so thinly constructed that eggs can be seen through bottom. Nests are generally well concealed among foliage of branches.	Omnivore	Insects and spiders; cultivated fruit, wild fruit, weed seeds, and grains. During breeding season, gleans insects high in trees and in understory.	Migratory	NA	47 g	NA	G5	S5B	1993	2002	38
Blue Jay (*Cyanocitta cristata*)	Ground	Arboreal	Primarily inhabits deciduous, coniferous, and mixed forests and woodlands. Common in towns and residential areas, especially those having large oaks or other mast-producing trees.	Omnivore	Arthropods, acorns and other nuts, soft fruits, seeds, small vertebrates.	Migratory	NA	87 g	NA	G5	S5N	1988	2002	5
Blue-winged Teal (*Anas discors*)	Riparian	Riparian	Main habitat consists of shallow ponds with adequate supplies of aquatic invertibrates. Prefers to nest in grass or herbaceous vegetation and rarely uses brushy nesting cover.	Omnivore	Diet consists of aquatic inveritbrates, seeds, vegetative parts of aquatic plants, duckweeds, algae, and occasional grains from agricultural crops. Animal matter dominates diet of laying females.	Migratory	NA	409 g	NA	G5	S5B	1992	1998	6
Bohemian Waxwing (*Bombycilla garrulus*)	Arboreal	Arboreal	Prefers open coniferous or mixed-coniferous and deciduous forests. Often found in recently burned areas or near lakes and streams, beaver ponds, and swamps.	Frugivore, Invertivore	Sugary fruits and insects. During spring, also tree sap and budding flowers.	Migratory	NA	56 g	NA	G5	SHB, S5N	1920	1993	4
Boreal Chickadee (*Poecile hudsonica*)	Arboreal	Arboreal	boreal coniferous and mixed forests, muskeg bogs, in the vicinity of white cedar and hemlock swamps, birches and streamside willows. The species nests in natural cavities or abandoned woodpecker holes, or in a cavity dug by a pair in a rotten tree stub, usually within 1 meter of the ground (but up to 3.7 m).	Omnivore	conifer and birch seeds, and the eggs, larval stages, and adults of insects. It forages mainly on twigs and branches of trees.	Non-Migratory	NA	10 g	NA	G5	S1S2	1994	2005	13
Boreal Owl (*Aegolius funereus*)	Carnivore	Arboreal	High elevation spruce/fir forest, with lodgepole pine sometimes present. Mature spruce/fir forests with multilayered canopies and a highly complex structure, at elevations greater than 1500m with a mosaic of openings or meadows. roost at sites scattered throughout their home range, rarely in the same stand on consecutive nights or the same tree more than 2X per year. Roost alone, usually far from their nest and mate	Carnivore	Predominately small mammals, with a few birds and insects	Non-Migratory	NA	167 g	NA	G5	S4	1986	1996	35
Brewer's Blackbird (*Euphagus cyanocephalus*)	Ground	NA	Open, human-modified habitats such as residential lawns, golf courses, cemeteries, mowed urban parks and campus areas. Also found in large clearcut forests and plowed fields	Omnivore	During breeding season, diet consists of insects and other invertebrates, along with grains and weed seeds. During migration and winter, diet consists of primarily vegetarian such as waste grains, weed and grass seeds.	Migratory	NA	67 g	NA	G5	S5B	1991	2006	11

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Brown Creeper (*Certhia americana*)	Arboreal	Arboreal	Late successional stages of coniferous forests and mixed coniferous-deciduous forest. Especially common in unlogged, old-growth stands. The consistent factor appears to be the need for large trees and snags (dead trees) for foraging and nesting microsites. Breeding season is the same as winter, but possible no vegetable matter is eaten. Nest built in 2 parts, base and nest cup, behind a piece of peeling bark.	Invertivore	Forages primarily on trunks of live trees. In winter main foods taken include a variety of insects and larvae, spiders and their eggs, ants, and pseudeoscorpions; a small amount of seeds and other vegetable matter.	Altitudinal	NA	8 g	Territories ranged from 2.3 to 6.4 ha	G5	S4	1992	2004	225
Brown-headed Cowbird (*Molothrus ater*)	Ground	Brood parasite	Areas with low or scattered trees among grassland vegetationâ€"woodland edges, brushy thickets, prairies, fields, pastures, orchards, or even residential areas. Species is a brood parasite; nests are chosen by females, but are that of another species. Care given to cowbird eggs and young is provided by the host and reflects characteristics of that species.	Omnivore	Mainly of anthropods and seeds.	Migratory	NA	adult male is 39-57 g, female is smaller	NA	G5	S5B	1992	2006	102
Bufflehead (*Bucephala albeola*)	Riparian	Riparian	Freshwater, permanent ponds with no outlet or only seasonal outflow, and small lakes. Large lakes are avoided except by molting flocks. habit of nesting in the holes of the Northern Flicker. Will also nest in boxes.	Aquatic Invertivore	Main foods taken are aquatic invertebrates (insects, crustaceans, mollusks). Will take some seeds.	Migratory	NA	473 g	NA	G5	S5B	1995	2006	5
Bullock's Oriole (*Icterus bullockii*)	Arboreal	Arboreal	Prefers open woodland areas, especially riparian (river) woodlands with large cottonwoods, sycamores, and willows. During spring and fall migration it is found in a variety of open woodland and urban parklands and tall shrubland. Nests are typically pensile, often suspended from a few thin branches.	Invertivore	Mostly insects, especially butterfly and moth larvae and pupae, grasshoppers and crickets, beetles and other insects.	Migratory	NA	34 g	Females foraged regularly more than 200 meters from nest, and up to 1 kilometer	G5	S5B	1993	2004	2
California Gull (*Larus californicus*)	Riparian	Riparian	Prefers larger lakes, but also occurs on ponds and rivers, especially in spring and fall. Nests varied in shape from depressions in the ground to constructed mounds; they were located 2 to 75 feet apart	Aquatic Invertivore	Insects, oligochaetes, crustaceans, amphibians and birds, and plant material believed to be ingested incidentally to consuming animals	Migratory	NA	609 g	Breeding pairs in MT foraged an average of 17.4 km (maximum 61 km) from colony. At another colony, maximum foraging distance was 32 km	G5	S5B	1991	1995	3
Calliope Hummingbird (*Stellula calliope*)	Aerial	Arboreal	Mountains; along meadows, canyons and streams. Open montane forest, mountain meadows, and willow and alder thickets, gardens; in migration and winter also in chaparral, lowland brushy areas, deserts. Nests in tree (frequently conifer) at edge of meadow or in canyon or thicket along stream. Nests <1-21 m above ground (usually low, with branch or foliage above). Nectar supply unimportant in location of male's breeding territory In Bozeman area occurs on thickety hillsides and in forest openings to moderate elevations in the mountains.	Aerial Invertivore	Floral nectar and small insects. Like other hummingbirds, it forages aerially for small insects.	Migratory	NA	3 g	NA	G5	S5B	1991	2004	40
Canada Goose (*Branta canadensis*)	Ground	Riparian	Various habitats near water, from temperate regions to tundra. In migration and winter, coastal and freshwater marshes, lakes, rivers, fields, etc. Breeds in open or forested areas near lakes, ponds, large streams, inland and coastal marshes. The nest is built on the ground or on an elevated place (muskrat house, abandoned heron's nest, rocky cliffs, etc.). Usually returns to nesting territory used in previous year.	Herbivore	Grazes on marsh grasses, sprouts of winter wheat (spring), grain (fall); eats clover, cattails, bulrushes, algae, pond- weed, and other plants. Feeds in shallows, marshes, fields. Also eats mollusks and small crustaceans	Migratory	Begin breeding at 2 years, most by age 3 years.	4741 g	NA	G5	S5B	1991	2006	33
Canvasback (*Aythya valisineria*)	Riparian	Riparian	Breeds in small lakes, deep-water marshes, sheltered bays of large fresh water and alkali lakes, permanent and semi permanent ponds, sloughs, potholes, and shallow river impoundments. In aspen parklands and mixed-grass prairie, prefers wetlands bordered by dense emergent vegetation. In boreal forest, utilizes open marshes. Nest is a large bulky structure. May be overtopped by vegetation and may have one or more well-maintained ramps.	Omnivore	Foods vary depending upon availability. During winter and migration, mainly plants (winter buds, rhizomes, and tubers or aquatic plants. When plant food is limited, may take small clams and snails.	Migratory	NA	1248 g	NA	G5	S5B			2
Canyon Wren (*Catherpes mexicanus*)	Ground	Ground/Cliffs and Rock Outcops	Limited to cliffs, steep-sided canyons, rocky outcrops, and boulder piles, usually in arid regions. Inhabits the same territories year-round. Also sometimes found in towns, around houses and barns, on old stone buildings. Nests on canyon walls; may also nest around human-built structures.	Invertivore	Uses its long, decurved bill and flattened head to probe for spiders and insects in rock crevices	Non-Migratory	NA	39 g	NA	G5	S4	1995	1995	2

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Cassin's Finch (*Carpodacus cassinii*)	Arboreal	Arboreal	Prefers open coniferous forests of interior western mountains along with mature forests of lodgepole pine. Nests in conifer, 3-25 m above ground, on outer end of limb; may sometimes nest in deciduous tree or in shrub. May return to same nesting area in successive years, though this may be unusual	Herbivore	Consists of mostly vegetable matter, particularly buds, seeds, berries and other fruits, along with some insects.	Migratory	Breeds at 1-2 yr	27 g	NA	G5	S5	1990	2004	155
Cassin's Vireo (*Vireo cassinii*)	NA	NA	Prefer dry, open forests. Occupies coniferous, mixed-coniferous/deciduous, and deciduous forests in mountains and foothills.	Omnivore	Diet consists almost exclusively of arthropods, spring through autumn. Winter diets consists of fleshy fruits.	NA	NA	NA	NA	G5	S4B	1994	2005	733
Cedar Waxwing (*Bombycilla cedrorum*)	Arboreal	NA	Habitats include deciduous, coniferous, and mixed woodlandsâ€"especially open forests and riparian areas of deserts and grasslands; farms, orchards, conifer plantations, and suburban gardens also popular.	Frugivore, Invertivore	Diet consists of fleshy fruits and insects. Feeds opportunistically on small fruits, in spring and summer also various insects. May consume maple tree sap and flower petals. Apparantly cannot maintain positive energy balance when feeding solely on high-sucrose fruits.	Migratory	NA	33 g	NA	G5	S5B	1992	2006	61
Chestnut-backed Chickadee (*Poecile rufescens*)	Arboreal	Arboreal	humid coastal and interior forests from southeastern Alaska to southern California. Year-round resident throughout its range. Occurs within the densest coniferous forests, or along edges, where temperature is even and there is considerable shade. Nests in tree cavities and readily colonizes available nest boxes.	Invertivore	Insects and arthropods make up approximately 65% of the diet. Seeds and plant material make up the rest. Eats mainly insects gleaned from twigs, branches, and trunks of trees and shrubs; in the breeding season, forages often on outer foliage (needles, leaves, or buds); also eats spiders, some fruit, conifer seeds	Non-Migratory	NA	10 g	NA	G5	S4	1991	2005	119
Chestnut-sided Warbler (*Dendroica pensylvanica*)	Arboreal	Shrub	Nesting in shrubby habitat close to the ground, sometimes deciduous trees. In new, second-growth thickets of alder and other deciduous bushes growing in scrubby clearings and brushy areas or along the margins of streams, in orchards, pasturelands, forest edges, cut-over forests, roadsides, in open deciduous woodlands and in powerline corridors. Becomes most common in deciduous second growth or large forest clearings. Avoids deep woods.	Invertivore	Eats primarily the larvae and some adults of Lepidoptera and Diptera, some spiders, and some seeds and fruit as well . Usually forages alone. Gleans the undersurfaces of leaves at the low to medium levels in shrubs and the lower branches of small trees, but may feed in the upper canopy	Migratory	NA	10 g	NA	G5	SNA	1972	1993	2
Chipping Sparrow (*Spizella passerina*)	Ground	Arboreal	Prefers open woodlands, the borders of natural forest openings, edges of rivers and lakes, and brushy, weedy fields. It has a preference for nesting in open glades of coniferous forests, and for foraging in brushy open areas making it suited to human-modified habitats. Nests in a wide variety of trees and shrubs; has a distinct preference for conifers. Nest is a loosely woven cup.	Herbivore	Feeds primarily on seeds of grasses and various annual plants, infrequently supplementing this diet with small fruits. Adds insects and other invertebrates when breeding. Mainly forages on the ground, but also in foliage.	Migratory	NA	NA	Territory sizes of 1.1 to 1.8 acres	G5	S5B	1989	2006	969
Cinnamon Teal (*Anas cyanoptera*)	Riparian	Riparian	Prefers wetlands including large marsh systems, natural basins, reservoirs, sluggish streams, ditches, and stock ponds. Well-developed basins with emergent vegitation common habitat.	Omnivore	Seeds and aquatic vegetation, aquatic and semi-terrestrial insects, snails, and zooplankton.Feeds on aquatic plants in shallow water areas; especially on rush seeds, pondweed seeds and leaves, and salt grass seeds. Also eats small amounts of animal food, especially insects and mollusks	Migratory	NA	408 g	NA	G5	S5B	1991	1993	3
Clark's Nutcracker (*Nucifraga columbiana*)	Arboreal	Arboreal	Found in close association with ponderosa pine, Douglas fir, and white-bark pine. Usually nests at elevations between 1800 and 2500 m. Nests on outer end of branch of a conifer, 2-45 m above ground.	Grainivore	Fresh and stored pine seeds. Also eats insects, acorns, berries, snails, carrion; sometimes eats eggs and young of small birds.	Non Migratory	NA	141 g	Foraging 0.8 to 2.4 km from nest, summer home range of 1500 ha (4.4. km in diameter). Year-round home ranges are much larger: 15,000 ha in areas of good food	G5	S5	1991	2005	130
Clay-colored Sparrow (*Spizella pallida*)	Ground	NA	Prefers open shrubland, thickets along edges of waterways, second-growth areas, and forest edges and burns	Omnivore	Feeds on a wide variety of seeds; during the summer eats insects. Forages on or near the ground. When breeding, feeds in area separate from nesting territory	Migratory	NA	NA	Nesting territories about 0.1 to 0.5 ha and 0.04-0.1 ha.	G5	S4B	1995	2004	24
Cliff Swallow (*Petrochelidon pyrrhonota*)	Aerial	Cliffs/Eaves	Open to semiwooded habitat, cliffs, canyons, farms; near meadows, marshes, and water. Builds bottle shaped mud nest in colonies on cliffs, eaves of buildings, under bridges, etc. Prefers sites with overhang.	Aerial Invertivore	Flying insects at all times of the year. Insects taken reflect local availability.	Migratory	NA	22 g	Forages usually within 0.5 km of colony	G5	S5B	1992	2005	13

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Common Goldeneye (*Bucephala clangula*)	Riparian	Riparian	Breeding birds usually are found in forested wetland habitats	Aquatic Invertivore	During breeding season, primarily insectivorous and prefers lakes (often fishless) with abundant aquatic invertebrates. Fish, crustaceans, and mollusks become a more important part of the diet in winter.	Migratory	NA	1000 g	NA	G5	S5	1977	2006	10
Common Merganser (*Mergus merganser*)	Riparian	Riparian	Occur on large lakes and large rivers. During migration, most birds are on lakes	Piscivore	Eats primarily small fish, but will also eat insects, mollusks, crustaceans, worms, frogs, small mammals, birds, and plants	Migratory	Breeds at end of 2nd yr	1709 g	NA	G5	S5B	1977	2000	21
Common Nighthawk (*Chordeiles minor*)	Aerial	NA	Coastal sand dunes and beaches, woodland clearings, prairies and plains, and flat gravel rooftops of city buildings. During times of migration, habitat includes farmlands, river valleys, marshes, and coastal dunes.	Invertivore	Diet consists solely of flying insects	Migratory	NA	64 g	NA	G5	S5B	1992	2006	39
Common Raven (*Corvus corax*)	Ground	NA	Broad range of habitats: boreal, conifer, and deciduous forests; tundra; prairies and grasslands; isolated settlements, towns, and cities; deserts; sea coasts and islands; agricultural fields; Arctic ice floes; and the highest mountains. It is one of the most widespread naturally occurring birds in the world.	Omnivore	Diverse diet includes arthropods (even scorpions), amphibians, reptiles, birds (adults, chicks, and eggs), small mammals, carrion, grains, buds, and berries.	Non Migratory	NA	689-1,625 g.	Home range size of breeding birds reported at 0.2-4.4, 6.6, 9.4 and 40.5 sq km.	G5	S5	1991	2006	592
Common Redpoll (*Carduelis flammea*)	Ground/Trees	Arboreal	Open subarctic, largely coniferous forest and scrub, on dry, rocky, or damp substrates; level or steeply sloped; avoids dense forest; occurs on tundra and above timberline only where shrubby deciduous and sometimes coniferous vegetation occurs in hollows and sheltered places. Nests are built on loose foundation of small twigs laid across adjacent branches out from trunk of small spruce or in crotch of alder or willow. Forages in trees or on the ground.	Grainivore, Invertivore	Very small seeds and other plant material throughout the year. Also arthropods, particularly in summer when feeding young	Migratory	NA	13 g	Move up to 20 km while foraging	G5	S5N	1990	1990	3
Common Yellowthroat (*Geothlypis trichas*)	Ground	Ground	Occupies thick vegetation in wide range of habitats from wetlands to prairie to pine forest. Nests just above ground or over water, in weeds, reeds, cattails, tules, grass tussocks, brier bushes, and similar situations; often at base of shrub or sapling, sometimes higher in weeds or shrubs up to about 1 m.	Invertivore	Eats various small invertebrates obtained among low plants	Migratory	NA	10 g	NA	G5	S5B	1992	2006	37
Cooper's Hawk (*Accipiter cooperii*)	NA	Arboreal	Nest in dense deciduous and coniferous forest cover, often in draws or riparian areas. They hunt in these areas or in adjacent open country	Carnivore	Small to medium-sized birds comprise most of the diet of Cooper's hawks, although they also eat small mammals	Migratory	NA	529 g	3.2 km from nest	G5	S4B	1991	2005	11
Cordilleran Flycatcher (*Empidonax occidentalis*)	Aerial/ Arboreal	Ground/Arboreal	Coolness, shade, and nest sites" are requisites, and this species, from Alberta to n. Mexico, "invariably associated with water courses, and thus openings, in the timber. Has been know to nest in rocky outcroppings near water, in natural nest cavities in live trees (quaking aspen, Douglas fir), tree stumps, and about mountain cabins.	Invertivore	Feeds almost exclusively on insects caught in the air or gleaned from foliage of trees and shrubs.	Migratory	NA	NA	NA	G5	S5	1993	2004	22
Dark-eyed Junco (*Junco hyemalis*)	Ground	Ground-Cavity	Occurs across the continent from northern Alaska south to northern Mexico. Conspicuous ground-foraging flocks are often found in suburbs (especially at feeders), at edges of parks and similar landscaped areas, around farms, and along rural roadsides and stream edges. Most often in small cavity on sloping bank or rock face, under protruding rock, among roots (especially on vertical surface of root ball of large trees topple by wind), and in sloping road cut (especially if overhung by grass or other vegetation).	Omnivore	Seeds and arthropods; occasionally fruit and waste grain in agricultural fields. Most food obtained from ground and leaf litter	Migratory	NA	2 g	Territory sizes form of 1.7 to 2.6 acres	G5	S5B	1991	2006	1977

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	Foraging	Nesting										Oldest	Most Recent	Number
Dark-eyed Junco (Oregon) (*Junco hyemalis oreganus*)	Ground	Ground/Rock/Cavity	Occurs across the continent from northern Alaska south to northern Mexico. Conspicuous ground-foraging flocks are often found in suburbs (especially at feeders), at edges of parks and similar landscaped areas, around farms, and along rural roadsides and stream edges. Nest site highly variable. Most often in small cavity on sloping bank or rock face, under protruding rock, among roots (especially on vertical surface of root ball of large trees topple by wind), and in sloping road cut (especially if overhung by grass or other vegetation).	Omnivore	Seeds and arthropods; occasionally fruit and waste grain in agricultural fields. Most food obtained from ground and leaf litter	NA	NA	NA	NA	G5T5	SNR	1994	2000	11
Downy Woodpecker (*Picoides pubescens*)	Arboreal	Arboreal	Open riparian and deciduous woodlands throughout its entire range. Also uses wooden human-made structures in urban areas. Nests mostly in hole dug by both sexes in dead stub of tree, also in live tree (especially dead part), fenceposts; 1-15 m above ground.	Invertivore, Frugivore	Insects, including adults, larvae, pupae, and eggs, obtained from bark of trees; also eats berries and nuts	Non Migratory	NA	27 g	NA	G5	S5	1991	2004	43
Dusky Flycatcher (*Empidonax oberholseri*)	Aerial	Shrub	Open coniferous forest, mountain chaparral, aspen groves, streamside willow thickets and brushy open areas. In MT, Nests were in small bush crotches; the average nest height was 5 feet	Aerial Invertivore	aerial forager - a sit and wait predator. It eats flying insects, occasionally pounces on prey on the ground.	Migratory	NA	10 g	NA	G5	S5B	1993	2005	316
Dusky Grouse (*Dendragapus obscurus*)	Ground	NA	Winter at high elevations in conifer stands. In early spring, they descend to lower altitudes, where they prefer forest edges and openings	Omnivore	In winter they eat mainly conifer needles. In summer they eat a mixed diet of insects, green plants and berries. The young eat mainly insects	Altitudinal	NA	1188 g	Brood movement in summer is generally less than 0.5 mile	G5	S5	1977	2006	21
Eared Grebe (*Podiceps nigricollis*)	Riparian	Riparian	Shallow lakes and ponds with vegetation and macro invertebrate communities, rarely on ponds with fish. They prefer saline habitats at all seasons, allowing them to escape fish predators and have an abundant of invertebrates.	Aquatic Invertivore	large variety of aquatic prey, mainly invertebrates, small crustations, insects, and less often small fish, mollusks, amphibians.	Migratory	NA	297 g	NA	G5	S5B	1993	1995	4
Eastern Kingbird (*Tyrannus tyrannus*)	Aerial	NA	Open environments along forest edges and fields. Also orchards and scattered shrubs and trees favorable.	Aerial Invertivore	Eats mainly insects obtained by flycatching from perch; also eats seeds and small fruits, and may pick food from ground or water surface	Migratory	NA	40 g	NA	G5	S5B	1991	2006	13
European Starling (*Sturnus vulgaris*)	Ground	Ground/Arboreal	Exotic species. Non-Native. Owing to their close association with man and behavioral plasticity, starling inhabit a wide variety of areas if a few crucial needs are met. They forage in open country on short, mown, or grazed fields - abundantly available in urban as well as agricultural areas. These areas also provide the necessary food resources, nesting cavities, and water. Nests can be found virtually anywhere a cavity can be found. Preferred sites include cavity-like openings in buildings, nest-boxes, cavities usurped from woodpeckers, and natural cavities in trees. Found occasionally without a cavity in dense vegetation in trees or on the ground.	Omnivore	Extremely diverse diet that varies geographically, with the age of individuals, and with season. Generally will eat invertebrates when available, fruits and berries, grains and certain seeds during other times of the year. Most foraging time is spent in open areas with short vegetation.	Non Migratory	NA	85 g	NA	G5	SNA	1991	2006	18
Evening Grosbeak (*Coccothraustes vespertinus*)	Arboreal	Arboreal	Common in mixed-conifer and spruce-fir forests, less common in pine-oak, pinon, Cascadian, ponderosa pine and aspen forests. Less closely tied to coniferous tree species than other carduelines-also uses deciduous species for nesting and food. Nests primarily in trees but also in shrubs, a spare structure, shaped like flattened saucer.	Omnivore	Invertebrates, especially spruce budworm and other larvae; wide variety of small fruits and seeds, especially maples	Migratory	NA	60 g	NA	G5	S5	1992	2003	154
Flammulated Owl (*Otus flammeolus*)	Ground	Arboreal	Associated with mature and old-growth xeric ponderosa pine/Douglas-fir stands and in landscapes with higher proportions of suitable forest and forest with low to moderate canopy closure. They are absent from warm and humid pine forests and mesic ponderosa pine/Douglas-fir. Most often nests in an abandoned tree cavity made by Pileated Woodpecker , flicker, sapsucker or other large primary cavity nester, at heights from 1 to 16 meters	Invertivore	Hunt at night and eat nocturnal arthropods. Feeds on various insects (e.g., moths, beetles, grasshoppers, crickets, caterpillars;	Migratory	NA	47 g	Territory size about 5.2 sq km	G4	S3B	1992	2005	32

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Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Fox Sparrow (*Passerella iliaca*)	Ground	NA	Areas of thick cover, usually around forest edges and brushy woodland edges. Also found in grown-up fields, cut-over woodland, and scrubby woods.	Omnivore	Forages on the ground for seeds (e.g., smartweed, ragweed). Also eats berries (e.g., blueberries, elderberries) grapes and other fruits. Diet consists mainly of insects. Other food sources include seeds, fruit and plant matter.	Migratory	NA	30 g	NA	G5	S5B	1991	2005	192
Gadwall (*Anas strepera*)	Riparian	Riparian	Nest density was highest in saline lowlands, followed by dense nesting cover, panspots, and silty/ shallow clay. Nest success was highest in saline lowlands, then clay, panspots, silty sites and dense cover	Herbivore	Mainly of submerged aquatic vegitation, seeds and aquatic invertibrates.	Migratory	NA	990 g	NA	G5	S5B	1995	2006	4
Golden Eagle (*Aquila chrysaetos*)	Carnivore	Arboreal/Cliffs	Nest on cliffs and in large trees (occasionally on power poles), and hunt over prairie and open woodlands.	Carnivore	Primarily jackrabbits, ground squirrels, and carrion (dead animals). They occasionally prey on deer and antelope (mostly fawns), waterfowl, grouse, weasels, skunks, and other animals.	Migratory	NA	4,692 g	Territory size in several areas of the western U.S. averaged 57-142 sq km	G5	S4	1997	2000	4
Golden-crowned Kinglet (*Regulus satrapa*)	Arboreal	Arboreal	Nests in forests with closed or open canopies, edges of clearings, or near water	Invertivore	Feeds primarily on insects and their eggs (e.g., bark beetles, scale insects, aphids). Also drinks tree sap and eats some fruit and seeds (rare). Young are fed various insects and other small arthropods and sometimes small snails	Migratory	NA	6 g	Territory size in northern Minnesota was 2.1-6.2 acres (mean 4.1 acres)	G5	S5	1991	2005	818
Gray Catbird (*Dumetella carolinensis*)	Shrub	Shrub	Throughout range found in dense shrubs or vine tangles; most abundant in shrub-sapling-stage successional habitats. Also found in forest edges and clearings, roadsides, fencerows, abandoned farmland and home sites, pine plantations, streamsides, and some residential areas. Uncommon in areas dominated by conifers.	Omnivore	Main foods taken include insects and small fruits	Migratory	NA	37 g	NA	G5	S5B	1994	2005	16
Gray Jay (*Perisoreus canadensis*)	Arboreal	Arboreal	A widespread resident of North America's boreal and sub-alpine coniferous forests. Nests of low to moderate height, often 1 or 2 trees north of north edge of open bog, road allowance, or other break in the forest.	Omnivore	Arthropods, berries, carrion, nestling birds, fungi. Copious sticky saliva from enlarged salivary glands is used to fasten food items in trees, food that is used extensively by pairs throughout the winter and even during other times of the year.	Non Migratory	NA	71 g	NA	G5	S5	1991	2006	328
Gray Partridge (*Perdix perdix*)	Ground	NA	Exotic species. Non-native. Habitat consists of a mixture of cultivated and noncultivated land; grasslands interspersed with wheat fields, weed patches, and brushy cover. Optimum conditions are a cool, moderately dry climate and a mixture of cultivated and noncultivated land. Grain fields and winter wheat stubble are also used. Field edges provide escape and winter cover	Grainivore	Waste grain is a staple fall and winter food. Weed seeds and insects are summer food. Feeds primarily on seeds of wheat, corn, barley, oats, smartweeds, lambs's quarters, crabgrass, etc. Also eats leaves of clover, alfalfa, bluegrass, dandelion, etc. Chicks feed on insects for first few weeks of life.	Non Migratory	NA	398 g	In New York, home range size was 82-672 ha, did not differ by season	G5	SNA			2
Great Blue Heron (*Ardea herodias*)	Riparian	Riparian	Nested primarily in cottonwoods in riparian zones, and also in drier, coniferous sites. Nesting trees are the largest available. Active colonies are farther from rivers than inactive colonies. The number of nests in the colony corresponded to the distance from roads	Piscivore	Feeds mostly in slow moving or calm freshwater. Eats mostly fish but also amphibians, invertebrates, reptiles, mammals, and birds.	Migratory	NA	2,576	NA	G5	S3S4	1981	2006	36
Great Gray Owl (*Strix nebulosa*)	Carnivore	Dead Trees	Use lodgepole pine/Douglas-fir in Montana. Habitat is dense coniferous and hardwood forest, especially pine, spruce, paper birch, poplar, and second-growth, especially near water. They forage in wet meadows, boreal forests and spruce-tamarack bogs in the far north, and coniferous forest and meadows in mountainous areas. Nest in the tops of large broken-off tree trunks (especially in the south), in old nests of other large birds (e.g., hawk nest) (especially in the north), or in debris platforms from dwarf mistletoe, frequently near bogs or clearings.	Carnivore	Small mammals, especially rodents (i.e. voles) dominate prey over most of the range. Pocket gophers also dominate the diet of Great Gray Owls in North America. They usually forage in open areas where scattered trees or forest margins provide suitable sites for visual searching.	Migratory	NA	1,298	NA	G5	S3	2000	2000	5

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Great Horned Owl (*Bubo virginianus*)	Carnivore	Arboreal/Cliffs/Cavity	Occurs from river bottoms to timberline throughout the state. Nests in stick nests made by other birds, broken-topped snags, hollow trees, and cliff cavities.	Carnivore	small to medium-sized mammals and birds.	Non Migratory	NA	1,769	Home range size varies seasonally and geographically. Breeding territories in southwest Yukon 230-883 ha, averaging 483 ha; nonterritorial floaters averaged 725 ha	G5	S5	1992	2005	10
Green-winged Teal (Anas crecca)	Riparian	Riparian	Highest densities in wooded ponds of deciduous parklands, with additional breeding in boreal forests, arctic deltas, and mixed prairie regions. Often inhabits grasslands or sedge meadows with brush thickets or woodlands next to a marsh or pond. Often inhabits beaver ponds in wooded areas. Ground nester. Nests typically in sedge meadows, grasslands, brush thickets, or woods near a pond. Eggs are elliptical to subelliotical.	Omnivore	Broad diet. Seeds of sedges, grasses, and aquatic vegetation; aquatic insects and larvae, molluscs, crustaceans	Migratory	NA	364 g	NA	G5	S5B	1986	2005	6
Hairy Woodpecker (*Picoides villosus*)	Arboreal	Arboreal - Cavity	Primarily a forest bird; widely distributed in regions where mature woodlands prevalent. Also occurs in small woodlots, wooded parks, cemeteries, shaded residential areas, and other urban areas with mature shade trees, but often scarce within these habitats. Cavity nester. In western North America, more often in large dead stubs or in some areas in aspen with fungal decay.	Omnivore	Tree surface and subsurface arthropods and a diversity of fruits and seeds. Readily comes to feeders	Migratory	NA	70 g	Territory size 0.6-15 hectares; varies with habitat quality. In central Ontario, breeding territories averaged 2.8 hectares, range 2.4 to 3.2 ha	G5	S5	1991	2005	237
Hammond's Flycatcher (*Empidonax hammondii*)	Aerial	Arboreal	Inhabits cool forest and woodland, breeding primarily in dense fir, mature coniferous or mixed forests to near timberline. nests were saddled on limbs of mature conifers, 10.5 to 40 feet high.	Aerial Invertivore	Diet consists of insects. The Hammond's Flycatcher is primarily an aerial forager, capturing most of its insect diet on the wing. On occasion it may forage from leaf surfaces or from the ground	Migratory	NA	10 g	Territory sizes of 1.6 to 3.2 acres in Douglas fir or lodgepole forests in western Montana	G5	S4B	1992	2006	355
Harlequin Duck (*Histrionicus histrionicus*)	Riparian	Riparian	Inhabit fast moving, low gradient, clear mountain streams. Overstory in Montana does not appear to affect habitat use	Aquatic Invertivore	95% of the material in droppings in Grand Teton National Park consisted of Stoneflies, Mayflies, and Caddisflies	Migratory	NA	687 g	NA	G4	S2B	1972	2005	76
Harris's Sparrow (*Zonotrichia querula*)	Ground	Ground	Frequents streams, hedgerows, shelterbelts, and brushy ravines dominated by deciduous trees and shrubs. Feeds primarily on the ground, scratching and kicking away ground litter with its feet; forages less frequently among branches of trees. Nests are located on the ground, typically under a shrub that is on top of, or next to, a hummock. May also be located beneath rock or turf overhangs. In Northwest Territories, most nests are concealed amid dwarf birch, alder, spruce, and Labrador tea. Nest entrances are often oriented to the southeast, opposite the direction of prevailing storms	Omnivore	Diet consists of seeds, fruits, arthropods, and young conifer needles.	Migratory	longest 11yr 8mo	39 g	Territories averaged 2 hectares, but birds foraged up to 500 meters outside territories	G5	SNA			2
Hermit Thrush (*Catharus guttatus*)	Ground	NA	Species prefers interior forest edges such as margins of ponds and edges of meadows in forested areas.	Omnivore	During breeding diet consists mostly of animal matter, especially insects and other small invertebrates. During migration and winter, diet supplemented by wide variety of fruits. Forages from ground.	Non Migratory	NA	31 g	Territory sizes of 5.1 to 5.6 acres in Douglas fir or lodgepole pine forests in western MT	G5	S5B	1991	2005	355
Herring Gull (*Larus argentatus*)	Riparian	Riparian	Mainly islands and areas around water. Sometimes found in rocky or sandy cliffs; occasionally on rooftops near water.	Scavenger	Diet consists of marine invertebrates, fishes, insects, other seabirds, and adults, eggs, and young of congeners. Feeds opportunistically mostly on various animals and garbage. Often a scavenger around bays and harbors.	Migratory	Adult plumage in 4 yr	1226 g	NA	G5	SNA	1995	1995	3

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Hoary Redpoll (*Carduelis hornemanni*)	Ground	Ground	Open forest and scrub, extending farther onto tundra than Common Redpoll, but still requiring shrub, at least in sheltered hollows; substrate damp or dry. During migration and in winter, often joins with Common Redpolls. Occurs in open woodland and shrub, along field edges and week patches and in towns and villages. Nest sites similar to Common Redpoll but may be closer to water, often over shallow water; in willows, alder, spruce, tamarack, birch. Where otherwise suitable sites unavailable, nests in cavities in driftwood.	Herbivore	Small seeds of various trees, shrubs, weeds and grasses, along with other plant parts, supplemented with invertebrates in summer	Migratory	NA	13 g	NA	G5	SNA			2
Hooded Merganser (*Lophodytes cucullatus*)	Riparian	Riparian	Hooded Mergansers are generally found in river areas bounded by woods and supporting good fish populations associated with clear water	Aquatic Invertivore	Main foods taken are primarily aquatic insects, fish, and crustaceans (particularly crayfish).	Migratory	First breed at 2 yr	680 g	NA	G5	S4B	2006	2006	3
Horned Grebe (*Podiceps auritus*)	Riparian	Riparian	Breeding Range is on shallow freshwater ponds an marshes with beds of emergent vegetation, especially sedges, rushes and cattails. In spring and fall the Horned Grebe is mainly on large sized bodies of water, including rivers and small lakes. The floating nest is usually concealed in the vegetation.	Aquatic Invertivore	Aquatic arthropods in the summer, & fish and crustaceans in winter, especially amphipods, crayfish, and polychaetes.	Migratory	NA	453 g	NA	G5	S4			2
Horned Lark (*Eremophila alpestris*)	Ground	Ground - Cavity	Open, gerally barren country; avoids forests. Prefers bare ground to grasses taller than a few cm. May nest on marshy soil but generally prefers, throughout its range, bare ground such as plowed or fall-planted fields. Digs a nest cavity or may use a natural depression. Food obtained from ground.	Grainivore	In winter, mostly seeds. During the breeding season, adults eat mostly seeds but feed insects to their young. Adults take more insects during the spring and fall than at other times, perhaps to compensate for the energetic demands of breeding and molt	Migratory	NA	32 g	Territory size varies with habitat and population density; ranges from means of 3.5 ha in higher latitude heath, 1.6 ha in the agricultural Midwest to a range of 0.3-14 ha in Colorado shorstgrass prairie	G5	S5			2
House Finch (*Carpodacus mexicanus*)	Ground	NA	A common backyard bird throughout most of the contiuguous United States. In its native west, this species occupies a wide range of open or semi-open habitats from undisturbed desert to highly urbanized areas. In the east, it is rarely found far from urban or suburban areas.	Herbivore	In all seasons, 97% of diet is vegetable matter including buds, seeds, and fruits. Primary weed seeds eaten include Napa thistle, black mustard, wild mustard, Amaranth, knotweed and turkey mullen, plus some 21 additional seed varieties. In late summer it will eat fruits.	Non Migratory	NA	21 g	NA	G5	S5	1995	1998	2
House Sparrow (*Passer domesticus*)	Ground	Arboreal	Exotic. Non-Native. Breeding habitat is mostly associated with human modified environments such as farms, and residential and urban areas. Absent from extensive woodlands, forests, grasslands, and deserts. Nest often in enclosed spaces. If they nest in trees the nest usually is a globular structure with a side entrance and may share a wall with a neighboring nest.	Grainivore	Have been known to eat livestock feed. Grains, weed seeds, relatively few insects. Urban birds eat commercial birdseed.	Non Migratory	NA	28 g	NA	G5	SNA	1995	2005	4
House Wren (*Troglodytes aedon*)	Ground/Shrub	Cavity	Affinity for open, shrubby woodlands, mimicked so well by small town and suburban backyards and city parks; has a preference for human-made "bird houses" . Nests usually in cavities (natural, abandoned woodpecker holes, bird boxes, and within various human artifacts). Male starts several nests, female finishes nest.	Invertivore	Feeds primarily on small, terrestrial invertebrates	Migratory	NA	11 g	NA	G5	S5B	1992	1998	16
Killdeer (*Charadrius vociferus*)	Ground	Ground	Frequents open areas, especially sandbars, mudflats, heavily grazed pastures, and such human-modified habitats as cultivated fields, athletic fields, airports, golf courses, graveled or broken-asphalt parking lots, and graveled rooftops	Invertivore	Main foods taken include terrestrial invertebrates, especially earthworms, grasshoppers, beetles, and snails; infrequently small vertebrates and seeds	Migratory	NA	101 g	NA	G5	S5B	1992	2007	17
Lark Sparrow (*Chondestes grammacus*)	Ground	Ground/Arboreal/Cavity	Widespread in open habitats such as shrub-steppe, pinion-juniper edges, grasslands, roadsides, farmlands, and pastures. Nests on bare ground, in hollow depression, or in shrub or tree up to 2.75 m from ground. May use unusual nest sites such as a natural cavity of a dead tree. Nest either on the ground or close to the ground (within 4 meters) in woody vegetation	Omnivore	Categorized as a ground-foraging omnivore during the breeding season, and a ground-gleaning granivore during the nonbreeding period. In breeding season, eats more insects than seeds. During colder periods, when insects are less readily available, seeds may be primary diet.	Migratory	NA	29 g	Territories around immediate nest site (Martin and Parrish 2000), 66-248 sq. m in extent	G5	S5B	2004	2004	2

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Lazuli Bunting (*Passerina amoena*)	Ground	Arboreal/Shrub	Arid brushy areas in canyons, riparian thickets, chaparral and open woodland; in migration and winter also in open grassy and weedy areas Nests in small trees, shrubs, or vines, 0.3-3 m above ground.	Omnivore	Feeds on insects (grasshopper, caterpillars, beetles, ants, etc) and seeds (wild oats, canary grass, needlegrass, etc.).	Migratory	NA	16 g	NA	G5	S5B	1991	2006	35
Least Flycatcher *(Empidonax minimus*)	Aerial	NA	Semi-open, second-growth, and mature deciduous and mixed woods; occasionally conifer groves, burns, swamp and bog edges, orchards, and shrubby fields. Often found near open spaces such as forest clearings and edges, water, roads, and cottage clearings. Nest is a neat compact cup, generally not protected or only partially protected by surrounding vegetation.	Aerial Invertivore	Feeds almost exclusively on insects caught by hawking from the air or gleaned from foliage of trees and shrubs. Fruits and seeds taken occasionally.	Migratory	NA	10 g	NA	G5	S5B	1994	1998	13
Lesser Scaup (*Aythya affinis*)	Riparian	Ground	In the Bozeman area, habitat is generally restricted to lakes and ponds. Throughout fall and winter this species forms large flocks on rivers, lakes, and large wetlands. Pairs and broods typically associated with fresh to moderately brackish, seasonal and semipermanent wetlands and lakes with emergent vegetation such as bulrush, cattail and river bulrush . builds nest on the ground near or over water, as well as in uplands	Aquatic Invertivore	Mainly aquatic invertebrates such as insects, crustaceans, and mollusks. Seeds and vegetative parts of aquatic plants are important in certain areas	Migratory	NA	850 g	NA	G5	S5B	1993	1995	4
Lewis's Woodpecker (*Melanerpes lewis*)	Aerial	Arboreal	Occur in river bottom woods and forest edge habitats. Nest in a natural cavity, abandoned northern flicker hole, or previously used cavity, 1-52 meters above ground. Sometimes will excavate a new cavity in a soft snag (standing dead tree), dead branch of a living tree, or rotting utility pole	Aerial Invertivore	Adult emergent insects (e.g., ants, beetles, flies, grasshoppers, tent caterpillars, mayflies) in summer, and ripe fruit and nuts in fall and winter. They are opportunistic and may respond to insect outbreaks and grasshopper swarms by increasing breeding densities.	Migratory	NA	116 g	NA	G4	S2B	1991	1995	8
Lincoln's Sparrow (*Melospiza lincolni* i)	Ground	Ground	Found mainly in boggy, willow, sedge, and moss-dominated habitats, particularly where shrub cover is dense. At lower elevations, also prefers mesic willow shrubs, but can be found in mixed deciduous wood groves such as aspen and cottonwoods. Nests on the ground, most often inside a low willow shrub or mountain birch that also contains fairly dense sedge cover.	Omnivore	Winter: small seeds, terrestrial invertebrates when available. Occasionally uses feeders. Breeding season: mostly arthropods, also small seeds when available. Forages on ground under grass and brush	Migratory	NA	17 g	Breeding territory about 0.4 ha	G5	S5B	1992	1998	10
Long-eared Owl (*Asio otus*)	Carnivore	Arboreal	Most often observed in hedgerows, woody draws, and juniper thickets, although they do occur within the forest edge. They are predominantly open-country hunters; however, they are seldom seen because of their nocturnal habits. Nests in a stick nest built by other raptors, magpies, crows, or ravens.	Carnivore	Depends heavily on small rodents.	Migratory	NA	279 g	In Siberia, nesting pairs remained in an area about 100-300 meters in diameter	G5	S5	2003	2003	3
MacGillivray's Warbler (*Oporornis tolmiei*)	Riparian-Ground	Shrub	Commonly found in riparian habitat and clearcuts of northern coniferous forests along the Rocky Mountains. Forages along streams or in dense second growth. Commonly found in deciduous, shrubby riparian habitats. Usually nests low, 0.6-1.5 meters above ground, in bushes, saplings, clump of ferns, etc.	Invertivore	Main food is insects. Feeds on or just above the ground.	Migratory	NA	10 g	NA	G5	S5B	1991	2005	488
Mallard (*Anas platyrhynchos*)	Riparian	Riparian	In North America, the Mallard is the most abundant duck species. Its success in the wild reflects its adaptability to varied habitats, its hardiness in cold climates, and tolerance of human activities. Usual nest site is in uplands close to water. Nests in wide variety of situations with dense cover, including grasslands, marshes, bogs, riverine floodplains, dikes, roadside ditches, pastures, cropland, shrubland, fence lines, rock piles, forests, and fragments of cover around farmsteads	Omnivore	Very flexible in food choice; diet composition depends on stage of annual cycle, hydrological conditions, invertebrate behavior, and crop-harvesting schedule	Migratory	NA	1,082 g	NA	G5	S5	1977	2006	34
Marsh Wren (*Cistothorus palustris*)	Riparian	Riparian	Freshwater and brackish marshes in cattails, tule, bulrush, and reeds. Nests in marsh vegetation; female finishes one of several nests started by male; male may continue to build nests even after female begins incubation. Nesting success may be greatest in marshes with relatively dense vegetation and deep water	Aquatic Invertivore	Eats mainly insects and other invertebrates	Migratory	NA	12 g	NA	G5	S5B	1991	2006	7
Merlin (*Falco columbarius*)	Carnivore	Arboreal	Breeding pairs in eastern Montana usually use sparse conifer stands adjacent to prairie habitats, but sometimes use shelterbelts and river bottom forests. In western Montana, they use open stands of conifers and river bottom forests. Merlins sometimes nest in urban areas	Carnivore	Bulk of diet usually consists of small to medium-sized birds, often flocking species. Large flying insects (e.g., dragonflies) may be important for young learning to hunt. Also eats toads, reptiles, and mammals	Migratory	NA	244 g	NA	G5	S4			3

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Mountain Bluebird (*Sialia currucoides*)	Ground	Arboreal	Subalpine meadows, grasslands, shrub-steppe, savanna, and pinyon-juniper woodland; in south usually at elevations above 1500 m. In winter and migration also inhabits desert, brushy areas and agricultural lands. Nests are built in natural tree cavities, or abandoned woodpecker holes. May also use bird box, old swallow's nest, rock crevice, or old mammal burrow.	Invertivore/ Omnivore	Insectivorous. Feeds on beetles, ants, bees, wasps, caterpillars, grasshoppers, etc. Also consumes some berries and grapes seasonally. Hovers and drops to ground while foraging or darts out from a low perch to catch prey.	Migratory	NA	28 g	NA	G5	S5B	1991	2006	147
Mountain Chickadee (*Poecile gambeli*)	Shrub	Ground/Arboreal	Year round resident of montane coniferous forests of west North America, primarily in areas dominated by pine, spruce-fir and pinon juniper. Occurs in mixed coniferous-deciduous forests. Nests in a natural tree cavity, woodpecker hole, hole in the ground, or under a rock in a bank. Nest height usually is low, but may be up to 25 m.	Invertivore	Insects during warm seasons augmented with spiders. Conifer seeds during cool seasons.	Non Migratory	NA	12 g	Mean territory size 1.5 ha in Arizona;	G5	S5	1991	2006	875
Mourning Dove (*Zenaida macroura*)	Ground	Ground	tremendous adaptability. Generally shuns deep woods or extensive forest and selects more open woodlands and edges between forest and prairie biomes for nesting. Human alteration of original vegetations is generally beneficial for this species, with creation of opening in extensive forest and plowing of grasslands for cereal-grain production. Additional habitat created with planting of trees and shrubs in cities, towns, and suburbs. Nests primarily at woodland or grassland edge, usually in trees but readily on ground in absence of suitable trees or shrubs.	Grainivore	Mostly seeds (99%). Insignificant amounts of animal matter and green forage may be acquired incidentally. Principal food items vary by region and immediate locale. Feeds almost entirely on ground	Migratory	NA	123 g	Average home range in Missouri was 3200 ha, but most activity was within 1.6 kilometers	G5	S5B	1993	2006	24
Myrtle Warbler (*Dendroica coronata auduboni*)	NA	NA	NA	NA	NA	NA	NA	NA	NA	G5T5	S5B	1994	2000	10
Nashville Warbler (*Vermivora ruficapilla*)	Ground/Arboreal	Ground	Forest-bordered bogs, second growth, open deciduous and coniferous woodland, forest edge and undergrowth, cutover or burned areas; in migration and winter in various woodland, scrub, and thicket habitats. Nests on ground at base of bush, small tree, sapling, or clump of grass, or in hollow in moss.	Invertivore	Eats insects; forages from ground to treetop, but mainly low in trees and thickets at edge of forest	Migratory	NA	9 g	NA	G5	S5B	1991	2005	58
Northern Flicker (*Colaptes auratus*)	Ground	Arboreal	A common, primarily ground-foraging woodpecker that occurs in most wooded regions of North America. Prefers forest edge and open woodlands. Yellow-shafted Flickers reported nesting in most tree species in the wide range of woodlands it inhabits. Red-shafted Flickers are particularly common in quaking aspen stands and cottonwoods in riparian woodlands and in burned woodlands. Cavities excavated by flickers are used by many species of secondary cavity users.	Invertivore	Insects, primarily ants; fruits and seeds, especially in winter. Feeds on the ground or catches insects in the air.	Migratory	NA	142 g	NA	G5	S5	1991	2006	572
Northern Flicker (Red-shafted) (*Colaptes auratus cafer*)	Ground	Arboreal	A common, primarily ground-foraging woodpecker that occurs in most wooded regions of North America. Prefers forest edge and open woodlands. Yellow-shafted Flickers reported nesting in most tree species in the wide range of woodlands it inhabits. Red-shafted Flickers are particularly common in quaking aspen stands and cottonwoods in riparian woodlands and in burned woodlands. Cavities excavated by flickers are used by many species of secondary cavity users.	Invertivore	Insects, primarily ants; fruits and seeds, especially in winter. Feeds on the ground or catches insects in the air.	Migratory	NA	142 g	NA	G5T5	SNRB	1994	2000	11
Northern Goshawk (*Accipiter gentilis*)			Goshawks in Montana tend to nest predominately in mature large-tract conifer forests with a high canopy cover (69%), relatively steep slope (21%) and little to sparse undergrowth. Nests were constructed an average 10.9 meters above the ground and were usually located near water (232 m) or a clearing (85 m)	Carnivore	Forage during short flights alternating with brief prey searches from perches. They also hunt by flying rapidly along forest edges, across openings, and through dense vegetation. An opportunistic hunter, Northern Goshawks prey on a wide variety of vertebrates and, occasionally, insects. Prey is taken on the ground, in vegetation, or in the air.	Non Migratory	Breed at 1-2 yr	1137 g	NA	G5	S3	1924	2005	153

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Northern Pintail (*Anas acuta*)	Riparian	Riparian	prefer large lakes . Breeders favor shallow wetlands interspersed throughout prairie grasslands or arctic tundra. An early fall migrant, the species arrives on wintering areas beginning in August, after wing molt, often forming large roosting and feeding flocks on open, shallow wetlands and flooded agricultural fields	Grainivore	Grain (rice, wheat, corn, barley), moist-soil and aquatic plant seeds, pond weeds, aquatic insects, crustaceans, and snails	Migratory	NA	1035 g	NA	G5	S5B	1995	2006	4
Northern Pygmy-owl (*Glaucidium gnoma*)	Carnivore		most often seen in mixed fir forests, but can be found form river bottoms to timberline.	Carnivore	Small birds, mammals, insects, and probably a few reptiles and amphibians. Small birds may be an important part of its diet.	Non Migratory	NA	73 g	NA	G5	S4	1994	2005	12
Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)	Aerial	Ground	Long-distance migrant in the U.S. and Canada. Breeding populations from the lowlands and central interior of Mexico southward are generally sedentary, though they may make local elevational migrations to coastal areas in winter.	Invertivore	Flys through air and catches insects (e.g., flies, wasps, bees, beetles). Swoops low over open ground or water. Occasionally may scavenge on ground.	Migratory	NA	16 g	NA	G5	S5B	1991	2006	18
Northern Saw-whet Owl (*Aegolius acadicus*)	Carnivore	Arboreal	Most common in coniferous forests; however, they can be found in deciduous trees along watercourses. Nests in woodpecker holes and possibly natural cavities.	Carnivore	Eats mainly small mammals sometimes birds and insects.	Non Migratory/Elevational	NA	91 g	NA	G5	S4	1994	2005	8
Olive-sided Flycatcher (*Contopus cooperi*)	Aerial	Ground	Generally breeds in the montane and boreal forests in the mountains of western North America, highly adapted to the dynamics of a landscape frequently altered by fire. They are more often associated with post-fire habitat than any other major habitat type, but may also be found in other forest openings (clear cuts and other disturbed forested habitat), open forests with a low percentage of canopy cover, and forest edges near natural meadows, wetlands, or canyons. Nests are placed most often in conifers (Harrison 1978, 1979), on horizontal limbs from two to 15 meters from the ground.	Invertivore	hovering or sallying forth, concentrating on prey available via aerial attack. They generally launch these aerial attacks from a high, exposed perch atop a tree or snag. Like others in the flycatching guild, this bird is a passive searcher, looking for easy to find prey, but is also an active pursuer, attacking prey difficult to capture	Migratory	NA	32 g	NA	G4	S3B	1992	2005	332
Orange-crowned Warbler (*Vermivora celata*)	Arboreal	Ground	Prefers habitats with shrubs and low vegetation, often in aspen forest or in riparian or chaparral areas which provide cover for its nest. Nests well concealed, often on or near ground or in small crevices or depression in ground/rock, along shady hillside, on slopes or steep banks, sheltered by overhanging vegetation. Also found in shrubby bushes, ferns, vines. Nest is a small open cup.	Invertivore	Gleans insects from leaves, blossoms, and the tips of boughs, but also eats some berries and fruit and is attracted to suet feeders in the winter.	Migratory	NA	9 g	NA	G5	S5B	1992	2004	608
Pileated Woodpecker (*Dryocopus pileatus*)	Arboreal	Arboreal	Late success ional stages of coniferous or deciduous forest, but also younger forests that have scattered, large dead trees. Dead trees provide favored sites in which to excavate nest cavities. Only large- diameter trees have enough girth to contain nest.	Invertivore	Diet consists primarily of wood-dwelling ants and beetles that are extracted from down woody material and from standing live and dead trees. Fruit and mast of wild nuts when available.	Non-Migratory	9 years	308 g	NA	G5	S4	1991	2005	256
Pine Grosbeak (*Pinicola enucleator*)	Arboreal	NA	Open coniferous forests of north-western mountain ranges and in coastal and island rain forests of Alaska and British Columbia. Always most common in places where forest is open.	Omnivore	During most of the year 99% of diet is vegetable matter, especially buds, seeds and fruits. Feeds young a diet of mainly insects and spiders often mixed with vegetable matter.	Migratory	NA	56 g	NA	G5	S5	1988	2004	59
Pine Siskin (*Carduelis pinus*)	Ground	NA	Forests and woodlands, parks, gardens and yards in suburban areas; in migration and winter in a variety of woodland and forest habitats, partly open situations with scattered trees, open fields, pastures and savanna.	Herbivore	Forages in trees and on the ground for seeds (e.g., of alder, birches, pines, maples, thistles) and insects. Also eats flower buds of elms, drinks nectar from eucalyptus blossoms and sap from sapsucker's holes	Migratory	NA	15 g	NA	G5	S5	1991	2006	1243
Pygmy Nuthatch (*Sitta pygmaea*)	Arboreal	Arboreal	long-needled pine forests - principally ponderosa pines. Reaches its highest densities in mature pine forests little affected by logging, firewood collection, and snag removal. A cavity nester, can excavate own cavity, but will use woodpecker holes and natural cavities.	Invertivoe	Feeds mainly on weevils and leaf and bark beetles, but also eats pine seed. At feeders, eats suet and sunflower seeds	Non-Migratory	NA	11 g	NA	G5	S4	1993	2004	11
Red Crossbill (*Loxia curvirostra*)	Arboreal	Arboreal	Coniferous and mixed coniferous-deciduous forests; also pine savanna and pine-oak habitat. In migration and winter may also occur in deciduous forest, and more open scrubby areas. Nests in conifers, 1.5-25 m above ground, toward outer end of branch	Omnivore	Eats seeds, buds, and insects. Forages in trees; also picks up seeds from the ground.	Non-Migratory	NA	37 g	NA	G5	S5	1989	2004	692

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Red-breasted Nuthatch (*Sitta canadensis*)	Arboreal	Arboreal	Prefers forests that have a strong fir and spruce component. May also breed in mixed woodland when a strong coniferous component is associated with deciduous trees such as aspen, oak and poplar. The nests are open and built up from a variety of grasses, strips of bark and pine needles.	Invertivore	Eats mainly arboreal arthropods during the breeding season and a large number of conifer seeds outside the breeding season.	Migratory	NA	10 g	NA	G5	S5	1991	2005	1724
Red-eyed Vireo (*Vireo olivaceus*)	Arboreal	NA	Breeds in deciduous and mixed deciduous-coniferous forest. Absent from sites where understory shrubs are sparse or lacking. Often found near small openings in forest canopy. Can occur in residential areas, city parks, and cemeteries where large trees grow. During spring and fall migration uses a greater variety of forested habitats than during breeding season, but still prefers deciduous woodland over conifers. Winter range finds them present in various forested habitats from sea level up to 3000 m elevation.	Invertivore	Consumes mostly insects, particularly caterpillars. During breeding season most often observed foraging in canopy vegetation. Also eats various small fruits, most frequently in late summer and fall. In winter, mostly frugivorous	Migratory	NA	17 g	NA	G5	S5B	1993	2000	25
Red-naped Sapsucker *(Sphyrapicus nuchalis*)	Arboreal	Arboreal	nesting in broken-top larch; optimum habitat is old-growth larch, particularly near wet areas. Nest cavities made in dead trees or dead portions of live trees. Pure white, moderately glossy eggs are ovate to elliptical-ovate or rounded-ovate.	Herbivore	Sap wells in the bark of woody plants and feed on sap that appears there. Often drill sap wells in the xylem of conifers and aspens. Once the temperatures increase and sap begins to flow, theses birds switch to phloem wellls in aspen or willow, if available. Insects, also bast (inner bark), fruit, and seeds.	Migratory	NA	NA	NA	G5	S5B	1992	2006	189
Red-tailed Hawk (*Buteo jamaicensis*)	Carnivore	Arboreal/Cliffs	nest in trees and on cliffs, and hunt over grasslands, open woodlands, and agricultural areas.	Carnivore	primarily ground squirrels and other small rodents, but also feed on a wide variety of other animals. Red-tailed hawks often eat snakes, including rattlesnakes.	Migratory	NA	1,224 g	NA	G5	S5B	1989	2006	73
Red-winged Blackbird (*Agelaius phoeniceus*)	NA	NA	Breeds in a variety of wetland and upland habitats. Wetland habitats include freshwater marsh, saltwater marsh, and rice paddies. Upland breeding habitats commonly include sedge meadows, alfalfa fields and other crop lands and old fields. Roosts in habitats with dense cover.	Omnivore	During the nonbreeding season, diet is primarily plant matter. During breeding season, diet is primarily animal matter with some plant matter.	Migratory	NA	64 g	NA	G5	S5B	1993	2006	21
Ring-billed Gull (*Larus delawarensis*)	Riparian	Riparian	Spring and fall migration prefers fresh water (lakes, river marshes, reservoirs, irigation and agricultural areas). Occurs inland more often than other species of gulls - near landfill sites, golf courses, farm fields. Winter range mostly on or near coast. Common around docks, wharves, harbors; scarce in pelagic waters; inland on reservoirs, lakes, ponds and streams, landfill sites, and shopping malls in large metropolitan centers.	Invertivore	fish, insects, earthworms, rodents, and grain.. At Freezeout Lake, stomach contents included insects, oligochaetes, crustaceans, birds and mammals, and plant material believed to be consumed incidentally to consuming animals	Migratory	NA	566 g	NA	G5	S5B	1991	2006	5
Ring-necked Duck (*Aythya collaris*)	Riparian	Riparian	Freshwater wetlands, especially marshes, fens, and bogs that are generally shallow with fringes of flooded or floating emergents, predominantly sedges interspersed with other vegetation and shrubs; also open water zones vegetated with abundant submerged or floating aquatic plants (Hohman and Eberhardt 1998). In the Bozeman area, habitat is restricted to lakes and ponds.	Omnivore	Moist-soil and aquatic plant seeds and tubers; aquatic invertebrates	Migratory	NA	730 g	NA	G5	S5B	1992	2006	9
Rock Wren (*Salpinctes obsoletus*)	Ground	NA	Rock also found in nonrocky habitats, as long as there exists areas "rich in crevices, interstices, passageways, recesses, and nooks and crannies of diverse shapes and sizes"	Invertivore	Insects and other arthropods	Migratory	NA	17 g	NA	G5	S5B	1991	2004	11
Ruby-crowned Kinglet (*Regulus calendula*)	Arboreal	Arboreal	In the west, nests in spruce-fir, lodgepole pine and Douglas-fir forests. Spring and fall migration includes a broad range of habitats: coniferous and deciduous forests, floodplain forests, willow shrubs, abandoned homesteads in rangeland, old fields, and suburban yards. Nest globular or elongated, usually pensile but may be placed on limb. In all cases nests protected from above by overhanging foliage.	Invertivore	Winter: spiders and their eggs, a variety of insects and their eggs, psuedoscorpions, small amounts of fruit, seeds and other vegetable matter. Breeding season: same as winter except no vegetable matter eaten	Migratory	NA	7 g	NA	G5	S5B	1992	2006	500

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Ruddy Duck (*Oxyura jamaicensis*)	Riparian	Riparian	Breeding is usually on overgrown, shallow marshes with abundant emergent vegetation and some open water. Non-breeding birds are found on large, generally deeper waters with silty/muddy bottoms	Invertivore	primarily aquatic insects, crustaceans, zooplankton, and other invertebrates. Typically consumes small amount of aquatic vegetation and seeds. Forage almost exclusively by diving but occasionally forage by "skimming" water surface, straining food from water	Migratory	NA	590 g	NA	G5	S5B	1992	1993	4
Ruffed Grouse (*Bonasa umbellus*)	Ground	Arboreal/Shrub	found in dense, brushy, mixed-conifer and deciduous tree cover, often along stream bottoms. In the Bozeman area they are mostly in deciduous thickets in the foothills and mountains; also in riparian areas to the lowest elevation says they inhabit the denser cover of mixed conifer and deciduous trees and brush, and are often along stream bottoms.	Omnivore	In winter deciduous tree buds and shrubs. In summer, a mixed diet of insects, green plants and berries, with young birds eating primarily insect	Migratory	NA	NA	NA	G5	S5	1977	2006	148
Rufous Hummingbird (*Selasphorus rufus*)	Riparian	Riparian	primarily aquatic insects, crustaceans, zooplankton, and other invertebrates. Typically consumes small amount of aquatic vegetation and seeds. Forage almost exclusively by diving but occasionally forage by "skimming" water surface, straining food from water	Invertivore	primarily aquatic insects, crustaceans, zooplankton, and other invertebrates. Typically consumes small amount of aquatic vegetation and seeds. Forage almost exclusively by diving but occasionally forage by "skimming" water surface, straining food from water	Migratory	NA	3 g	NA	G5	S5B	1991	2007	49
Savannah Sparrow (*Passerculus sandwichensis*)	Ground	Arboreal	widespread and abundant in open habitats throughout North America. During the breeding season its persistent buzzy song can be heard in agricultural fields, meadows, marshes, coastal grasslands, and tundra. During spring and fall migration it can be found in open fields, roadsides, dune vegetation, coastal marshes, edges of sewage ponds and other ponds in open country.	Omnivore	The main foods taken in winter include small seeds, fruits, and insects when available. During breeding season they eat adult insects, larval insects, insect eggs, small spiders, millipedes, isopods, amphipods, decapods, mites, small mollusks, seeds, and fruits.	Migratory	NA	25 g	Territories are small, ranging from 0.05 to 1.25 hectares	G5	S5B	1992	2004	12
Say's Phoebe (*Sayornis saya*)	Aerial	NA	Open country, prairie ranches, sagebrush plains, badlands, dry barren foothills, canyons, and borders of deserts	Invertivore	Primarily flying or terrestrial insects, most frequently wild bees and wasps but also flies, beetles, and grasshoppers. Little vegetable matter	Migratory	NA	21 g	NA	G5	S5B			2
Sharp-shinned Hawk (*Accipiter striatus*)	Carnivore	NA	commonly use heavy timber, especially even-aged stands of conifers, but sometimes hunt in open areas	Carnivores	almost entirely on songbirds, although they occasionally take small mammals and insects	Non-Migratory	NA	174 g	NA	G5	S4B	1991	2003	17
Solitary Vireo (*Vireo solitarius*)	Arboreal	NA	Mixed coniferous-deciduous woodland, humid montane forest; in migration and winter also in "a variety of wooded habitats, but favors tall woodland with live oaks and pines in the temperate zone.	Invertivore	Eats mostly insects, some spiders and small fruits; forages among foliage and branches of trees and shrubs. Eats fruits and insects in about equal proportions	Migratory	NA	17 g	NA	G5	SNR	1993	1994	9
Song Sparrow (*Melospiza melodia*)	Arboreal	NA	Wide range of forest, shrub, and riparian habitats, but limited to those adjacent to fresh water more often in arid environments	Omnivore	In nonbreeding period, primarily seeds, fruits, and invertebrates, as available. During breeding, primarily insects and other small invertebrates; some seeds and fruit	Migratory	NA	21 g	NA	G5	S5B	1991	2006	80
Sora (Porzana carolina)	Riparian	Riparian	Primarily shallow freshwater emergent wetlands (e.g., marshes of cattail, sedge, blue-joint, or bulrush), less frequently in bogs, fens, wet meadows, and flooded fields, sometimes foraging on open mudflats adjacent to marshy habitat.	Omnivore	Eats mollusks, insects, seeds of marsh plants, duckweed	Migratory	NA	NA	NA	G5	S5B	1991	2000	9
Spotted Sandpiper (*Actitis macularius*)	Riparian	Riparian	Shores of lakes, ponds, and streams, sometimes in marshes; prefers shores with rocks, wood, or debris; also mangrove edges in Caribbean. Nests near freshwater in both open and wooded areas, less frequently in open grassy areas away from water; on ground in growing herbage or low shrubby growth, or against log or plant tuft	Aquatic Invertivore	Eats mainly small invertebrates obtained from surface or by probing along shores or some distance inland if insects are abundant there	Migratory	NA	40 g	NA	G5	S5B	1992	2006	29
Spotted Towhee (*Pipilo maculatus*)	Ground	NA	Uses a wide variety of shrubby habitats characterized by deep litter and humus on ground, and sheltering vegetation overhead. Undergrowth of open woodland, forest edge, second growth, brushy areas, chaparral, riparian thickets, woodland	Invertivore	Forages on the ground beneath shrubs and undergrowth, using a two-footed scratching maneuver to find food among loose debris. Eats various invertebrates, seeds, small fruits, some small vertebrates	Migratory	NA	42 g	NA	G5	S5B	1991	2006	78

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Spruce Grouse (*Falcipennis canadensis*)	Ground	NA	dense forest types such as alpine fir, Engelmann spruce, or lodgepole pine. Winter home ranges northeast of Missoula are covered by Douglas fir, ponderosa pine, lodgepole pine and larch. Douglas fir provided the most important cover; the average size being 24.1 hectars	Herbivore	Conifer needles (larch, ponderosa pine, lodgepole pine) were the main food in late fall through early spring. In summer, herbaceous vegetation and insects were utilized.	Migratory	NA	492 g	NA	G5	S4	1992	2004	16
Steller's Jay (*Cyanocitta steller* i)	Ground	Arboreal	Coniferous and mixed coniferous-deciduous forest, open woodland, orchards, and gardens including humid coniferous forest in nw. North America. Habituates readily to humans and is well known at feeders, picnic areas, and campgrounds. Nests typically placed on horizontal branches close to trunk, often close to top of tree. When nesting close to human habitation, frequently nests close to a window, building, or path, above ground in bushes or trees.	Omnivore	Consumes wide variety of animal and plant food including arthropods, nuts, seeds, berries, fruits, small vertebrates, and eggs and young of smaller birds. At feeders, picnic areas and campgrounds, consumes wide variety of foods such as suet, sunflower seeds, peanuts, meat, cheese, bread, and cookies	Non Migratory	NA	106 g	NA	G5	S5	1987	2005	83
Swainson's Thrush (*Catharus ustulatus*)	Arboreal	Arboreal	Coniferous and mixed coniferous-deciduous forest, open woodland, orchards, and gardens including humid coniferous forest in nw. North America. Habituates readily to humans and is well known at feeders, picnic areas, and campgrounds. Nests usually in small tree, close to trunk, often 2 m or less above ground; often in conifer, sometimes deciduous tree or shrub.	Omnivore	Berries and insects. Breeding and spring migrating populations tend to be insectivorous; fall migrating and wintering populations more frugivorous	Non Migratory/ Altitudinal	NA	23-45 g	Territory sizes of 1.7 to 3.3 acres	G5	S5B	1991	2005	1387
Tennessee Warbler (*Vermivora peregrina*)	Arboreal	Arboreal	Openings of northern woodland, edges of dense spruce forests, cleared balsam-tamarack bogs, grassy places of open aspen and pines, alder and willow thickets, open deciduous second growth. In migration and winter generally in single species flocks in tops of trees of various woodland types--not typically in continuous mature forest; in winter prefers semi-open, second growth, coffee plantations, gardens. Nests in hollow of moss in bog, or on higher level ground or hillside, in thickets or in open at base of grass or shrub	Invertivore	Eats insects and spiders, seeds, fruit juices; forages over terminal twigs and leaves of trees and in dense patches of weeds	Migratory	NA	10 g	NA	G5	S2S4 B	1991	2000	10
Townsend's Solitaire (*Myadestes townsendi*)	Ground	Ground	Open woodland, pinyon-juniper association, chaparral, desert and riparian woodland nest sites were in cutbanks and 2 were in open woodlands	Invertivore	In Missoula, insects were the primary summer food, obtained primarily by ground predation. Rocky Mountain juniper cones were the primary food during late winter. Feeds on insects (e.g., caterpillars, beetles, wasps, ants, bugs) and fruit (e.g., juniper berries, and berries of rose, cedar mistletoe, madrona); also pine seeds. Flies out from a perch and catches insects in the air.	Migratory	NA	34 g	NA	G5	S5	1991	2004	515
Townsend's Warbler (*Dendroica townsendi*)	Arboreal	Arboreal	Tall coniferous and mixed coniferous-deciduous forest at various elevations, from wet coastal forest at sea level to dry subalpine forest. Most abundant in unlogged, old-growth forest, but also common in late successional stages. Uncommon in logged forest. Appears to prefer conifers; may nest 2.7-4.5 m above ground, maybe higher	Invertivore	Insects. Honeydew excreted by scale insects in low-latitude cloud forests. Winter: gleans small insects and caterpillars in foliage at all heights, occasionally hovers and plucks them from undersides of leaves; hawks flying insects	Non Migratory	NA	9 g	NA	G5	S5B	1991	2005	1306
Tree Swallow (*Tachycineta bicolor*)	Aerial	Arboreal	Open fields, meadows, marshes, beaver ponds, lakeshores and other wetland margins. Uses trees only for nesting and occasional roosting.	Invertivore	Mostly flying insects, though vegetable matter is eaten during unfavorable weather conditions. Forage over open water, marshes, ponds, and fields, as well as in shrubby habitat.	Migratory	NA	20 g	NA	G5	S5B	1992	2006	27
Turkey Vulture (*Cathartes aura*)	Carnivore	Cliffs	Turkey vultures forage in a variety of habitats, including grasslands, badlands, open woodlands, and farmlands. Nesting in the northern Rockies is usually done on cliff ledges under overhangs, or in rock crevices, often in river valleys	Carnivore	Carrion is the primary food, but they sometimes prey on small mammals.	Migratory	NA	1467 g	NA	G5	S4B	1992	2006	18
Varied Thrush (*Ixoreus naevius*)	Ground	Arboreal	Humid coastal and interior montane coniferous forest, deciduous forest with dense understory, and tall shrubs (especially alder); in migration and winter also open woodland and chaparral. Usually nests in a small conifer, sometimes a deciduous tree, 3-4.5 m above ground	Omnivore	Feeds in trees or forages on the ground for insects, earthworms, seeds, and berries.	Non Migratory	NA	78 g	NA	G5	S5B	1990	2005	619

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Vaux's Swift (*Chaetura vauxi*)	Aerial	Arboreal	During breeding prefer late stages of coniferous forests and deciduous forests mixed with coniferous. More common in old-growth forests than in younger stands. During spring and fall migrations prefer forests and open areas; roost trees and chimneys important as they allow swifts to avoid exposure and conserve body heat. Hollow trees are its favored nesting and roosting sites. Nest in hollow trees in the forest; less commonly in chimneys.	Invertivore	Almost entirely insects and spiders. Catches its prey from the air.	Non Migratory	NA	17 g	NA	G5	S4B	1991	2002	12
Veery (*Catharus fuscescens*)	Ground	Riparian	Generally inhabits damp, deciduous forests. Has a strong preference for riparian habitats in several regions, including the Great Plains. Prefers disturbed forest, probably because denser understory is not found in undisturbed forests. Breeds in early-successional, damp, deciduous forests, often nesting near streamside thickets or swamps. Nest are typically on or near the ground, most often elevated in or at the base of a bush or small tree.	Omnivore	Primarily a ground forager, with a diet fairly evenly divided between insects and fruit. Roughly 60% insects, 40% fruit, feeding primarily on insects as breeders and on fruit late summer and fall.	Migratory	NA	31 g	NA	G5	S4B	1994	1995	7
Vesper Sparrow (*Pooecetes gramineus*)	Ground	Ground	In central Montana they nest on the ground under big sagebrush, but concealment of the nest is not greatly important. They are found in areas where vegetation was short and dense, with a high percentage of cover	Omnivore	In central Montana, 70-90% of food was animal (mostly Coleopterans), while 3 to 23% was plant (mostly grass seeds)	Migratory	NA	27 g	NA	G5	S5B	1991	2006	73
Violet-green Swallow (*Tachycineta thalassina*)	Aerial	Arboreal	Occurs principally in montane coniferous forests. Breeding range includes open deciduous, coniferous, and mixed woodlands. Often perches on wires and exposed tree branches.	Invertivore	Flying insects exclusively. Not known to feed on seeds or berries.	Migratory	NA	14 g	NA	G5	S5B	1991	2006	27
Warbling Vireo (Vireo gilvus)	Ground	Arboreal	Throughout range, shows a strong association with mature mixed deciduous woodlands especially along streams, ponds, marshes, and lakes but sometimes in upland areas away from water. Also found in young deciduous stands that emerge after a clear-cut. In general, overall habitat structure consists of large trees with semi-open canopy. Other habitats include urban parks and gardens, orchards, farm fencerows, campgrounds, deciduous patches in pine forests, mixed hardwood forests, and rarely, pure coniferous forests. Usually nests at end of branch in a deciduous tree, 9-18 m above ground, or 1-3.5 m above ground, in shrub or orchard tree.	Invertivore	Insects, throughout the year. Some fruit in winter	Migratory	NA	12 g	Territory sizes of 3.4 to 5.6 acres	G5	S5B	1992	2006	435
Western Bluebird (*Sialia mexicana*)	Ground		Can usually be found in open coniferous and deciduous woodlands, parklike forests, edge habitats, burned areas and where moderate amounts of logging have occurred, provided a sufficient number of larger trees and snags remain to provide nest sites and perches. Nests usually found in rotted or previously excavated cavities in trees and snags, or between trunk and bark.	Invertivore	Insects during the warmer months, but forages primarily on berries and fruits through the winter. Forages by flycatching and by dropping from perch to ground.	Non Migratory	NA	29 g	averaged 0.43 hectares and 0.56 hectares	G5	S4B	1991	2003	11
Western Grebe (Aechmophorus occidentalis)	Riparian-Opportunist		Lives on fresh water lakes and marshes which have large areas of open water and vegetation around it.	Piscivore, invertivore	Feeds mainly on fish, but will also eat salamanders, crustaceans, polychaete worms, and insects. They tend to be opportunists.	Migratory	NA	1477 g	20 hectares or more open water	G5	S4B	1987	1991	4
Western Kingbird (Tyrannus verticalis)	Aerial/Ground	Arboreal/Shrub	Open and partly open country, especially savanna, agricultural lands, and areas with scattered trees, also desert.	Invertivore	Primarily insectivorous; feeds on wasps, beetles, moths, caterpillars, grasshoppers, true bugs. Also eats spiders, millipedes, and some fruit. May occasionally take tree frogs.	Migratory	NA	40 g	Foraging range at least 400 meters from nest	G5	S5B	1991	2006	8
Western Meadowlark (Sturnella neglecta)	Ground	Ground	Most common in native grasslands and pastures, but also in hay and alfalfa fields, weedy borders of croplands, roadsides, orchards, or other open areas; occasionally desert grassland. Preference shown for habitats with good grass and litter cover.	Grainivore, Invertivore	Grain and weed seeds, and insects. Favorite insect foods include beetles, weevils, wireworms, cutworms, grasshoppers, and crickets. Seasonal differences: grain during winter and early spring, insects late spring and summer, weed seeds in fall.	Migratory	NA	106 g	4-13 hectares	G5	S5B	1992	2006	45

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Western Tanager (Piranga ludoviciana)	NA	Arboreal	Favors open woodlands, but occasionally extends into fairly dense forests. During migration, frequents a wide variety of forest, woodland, scrub and partly open habitats and various human-made environments such as orchards, stands of trees in suburban areas, parks, and gardens.	Frugivore, Invertivore	Feeds predominantly on insects during the breeding season, but it also incorporates fruits and berries in its diet whenever it can	Migratory	NA	28 g	NA	G5	S5B	1991	2006	1158
Western Wood-pewee (Contopus sordidulus)	Aerial	Arboreal	Seen wherever there are clearings or groves of deciduous trees along the river valleys	Invertivore	Flying insects, especially flies, ants, bees, wasps, and beetles, moths and bugs.	Migratory	NA	13 g	NA	G5	S5B	1992	2006	34
White-breasted Nuthatch (Sitta carolinensis)	Arboreal	Arboreal	A common resident of deciduous forests in North America. Also in mixed deciduous and coniferous forests. Favors woodland edges over more central locations, prefering open areas. Over much of its range the presence of some oaks seems to be a requirement.	Grainivore, Invertivore	Feeds on a variety of insects and plant matter (acorns, nuts, etc).	Migratory	NA	21 g	10-20 hectares feeding territory	G5	S4	1992	2006	58
White-crowned Sparrow (Zonotrichia leucophrys)	Ground	Ground/Shrub/Arboreal	Necessary habitat features of breeding territories include grass, either pure or mixed with other plants; bare ground for foraging; dense shrubs or small conifers thick enough to provide a roost and conceal a nest; standing or running water on or near territory; and tall coniferous trees, generally on periphery of territory.	Grainivore, Invertivore	Main foods taken in winter include seeds, buds, grass, fruits, and arthropods, when available. During breeding season arthropods (principally insects) and seeds are taken.	Migratory	NA	29 g	NA	G5	S5B	1989	2003	41
White-throated Sparrow (Zonotrichia albicollis)	Ground	Ground	Coniferous and mixed forest, forest edge, clearings, bogs, brush, thickets, open woodland. In migration and winter also in deciduous forest and woodland, scrub, shrubbery, gardens, parks, cattail marshes.	Frugivore, Granivore, Invertivore	Eats mostly weeds seeds, also small fruits, buds, and insects.	Migratory	NA	26 g	NA	G5	SNA	1994	1994	3
White-winged Crossbill (Loxia leucoptera)	NA	Arboreal	Coniferous forest (especially spruce, fir or larch), mixed c oniferous-deciduous woodland, and forest edge; in migration and winter also may occur in deciduous forest and woodland.	Granivore, Invertivore	Eats seeds (e.g., of conifers, birches, grasses, junipers, etc.) and insects; mainly conifer seeds, which also comprise diet of nestlings.	Non-Migratory	NA	28 g	NA	G5	S4	1991	2000	28
Wild Turkey (Meleagris gallopavo)	Ground	Ground	Open ponderosa pine forest in rugged terrain, interspersed with grassland and brushy draws is the preferred habitat (FWP). Open ponderosa pine-grassland cover types are most widely used in the Longpine Hills during summer and early fall; canyon bottoms at lower elevations, grain fields and livestock feeding areas are utilized in late fall and winter.	Frugivore, Granivore, Herbivore, Invertivore	Summer foods include insects (primarily grasshoppers), bearberry, snowberry and skunkbrush sumac fruits, grass leaves and stems, and Carex seeds; winter foods are grains, hawthorn and snowberry fruits, and grass leaves, stems and heads.	Non-Migratory	NA	7400 g	260 to 520 hectares	G5	SNA	1994	2005	12
Williamson's Sapsucker (Sphyrapicus thyroideus)	Arboreal	Arboreal	Coniferous forest, especially fir and Lodgepole Pine; in migration and winter also in lowland forest.	Invertivore	Drills holes in trees and consumes sap, cambium and insects. Ants may comprise 86% of its animal food; also eats wood-boring larvae, moths of spruce budworms, etc.	Migratory	NA	48 g	Reported territory sizes vary from 4 hectares to 6-7 hectares	G5	S3S4B	1991	2002	39
Willow Flycatcher (Empidonax traillii)	Aerial	Riparian	Strongly tied to brushy areas of willow (SALIX spp.) and similar shrubs. Found in thickets, open second growth with brush, swamps, wetlands, streamsides, and open woodland. Common in mountain meadows and along streams; also in brushy upland pastures (especially hawthorn) and orchards. The presence of water (running water, pools, or saturated soils) and willow, alder (ALNUS spp), or other deciduous riparian shrubs are essential habitat elements.	Invertivore	Eats mainly insects and occasionally berries, 96 percent of diet is animal matter, most of which is flying insects.	Migratory	NA	14 g	0.1 to 0.9 hectares	G5	S5B	1991	2006	26
Wilson's Phalarope (Phalaropus tricolor)	Riparian	Riparian - ground	During spring, the species is widespread in the valley in lakes, ponds and flooded fields. Summer birds are restricted to marshy borders of lakes and ponds	Invertivore	Small aquatic invertebrates in freshwater or hypersaline environments; also some terestrial invertebrates.	Migratory	NA	68 g	Usually nests less than 100 meters from shoreline	G5	S4B	1995	1995	2
Wilson's Snipe (Gallinago delicata)	Ground	Ground	During summer birds are widely distributed in the valley in moist meadows. In winter, they occur along warm, bog-bordered streams in the valley. Requires soft organic soil rich in food organisms just below surface, with clumps of vegetation offering both cover and good view of approaching predators. Avoids marshes with tall, dense vegetation (cattails, reeds, etc.).	Invertivore	Eats mostly larval insects, but also takes crustaceans, earthworms, and mollusks. Stomachs contain as much as 66% plant material, but probably little or no energy is obtained from plants	Migratory	NA	128 g	Common Snipes breed throughout the state. Most wintering records are for western Montana.	G5	S5	1991	2006	54

TABLE D-7 BIRD SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration	Longevity	Size	Home Range	Global Rank	State Rank	Observations in Lincoln, Co.,		
	Foraging	Nesting										Oldest	Most Recent	Number
Wilson's Warbler (Wilsonia pusilla)	Arboreal/Aerial	Ground	Breeding territories are usually located in riparian habitat or wet meadows with extensive deciduous shrub thickets. Likes edeges of beaver ponds, lakes, bogs and overgrown clear-cuts of montane and boreal zones.	Invertivore	Bees, flies, mayflies, spiders, beetles and caterpillars. Occasionally eats berries.	Migratory	NA	7 g	Ranges from about 0.2 to 2.0 hectares.	G5	S5B	1991	2005	349
Winter Wren (*Troglodytes troglodytes*)	Ground/Shrubs	Arboreal - Cavity	Coniferous forest, primarily with dense understory and near water, and in open areas with low cover along rocky coasts, cliffs, islands, or high mtn. areas, logged areas with large amounts of slash; in winter and migration also in deciduous woods with understory, thickets, brushy fields.	Invertivore	Eats almost entirely insects (beetles, Diptera, caterpillars) and spiders.	Migratory	NA	9 g	NA	G5	S4	1991	2005	487
Wood Duck (*Aix sponsa*)	Riparian/Ground	Arboreal - Cavity	Wide variety of habitats: creeks, rivers, overflow, bottomlands, swamps, marshes, beaver and farm ponds.	Omnivore	Omnivore with a broad diet. Seeds, fruits and aquatic and terrestrial invertebrates are main foods taken.	Migratory	NA	681 g	Home ranges of of fledged broods range up to 12.8 kilometers.	G5	S5B	1996	2006	6
Yellow Warbler (*Dendroica petechia*)	Arboreal/Aerial	Arboreal/Shrub	Found throughout much of North America in habitats categorized as wet, deciduous thickets. Found especially in those dominated by willows.	Invertivore	Main foods include insects and other arthropods. May take wild fruits occasionally.	Migratory	NA	10 g	Breeding territories are as small as 0.16 hectares.	G5	S5B	1991	2006	51
Yellow-breasted Chat (*Icteria virens*)	Arboreal	Arboreal/Shrub	Found in low, dense vegetation without a closed tree canopy, including shrubby habitat along stream, swamp, and pond margins; forest edges, regenerating burned-over forest, and logged areas; and fencerows and upland thickets of recently abandoned farmland.	Frugivore, Invertivore	Adults feed on small invertebrates (mainly insects and spiders), fruit and berries when available.	Migratory	NA	26 g	Territory size averages 1.24 hectares.	G5	S5B	1991	1993	4
Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)	Ground	Riparian	Primarily prairie wetlands, but also common in wetlands associated with quaking aspen parklands, mountain meadows, and arid regions. Scattered colonies occur on forest edges and on larger lakes in mixed-wood boreal forest.	Granivore, Invertivore	During breeding season specializes in "aquatic" prey; feeds aquatic insects to nestlings. Consumes primarily cultivated grains and weed seeds during the postbreeding season.	Migratory	NA	80 g	Forages up to 1.6 kilometers from nesting area.	G5	S5B	1993	2006	6
Yellow-rumped Warbler (*Dendroica coronata*)	Arboreal/Aerial/Ground	Arboreal	Nests in forests or open woodlands. In migration and winter found in open forests, woodlands, savanna, roadsides, pastures, and scrub habitat.	Invertivore	Feeds on insects (ants, wasps, flys, beetles, mosquitoes, etc.), spiders, some berries and seeds.	Migratory	NA	13 g	NA	G5	S5B	1991	2005	1716

Montana Species Ranking Codes: Montana employs a standardized ranking system to denote global (G - range-wide) and state status (S) (NatureServe 2003). Species are assigned numeric ranks ranging from 1 (critically imperiled) to 5 (demonstrably secure), reflecting the relative degree to which they are "at-risk". Rank definitions are given below. A number of factors are considered in assigning ranks - the number, size and distribution of known "occurrences" or populations, population trends (if known), habitat sensitivity, and threat.

Data are taken from: http://fieldguide.mt.gov/

NA = not available

G1 S1
At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.

G2 S2
At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state.

G3 S3
Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas.

G4 S4
Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern.

G5 S5
Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.

Table originated in the OU3 Non-Asbestos BERA (CDM 2013b); presented herein with permission from the EPA and CDM Smith.

TABLE D-8 MAMMALIAN SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration/ Hibernation	Longevity	Size	Home Range	Global Rank	State Rank	Observation in Lincoln, Co.,		
	Foraging	Breeding, Resting										Oldest	Most Recent	Number
Beaver (*Castor canadensis*)	Riparian	Riparian	Ponds, small lakes, meandering streams, and rivers. Requires water and associated woody vegetation.	Herbivore	variety of woody and herbaceous species. Willows, mountain alder, and aspen	Non-migratory	11 years in wild	Adults 16-23 kg (35-50 pounds), Kits 0.5 kg or less (1 pound) at birth, when they are about 38 cm (15 inches) long	NA	G5	S5	1947	2006	4
Black Bear (*Ursus americanus*)	Ground/Shrub/Arboreal	Ground	Dense forests; riparian areas; open slopes or avalanche chutes during spring green-up (FWP). Habitat use tied to seasonal food avail./plant phenology. Dry mtn meadows in early spring, snow slides,stream bottoms, wet meadows early & mid-summer. May concentrate in berry & whitebark pine areas in fall. Sympatric with grizzly bear but more prone to occupying closed canopy areas. Natural cub and adult mortality low, sub-adult mortality higher. Dens beneath downed trees, hollow trees, roots or other shelter.	Omnivore	Grasses, sedges, berries, fruits, inner bark of trees, insects, honey, eggs, carrion, rodents, occassional ungulates (especially young and domestic), and (where available) garbage. Varies. Spring--primarily vegetation (grasses, umbels, & horsetails). Summer--herbaceous & fruits. Fall--berries & nuts, some begetation. Insects a frequent bomponent of diet. Also mammals, birds, & carrion	Non-migratory/Semi-hibernates in winter	NA	90 - 240+ kg	NA	G5	S5	1917	2006	20
Bobcat (*Lynx rufus*)	Carnivore	NA	Utilizes wide variety of habitats; known to be an animal of "patchy" country. Prefers rimrock and grassland/shrubland areas. Often found in areas with dense understory vegetation and high prey densities. Natural rocky areas are preferred den sites May be active during all hours but is primarily nocturnal. Solitary animal that is difficult to observe in the wild. In Central MT selected for cover types (52+% canopy cover) corrected with high prey densities. In W. MT den sites within caves, btwn boulders, in hollow logs, or abandon mine shafts.	Carnivore	Snowshoe hares and jackrabbits are the most common prey. Also feeds heavily on medium-sized rodents. Will eat carrion.	Non-migratory/ NA	NA	6.7 - 15.7 kg	In LA about 5 sq km for males and 1 sq km for females. In Idaho, home ranges averaged 42 sq km for males and 19 sq km for females	G5	S5	1997	1997	365
Bushy-tailed Woodrat (*Neotoma cinerea*)	Ground	Dens - rock crevices, logs	Occurs in crevices where there are large amounts of sticks, leaves & other debris used to build nest. Rockslides, rocky slopes, abandoned homesites, badlands. Occas. lodges nest in tree forks high above ground	Herbivore	Not selective in its diet of foliage, fruits and seeds of shrubs & forbs, conifer & fungi.	Non-migratory/NA	NA	NA	NA	G5	S5	1975	2006	4
Columbian Ground Squirrel (*Spermophilus columbianus*)	Ground	NA	Intermontane valleys, open woodland, subalpine meadows, even alpine tundra . Subalpine basins, clearcuts, and other disturbed areas. At high elevations, may use rockslides/forage in meadows. Prefers g-lands & sedges.	Herbivore	Grasses, leafy vegetation, and bulbs. May increase use of fruits and seeds as season progresses. Uses a small amount of animal matter: insects, fish, carrion.	Non-migratory/ Dormacy	NA	340 - 812 g	NA	G5	S5	1922	2006	12
Coyote (*Canis latrans*)	Scavenger	NA	Utilizes almost any habitat, including urban areas, where prey is readily available. Prefers prairies, open woodlands, brushy or boulder-strewn areas. Coyote abundance is tied to food availability. Mainly nocturnal, true scavenger, territorial. Occupies diverse habitats.	Omnivore	Will eat almost anything, plant or animal. Emphasizes small mammals, fawns, plants, birds, and invertebrates. During winter, often preys on deer. Commonly preys on domestic sheep. Rodents & rabbits imp. year round. Grasshoppers, crickets, fruits may be used in summer & fall. Food habits vary bet- ween seasons & areas. May take adult deer in winter. Young deer, elk, & pronghorn in spring.	Non-migratory / NA	NA	9 - 22 kg	NA	G5	S5	1999	2006	3

TABLE D-8 MAMMALIAN SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration/ Hibernation	Longevity	Size	Home Range	Global Rank	State Rank	Observation in Lincoln, Co.,		
	Foraging	Breeding, Resting										Oldest	Most Recent	Number
Deer Mouse (*Peromyscus maniculatus*)	Ground	Ground-Burrows	In virtually all habitats - sagebrush desert, grasslands, riparian areas, montane, subalpine coniferous forests & alpine tundra. Usually not seen in wetlands. In forest areas densities peak about 2-5 years after clear-cutting, then decline as succession advances. 15 yrs. after cut, uncut & cut densities similar. On prarie production may be linked to precipitation. Nests in burrow in ground in trees, stumps and buildings	Omnivore	Omnivorous diet although dentition is adapted for seed eating. Invertebrates important in warm months, green plant material a minor but important component. Stores some food in burrow	Non-migratory/No hibernation	Rarely lives more than 2 years in wild and from 5-8 years in captivity	18 - 35 g	NA	G5	S5	1895	2006	60
Dusky or Montane Shrew (*Sorex monticolus*)	Ground	Ground - Beneath stumps, logs, trees	High altitude spruce-fir forest, alpine tundra. Non-breeders territorial. Breeders apparently not territorial. First-year animals may not be reproductively active. Nests in stumps, logs, beneath trees.	Invertivore	Similar to other long-tailed shrews: eats mostly invertebrates	Non-migratory/NA	NA	NA	NA	G5	S5	2006	2006	7
Elk (Cervus canadensis)	Ground/Grazer	NA	Mainly coniferous forests interspersed with natural or man-made openings (mountain meadows, grasslands, burns, and logged areas) (FWP). Varies btwn pops. & areas. Basic habitat components: securi ty, shelter (may use to maintain thermal equil.) & forage prod. Moist sites preferred in sum.	Herbivore	Grasses, sedges, forbs, deciduous shrubs (especially williow and serviceberry) and young trees (especially chokecherry and maple), some conifers (FWP). Varies between ranges.	Migratory in some areas (Sun River, North Yellowstone) moving between seasonal ranges, non-migratory in others.	14 years in the wild (25 years in captivity)	Males (315 - 450 kg); Females (225 - 270 kg)	NA	G5	S5	1977	2006	5
Fisher (*Martes pennanti*)	Carnivore	Ground/Arboreal	Although they are primarily terrestrial, fishers are well adapted for climbing. When inactive, they occupy dens in tree hollows, under logs, or in ground or rocky crevices, or they rest in branches of conifers (in the warmer months). Fishers occur primarily in dense coniferous or mixed forests, including early successional forests with dense overhead cover. Dens in hollow tree or on ground	Carnivore	Mammals (small rodents, shrews, squirrels, hares, muskrat, beaver, porcupine, raccoon, deer carrion); also birds and fruit. Snowshoe hares are an important dietary item for fishers in Montana, as is deer carrion. known for their skill at killing porcupines	Fishers are non-migratory, but may make extensive movements up to a maximum of 40 kilometers in 3 days / NA	More than 9 years in captivity	Males (2.7 - 5.4 kg); Females (1.4 - 3.2 kg)		G5	S3	1965	1992	18
Golden-mantled Ground Squirrel (*Spermophilus lateralis*)	Ground	Ground-Burrows	Occurs throughout the montane and subalpine forests, where- ever the rocky habitat it dwells in (outcrops and talus slopes) is present. It will range above timberline and even (in summer at least) into alpine tundra. Short, simple, concealed burrows--entrance near rock, stump, log, or bush	Omnivore	Seeds, fruits, insects, eggs, meat (Burt and Grossenheider, 1952)	Non-migratory/ Hibernates	NA	170 - 276 g	NA	G5	S4	1966	1966	2
Gray Wolf (*Canis lupus*)	Carnivore	NA	No particular habitat preference except for the presence of native ungulates within its territory on a year round basis. Wolves establishing new packs in Montana have demonstrated greater tolerance of human presence and disturbance than previously thought characteristic of this species. They have established territories where prey are more abundant at lower elevations than expected, especially in winter	Carnivore	Opportunistic carnivores that predominantly prey on large ungulates. Main prey in Montana include deer, elk, and moose. Also alternative prey, such as rodents, vegetation and carrion. Hunt in packs, but lone wolves and pairs are able to kill prey as large as adult moose.	Not migratory but may move seasonally following migrating ungulates within its territory.	NA	31.5 - 54 kg	NA	G4	S3	1974	2000	47
Grizzly Bear (*Ursus arctos horribilis*)	Ground/Shrub	NA	In Montana, grizzlies primarily use meadows, seeps, riparian zones, mixed shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slabrock habitats. Habitat use is highly variable between areas, seasons, local populations, and individuals	Omnivore	large vegetative component (more than half) to their diet and have evolved longer claws for digging and larger molar surface area to better exploit vegetative food sources	No true migration occurs, although grizzly bears often exhibit discrete elevational movements from spring to fall, following seasonal food availability/ Hibernates	25 years or more in captivity	146 - 282 kg	NA	G4	S2S3	1912	2003	14

TABLE D-8 MAMMALIAN SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration/ Hibernation	Longevity	Size	Home Range	Global Rank	State Rank	Observation in Lincoln, Co.,		
	Foraging	Breeding, Resting										Oldest	Most Recent	Number
Heather Vole (*Phenacomys intermedius*)	Ground	Ground-Burrows	Most common in subalpine spruce-fir forest w/ evergreen shrub ground cover, also in timberline krummholz, alpine tundra. Sometimes in montane yellowpine-doug fir forests w/ bearberry-twinflower understory. Winter nest is a hollow sphere of twigs & lichens about 6 inches diam., above ground in protected spot. Summer nest 4-10 in. underground (Banfield 1974). Does not tend to construct runways.	Herbivore	Twigs, berries	Non-migratory/NA	NA	NA	NA	G5	S4	1948	2006	15
Hoary Marmot (*Marmota caligata*)	Ground	NA	Talus slopes, alpine meadows, high in mountains near timberline	Herbivore	herbs, grasses, sedges	Hibernates	NA	3.6 - 9 kg	NA	G5	S3S4	1949	2006	12
Long-tailed Vole (*Microtus longicaudus*)	Ground	Ground-Burrows	Riparian valley bottoms to alpine tundra, sagebrush-grassland semi-desert to subalpine coniferous forests. In forested areas may not make runways. Subordinate to other species of voles. Streambanks and occasionally in dry situations. Nests above ground in winter and in burrows in summer.	Herbivore	Grasses, bulbs, bark of small twigs.	NA/NA	NA	37 - 57 g	NA	G5	S4	1895	1993	13
Long-tailed Weasel (*Mustela frenata*)	Carnivore	Ground-Burrows	Found in almost all land habitats near water. Has the broadest ecological and geographical range of the North American weasels. Prefers areas with abundant prey. Avoids dense forest, most abundant in late seral ecotones. Primarily nocturnal, but sometimes active during the day. Quite fearless and curious. Mainly terrestrial but can climb and swim well. Nests in old burrows of other animals . Occupies a diverse range of habitats. More prone to open country and forest openings than *M. erminea* . Common in intermontane valleys and open foresets where M. erminea is absent. May occur up to alpine tundra	Carnivore	More of a generalist than the short-tailed and least weasels. Feeds mostly on small mammals up to rabbit-sized, but eats birds and other animals as well	Non-migratory/No hibernation	NA	Males (198 - 340 g); Females (85 - 198 g)	NA	G5	S5	1940	1992	3
Lynx (*Lynx canadensis*)	Carnivore	NA	Subalpine forests between 1,220 and 2,150 meters in stands composed of pure lodgepole pine but also mixed stands of subalpine fir, lodgepole pine, Douglas-fir, grand fir, western larch and hardwoods. In extreme northwestern Montana, primary vegetation may include cedar-hemlock habitat types	Carnivore	The primary winter food for lynx throughout their range is the snowshoe hare, comprising 35 to 97% of their diet. Red squirrels are also an important prey item, particularly when snowshoe hare populations are reduced. Summer diets are not as well known but are probably more varied. Lynx in Montana probably prey on a wider variety of species throughout the year because of generally lower snowshoe hare densities and available alternate prey	Non-migratory, but movements of 90 to 125 miles have been recorded between Montana and Canada / NA	NA	6.7 - 13.5 kg	NA	G5	S3	1941	2005	215
Marten (*Martes americana*)	Carnivore	NA	Primarily a boreal animal preferring mature conifer or mixed wood forests. Severe forest disturbance can significantly reduce habitat value. Uses deadfall and snags as den sites. Spends much time in trees but will also forage on the ground.	Carnivore	Opportunistic feeder that primarily feeds on small mammals. Meadow voles and red-backed voles were staples in Glacier NP. Also used Cricetidae, jumping mice, shrews, ground squirrels, and snowshoe hares. Use of birds, insects, and fruit variable by season.	Non-migratory/NA	17 years in captivity	Males (754 - 1248 g); Females (681 -851 g)	NA	G5	S4	1945	1966	78
Masked Shrew (*Sorex cinereus*)	Ground	Ground	Coniferous forest. In western Montana, where *S. vagrans* also occurs, *S. cinereus* is usually restricted to drier coniferous forest habitat. Moist situations in forests, open country, brushland. Nest of dry leaves or grasses, in stumps or under logs or piles of brush.	Invertivore	Invertebrates, salamanders, small mice. In winter, seeds may be main item in diet.	Non-migratory/NA	NA	3 - 6 g	NA	G5	S5	1966	2006	16

TABLE D-8 MAMMALIAN SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration/ Hibernation	Longevity	Size	Home Range	Global Rank	State Rank	Observation in Lincoln, Co.,		
	Foraging	Breeding, Resting										Oldest	Most Recent	Number
Meadow Vole (*Microtus pennsylvanicus*)	Ground	Ground-Burrows	Wet grassland habitat but not above timberline in grassy alpine tundra. Where *M. montanus* not present, M. pennsyvanicus may inhabit drier grasslands. Makes extensive runways. In E MT mean home range was 0.13 ac. for females, 0.14 ac. for lactating females, 0.23 ac. for males (McCann 1976). Low longevity, high juvenile mortality.	Herbivore	Grasses, sedges & herbaceous plants. May use fungi, particularly endogone. Will use insects. Occasionally will use carrion. Reported to feed on apple trees (bark and vascular tissues of lower trunk and roots)	Non-migratory/NA	1 to 3 years in wild	28 - 70 g	NA	G5	S5	1895	2006	57
Mink (*Mustela vison*)	Riparian	Ground	Usually found along streams and lakes. Commonly occurs in marshes and beaver ponds. Permanence of water and dependable source of food are most important habitat components. Often uses den sites of other animals and is commonly found in association with muskrats. Semi-aquatic forager. Can kill prey larger than itself. Chiefly nocturnal, territorial, and secretive. Dens underneath piles of brush or driftwood, under rocks, in hollow logs, and in houses or dens abandoned by beavers or muskrats.	Piscivore	Preys primarily on small mammals, birds, eggs, frogs, and fish. Its diet is almost entirely animal. During summer preys on waterfowl. Order of importance varies.	Non-migratory. Males make extensive movements and juveniles disperse / NA	NA	Males (681 - 1362 g); Females (567 - 1089 g)	NA	G5	S5	1939	1943	2
Moose (*Alces alces*)	Ground/Grazer	NA	Variable; in summer, mountain meadows, river valleys, swampy areas, clearcuts; in winter, willow flats or mature coniferous forests; best ability of any Montana ungulate to negotiate deep snow	Herbivore	Browse, including large saplings; aquatic vegetation (FWP). Varies btwn ranges. Winter: willow, servicebry, chokecherry & redosier dogwood. Spring/sum--incr. forb use (up to70% of diet). Some pop.s use aquat. veg. overall	Often uses separate summer/winter ranges. Movements prompted by temperature & snow depth/ No hibernation	20 or more years in the wild	Males (382.5 - 531 kg); Females (270 -360 kg)	NA	G5	S5	1977	2006	10
Mountain Cottontail (*Sylvilagus nuttallii*)	Ground	NA	Primarily dense shrubby undergroth, riparian areas in Cen- tral and Eastern MT. In mountains, it uses shrubby gulleys, and forest edges.	Herbivore	Sagebrush may be a principal food. Grasses also a preferred food. Juniper sometimes used. May prefer grasses in spring and summer	Non-migratory/No hibernation	NA	0.7 - 1.3 kg	NA	G5	S4	NA	NA	NA
Mountain lion (*Puma concolor)*	Carnivore	NA	Mostly mountains and foothills, but any habitat with sufficient food, cover and room to avoid humans. In W MT spring-fall ranges at higher elev than winter areas. Cover types in winter: 42% pole stands, 30% selectively logged (pole or mature), 18% seral brushfields	Carnivore	Deer, elk, and pocupines most important in Montana, but may take prey ranging in size from grasshoppers to moose (FWP).	Non-migratory/NA	NA	36 - 90 kg	NA	G5	S4	1975	2007	182
Mule deer (*Odocoileus hemionus*)	Ground/Grazer	NA	Grasslands interspersed with brushy coulees or breaks; riparian habitat along prairie rivers; open to dense montane and subalpine coniferous forests, aspen groves (FWP). Varies between areas & seasons.	Herbivore	Bitterbush, mountain mahogany, chokecherry, serviceberry, grasses and forbs	Migratory in mountain-foothill habitats/ No hibernation	Normal in wild 16 years	Males (56.2 -180 kg) Females (45 - 67.5 kg)	NA	G5	S5	1977	1978	4
Muskrat (*Ondatra zibethicus*)	Riparian	Riparian	Marshes, edges of ponds, lakes, streams, cattails, and rushes are typical habitats. An essential habitat ingredient is water of sufficient depth or velocity to prevent freezing. The presence of herbaceous vegetation, both aquatic and terrestrial, is another essential ingredient. In general, has very flexible habitat requirements and often coexists in habitats used by beavers (FWP). Lentic or slightly lotic water containing vegetation. Typha spp. (cattails) & Scirpus spp. (bulrushes) usually present. Constructs bank dens, lodges, feeding huts, platforms, pushups & canals	Herbivore	Primarily herbivorous and will eat virtually any vegetable matter. Utilizes shoots, roots, bulbs, and leaves of aquatic plants. Cattails and bulrush are preferred foods. Will also consume cultivated crops. On occasion will eat animal matter. Food is stored in the burrow or den and during winter may even eat part of its own lodge	Non-migratory/NA	NA	908 - 1,816 g	NA	G5	S5	1940	2006	3

TABLE D-8 MAMMALIAN SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration/ Hibernation	Longevity	Size	Home Range	Global Rank	State Rank	Observation in Lincoln, Co.,		
	Foraging	Breeding, Resting										Oldest	Most Recent	Number
North American Wolverine (*Gulo gulo luscus*)	Carnivore	Caves/Cavity /Ground/Rock	Wolverines are limited to alpine tundra, and boreal and mountain forests (primarily coniferous) in the western mountains, especially large wilderness areas. They are usually in areas with snow on the ground in winter. Riparian areas may be important winter habitat. When inactive, wolverines occupy dens in caves, rock crevices, under fallen trees, in thickets, or similar sites. Wolverines are primarily terrestrial but may climb trees. In Montana, most wolverine use in medium to scattered timber, while areas of dense, young timber were used least.	Omnivore	Wolverines are opportunistic. They feed on a wide variety of roots, berries, small mammals, birds' eggs and young, fledglings, and fish. They may attack moose, caribou, and deer hampered by deep snow. Small and medium size rodents and carrion (especially ungulate carcasses) often make up a large percentage of the diet. Prey is captured by pursuit, ambush, digging out dens, or climbing into trees. They may cache prey in the fork of tree branches or under snow	Wolverines in northwestern Montana and Alaska tend to occupy higher elevations in summer and lower elevations in winter / NA	More than 15 years in captivity	7 - 32 kg	NA	G4	S3	1938	1995	56
Northern Flying Squirrel (*Glaucomys sabrinus*)	Arboreal	Arboreal	Montane and subalpine coniferous forests. Also in riparian Cottonwood forests. Nests are constructed either within natural cavities or abandoned woodpecker holes in dead standing trees, or they are built over limbs or within witches' brooms	Omnivore	Seeds, fruits, flowers, insects, tree sap, fungus. Perhaps eggs and meat.	Non-migratory	NA	113-185 g	NA	G5	S4	1941	1969	5
Northern Pocket Gopher (*Thomomys talpoides*)	Ground	Ground-Burrows	Cultivated fields and prairie to alpine meadows. Avoids dense forests, shollaow rocky soils and areas with poor snow cover.	Herbivore	underground plant parts	Non-migratory	18 to 24 months average in wild		NA	G5	S5	1966	1966	1
Pika (*Ochotona princeps*)	Ground	NA	Talus slides, boulder fields, rock rubble (with interstitial spaces adeq. for habitation) near meadows. Usually at high elevation but mid elevation possible if suitable rock cover and food plants present	Herbivore	Animals feed on hay individually, stored in small clumps under rocks, boulders.	Non-migratory/No hibernation	Maximum 7 yr	113 - 180 g	0.3-0.5 ha and mean 0.26 ha	G5	S4	1949	2006	12
Porcupine (*Erethizon dorsatum*)	Ground/ Shrub	Dens - rock crevices, trees	Common in montane forests of Western Montana, also occurs in brushy badlands, sagebrush semi-desert and alon streams and rivers. Rockfall caves, ledge caves, hollow trees, or brushpiles for dens,	Herbivore	In winter uses cambium, phloem, & foliage of woody shrubs & trees--Ponderosa Pine, Lodgepole Pine, perhaps spruce & fir. In spring & summer uses reprod. parts & foliage of aspen, forbs, grasses, sedges & succulent wetland vegetation	Non-migratory. In mountainous areas seasonal alti- tudinal migration may occur	NA	4.5 - 12.7 kg	NA	G5	S4	1917	1966	3
Pygmy Shrew (*Sorex hoyi*)	Ground	Ground/Cavity	Dry, open coniferous forests (ponderosa pine, western larch)	Invertivore	Primarily on invertebrates	Non-migratory/NA	NA	3 - 4 g	NA	G5	S4	1978	2006	4
Raccoon (*Procyon lotor*)	Riparian	NA	Inhabits stream and lake borders near wooded areas or rocky cliffs. Most abundant in riparian and wetland habitats. Uses hollow logs, trees, and rock crevices as den sites. Forested riparian habitat--river & stream valleys. Although tree dens are most common, burrows & crevices, etc. also used.	Omnivore	Carrion, mammals, birds, reptiles, insects, amphibians, grains, nuts, and fruits.	Non-migratory / No hibernation	NA	900 - 1130 g	NA					
Red fox (*Vulpes vulpes*)	Carnivore	Ground	Wide range of habitats. Often associated with agricultural areas. Prefers mixture of forest and open country near water. Uses dens for shelter during severe weather and when pups are being reared. Usually uses dens made by other animals. Seldom found far from permanent water. Thrive in bushy successional area where small mammals are most abundant. Occupies diverse habitats. In forest situations uses edge. Burrow den-sites comprised of sub-dens (10-40 holes). Some dens in open and some in brush	Carnivore	Opportunistic predator that sometimes eats carrion. Preys on small mammals, birds, eggs, game birds. Varies according to avail. in W. MT. During spring: microtus spp., birds, muskrats, rabbits, grnd squirrels, deer carrion (in decreasing order of importance). In winter microtus spp., birds, N. pocket gophers. Also uses vegetation.	Non-migratory / NA	NA	18 - 31.5 kg	NA					
Red Squirrel (*Tamiasciurus hudsonicus*)	Ground	NA	Most common in Montane (Yellow Pine and Douglas Fir) and subalpine (subalpine fir--Englemann Spruce) forests in W. MT. Annual fluctuations in density are large. Correlated with size of seed and cone crops	Herbivore	Conifer cone crops, including serotinous cones. Opportun- istic. Uses terminal buds, seeds, sap, berries, bark of a variety of plants. Also uses fungi. Occasionally carnivorous	Non-migratory/No hibernation	NA	198 - 250 g	NA	G5	S5	1945	2006	19

TABLE D-8 MAMMALIAN SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration/ Hibernation	Longevity	Size	Home Range	Global Rank	State Rank	Observation in Lincoln, Co.,		
	Foraging	Breeding, Resting										Oldest	Most Recent	Number
Red-tailed Chipmunk (*Tamias ruficaudus*)	Arboreal	NA	Coniferus forests, talus slides, mountains up to timberline. Most abundant in edge openings. Sometimes ranges into alpine	Herbivore	Primarily seeds and fruits. Leaves and flowers in spring, less so in summer. Occasionally uses arthropods	Non-migratory	NA	NA	NA	G5	S4	1949	1978	13
Short-tailed Weasel (*Mustela erminea*)	Carnivore	Ground-Burrows	Inhabits brushy or wooded areas, usually not far from water. Tends to avoid dense forests. Prefers areas with high densities of small mammals. Most abundant in ecotones. Mostly nocturnal but will hunt during the day. Active throughout the year. Dens in ground burrows, under stumps, rock piles, or old buildings. In Montana apparently prone to montane forest associations.	Carnivore	Weasels prey on a variety of small mammals and birds, they specialize in hunting voles. Mostly small warm-blooded vertebrates, primarily cricetidae. Hunts under snow in winter. Females generally eat smaller prey. May use invertebrates.	Non-migratory/No hibernation	NA	Males (71 - 170 g); Females (28 - 85 g)	NA	G5	S5	1939	1969	4
Snowshoe Hare (*Lepus americanus*)	Ground	NA	In W. MT, apparently preferred fairly dense stands of young pole-sized timber with some use of more open stands, openings, and edges.	Herbivore	Spring and summer: forbs and grasses. Fall and winter: more shrubs and sometimes conifer needles. Occasionally reingests feces. Sometimes eats sand	Non-migratory/No hibernation	Few live more than 3 years in the wild.	0.9 - 1.8 kg	NA	G5	S4	1986	1986	1
Southern Red-backed Vole (*Clethrionomys gapperi*)	Ground	Ground	Common in dense subalpine forests, also occurs in more open forest types, even alpine tundra. A favored prey of marten in NW MT. Populations fluctuate. Typically does not construct runways. Simple globular nests (75-100 mm. diam.), lined w/ grass, stems, leaves or moss.	Herbivore	Vegetative portions of plants, nuts, seeds, berries, mosses, lichens, ferns, fungi & arthropods	Non-migratory/NA	NA	14 - 40 g	NA	G5	S4	1949	2006	35
Striped Skunk (*Mephitis mephitis*)	Ground	Ground/Cavity	Variety of habitats including semi-open country, mixed woods, brushland, and open prairie. Most abundant in agricultural areas where there is ample food and cover. Usually absent where water table is too high for making ground dens. Forest edges, open woodland, brushy grassland, riparian vegetation, cultivated lands. Dens in ground burrows, beneath abandoned buildings, boulders, or wood, or rock piles	Omnivore	Omnivorous, eating more animal than plant matter. Propor- tional composition of diet varies. Small mammals, reptiles, amphibians, berries, fruit, garbage, cariion, bird eggs, & arthropods.	Non-migratory / No hibernation	NA	2.7 - 6.3 kg	NA	G5	S5	1895	1999	3
Vagrant Shrew (*Sorex vagrans*)	Ground	NA	At elevations below 5000 ft, usually Doug. Fir, Lodgepole Pine, W. Larch, Grand Fir, W. Red Cedar forests. Often found in moist sites. Marshes, bogs, wet meadows, and along streams in forests. Uses echolocation to orient in darkness.	Carnivore	Insects, annelida, shrews, vegetable matter, insect larvae. Also uses plant seeds, carrion, and some mushrooms	Non-migratory/NA	Few live more than 16 months.	7 g	NA	G5	S4	1895	2006	39
Water Shrew (*Sorex palustris*)	Riparian	Ground	Streamside habitat in coniferous forests, particularly in or under overhanging banks or crevices--good cover. However, also found in seasonal streams and small seeps. Also above timberline. Nests of dried sticks and leaves.	Invertivore	Aquatic insect larvae, also some vegetable matter, oligo- chaetes, other shrews, arachnids, and small fish	Non-migratory/NA	NA	9 - 14 g	NA	G5	S4	1966	1992	4
Water Vole (*Microtus richardsoni*)	Riparian	Ground-Burrows	Semi-aquatic. Near streams & lakes in subalpine and alpine zones. Normally above 5000 ft. in western mountains. Moist grass & sedge areas, streamside hummocks overhung w/ willows. Burrows, runways & cuttings are conspicuous in summer	Omnivore	Possible heavy use of graminoids. Composite data from a variety of areas suggest forbs & willows also eaten. Use of vaccinium, erythronium bulbs, conifer seeds, insects	Non-migratory/NA	NA	71 - 100 g	NA	G5	S4			
Western Jumping Mouse (*Zapus princeps*)	Ground	Ground	tall grass along streams, with or without a brush or tree canopy. Also dry grasslands in N. Central MT. Mesic forests with sparse understory herbage in W. MT. From valley floors to timberline & alpine wet sedge meadows. Nests are in mounds or banks elevated above surrounding ground (well-drained) usually 2 feet underground, shredded vegetation insulative core.	Herbivore	Seeds	Non-migratory/ Hibernates	As long as 6 years in wild if survive first hibernation (half of all juveniles die during first hibernation)	18 to 37 grams	NA	G5	S4	1949	2006	17

TABLE D-8 MAMMALIAN SPECIES THAT OCCUR OR MAY POTENTIALLY OCCUR WITHIN THE LIBBY OU3 SITE

Common Name (Genus/species)	Habitat Group		General Habitat Description	Feeding Guild	Food	Migration/ Hibernation	Longevity	Size	Home Range	Global Rank	State Rank	Observation in Lincoln, Co.,		
	Foraging	Breeding, Resting										Oldest	Most Recent	Number
White-tailed deer (*Odocoileus virginianus*)	Ground/Grazer	NA	River and creek bottoms; dense vegetation at higher elevations; sometimes open bitterbush hillsides in winter (FWP). In W MT mature subclimax coniferous forest, cool sites, diversity & moist sites important in summer (Leach 1982). In winter prefer dense canopy classes, moist habitat types, uncut areas & low snow depths (Berner 1985).	Herbivore	Leaves, twigs, fruits, and berries of browse plants such as chokecherry, serviceberry, snowberry, and dogwood; some forbs during summer (FWP). Browse most imp. statewide - yr. round, particularly so in winter. Graminoid use increases in spring, forb use in late spring & sometimes in fall.	Uses summer range, winter range in W MT - may be 8.69-15 mi. apart.	Up to 16.5 years in the wild.	Males (33.7 - 180 kg); Females (22.5 - 112.5 kg)	NA	G5	S5	1978	2006	3
Yellow pine chipmunk (*Tamias amoenus*)	Ground	Ground-Burrows	Open stands of ponderosa pine and Douglas fir. Nest chamber in burrow averaging 11 inches below surface. Open coniferous forests, chaparral, rocky areas with brush or scattered bines, burned over areas.	Herbivore	Fruits and seeds and a few insects	Non-migratory/ Hibernates	5 years or more in the wild	38 - 71 grams	NA	G5	S5	1860	2006	10
Yellow-bellied Marmot (*Marmota flaviventris*)	Ground/Rock Slopes	Dens - Talus slopes, rock outcrops	Semi-fossorial. Inhabits talus slopes or rock outcrops in meadows. Abundant herbaceous & grassy plants nearby. Rocks support burrows & serve as sunning & observ. posts. Avoids dense forests. Rarely in holl riv bot fld pln c-wood trees. Occurs from valley bottoms to alpine tundra where suitable habitat exists. Where *Marmota caligata* occurs, *M. flavi* - ventris is restricted to lower elevations.	Herbivore	Grasses, flowers, forbs--in late summer eats seeds. Mode- rate grazing by ungulates may favor marmots. Likes alfalfa	Non-migratory, although dispersal movements may be observed/ Hibernates	NA	2.2 - 4.5 kg	NA	G5	S4	1949	1949	3

Montana Species Ranking Codes: Montana employs a standardized ranking system to denote global (G - range-wide) and state status (S) (NatureServe 2003). Species are assigned numeric ranks ranging from 1 (critically imperiled) to 5 (demonstrably secure), reflecting the relative degree to which they are "at-risk". Rank definitions are given below. A number of factors are considered in assigning ranks - the number, size and distribution of known "occurrences" or populations, population trends (if known), habitat sensitivity, and threat.

Data are taken from: http://fieldguide.mt.gov/
NA = not available

G1 S1
At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.

G2 S2
At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state.

G3 S3
Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas.

G4 S4
Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern.

G5 S5
Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.

Table originated in the OU3 Non-Asbestos BERA (CDM 2013b); presented herein with permission from the EPA and CDM Smith.

TABLE D-9 FEDERAL SPECIES OF CONCERN IN THE KOOTENAI NATIONAL FOREST

Category	Commin Name (*scientific name*)	Status	Range
Mammal	Grizzly Bear (*Ursus arctos horribilis*)	T	Alpine/subalpine coniferous forest of western Montana
	Canada Lynx (*Lynx canadensis*)	T	Montane spruce/fir forest of western Montana
	Wolverine *(Gulo gulo luscus*)	P	High elevation alpine and boreal forests that are cold and with snow lasting into late spring
Fish	White Sturgeon (*Acipenser transmontanus*)	E	Kootenai River
	Bull Trout (*Salvelinus confluentus*)	T, CH	Cold water streams, rivers, lakes; Kootenai River
Plant	Spalding's Campion (*Silene spaldingii*)	T	Open grassland of Flathead and Fisher River drainages
	Whitebark Pine (*Pinus albicaulis*)	C	High elevation upper montaine habitat near treeline in cetral and western Montana

Source: USFWS (2014)

T = Threatened
E = Endangered
P = Proposed
CH = Critical habitat
C = Candidate

Table originated in the OU3 Non-Asbestos BERA (CDM 2013b); presented herein with permission from the EPA and CDM Smith.

TABLE D-10 STATE SPECIES OF CONCERN OCCURING IN OR NEAR OU3

Group	Common Name	Scientific name	State Rank	Habitat
Mammal	Wolverine	*Gulo gulo*	S3	Boreal Forest and Alpine Habitats
	Hoary Bat	*Lasiurus cinereus*	S3	Riparian and forest
	Canada Lynx	*Lynx canadensis*	S3	Subalpine conifer forest
	Fisher	*Martes pennanti*	S3	Mixed conifer forests
Bird	Northern Goshawk	*Accipiter gentilis*	S3	Mixed conifer forests
	Pileated Woodpecker	*Dryocopus pileatus*	S3	Moist conifer forests
	Cassin's Finch	*Haemorhous cassinii*	S3	Drier conifer forest
	Clark's Nutcracker	*Nucifraga columbiana*	S3	Conifer forest
	Flammulated Owl	*Psiloscops flammeolus*	S3B	Dry conifer forest
	Pacific Wren	*Troglodytes pacificus*	S3	Moist conifer forests
Amphibian	Western Toad	*Anaxyrus boreas*	S2	Wetlands, floodplain pools
	Coeur d'Alene Salamander	*Plethodon idahoensis*	S2	Spring / seep, waterfall, fractured rock
Fish	Torrent Sculpin	*Cottus rhotheus*	S3	Mountain streams, rivers, lakes
	Westslope Cutthroat Trout	*Oncorhynchus clarkii lewisi*	S2	Mountain streams, rivers, lakes
	Bull Trout	*Salvelinus confluentus*	S2	Mountain streams, rivers, lakes

S1 = At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.

S2 = At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state.

S3 = Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas.

Source MNHP (2014)
Township = 31N, Range = 30W

Table originated in the OU3 Non-Asbestos BERA (CDM 2013b); presented herein with permission from the EPA and CDM Smith.



Appendix E

Libby OU3 Study Area Database for Remedial Investigation Asbestos Samples, Non-asbestos Samples, and Water Quality Parameters

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Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information										Results			
																Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
I	Surface Water	LRC-2	P1-00251	10/15/2007	Field Sample	EMSL27	Not QC	12/5/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	2	0.10	1	0.050
I	Surface Water	TP-TOE1	P1-00254	10/16/2007	Field Sample	EMSL27	Not QC	12/12/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	0	0	0	0
I	Surface Water	CCS-14	P1-00265	10/13/2007	Field Sample	EMSL27	Not QC	11/14/2007	TEM-ISO	EPA 100.2	100	1295	0.013	5	2.0E+05	55	11	0	0
I	Surface Water	FC-Pond	P1-00266	10/13/2007	Field Sample	EMSL27	Not QC	11/14/2007	TEM-ISO	EPA 100.2	10	1295	0.013	4	2.5E+06	50	125	3	7.5
I	Surface Water	FC-1	P1-00267	10/13/2007	Field Sample	EMSL27	Not QC	11/15/2007	TEM-ISO	EPA 100.2	100	1295	0.013	13	7.7E+04	51	3.9	12	0.92
I	Surface Water	FC-2	P1-00268	10/13/2007	Field Sample	EMSL27	Not QC	11/14/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	4	0.20	1	0.050
I	Surface Water	TP	P1-00269	10/13/2007	Field Sample	EMSL27	Not QC	11/16/2007	TEM-ISO	EPA 100.2	50	1295	0.013	1	2.0E+06	57	114	19	38
I	Surface Water	LRC-6	P1-00300	10/15/2007	Field Sample	EMSL27	Not QC	12/11/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	0	0	0	0
I	Surface Water	LRC-5	P1-00301	10/15/2007	Field Sample	EMSL27	Not QC	12/4/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	25	1.2	2	0.10
I	Surface Water	LRC-4	P1-00302	10/15/2007	Field Sample	EMSL27	Not QC	12/4/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	21	1.0	3	0.15
I	Surface Water	LRC-3	P1-00303	10/15/2007	Field Sample	EMSL27	Not QC	12/11/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	4	0.20	0	0
I	Surface Water	LRC-1	P1-00304	10/15/2007	Field Sample	EMSL27	Not QC	12/11/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	4	0.20	0	0
I	Surface Water	TP-TOE2	P1-00312	10/16/2007	Field Sample	EMSL27	Not QC	12/12/2007	TEM-ISO	EPA 100.2	10	1295	0.013	50	2.0E+05	10	2.0	6	1.2
I	Surface Water	MP	P1-00313	10/16/2007	Field Sample	EMSL27	Not QC	12/12/2007	TEM-ISO	EPA 100.2	50	1295	0.013	4	5.0E+05	54	27	20	10
I	Surface Water	CCS-9	P1-00315	10/16/2007	Field Sample	EMSL27	Not QC	12/13/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	0	0	0	0
I	Surface Water	CCS-16	P1-00316	10/17/2007	Field Sample	EMSL27	Not QC	12/14/2007	TEM-ISO	EPA 100.2	25	1295	0.013	50	8.0E+04	0	0	0	0
I	Surface Water	CCS-8	P1-00317	10/17/2007	Field Sample	EMSL27	Not QC	12/13/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	0	0	0	0
I	Surface Water	CC-2	P1-00380	10/11/2007	Field Sample	EMSL27	Not QC	11/8/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	1	0.050	1	0.050
I	Surface Water	CC-1	P1-00381	10/11/2007	Field Sample	EMSL27	Not QC	11/8/2007	TEM-ISO	EPA 100.2	100	1295	0.013	21	4.7E+04	20	0.95	7	0.33
I	Surface Water	CCS-1	P1-00382	10/12/2007	Field Sample	EMSL27	Not QC	11/9/2007	TEM-ISO	EPA 100.2	100	1295	0.013	7	1.4E+05	53	7.5	3	0.43
I	Surface Water	CCS-11	P1-00383	10/12/2007	Field Sample	EMSL27	Not QC	11/9/2007	TEM-ISO	EPA 100.2	10	1295	0.013	30	3.3E+05	50	17	10	3.3
I	Surface Water	CCS-6	P1-00385	10/12/2007	Field Sample	EMSL27	Not QC	11/9/2007	TEM-ISO	EPA 100.2	10	1295	0.013	5	2.0E+06	51	102	2	4.0
I	Surface Water	URC-2	P1-00390	10/14/2007	Field Sample	EMSL27	Not QC	11/30/2007	TEM-ISO	EPA 100.2	100	1295	0.013	9	1.1E+05	52	5.8	1	0.11
I	Surface Water	URC-1	P1-00391	10/14/2007	Field Sample	EMSL27	Not QC	12/3/2007	TEM-ISO	EPA 100.2	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	MP	P2-00001	4/7/2008	Field Sample	EMSL19	Not QC	5/23/2008	TEM-ISO	ISO 10312	50	1295	0.013	7	2.8E+05	50	14	8	2.3
IIA	Surface Water	LRC-1	P2-00002	4/7/2008	Field Sample	EMSL19	Not QC	5/28/2008	TEM-ISO	ISO 10312	5	1295	0.013	32	6.2E+05	50	31	12	7.5
IIA	Surface Water	LRC-2	P2-00003	4/7/2008	Field Sample	EMSL19	Not QC	5/30/2008	TEM-ISO	ISO 10312	50	1295	0.013	13	1.5E+05	50	7.7	7	1.1
IIA	Surface Water	CC-2	P2-00004	4/7/2008	Field Sample	EMSL19	Not QC	6/3/2008	TEM-ISO	ISO 10312	10	1295	0.013	50	2.0E+05	7	1.4	1	0.20
IIA	Surface Water	TP-TOE1	P2-00006	4/7/2008	Field Sample	EMSL19	Not QC	6/5/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	1	0.050	0	0
IIA	Surface Water	FC-2	P2-00008	4/8/2008	Field Sample	EMSL19	Not QC	6/13/2008	TEM-ISO	ISO 10312	5	1295	0.013	50	4.0E+05	7	2.8	2	0.80
IIA	Surface Water	FC-POND	P2-00009	4/8/2008	Field Sample	EMSL19	Not QC	6/23/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	14	0.70	2	0.10
IIA	Surface Water	URC-1A	P2-00010	4/8/2008	Field Sample	EMSL19	Not QC	6/17/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	1	0.050	0	0
IIA	Surface Water	URC-2	P2-00011	4/8/2008	Field Sample	EMSL19	Not QC	7/10/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	12	0.60	3	0.15
IIA	Surface Water	TP	P2-00012	4/8/2008	Field Sample	EMSL19	Not QC	7/16/2008	TEM-ISO	ISO 10312	50	1295	0.013	2	1.0E+06	31	31	6	6.0
IIA	Surface Water	LRC-6	P2-00014	4/8/2008	Field Sample	EMSL19	Not QC	8/19/2008	TEM-ISO	ISO 10312	10	1295	0.013	50	2.0E+05	5	1.0	2	0.40
IIA	Surface Water	LRC-6	P2-00021	4/14/2008	Field Sample	EMSL19	Not QC	8/26/2008	TEM-ISO	ISO 10312	10	1295	0.013	48	2.1E+05	25	5.2	1	0.21
IIA	Surface Water	MP	P2-00022	4/14/2008	Field Sample	EMSL19	Not QC	9/8/2008	TEM-ISO	ISO 10312	10	1295	0.013	7	1.4E+06	25	36	6	8.5
IIA	Surface Water	LRC-1	P2-00023	4/14/2008	Field Sample	EMSL19	Not QC	9/9/2008	TEM-ISO	ISO 10312	30	1295	0.013	4	8.3E+05	26	22	1	0.83
IIA	Surface Water	CC-2	P2-00024	4/14/2008	Field Sample	EMSL19	Not QC	9/9/2008	TEM-ISO	ISO 10312	30	1295	0.013	5	6.6E+05	25	17	4	2.7
IIA	Surface Water	LRC-2	P2-00025	4/14/2008	Field Sample	EMSL19	Not QC	9/10/2008	TEM-ISO	ISO 10312	30	1295	0.013	4	8.3E+05	26	22	2	1.7
IIA	Surface Water	TP-TOE1	P2-00026	4/14/2008	Field Sample	EMSL19	Not QC	9/11/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	10	0.50	0	0
IIA	Surface Water	TP	P2-00027	4/14/2008	Field Sample	EMSL19	Not QC	9/15/2008	TEM-ISO	ISO 10312	2	1295	0.013	1	5.0E+07	25	1245	1	50
IIA	Surface Water	URC-2	P2-00028	4/14/2008	Field Sample	EMSL19	Not QC	9/19/2008	TEM-ISO	ISO 10312	5	1295	0.013	50	4.0E+05	6	2.4	2	0.80
IIA	Surface Water	URC-1A	P2-00029	4/14/2008	Field Sample	EMSL19	Not QC	9/22/2008	TEM-ISO	ISO 10312	10	1295	0.013	50	2.0E+05	0	0	0	0
IIA	Surface Water	FC-2	P2-00031	4/14/2008	Field Sample	EMSL19	Not QC	9/30/2008	TEM-ISO	ISO 10312	30	1295	0.013	25	1.3E+05	25	3.3	3	0.40
IIA	Surface Water	FC-POND	P2-00032	4/14/2008	Field Sample	EMSL19	Not QC	9/30/2008	TEM-ISO	ISO 10312	30	1295	0.013	23	1.4E+05	27	3.9	0	0
IIA	Surface Water	LRC-6	P2-00041	4/21/2008	Field Sample	EMSL19	Not QC	10/2/2008	TEM-ISO	ISO 10312	50	1295	0.013	13	1.5E+05	26	4.0	2	0.31
IIA	Surface Water	LRC-2	P2-00042	4/21/2008	Field Sample	EMSL19	Not QC	10/3/2008	TEM-ISO	ISO 10312	50	1295	0.013	4	5.0E+05	31	15	3	1.5
IIA	Surface Water	CC-2	P2-00043	4/21/2008	Field Sample	EMSL19	Not QC	10/6/2008	TEM-ISO	ISO 10312	50	1295	0.013	15	1.3E+05	25	3.3	1	0.13
IIA	Surface Water	LRC-1	P2-00044	4/21/2008	Field Sample	EMSL19	Not QC	10/9/2008	TEM-ISO	ISO 10312	30	1295	0.013	50	6.6E+04	3	0.20	1	0.066
IIA	Surface Water	MP	P2-00045	4/21/2008	Field Sample	EMSL19	Not QC	10/15/2008	TEM-ISO	ISO 10312	30	1295	0.013	6	5.5E+05	26	14	4	2.2

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information										Results			
																Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
IIA	Surface Water	TP-TOE1	P2-00046	4/21/2008	Field Sample	EMSL19	Not QC	11/26/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	10	0.50	4	0.20
IIA	Surface Water	TP	P2-00047	4/21/2008	Field Sample	EMSL19	Not QC	12/1/2008	TEM-ISO	ISO 10312	10	1295	0.013	1	1.0E+07	26	259	2	20
IIA	Surface Water	URC-2	P2-00050	4/22/2008	Field Sample	EMSL19	Not QC	12/3/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	6	0.30	1	0.050
IIA	Surface Water	URC-1A	P2-00051	4/22/2008	Field Sample	EMSL19	Not QC	12/4/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	FC-2	P2-00052	4/22/2008	Field Sample	EMSL19	Not QC	12/4/2008	TEM-ISO	ISO 10312	75	1295	0.013	5	2.7E+05	26	6.9	3	0.80
IIA	Surface Water	FC-POND	P2-00053	4/22/2008	Field Sample	EMSL19	Not QC	12/5/2008	TEM-ISO	ISO 10312	20	1295	0.013	2	2.5E+06	28	70	3	7.5
IIA	Surface Water	LRC-6	P2-00061	4/28/2008	Field Sample	EMSL19	Not QC	12/5/2008	TEM-ISO	ISO 10312	10	1295	0.013	34	2.9E+05	26	7.6	2	0.59
IIA	Surface Water	CC-2	P2-00062	4/28/2008	Field Sample	EMSL19	Not QC	12/16/2008	TEM-ISO	ISO 10312	10	1295	0.013	40	2.5E+05	25	6.2	2	0.50
IIA	Surface Water	LRC-1	P2-00063	4/28/2008	Field Sample	EMSL19	Not QC	12/18/2008	TEM-ISO	ISO 10312	50	1295	0.013	12	1.7E+05	25	4.2	1	0.17
IIA	Surface Water	LRC-2	P2-00064	4/28/2008	Field Sample	EMSL19	Not QC	12/18/2008	TEM-ISO	ISO 10312	50	1295	0.013	8	2.5E+05	27	6.7	4	1.0
IIA	Surface Water	TP-TOE1	P2-00065	4/28/2008	Field Sample	EMSL19	Not QC	12/26/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	13	0.65	2	0.10
IIA	Surface Water	TP	P2-00066	4/28/2008	Field Sample	EMSL19	Not QC	12/29/2008	TEM-ISO	ISO 10312	50	1295	0.013	1	2.0E+06	41	82	6	12
IIA	Surface Water	URC-2	P2-00068	4/28/2008	Field Sample	EMSL19	Not QC	12/31/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	4	0.20	0	0
IIA	Surface Water	URC-1A	P2-00069	4/28/2008	Field Sample	EMSL19	Not QC	1/5/2009	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	1	0.050	0	0
IIA	Surface Water	FC-2	P2-00070	4/28/2008	Field Sample	EMSL19	Not QC	1/6/2009	TEM-ISO	ISO 10312	10	1295	0.013	13	7.7E+05	26	20	4	3.1
IIA	Surface Water	FC-POND	P2-00071	4/28/2008	Field Sample	EMSL19	Not QC	1/6/2009	TEM-ISO	ISO 10312	10	1295	0.013	3	3.3E+06	25	83	3	10
IIA	Surface Water	MP	P2-00072	4/28/2008	Field Sample	EMSL19	Not QC	1/8/2009	TEM-ISO	ISO 10312	10	1295	0.013	40	2.5E+05	25	6.2	6	1.5
IIA	Surface Water	LRC-6	P2-00081	5/5/2008	Field Sample	EMSL19	Not QC	1/21/2009	TEM-ISO	ISO 10312	50	1295	0.013	4	5.0E+05	25	12	4	2.0
IIA	Surface Water	LRC-2	P2-00082	5/5/2008	Field Sample	EMSL19	Not QC	1/21/2009	TEM-ISO	ISO 10312	50	1295	0.013	10	2.0E+05	29	5.8	2	0.40
IIA	Surface Water	CC-2	P2-00083	5/5/2008	Field Sample	EMSL19	Not QC	1/22/2009	TEM-ISO	ISO 10312	50	1295	0.013	6	3.3E+05	26	8.6	3	1.0
IIA	Surface Water	LRC-1	P2-00084	5/5/2008	Field Sample	EMSL19	Not QC	1/23/2009	TEM-ISO	ISO 10312	50	1295	0.013	18	1.1E+05	25	2.8	2	0.22
IIA	Surface Water	CC-POND	P2-00085	5/6/2008	Field Sample	EMSL27	Not QC	1/19/2009	TEM-ISO	ISO 10312	10	1295	0.013	6	1.7E+06	27	45	1	1.7
IIA	Surface Water	MP	P2-00086	5/6/2008	Field Sample	EMSL27	Not QC	1/20/2009	TEM-ISO	ISO 10312	25	1295	0.013	50	8.0E+04	9	0.72	1	0.080
IIA	Surface Water	TP-TOE1	P2-00089	5/6/2008	Field Sample	EMSL27	Not QC	1/21/2009	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	4	0.20	1	0.050
IIA	Surface Water	TP	P2-00091	5/6/2008	Field Sample	EMSL27	Not QC	1/21/2009	TEM-ISO	ISO 10312	50	1295	0.013	2	1.0E+06	28	28	4	4.0
IIA	Surface Water	URC-2	P2-00094	5/6/2008	Field Sample	EMSL27	Not QC	1/22/2009	TEM-ISO	ISO 10312	50	1295	0.013	12	1.7E+05	27	4.5	4	0.66
IIA	Surface Water	URC-1A	P2-00095	5/6/2008	Field Sample	EMSL27	Not QC	1/22/2009	TEM-ISO	ISO 10312	25	1295	0.013	50	8.0E+04	0	0	0	0
IIA	Surface Water	FC-POND	P2-00096	5/6/2008	Field Sample	EMSL27	Not QC	1/21/2009	TEM-ISO	ISO 10312	10	1295	0.013	3	3.3E+06	25	83	2	6.6
IIA	Surface Water	TP-OVERFLOW	P2-00098	5/7/2008	Field Sample	EMSL19	Not QC	1/26/2009	TEM-ISO	ISO 10312	50	1295	0.013	14	1.4E+05	25	3.6	0	0
IIA	Surface Water	FC-2	P2-00100	5/7/2008	Field Sample	EMSL19	Not QC	1/27/2009	TEM-ISO	ISO 10312	50	1295	0.013	6	3.3E+05	25	8.3	1	0.33
IIA	Surface Water	LRC-6	P2-00101	5/12/2008	Field Sample	EMSL27	Not QC	8/14/2008	TEM-ISO	ISO 10312	25	1295	0.013	2	2.0E+06	27	54	8	16
IIA	Surface Water	CC-POND	P2-00102	5/12/2008	Field Sample	EMSL27	Not QC	8/18/2008	TEM-ISO	ISO 10312	10	1295	0.013	8	1.2E+06	26	32	2	2.5
IIA	Surface Water	LRC-2	P2-00103	5/12/2008	Field Sample	EMSL27	Not QC	8/18/2008	TEM-ISO	ISO 10312	25	1295	0.013	13	3.1E+05	26	8.0	5	1.5
IIA	Surface Water	CC-2	P2-00104	5/12/2008	Field Sample	EMSL27	Not QC	8/20/2008	TEM-ISO	ISO 10312	25	1295	0.013	5	8.0E+05	29	23	1	0.80
IIA	Surface Water	LRC-1	P2-00105	5/12/2008	Field Sample	EMSL27	Not QC	8/20/2008	TEM-ISO	ISO 10312	25	1295	0.013	11	3.6E+05	25	9.1	3	1.1
IIA	Surface Water	MP	P2-00107	5/12/2008	Field Sample	EMSL27	Not QC	8/20/2008	TEM-ISO	ISO 10312	25	1295	0.013	23	1.7E+05	26	4.5	2	0.35
IIA	Surface Water	TP-TOE1	P2-00108	5/12/2008	Field Sample	EMSL27	Not QC	8/27/2008	TEM-ISO	ISO 10312	100	1295	0.013	5	2.0E+05	29	5.8	5	1.0
IIA	Surface Water	TP-OVERFLOW	P2-00109	5/13/2008	Field Sample	EMSL27	Not QC	8/18/2008	TEM-ISO	ISO 10312	25	1295	0.013	20	2.0E+05	25	5.0	1	0.20
IIA	Surface Water	TP	P2-00110	5/13/2008	Field Sample	EMSL27	Not QC	9/10/2008	TEM-ISO	ISO 10312	25	1295	0.013	5	8.0E+05	29	23	5	4.0
IIA	Surface Water	URC-2	P2-00111	5/13/2008	Field Sample	EMSL27	Not QC	9/16/2008	TEM-ISO	ISO 10312	100	1295	0.013	36	2.8E+04	25	0.69	6	0.17
IIA	Surface Water	URC-1A	P2-00113	5/13/2008	Field Sample	EMSL27	Not QC	11/20/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	1	0.050	0	0
IIA	Surface Water	FC-2	P2-00114	5/13/2008	Field Sample	EMSL27	Not QC	11/20/2008	TEM-ISO	ISO 10312	100	1295	0.013	9	1.1E+05	26	2.9	4	0.44
IIA	Surface Water	MP	P2-00201	4/29/2008	Field Sample	EMSL19	Not QC	1/12/2009	TEM-ISO	ISO 10312	50	1295	0.013	11	1.8E+05	27	4.9	2	0.36
IIA	Surface Water	MP	P2-00203	4/29/2008	Field Sample	EMSL19	Not QC	1/13/2009	TEM-ISO	ISO 10312	50	1295	0.013	8	2.5E+05	26	6.5	4	1.0
IIA	Surface Water	MP	P2-00204	4/29/2008	Field Sample	EMSL19	Not QC	1/14/2009	TEM-ISO	ISO 10312	50	1295	0.013	13	1.5E+05	25	3.8	3	0.46
IIA	Surface Water	TP	P2-00205	4/29/2008	Field Sample	EMSL19	Not QC	1/19/2009	TEM-ISO	ISO 10312	50	1295	0.013	1	2.0E+06	33	66	9	18
IIA	Surface Water	TP	P2-00207	4/29/2008	Field Sample	EMSL19	Not QC	1/20/2009	TEM-ISO	ISO 10312	50	1295	0.013	1	2.0E+06	25	50	0	0
IIA	Surface Water	TP	P2-00208	4/29/2008	Field Sample	EMSL19	Not QC	1/20/2009	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	0	0	0	0
IIA	Surface Water	LRC-6	P2-00301	5/19/2008	Field Sample	EMSL27	Not QC	8/29/2008	TEM-ISO	ISO 10312	10	1295	0.013	4	2.5E+06	34	85	11	27
IIA	Surface Water	CC-POND	P2-00302	5/19/2008	Field Sample	EMSL27	Not QC	9/4/2008	TEM-ISO	ISO 10312	10	1295	0.013	10	1.0E+06	25	25	4	4.0
IIA	Surface Water	LRC-2	P2-00303	5/19/2008	Field Sample	EMSL27	Not QC	9/2/2008	TEM-ISO	ISO 10312	10	1295	0.013	50	2.0E+05	9	1.8	2	0.40

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information										Results			
																Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
IIA	Surface Water	CC-2	P2-00304	5/19/2008	Field Sample	EMSL27	Not QC	9/3/2008	TEM-ISO	ISO 10312	50	1295	0.013	7	2.8E+05	26	7.4	2	0.57
IIA	Surface Water	LRC-1	P2-00305	5/19/2008	Field Sample	EMSL27	Not QC	9/5/2008	TEM-ISO	ISO 10312	10	1295	0.013	10	1.0E+06	28	28	4	4.0
IIA	Surface Water	MP	P2-00306	5/19/2008	Field Sample	EMSL27	Not QC	9/10/2008	TEM-ISO	ISO 10312	25	1295	0.013	8	5.0E+05	26	13	3	1.5
IIA	Surface Water	TP-TOE1	P2-00308	5/20/2008	Field Sample	EMSL27	Not QC	9/12/2008	TEM-ISO	ISO 10312	10	1295	0.013	31	3.2E+05	25	8.0	3	0.96
IIA	Surface Water	TP-OVERFLOW	P2-00309	5/20/2008	Field Sample	EMSL27	Not QC	9/13/2008	TEM-ISO	ISO 10312	10	1295	0.013	38	2.6E+05	25	6.6	3	0.79
IIA	Surface Water	TP	P2-00310	5/20/2008	Field Sample	EMSL27	Not QC	9/13/2008	TEM-ISO	ISO 10312	10	1295	0.013	17	5.9E+05	27	16	7	4.1
IIA	Surface Water	URC-2	P2-00311	5/20/2008	Field Sample	EMSL27	Not QC	9/14/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	6	0.30	2	0.10
IIA	Surface Water	URC-1A	P2-00312	5/20/2008	Field Sample	EMSL27	Not QC	9/16/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	1	0.050	1	0.050
IIA	Surface Water	FC-2	P2-00313	5/20/2008	Field Sample	EMSL27	Not QC	9/18/2008	TEM-ISO	ISO 10312	50	1295	0.013	31	6.4E+04	26	1.7	5	0.32
IIA	Surface Water	LRC-6	P2-00321	5/26/2008	Field Sample	EMSL27	Not QC	9/18/2008	TEM-ISO	ISO 10312	25	1295	0.013	7	5.7E+05	26	15	3	1.7
IIA	Surface Water	LRC-2	P2-00322	5/26/2008	Field Sample	EMSL27	Not QC	9/22/2008	TEM-ISO	ISO 10312	25	1295	0.013	15	2.7E+05	26	6.9	2	0.53
IIA	Surface Water	CC-2	P2-00323	5/26/2008	Field Sample	EMSL27	Not QC	9/23/2008	TEM-ISO	ISO 10312	25	1295	0.013	21	1.9E+05	25	4.7	2	0.38
IIA	Surface Water	LRC-1	P2-00324	5/26/2008	Field Sample	EMSL27	Not QC	9/23/2008	TEM-ISO	ISO 10312	25	1295	0.013	8	5.0E+05	25	12	2	1.0
IIA	Surface Water	MP	P2-00325	5/26/2008	Field Sample	EMSL27	Not QC	10/1/2008	TEM-ISO	ISO 10312	25	1295	0.013	8	5.0E+05	26	13	3	1.5
IIA	Surface Water	TP-TOE1	P2-00326	5/26/2008	Field Sample	EMSL27	Not QC	10/3/2008	TEM-ISO	ISO 10312	25	1295	0.013	5	8.0E+05	31	25	2	1.6
IIA	Surface Water	TP-OVERFLOW	P2-00327	5/26/2008	Field Sample	EMSL27	Not QC	10/20/2008	TEM-ISO	ISO 10312	25	1295	0.013	36	1.1E+05	26	2.9	2	0.22
IIA	Surface Water	TP	P2-00328	5/26/2008	Field Sample	EMSL27	Not QC	10/27/2008	TEM-ISO	ISO 10312	25	1295	0.013	10	4.0E+05	26	10	3	1.2
IIA	Surface Water	CC-POND	P2-00330	5/27/2008	Field Sample	EMSL27	Not QC	10/29/2008	TEM-ISO	ISO 10312	25	1295	0.013	3	1.3E+06	28	37	5	6.6
IIA	Surface Water	URC-2	P2-00331	5/27/2008	Field Sample	EMSL27	Not QC	10/30/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	1	0.050	0	0
IIA	Surface Water	URC-1A	P2-00333	5/27/2008	Field Sample	EMSL27	Not QC	10/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	FC-2	P2-00334	5/27/2008	Field Sample	EMSL27	Not QC	10/30/2008	TEM-ISO	ISO 10312	100	1295	0.013	24	4.2E+04	18	0.75	3	0.12
IIA	Surface Water	LRC-6	P2-00335	6/2/2008	Field Sample	EMSL27	Not QC	11/5/2008	TEM-ISO	ISO 10312	10	1295	0.013	50	2.0E+05	10	2.0	6	1.2
IIA	Surface Water	LRC-2	P2-00336	6/2/2008	Field Sample	EMSL27	Not QC	11/5/2008	TEM-ISO	ISO 10312	50	1295	0.013	21	9.5E+04	26	2.5	4	0.38
IIA	Surface Water	CC-2	P2-00337	6/2/2008	Field Sample	EMSL27	Not QC	11/7/2008	TEM-ISO	ISO 10312	100	1295	0.013	11	9.1E+04	27	2.4	0	0
IIA	Surface Water	LRC-1	P2-00338	6/2/2008	Field Sample	EMSL27	Not QC	11/6/2008	TEM-ISO	ISO 10312	50	1295	0.013	9	2.2E+05	27	6.0	2	0.44
IIA	Surface Water	MP	P2-00339	6/2/2008	Field Sample	EMSL27	Not QC	11/7/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	20	1.0	0	0
IIA	Surface Water	TP-TOE1	P2-00340	6/2/2008	Field Sample	EMSL27	Not QC	11/10/2008	TEM-ISO	ISO 10312	100	1295	0.013	3	3.3E+05	30	10	3	1.0
IIA	Surface Water	TP-OVERFLOW	P2-00341	6/2/2008	Field Sample	EMSL27	Not QC	11/11/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	1	0.050	0	0
IIA	Surface Water	CC-POND	P2-00342	6/3/2008	Field Sample	EMSL27	Not QC	12/12/2008	TEM-ISO	ISO 10312	10	1295	0.013	11	9.1E+05	25	23	4	3.6
IIA	Surface Water	TP	P2-00343	6/3/2008	Field Sample	EMSL27	Not QC	12/12/2008	TEM-ISO	ISO 10312	25	1295	0.013	13	3.1E+05	28	8.6	5	1.5
IIA	Surface Water	URC-2	P2-00345	6/3/2008	Field Sample	EMSL27	Not QC	12/11/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	URC-1A	P2-00346	6/3/2008	Field Sample	EMSL27	Not QC	12/11/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	FC-2	P2-00348	6/3/2008	Field Sample	EMSL27	Not QC	12/12/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	LRC-6	P2-00349	6/9/2008	Field Sample	EMSL27	Not QC	11/22/2008	TEM-ISO	ISO 10312	50	1295	0.013	5	4.0E+05	27	11	6	2.4
IIA	Surface Water	LRC-2	P2-00350	6/9/2008	Field Sample	EMSL27	Not QC	11/22/2008	TEM-ISO	ISO 10312	50	1295	0.013	31	6.4E+04	27	1.7	7	0.45
IIA	Surface Water	CC-2	P2-00351	6/9/2008	Field Sample	EMSL27	Not QC	11/23/2008	TEM-ISO	ISO 10312	50	1295	0.013	19	1.0E+05	27	2.8	4	0.42
IIA	Surface Water	LRC-1	P2-00353	6/9/2008	Field Sample	EMSL27	Not QC	12/3/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	13	0.65	0	0
IIA	Surface Water	MP	P2-00354	6/9/2008	Field Sample	EMSL27	Not QC	12/3/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	10	0.50	2	0.10
IIA	Surface Water	TP-TOE1	P2-00355	6/9/2008	Field Sample	EMSL27	Not QC	12/4/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	0	0	0	0
IIA	Surface Water	TP-OVERFLOW	P2-00356	6/9/2008	Field Sample	EMSL27	Not QC	12/4/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	8	0.40	3	0.15
IIA	Surface Water	TP	P2-00357	6/9/2008	Field Sample	EMSL27	Not QC	12/5/2008	TEM-ISO	ISO 10312	50	1295	0.013	31	6.4E+04	25	1.6	4	0.26
IIA	Surface Water	CC-POND	P2-00359	6/10/2008	Field Sample	EMSL27	Not QC	12/5/2008	TEM-ISO	ISO 10312	50	1295	0.013	13	1.5E+05	25	3.8	6	0.92
IIA	Surface Water	URC-2	P2-00360	6/10/2008	Field Sample	EMSL27	Not QC	12/11/2008	TEM-ISO	ISO 10312	10	1295	0.013	3	3.3E+06	38	126	2	6.6
IIA	Surface Water	URC-1A	P2-00361	6/10/2008	Field Sample	EMSL27	Not QC	12/11/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	0	0	0	0
IIA	Surface Water	FC-2	P2-00362	6/10/2008	Field Sample	EMSL27	Not QC	12/11/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	1	0.050	0	0
IIA	Surface Water	LRC-6	P2-00363	6/16/2008	Field Sample	EMSL27	Not QC	12/14/2008	TEM-ISO	ISO 10312	25	1295	0.013	8	5.0E+05	25	12	3	1.5
IIA	Surface Water	LRC-2	P2-00364	6/16/2008	Field Sample	EMSL27	Not QC	12/15/2008	TEM-ISO	ISO 10312	25	1295	0.013	50	8.0E+04	12	0.96	2	0.16
IIA	Surface Water	CC-2	P2-00365	6/16/2008	Field Sample	EMSL27	Not QC	12/15/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	0	0	0	0
IIA	Surface Water	LRC-1	P2-00366	6/16/2008	Field Sample	EMSL27	Not QC	12/15/2008	TEM-ISO	ISO 10312	25	1295	0.013	50	8.0E+04	3	0.24	1	0.080
IIA	Surface Water	MP	P2-00367	6/16/2008	Field Sample	EMSL27	Not QC	12/15/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	1	0.050	0	0
IIA	Surface Water	TP-TOE1	P2-00369	6/16/2008	Field Sample	EMSL27	Not QC	12/15/2008	TEM-ISO	ISO 10312	25	1295	0.013	50	8.0E+04	0	0	0	0

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
IIA	Surface Water	TP-OVERFLOW	P2-00371	6/16/2008	Field Sample	EMSL27	Not QC	12/15/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	1	0.050	0	0
IIA	Surface Water	TP	P2-00372	6/16/2008	Field Sample	EMSL27	Not QC	12/15/2008	TEM-ISO	ISO 10312	50	1295	0.013	15	1.3E+05	25	3.3	5	0.66
IIA	Surface Water	CC-POND	P2-00373	6/17/2008	Field Sample	EMSL27	Not QC	9/14/2008	TEM-ISO	ISO 10312	10	1295	0.013	12	8.3E+05	26	22	0	0
IIA	Surface Water	URC-2	P2-00374	6/17/2008	Field Sample	EMSL27	Not QC	9/25/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	URC-1A	P2-00375	6/17/2008	Field Sample	EMSL27	Not QC	9/24/2008	TEM-ISO	ISO 10312	50	1295	0.013	50	4.0E+04	0	0	0	0
IIA	Surface Water	FC-2	P2-00376	6/17/2008	Field Sample	EMSL27	Not QC	9/24/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	7	0.35	0	0
IIA	Surface Water	LRC-6	P2-00401	6/24/2008	Field Sample	EMSL27	Not QC	12/10/2008	TEM-ISO	ISO 10312	50	1295	0.013	6	3.3E+05	26	8.6	5	1.7
IIA	Surface Water	LRC-5	P2-00402	6/24/2008	Field Sample	EMSL27	Not QC	12/10/2008	TEM-ISO	ISO 10312	50	1295	0.013	6	3.3E+05	25	8.3	7	2.3
IIA	Surface Water	LRC-4	P2-00403	6/24/2008	Field Sample	EMSL27	Not QC	12/10/2008	TEM-ISO	ISO 10312	50	1295	0.013	8	2.5E+05	27	6.7	3	0.75
IIA	Surface Water	LRC-3	P2-00404	6/24/2008	Field Sample	EMSL27	Not QC	12/10/2008	TEM-ISO	ISO 10312	50	1295	0.013	7	2.8E+05	28	8.0	7	2.0
IIA	Surface Water	CC-2	P2-00409	6/25/2008	Field Sample	EMSL27	Not QC	12/11/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	11	0.55	4	0.20
IIA	Surface Water	LRC-1	P2-00410	6/25/2008	Field Sample	EMSL27	Not QC	12/11/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	0	0	0	0
IIA	Surface Water	MP	P2-00411	6/25/2008	Field Sample	EMSL27	Not QC	12/11/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	0	0	0	0
IIA	Surface Water	TP-TOE2	P2-00412	6/25/2008	Field Sample	EMSL27	Not QC	12/11/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	1	0.050	0	0
IIA	Surface Water	TP	P2-00420	6/26/2008	Field Sample	EMSL27	Not QC	12/16/2008	TEM-ISO	ISO 10312	100	1295	0.013	3	3.3E+05	46	15	11	3.7
IIA	Surface Water	URC-2	P2-00421	6/26/2008	Field Sample	EMSL27	Not QC	12/16/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	URC-1A	P2-00422	6/26/2008	Field Sample	EMSL27	Not QC	12/16/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	URC-1	P2-00427	6/27/2008	Field Sample	EMSL27	Not QC	12/17/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	FC-2	P2-00428	6/27/2008	Field Sample	EMSL27	Not QC	12/17/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	FC-POND	P2-00430	6/27/2008	Field Sample	EMSL27	Not QC	12/18/2008	TEM-ISO	ISO 10312	25	1295	0.013	10	4.0E+05	25	10	4	1.6
IIA	Surface Water	FC-1	P2-00432	6/27/2008	Field Sample	EMSL27	Not QC	12/19/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	2	0.100	2	0.10
IIA	Surface Water	CC-POND	P2-00439	6/28/2008	Field Sample	EMSL27	Not QC	12/17/2008	TEM-ISO	ISO 10312	100	1295	0.013	3	3.3E+05	34	11	1	0.33
IIA	Surface Water	CCS-8	P2-00441	6/28/2008	Field Sample	EMSL27	Not QC	12/17/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	3	0.15	1	0.050
IIA	Surface Water	CCS-6	P2-00442	6/28/2008	Field Sample	EMSL27	Not QC	12/17/2008	TEM-ISO	ISO 10312	25	1295	0.013	3	1.3E+06	38	50	9	12
IIA	Surface Water	CCS-1	P2-00443	6/28/2008	Field Sample	EMSL27	Not QC	12/18/2008	TEM-ISO	ISO 10312	25	1295	0.013	1	4.0E+06	54	215	8	32
IIA	Surface Water	CC-1	P2-00444	6/28/2008	Field Sample	EMSL27	Not QC	12/17/2008	TEM-ISO	ISO 10312	100	1295	0.013	16	6.2E+04	27	1.7	7	0.44
IIA	Surface Water	CCS-16	P2-00445	6/28/2008	Field Sample	EMSL27	Not QC	12/19/2008	TEM-ISO	ISO 10312	25	1295	0.013	50	8.0E+04	1	0.080	1	0.080
IIA	Surface Water	CCS-9	P2-00446	6/29/2008	Field Sample	EMSL27	Not QC	12/17/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	2	0.100	1	0.050
IIA	Surface Water	CCS-11	P2-00447	6/29/2008	Field Sample	EMSL27	Not QC	12/19/2008	TEM-ISO	ISO 10312	25	1295	0.013	10	4.0E+05	25	10	7	2.8
IIA	Surface Water	CCS-14	P2-00449	6/29/2008	Field Sample	EMSL27	Not QC	12/18/2008	TEM-ISO	ISO 10312	100	1295	0.013	3	3.3E+05	34	11	5	1.7
IIA	Surface Water	UTP	P2-00450	6/29/2008	Field Sample	EMSL27	Not QC	12/22/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	8	0.40	2	0.10
IIA	Surface Water	LRC-2	P2-00451	6/25/2008	Field Sample	EMSL27	Not QC	12/10/2008	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	3	0.15	0	0
IIA	Surface Water	TP-TOE1	P2-00453	6/26/2008	Field Sample	EMSL27	Not QC	12/16/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	UTP	P2-00456	6/29/2008	Field Sample	EMSL27	Not QC	12/22/2008	TEM-ISO	ISO 10312	25	1295	0.013	8	5.0E+05	26	13	9	4.5
IIA	Surface Water	LRC-6	P2-00458	6/30/2008	Field Sample	EMSL27	Not QC	12/15/2008	TEM-ISO	ISO 10312	100	1295	0.013	4	2.5E+05	25	6.2	4	1.0
IIA	Surface Water	LRC-2	P2-00459	6/30/2008	Field Sample	EMSL27	Not QC	12/15/2008	TEM-ISO	ISO 10312	100	1295	0.013	11	9.1E+04	25	2.3	4	0.36
IIA	Surface Water	CC-2	P2-00460	6/30/2008	Field Sample	EMSL27	Not QC	12/16/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	LRC-6	P2-00800	7/15/2008	Field Sample	EMSL27	Not QC	12/22/2008	TEM-ISO	ISO 10312	100	1295	0.013	7	1.4E+05	28	4.0	8	1.1
IIA	Surface Water	LRC-2	P2-00802	7/15/2008	Field Sample	EMSL27	Not QC	12/22/2008	TEM-ISO	ISO 10312	100	1295	0.013	13	7.7E+04	25	1.9	7	0.54
IIA	Surface Water	LRC-6	P2-00804	7/29/2008	Field Sample	EMSL27	Not QC	12/24/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	17	0.85	5	0.25
IIA	Surface Water	LRC-2	P2-00805	7/29/2008	Field Sample	EMSL27	Not QC	12/28/2008	TEM-ISO	ISO 10312	100	1295	0.013	8	1.2E+05	30	3.7	8	1.0
IIA	Surface Water	LRC-6	P2-00806	8/18/2008	Field Sample	EMSL27	Not QC	12/26/2008	TEM-ISO	ISO 10312	100	1295	0.013	11	9.1E+04	25	2.3	5	0.45
IIA	Surface Water	LRC-2	P2-00807	8/18/2008	Field Sample	EMSL27	Not QC	12/26/2008	TEM-ISO	ISO 10312	50	1295	0.013	19	1.0E+05	26	2.7	8	0.84
IIA	Surface Water	KR-4	P2-00840	8/19/2008	Field Sample	EMSL27	Not QC	12/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	KR-5	P2-00841	8/19/2008	Field Sample	EMSL27	Not QC	12/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	1	0.050	1	0.050
IIA	Surface Water	KR-6	P2-00842	8/19/2008	Field Sample	EMSL27	Not QC	12/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	KR-7	P2-00843	8/19/2008	Field Sample	EMSL27	Not QC	12/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	KR-8	P2-00844	8/19/2008	Field Sample	EMSL27	Not QC	12/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	KR-3	P2-00845	8/19/2008	Field Sample	EMSL27	Not QC	12/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	KR-2	P2-00846	8/19/2008	Field Sample	EMSL27	Not QC	12/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	KR-1	P2-00847	8/19/2008	Field Sample	EMSL27	Not QC	12/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	2	0.100	0	0

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
IIA	Surface Water	UKR	P2-00849	8/19/2008	Field Sample	EMSL27	Not QC	12/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	LRC-6	P2-00880	9/9/2008	Field Sample	EMSL27	Not QC	12/29/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	14	0.70	7	0.35
IIA	Surface Water	LRC-5	P2-00881	9/9/2008	Field Sample	EMSL27	Not QC	12/29/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	12	0.60	1	0.050
IIA	Surface Water	LRC-4	P2-00883	9/9/2008	Field Sample	EMSL27	Not QC	12/28/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	17	0.85	4	0.20
IIA	Surface Water	LRC-3	P2-00885	9/9/2008	Field Sample	EMSL27	Not QC	12/29/2008	TEM-ISO	ISO 10312	100	1295	0.013	19	5.2E+04	26	1.4	7	0.37
IIA	Surface Water	CC-2	P2-00887	9/10/2008	Field Sample	EMSL27	Not QC	12/30/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	3	0.15	1	0.050
IIA	Surface Water	LRC-1	P2-00889	9/10/2008	Field Sample	EMSL27	Not QC	12/30/2008	TEM-ISO	ISO 10312	100	1295	0.013	11	9.1E+04	25	2.3	7	0.63
IIA	Surface Water	MP	P2-00890	9/10/2008	Field Sample	EMSL27	Not QC	12/30/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	TP-TOE2	P2-00892	9/10/2008	Field Sample	EMSL27	Not QC	12/30/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	TP	P2-00893	9/11/2008	Field Sample	EMSL27	Not QC	12/30/2008	TEM-ISO	ISO 10312	50	1295	0.013	1	2.0E+06	71	141	18	36
IIA	Surface Water	URC-2	P2-00895	9/11/2008	Field Sample	EMSL27	Not QC	12/29/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	2	0.100	0	0
IIA	Surface Water	URC-1A	P2-00896	9/11/2008	Field Sample	EMSL27	Not QC	12/29/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	URC-1	P2-00897	9/11/2008	Field Sample	EMSL27	Not QC	12/31/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	UTP	P2-00898	9/12/2008	Field Sample	EMSL27	Not QC	1/2/2009	TEM-ISO	ISO 10312	100	1295	0.013	2	5.0E+05	36	18	6	3.0
IIA	Surface Water	UTP	P2-00899	9/12/2008	Field Sample	EMSL27	Not QC	1/4/2009	TEM-ISO	ISO 10312	100	1295	0.013	1	1.0E+06	27	27	0	0
IIA	Surface Water	FC-2	P2-00901	9/12/2008	Field Sample	EMSL27	Not QC	1/2/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	4	0.20	0	0
IIA	Surface Water	FC-POND	P2-00902	9/12/2008	Field Sample	EMSL27	Not QC	1/5/2009	TEM-ISO	ISO 10312	10	1295	0.013	1	1.0E+07	110	1096	29	289
IIA	Surface Water	FC-1	P2-00904	9/12/2008	Field Sample	EMSL27	Not QC	1/2/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	CCS-11	P2-00905	9/12/2008	Field Sample	EMSL27	Not QC	1/2/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	22	1.1	7	0.35
IIA	Surface Water	CCS-14	P2-00906	9/12/2008	Field Sample	EMSL27	Not QC	1/2/2009	TEM-ISO	ISO 10312	50	1295	0.013	1	2.0E+06	26	52	4	8.0
IIA	Surface Water	CCS-9	P2-00907	9/13/2008	Field Sample	EMSL27	Not QC	1/6/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIA	Surface Water	CC-POND	P2-00909	9/13/2008	Field Sample	EMSL27	Not QC	1/15/2009	TEM-ISO	ISO 10312	25	1295	0.013	3	1.3E+06	28	37	4	5.3
IIA	Surface Water	CCS-8	P2-00911	9/13/2008	Field Sample	EMSL27	Not QC	1/8/2009	TEM-ISO	ISO 10312	100	1295	0.013	50	2.0E+04	8	0.16	0	0
IIA	Surface Water	CCS-6	P2-00912	9/13/2008	Field Sample	EMSL27	Not QC	1/7/2009	TEM-ISO	ISO 10312	100	1295	0.013	3	3.3E+05	33	11	4	1.3
IIA	Surface Water	CCS-1	P2-00913	9/13/2008	Field Sample	EMSL27	Not QC	1/6/2009	TEM-ISO	ISO 10312	100	1295	0.013	2	5.0E+05	27	13	7	3.5
IIA	Surface Water	CC-1	P2-00914	9/14/2008	Field Sample	EMSL27	Not QC	1/9/2009	TEM-ISO	ISO 10312	100	1295	0.013	21	4.7E+04	0	0	0	0
IIA	Surface Water	CCS-16	P2-00917	9/14/2008	Field Sample	EMSL27	Not QC	1/9/2009	TEM-ISO	ISO 10312	10	1295	0.013	50	2.0E+05	9	1.8	6	1.2
IIA	Surface Water	LRC-2	P2-00930	9/9/2008	Field Sample	EMSL27	Not QC	12/28/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	7	0.35	3	0.15
IIA	Surface Water	TP-TOE1	P2-00933	9/10/2008	Field Sample	EMSL27	Not QC	12/30/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIC	Surface Water	NSY-R1	P2-01060	10/8/2008	Field Sample	EMSL27	Not QC	1/5/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIC	Surface Water	BTT-R1	P2-01063	10/8/2008	Field Sample	EMSL27	Not QC	1/6/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IVB	Surface Water	LRC-6	P4-50003	4/19/2011	Field Sample	EMSL27	Not QC	4/29/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	6	6.6E+05	102	68	20	13
IVB	Surface Water	CC-2	P4-50006	4/19/2011	Field Sample	EMSL27	Not QC	5/3/2011	TEM-ISO	ISO 10312 [Total]	100	1295	0.013	5	2.0E+05	100	20	5	1.0
IVB	Surface Water	LRC-2	P4-50009	4/19/2011	Field Sample	EMSL27	Not QC	5/9/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	10	2.0E+05	101	20	13	2.6
IVB	Surface Water	TP	P4-50012	4/19/2011	Field Sample	EMSL27	Not QC	5/9/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	8	2.5E+05	104	26	14	3.5
IVB	Surface Water	LRC-6	P4-50013	4/26/2011	Field Sample	EMSL27	Not QC	5/10/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	3	1.3E+06	104	138	20	27
IVB	Surface Water	LRC-2	P4-50022	4/26/2011	Field Sample	EMSL27	Not QC	5/10/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	6	3.3E+05	103	34	9	3.0
IVB	Surface Water	CC-2	P4-50025	4/26/2011	Field Sample	EMSL27	Not QC	5/11/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	5	8.0E+05	101	80	9	7.2
IVB	Surface Water	TP	P4-50028	4/26/2011	Field Sample	EMSL27	Not QC	5/19/2011	TEM-ISO	ISO 10312 [Total]	100	1295	0.013	4	2.5E+05	107	27	12	3.0
IVB	Surface Water	LRC-6	P4-50031	5/3/2011	Field Sample	EMSL27	Not QC	5/19/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	5	8.0E+05	116	92	25	20
IVB	Surface Water	LRC-2	P4-50034	5/3/2011	Field Sample	EMSL27	Not QC	5/25/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	11	1.8E+05	102	18	16	2.9
IVB	Surface Water	CC-2	P4-50037	5/3/2011	Field Sample	EMSL27	Not QC	5/31/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	11	3.6E+05	100	36	9	3.3
IVB	Surface Water	TP	P4-50040	5/3/2011	Field Sample	EMSL27	Not QC	6/1/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	10	2.0E+05	101	20	9	1.8
IVB	Surface Water	LRC-6	P4-50043	5/10/2011	Field Sample	EMSL27	Not QC	5/24/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	4	1.0E+06	119	119	27	27
IVB	Surface Water	LRC-2	P4-50052	5/10/2011	Field Sample	EMSL27	Not QC	6/1/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	4	5.0E+05	102	51	18	9.0
IVB	Surface Water	CC-2	P4-50055	5/10/2011	Field Sample	EMSL27	Not QC	6/2/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	5	8.0E+05	101	80	8	6.4
IVB	Surface Water	TP	P4-50058	5/10/2011	Field Sample	EMSL27	Not QC	6/7/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	4	1.0E+06	155	154	28	28
IVB	Surface Water	LRC-6	P4-50061	5/17/2011	Field Sample	EMSL27	Not QC	5/25/2011	TEM-ISO	ISO 10312 [Total]	5	1295	0.013	8	2.5E+06	111	276	22	55
IVB	Surface Water	LRC-2	P4-50064	5/17/2011	Field Sample	EMSL27	Not QC	5/26/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	6	6.6E+05	100	66	8	5.3
IVB	Surface Water	CC-2	P4-50067	5/17/2011	Field Sample	EMSL27	Not QC	6/6/2011	TEM-ISO	ISO 10312 [Total]	5	1295	0.013	8	2.5E+06	100	249	3	7.5
IVB	Surface Water	TP	P4-50070	5/17/2011	Field Sample	EMSL27	Not QC	6/9/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	16	2.5E+05	100	25	7	1.7

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
IVB	Surface Water	LRC-6	P4-50079	5/24/2011	Field Sample	EMSL27	Not QC	6/3/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	4	1.0E+06	130	130	15	15
IVB	Surface Water	LRC-2	P4-50082	5/24/2011	Field Sample	EMSL27	Not QC	6/7/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	10	4.0E+05	102	41	8	3.2
IVB	Surface Water	CC-2	P4-50085	5/24/2011	Field Sample	EMSL27	Not QC	6/8/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	8	5.0E+05	102	51	5	2.5
IVB	Surface Water	TP	P4-50088	5/24/2011	Field Sample	EMSL27	Not QC	6/15/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	10	2.0E+05	101	20	9	1.8
IVB	Surface Water	LRC-6	P4-50091	5/31/2011	Field Sample	EMSL27	Not QC	6/14/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	9	2.2E+05	110	24	8	1.8
IVB	Surface Water	LRC-2	P4-50094	5/31/2011	Field Sample	EMSL27	Not QC	6/15/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	11	3.6E+05	101	37	3	1.1
IVB	Surface Water	CC-2	P4-50097	5/31/2011	Field Sample	EMSL27	Not QC	6/20/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	7	5.7E+05	100	57	8	4.6
IVB	Surface Water	TP	P4-50106	5/31/2011	Field Sample	EMSL27	Not QC	7/15/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	4	5.0E+05	144	72	32	16
IVB	Surface Water	LRC-6	P4-50109	6/7/2011	Field Sample	EMSL27	Not QC	7/19/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	8	2.5E+05	103	26	8	2.0
IVB	Surface Water	LRC-2	P4-50112	6/7/2011	Field Sample	EMSL27	Not QC	7/25/2011	TEM-ISO	ISO 10312 [Total]	100	1295	0.013	6	1.7E+05	113	19	15	2.5
IVB	Surface Water	CC-2	P4-50115	6/7/2011	Field Sample	EMSL27	Not QC	7/21/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	9	2.2E+05	109	24	6	1.3
IVB	Surface Water	TP	P4-50118	6/7/2011	Field Sample	EMSL27	Not QC	7/22/2011	TEM-ISO	ISO 10312 [Total]	100	1295	0.013	8	1.2E+05	109	14	17	2.1
IVB	Surface Water	LRC-6	P4-50121	6/14/2011	Field Sample	EMSL27	Not QC	7/27/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	10	4.0E+05	100	40	14	5.6
IVB	Surface Water	LRC-2	P4-50124	6/14/2011	Field Sample	EMSL27	Not QC	8/1/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	34	5.9E+04	101	5.9	5	0.29
IVB	Surface Water	CC-2	P4-50133	6/14/2011	Field Sample	EMSL27	Not QC	8/4/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	17	2.3E+05	105	25	10	2.3
IVB	Surface Water	TP	P4-50136	6/14/2011	Field Sample	EMSL27	Not QC	8/8/2011	TEM-ISO	ISO 10312 [Total]	5	1295	0.013	16	1.2E+06	101	126	8	10
IVB	Surface Water	LRC-6	P4-50139	6/28/2011	Field Sample	EMSL27	Not QC	8/10/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	7	2.8E+05	103	29	10	2.8
IVB	Surface Water	LRC-2	P4-50142	6/28/2011	Field Sample	EMSL27	Not QC	8/11/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	13	1.5E+05	100	15	16	2.5
IVB	Surface Water	CC-2	P4-50145	6/28/2011	Field Sample	EMSL27	Not QC	8/12/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	13	1.5E+05	100	15	10	1.5
IVB	Surface Water	TP	P4-50148	6/28/2011	Field Sample	EMSL27	Not QC	8/15/2011	TEM-ISO	ISO 10312 [Total]	100	1295	0.013	4	2.5E+05	123	31	23	5.7
IVB	Surface Water	LRC-6	P4-50151	7/5/2011	Field Sample	EMSL27	Not QC	8/16/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	9	4.4E+05	100	44	14	6.2
IVB	Surface Water	LRC-2	P4-50160	7/5/2011	Field Sample	EMSL27	Not QC	8/19/2011	TEM-ISO	ISO 10312 [Total]	100	1295	0.013	8	1.2E+05	101	13	19	2.4
IVB	Surface Water	CC-2	P4-50163	7/5/2011	Field Sample	EMSL27	Not QC	8/22/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	16	1.2E+05	105	13	12	1.5
IVB	Surface Water	TP	P4-50166	7/5/2011	Field Sample	EMSL27	Not QC	8/23/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	7	2.8E+05	101	29	10	2.8
IVB	Surface Water	LRC-6	P4-50169	7/12/2011	Field Sample	EMSL27	Not QC	8/25/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	21	1.9E+05	103	20	16	3.0
IVB	Surface Water	LRC-2	P4-50172	7/12/2011	Field Sample	EMSL27	Not QC	8/26/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	20	1.0E+05	101	10	11	1.1
IVB	Surface Water	CC-2	P4-50175	7/12/2011	Field Sample	EMSL27	Not QC	8/29/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	16	1.2E+05	100	12	7	0.87
IVB	Surface Water	TP	P4-50178	7/12/2011	Field Sample	EMSL27	Not QC	8/30/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	12	3.3E+05	100	33	10	3.3
IVB	Surface Water	LRC-6	P4-50181	7/19/2011	Field Sample	EMSL27	Not QC	8/31/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	50	8.0E+04	0	0	0	0
IVB	Surface Water	LRC-2	P4-50190	7/19/2011	Field Sample	EMSL27	Not QC	9/6/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	11	1.8E+05	101	18	12	2.2
IVB	Surface Water	CC-2	P4-50193	7/19/2011	Field Sample	EMSL27	Not QC	9/7/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	18	1.1E+05	102	11	14	1.5
IVB	Surface Water	TP	P4-50196	7/19/2011	Field Sample	EMSL27	Not QC	9/8/2011	TEM-ISO	ISO 10312 [Total]	5	1295	0.013	50	4.0E+05	2	0.80	0	0
IVB	Surface Water	LRC-6	P4-50199	7/26/2011	Field Sample	EMSL27	Not QC	9/16/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	10	2.0E+05	100	20	6	1.2
IVB	Surface Water	LRC-2	P4-50202	7/26/2011	Field Sample	EMSL27	Not QC	9/19/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	8	2.5E+05	107	27	13	3.2
IVB	Surface Water	CC-2	P4-50205	7/26/2011	Field Sample	EMSL27	Not QC	9/22/2011	TEM-ISO	ISO 10312 [Total]	5	1295	0.013	50	4.0E+05	96	38	17	6.8
IVB	Surface Water	TP	P4-50208	7/26/2011	Field Sample	EMSL27	Not QC	9/26/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	18	1.1E+05	100	11	5	0.55
IVB	Surface Water	LRC-6	P4-50217	8/9/2011	Field Sample	EMSL27	Not QC	10/5/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	5	4.0E+05	102	41	11	4.4
IVB	Surface Water	LRC-2	P4-50220	8/9/2011	Field Sample	EMSL27	Not QC	10/6/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	9	4.4E+05	100	44	17	7.5
IVB	Surface Water	CC-2	P4-50223	8/9/2011	Field Sample	EMSL27	Not QC	10/7/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	50	4.0E+04	19	0.76	3	0.12
IVB	Surface Water	TP	P4-50226	8/9/2011	Field Sample	EMSL27	Not QC	10/10/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	14	2.8E+05	105	30	11	3.1
IVB	Surface Water	LRC-6	P4-50229	8/23/2011	Field Sample	EMSL27	Not QC	10/11/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	6	3.3E+05	101	34	6	2.0
IVB	Surface Water	LRC-2	P4-50232	8/23/2011	Field Sample	EMSL27	Not QC	10/12/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	10	4.0E+05	102	41	14	5.6
IVB	Surface Water	CC-2	P4-50235	8/23/2011	Field Sample	EMSL27	Not QC	10/13/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	8	5.0E+05	100	50	4	2.0
IVB	Surface Water	TP	P4-50244	8/23/2011	Field Sample	EMSL27	Not QC	10/18/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	7	5.7E+05	100	57	4	2.3
IVB	Surface Water	LRC-6	P4-50247	9/6/2011	Field Sample	EMSL27	Not QC	10/19/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	10	2.0E+05	100	20	13	2.6
IVB	Surface Water	LRC-2	P4-50250	9/6/2011	Field Sample	EMSL27	Not QC	10/24/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	50	4.0E+04	69	2.7	6	0.24
IVB	Surface Water	CC-2	P4-50253	9/6/2011	Field Sample	EMSL27	Not QC	10/26/2011	TEM-ISO	ISO 10312 [Total]	5	1295	0.013	51	3.9E+05	69	27	14	5.5
IVB	Surface Water	TP	P4-50256	9/6/2011	Field Sample	EMSL27	Not QC	10/27/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	9	2.2E+05	105	23	11	2.4
IVB	Surface Water	LRC-6	P4-50259	9/20/2011	Field Sample	EMSL27	Not QC	10/28/2011	TEM-ISO	ISO 10312 [Total]	50	1295	0.013	30	6.6E+04	105	7.0	14	0.93
IVB	Surface Water	LRC-2	P4-50262	9/20/2011	Field Sample	EMSL27	Not QC	11/4/2011	TEM-ISO	ISO 10312 [Total]	25	1295	0.013	37	1.1E+05	101	11	4	0.43
IVB	Surface Water	CC-2	P4-50271	9/20/2011	Field Sample	EMSL27	Not QC	11/8/2011	TEM-ISO	ISO 10312 [Total]	10	1295	0.013	38	2.6E+06	104	273	10	26

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
IVB	Surface Water	TP	P4-50274	9/20/2011	Field Sample	EMSL27	Not QC	11/9/2011	TEM-ISO	ISO 10312 [Total]	5	1295	0.013	10	2.0E+06	105	209	8	16
IVB	Surface Water - Filtered	LRC-2	P4-50008	4/19/2011	Field Sample	Hygeia	Not QC	4/26/2011	TEM-ISO	ISO 10312 [Free]	10	380	0.0099	42	9.1E+04	100	9.1	5	0.46
IVB	Surface Water - Filtered	TP	P4-50010	4/19/2011	Field Sample	Hygeia	Not QC	4/25/2011	TEM-ISO	ISO 10312 [Free]	50	380	0.0099	16	4.8E+04	89	4.3	6	0.29
IVB	Surface Water - Filtered	TP	P4-50011	4/19/2011	Field Sample	Hygeia	Not QC	4/29/2011	TEM-ISO	ISO 10312 [Free]	10	380	0.0099	20	1.9E+05	102	20	13	2.5
IVB	Surface Water - Filtered	LRC-6	P4-50017	4/26/2011	Field Sample	Hygeia	Not QC	5/5/2011	TEM-ISO	ISO 10312 [Free]	10	380	0.0099	9	4.3E+05	105	45	8	3.4
IVB	Surface Water - Filtered	LRC-2	P4-50024	4/26/2011	Field Sample	Hygeia	Not QC	5/22/2011	TEM-ISO	ISO 10312 [Free]	10	380	0.0099	11	3.5E+05	102	36	7	2.4
IVB	Surface Water - Filtered	CC-2	P4-50027	4/26/2011	Field Sample	Hygeia	Not QC	5/17/2011	TEM-ISO	ISO 10312 [Free]	10	380	0.0099	5	7.7E+05	110	84	6	4.6
IVB	Surface Water - Filtered	TP	P4-50029	4/26/2011	Field Sample	Hygeia	Not QC	5/18/2011	TEM-ISO	ISO 10312 [Free]	50	380	0.0099	5	1.5E+05	107	16	19	2.9
IVB	Surface Water - Filtered	LRC-6	P4-50033	5/3/2011	Field Sample	Hygeia	Not QC	5/25/2011	TEM-ISO	ISO 10312 [Free]	10	380	0.0099	10	3.8E+05	106	41	13	5.0
IVB	Surface Water - Filtered	LRC-2	P4-50035	5/3/2011	Field Sample	Hygeia	Not QC	6/2/2011	TEM-ISO	ISO 10312 [Free]	50	380	0.0099	16	4.8E+04	96	4.6	11	0.53
IVB	Surface Water - Filtered	TP	P4-50041	5/3/2011	Field Sample	Hygeia	Not QC	5/27/2011	TEM-ISO	ISO 10312 [Free]	50	380	0.0099	6	1.3E+05	106	14	12	1.5
VA	Surface Water	KR-1	P5-10004	4/25/2012	Field Sample	EMSL27	NOT QC	5/27/2012	TEM-ISO	ISO 10312	20	360	0.013	77	1.8E+05	0	0	0	0
VA	Surface Water	KR-1	P5-10010	5/2/2012	Field Sample	EMSL27	Not QC	10/3/2012	TEM-ISO	ISO 10312	20	360	0.013	85	1.6E+05	0	0	0	0
VA	Surface Water	KR-1	P5-10017	5/9/2012	Field Sample	EMSL04	NOT QC	8/7/2013	TEM-ISO	ISO 10312	20	1282	0.0132	76	6.4E+05	1	0.64	0	0
VA	Surface Water	KR-1	P5-10032	5/16/2012	Field Sample	EMSL22	NOT QC	6/7/2012	TEM-ISO	ISO 10312	60	1295	0.013	34	4.9E+04	1	0.049	1	0.049
VA	Surface Water	KR-1	P5-10052	5/23/2012	Field Sample	EMSL04	NOT QC	7/25/2012	TEM-ISO	ISO 10312	60	1295	0.0132	33	5.0E+04	2	0.099	0	0
VA	Surface Water	KR-1	P5-10061	5/30/2012	Field Sample	EMSL27	Not QC	6/25/2012	TEM-ISO	ISO 10312	25	360	0.013	27	4.1E+04	0	0	0	0
VA	Surface Water	KR-1	P5-10067	6/6/2012	Field Sample	EMSL27	NOT QC	6/26/2012	TEM-ISO	ISO 10312	20	360	0.013	26	5.3E+04	25	1.3	0	0
VA	Surface Water	KR-1	P5-10075	6/13/2012	Field Sample	EMSL27	NOT QC	6/27/2012	TEM-ISO	ISO 10312	25	360	0.013	31	3.6E+04	0	0	0	0
VA	Surface Water	KR-1	P5-10101	9/19/2012	Field Sample	EMSL27	NOT QC	12/27/2012	TEM-ISO	ISO 10312	25	360	0.013	25	4.4E+04	0	0	0	0
VA	Surface Water	KR-14	P5-10041	5/23/2012	Field Sample	EMSL04	Not QC	6/18/2012	TEM-ISO	ISO 10312	50	1295	0.0132	40	4.9E+04	0	0	0	0
VA	Surface Water	KR-14	P5-10042	5/23/2012	Field Sample	EMSL04	Not QC	7/23/2012	TEM-ISO	ISO 10312	20	1295	0.0132	99	5.0E+04	0	0	0	0
VA	Surface Water	KR-14	P5-10043	5/23/2012	Field Sample	EMSL04	Not QC	6/19/2012	TEM-ISO	ISO 10312	60	1295	0.0132	38	4.3E+04	0	0	0	0
VA	Surface Water	KR-14	P5-10045	5/23/2012	Field Sample	EMSL04	Not QC	6/28/2012	TEM-ISO	ISO 10312	100	1295	0.0132	19	5.2E+04	0	0	0	0
VA	Surface Water	KR-14	P5-10046	5/23/2012	Field Sample	EMSL04	NOT QC	6/19/2012	TEM-ISO	ISO 10312	30	1295	0.0132	66	5.0E+04	1	0.050	0	0
VA	Surface Water	KR-14	P5-10047	5/23/2012	Field Sample	EMSL04	NOT QC	6/29/2012	TEM-ISO	ISO 10312	50	1295	0.0132	40	4.9E+04	2	0.098	0	0
VA	Surface Water	KR-14	P5-10086	9/19/2012	Field Sample	EMSL27	NOT QC	12/26/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-14	P5-10088	9/19/2012	Field Sample	EMSL27	NOT QC	12/26/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-14	P5-10089	9/19/2012	Field Sample	EMSL27	NOT QC	12/19/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-14	P5-10090	9/19/2012	Field Sample	EMSL27	NOT QC	12/20/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-14	P5-10091	9/19/2012	Field Sample	EMSL27	NOT QC	12/22/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-15	P5-10048	5/23/2012	Field Sample	EMSL04	Not QC	6/28/2012	TEM-ISO	ISO 10312	75	1295	0.0132	27	4.8E+04	0	0	0	0
VA	Surface Water	KR-15	P5-10085	9/19/2012	Field Sample	EMSL27	NOT QC	12/19/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-16	P5-10035	5/23/2012	Field Sample	EMSL04	Not QC	6/17/2012	TEM-ISO	ISO 10312	60	1295	0.0132	33	5.0E+04	0	0	0	0
VA	Surface Water	KR-16	P5-10037	5/23/2012	Field Sample	EMSL04	Not QC	6/17/2012	TEM-ISO	ISO 10312	50	1295	0.0132	40	4.9E+04	0	0	0	0
VA	Surface Water	KR-16	P5-10038	5/23/2012	Field Sample	EMSL04	Not QC	6/18/2012	TEM-ISO	ISO 10312	10	1295	0.0132	76	1.3E+05	0	0	0	0
VA	Surface Water	KR-16	P5-10039	5/23/2012	Field Sample	EMSL04	Not QC	6/18/2012	TEM-ISO	ISO 10312	60	1295	0.0132	33	5.0E+04	0	0	0	0
VA	Surface Water	KR-16	P5-10040	5/23/2012	Field Sample	EMSL04	NOT QC	6/18/2012	TEM-ISO	ISO 10312	30	1295	0.0132	66	5.0E+04	1	0.050	0	0
VA	Surface Water	KR-16	P5-10079	9/19/2012	Field Sample	EMSL27	NOT QC	12/18/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-16	P5-10080	9/19/2012	Field Sample	EMSL27	NOT QC	12/26/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-16	P5-10081	9/19/2012	Field Sample	EMSL27	NOT QC	12/18/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-16	P5-10082	9/19/2012	Field Sample	EMSL27	NOT QC	12/26/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-16	P5-10083	9/19/2012	Field Sample	EMSL27	NOT QC	12/19/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	KR-4	P5-10002	4/25/2012	Field Sample	EMSL27	NOT QC	5/16/2012	TEM-ISO	ISO 10312	20	360	0.013	77	1.8E+05	0	0	0	0
VA	Surface Water	KR-4	P5-10008	5/2/2012	Field Sample	EMSL27	NOT QC	10/3/2012	TEM-ISO	ISO 10312	20	360	0.013	85	1.6E+05	0	0	0	0
VA	Surface Water	KR-4	P5-10015	5/9/2012	Field Sample	EMSL04	NOT QC	7/29/2013	TEM-ISO	ISO 10312	20	360	0.0132	76	1.8E+05	0	0	0	0
VA	Surface Water	KR-4	P5-10030	5/16/2012	Field Sample	EMSL22	NOT QC	6/4/2012	TEM-ISO	ISO 10312	75	1295	0.013	27	4.9E+04	2	0.098	1	0.049
VA	Surface Water	KR-4	P5-10051	5/23/2012	Field Sample	EMSL04	Not QC	7/24/2012	TEM-ISO	ISO 10312	50	1295	0.0132	40	4.9E+04	0	0	0	0
VA	Surface Water	KR-4	P5-10059	5/30/2012	Field Sample	EMSL27	Not QC	6/25/2012	TEM-ISO	ISO 10312	25	360	0.013	26	4.3E+04	0	0	0	0
VA	Surface Water	KR-4	P5-10066	6/6/2012	Field Sample	EMSL27	NOT QC	6/26/2012	TEM-ISO	ISO 10312	20	360	0.013	29	4.8E+04	25	1.2	2	0.095
VA	Surface Water	KR-4	P5-10073	6/13/2012	Field Sample	EMSL27	NOT QC	6/27/2012	TEM-ISO	ISO 10312	25	360	0.013	31	3.6E+04	0	0	0	0

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information										Results			
																Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
VA	Surface Water	KR-4	P5-10093	9/19/2012	Field Sample	EMSL27	NOT QC	12/27/2012	TEM-ISO	ISO 10312	25	360	0.013	25	4.4E+04	0	0	0	0
VA	Surface Water	KR-5	P5-10013	5/9/2012	Field Sample	EMSL27	NOT QC	5/25/2012	TEM-ISO	ISO 10312	20	360	0.013	77	1.8E+05	0	0	0	0
VA	Surface Water	KR-5	P5-10029	5/16/2012	Field Sample	EMSL22	NOT QC	6/1/2012	TEM-ISO	ISO 10312	75	1295	0.013	27	4.9E+04	5	0.25	2	0.098
VA	Surface Water	KR-5	P5-10049	5/23/2012	Field Sample	EMSL04	Not QC	6/28/2012	TEM-ISO	ISO 10312	100	1295	0.0132	20	4.9E+04	0	0	0	0
VA	Surface Water	KR-5	P5-10058	5/30/2012	Field Sample	EMSL27	NOT QC	6/25/2012	TEM-ISO	ISO 10312	25	360	0.013	26	4.3E+04	1	0.043	0	0
VA	Surface Water	KR-5	P5-10065	6/6/2012	Field Sample	EMSL27	Not QC	6/26/2012	TEM-ISO	ISO 10312	25	360	0.013	28	4.0E+04	0	0	0	0
VA	Surface Water	KR-5	P5-10072	6/13/2012	Field Sample	EMSL27	NOT QC	6/27/2012	TEM-ISO	ISO 10312	25	360	0.013	26	4.3E+04	0	0	0	0
VA	Surface Water	KR-5	P5-10092	9/19/2012	Field Sample	EMSL27	NOT QC	12/23/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	LRC-6	P5-10006	4/25/2012	Field Sample	EMSL27	NOT QC	5/21/2012	TEM-ISO	ISO 10312	20	360	0.013	4	3.5E+06	121	419	19	66
VA	Surface Water	LRC-6	P5-10012	5/2/2012	Field Sample	EMSL27	NOT QC	10/4/2012	TEM-ISO	ISO 10312	20	360	0.013	9	1.5E+06	27	42	6	9.2
VA	Surface Water	LRC-6	P5-10019	5/9/2012	Field Sample	EMSL27	NOT QC	6/8/2012	TEM-ISO	ISO 10312	20	360	0.013	34	4.1E+05	25	10	6	2.4
VA	Surface Water	LRC-6	P5-10020	5/9/2012	Field Sample	EMSL27	NOT QC	5/29/2012	TEM-ISO	ISO 10312	20	360	0.013	10	1.4E+06	26	36	2	2.8
VA	Surface Water	LRC-6	P5-10021	5/9/2012	Field Sample	EMSL27	NOT QC	6/8/2012	TEM-ISO	ISO 10312	20	360	0.013	19	7.3E+05	25	18	1	0.73
VA	Surface Water	LRC-6	P5-10022	5/9/2012	Field Sample	EMSL27	NOT QC	6/8/2012	TEM-ISO	ISO 10312	20	360	0.013	19	7.3E+05	25	18	4	2.9
VA	Surface Water	LRC-6	P5-10023	5/9/2012	Field Sample	EMSL27	NOT QC	5/30/2012	TEM-ISO	ISO 10312	20	360	0.013	27	5.1E+05	25	13	2	1.0
VA	Surface Water	LRC-6	P5-10024	5/9/2012	Field Sample	EMSL27	NOT QC	6/8/2012	TEM-ISO	ISO 10312	20	360	0.013	5	2.8E+06	25	69	1	2.8
VA	Surface Water	LRC-6	P5-10025	5/9/2012	Field Sample	EMSL27	NOT QC	6/7/2012	TEM-ISO	ISO 10312	20	360	0.013	5	2.8E+06	27	75	4	11
VA	Surface Water	LRC-6	P5-10026	5/9/2012	Field Sample	EMSL27	NOT QC	5/30/2012	TEM-ISO	ISO 10312	20	360	0.013	8	1.7E+06	26	45	3	5.2
VA	Surface Water	LRC-6	P5-10027	5/9/2012	Field Sample	EMSL27	NOT QC	6/7/2012	TEM-ISO	ISO 10312	20	360	0.013	20	6.9E+05	29	20	3	2.1
VA	Surface Water	LRC-6	P5-10034	5/16/2012	Field Sample	EMSL22	NOT QC	6/7/2012	TEM-ISO	ISO 10312	90	1295	0.013	4	2.8E+05	121	33	10	2.8
VA	Surface Water	LRC-6	P5-10056	5/23/2012	Field Sample	EMSL04	NOT QC	6/15/2012	TEM-ISO	ISO 10312	100	1295	0.0132	4	2.5E+05	66	16	14	3.4
VA	Surface Water	LRC-6	P5-10108	9/19/2012	Field Sample	EMSL27	NOT QC	12/27/2012	TEM-ISO	ISO 10312	25	360	0.013	4	2.8E+05	47	13	15	4.2
VA	Surface Water	UKR-0	P5-10005	4/25/2012	Field Sample	EMSL27	NOT QC	10/2/2012	TEM-ISO	ISO 10312	10	360	0.013	85	3.3E+05	2	0.65	0	0
VA	Surface Water	UKR-0	P5-10011	5/2/2012	Field Sample	EMSL27	Not QC	10/4/2012	TEM-ISO	ISO 10312	20	360	0.013	85	1.6E+05	0	0	0	0
VA	Surface Water	UKR-0	P5-10018	5/9/2012	Field Sample	EMSL04	NOT QC	8/8/2013	TEM-ISO	ISO 10312	20	1282	0.0132	76	6.4E+05	0	0	0	0
VA	Surface Water	UKR-0	P5-10033	5/16/2012	Field Sample	EMSL22	NOT QC	6/7/2012	TEM-ISO	ISO 10312	45	1295	0.013	45	4.9E+04	1	0.049	1	0.049
VA	Surface Water	UKR-0	P5-10053	5/23/2012	Field Sample	EMSL04	Not QC	6/28/2012	TEM-ISO	ISO 10312	60	1295	0.0132	33	5.0E+04	0	0	0	0
VA	Surface Water	UKR-0	P5-10102	9/19/2012	Field Sample	EMSL27	NOT QC	12/27/2012	TEM-ISO	ISO 10312	25	360	0.013	25	4.4E+04	1	0.044	1	0.044
VA	Surface Water	UKR-1	P5-10054	5/23/2012	Field Sample	EMSL04	Not QC	6/28/2012	TEM-ISO	ISO 10312	100	1295	0.0132	20	4.9E+04	0	0	0	0
VA	Surface Water	UKR-1	P5-10104	9/19/2012	Field Sample	EMSL27	NOT QC	12/23/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VA	Surface Water	UKR-2	P5-10055	5/23/2012	Field Sample	EMSL04	Not QC	6/28/2012	TEM-ISO	ISO 10312	100	1295	0.0132	20	4.9E+04	0	0	0	0
VA	Surface Water	UKR-3	P5-10105	9/19/2012	Field Sample	EMSL27	NOT QC	12/23/2012	TEM-ISO	ISO 10312	25	360	0.013	80	1.4E+04	0	0	0	0
VB	Surface Water	Banana Lake	P5-20066	5/24/2012	Field Sample	EMSL27	NOT QC	7/5/2012	TEM-ISO	ISO 10312	75	1295	0.013	30	4.4E+04	2	0.089	1	0.044
VB	Surface Water	Banana Lake	P5-20272	8/31/2012	Field Sample	EMSL27	NOT QC	11/26/2012	TEM-ISO	ISO 10312	5	360	0.013	80	6.9E+04	0	0	0	0
VB	Surface Water	Bobtail Pond	P5-20068	5/24/2012	Field Sample	EMSL27	NOT QC	7/5/2012	TEM-ISO	ISO 10312	75	1295	0.013	33	4.0E+04	0	0	0	0
VB	Surface Water	Bobtail Pond	P5-20271	8/31/2012	Field Sample	EMSL27	NOT QC	11/26/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+05	0	0	0	0
VB	Surface Water	CC-Pond	P5-20061	5/24/2012	Field Sample	EMSL27	NOT QC	6/29/2012	TEM-ISO	ISO 10312	75	1295	0.013	4	3.3E+05	27	9.0	6	2.0
VB	Surface Water	CC-Pond	P5-20085	5/31/2012	Field Sample	EMSL27	NOT QC	7/9/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	5	0.23	1	0.046
VB	Surface Water	CC-Pond	P5-20105	6/6/2012	Field Sample	EMSL27	NOT QC	7/18/2012	TEM-ISO	ISO 10312	25	360	0.013	25	4.4E+04	16	0.71	4	0.18
VB	Surface Water	CC-Pond	P5-20211	6/15/2012	Field Sample	EMSL27	NOT QC	7/20/2012	TEM-ISO	ISO 10312	50	360	0.013	4	1.4E+05	70	9.7	25	3.5
VB	Surface Water	CC-Pond	P5-20217	6/21/2012	Field Sample	EMSL27	NOT QC	7/23/2012	TEM-ISO	ISO 10312	10	360	0.013	60	4.6E+04	1	0.046	1	0.046
VB	Surface Water	CC-Pond	P5-20223	6/29/2012	Field Sample	EMSL27	NOT QC	10/12/2012	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	0	0	0	0
VB	Surface Water	CC-Pond	P5-20224	7/5/2012	Field Sample	EMSL27	NOT QC	11/9/2012	TEM-ISO	ISO 10312	25	1295	0.013	16	2.5E+05	26	6.5	5	1.2
VB	Surface Water	CC-Pond	P5-20232	7/11/2012	Field Sample	EMSL27	NOT QC	10/18/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+05	28	19	3	2.1
VB	Surface Water	CC-Pond	P5-20234	7/19/2012	Field Sample	EMSL27	NOT QC	10/16/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+05	39	27	4	2.8
VB	Surface Water	CC-Pond	P5-20238	7/26/2012	Field Sample	EMSL27	NOT QC	11/12/2012	TEM-ISO	ISO 10312	15	360	0.013	4	4.6E+05	27	12	1	0.46
VB	Surface Water	CC-Pond	P5-20242	8/2/2012	Field Sample	EMSL27	NOT QC	11/13/2012	TEM-ISO	ISO 10312	15	360	0.013	4	4.6E+05	36	17	5	2.3
VB	Surface Water	CC-Pond	P5-20248	8/9/2012	Field Sample	EMSL27	NOT QC	11/15/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	6	0.21	1	0.035
VB	Surface Water	CC-Pond	P5-20252	8/16/2012	Field Sample	EMSL27	NOT QC	11/19/2012	TEM-ISO	ISO 10312	10	360	0.013	5	5.5E+05	25	14	4	2.2
VB	Surface Water	CC-Pond	P5-20257	8/23/2012	Field Sample	EMSL27	NOT QC	11/20/2012	TEM-ISO	ISO 10312	10	360	0.013	83	3.3E+04	1	0.033	0	0
VB	Surface Water	CC-Pond	P5-20261	8/30/2012	Field Sample	EMSL27	NOT QC	11/21/2012	TEM-ISO	ISO 10312	10	360	0.013	24	1.2E+05	26	3.0	2	0.23

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
VB	Surface Water	FC-Pond	P5-20062	5/24/2012	Field Sample	EMSL27	NOT QC	7/5/2012	TEM-ISO	ISO 10312	75	1295	0.013	4	3.3E+05	46	15	7	2.3
VB	Surface Water	FC-Pond	P5-20088	5/31/2012	Field Sample	EMSL27	NOT QC	7/9/2012	TEM-ISO	ISO 10312	50	360	0.013	4	1.4E+05	41	5.7	5	0.69
VB	Surface Water	FC-Pond	P5-20106	6/6/2012	Field Sample	EMSL27	NOT QC	7/18/2012	TEM-ISO	ISO 10312	20	360	0.013	5	2.8E+05	30	8.3	4	1.1
VB	Surface Water	FC-Pond	P5-20212	6/15/2012	Field Sample	EMSL27	NOT QC	7/19/2012	TEM-ISO	ISO 10312	5	360	0.013	4	1.4E+06	79	109	20	28
VB	Surface Water	FC-Pond	P5-20218	6/21/2012	Field Sample	EMSL27	NOT QC	7/20/2012	TEM-ISO	ISO 10312	5	360	0.013	6	9.2E+05	29	27	3	2.8
VB	Surface Water	FC-Pond	P5-20222	6/29/2012	Field Sample	EMSL27	NOT QC	10/12/2012	TEM-ISO	ISO 10312	50	1295	0.013	6	3.3E+05	26	8.6	4	1.3
VB	Surface Water	FC-Pond	P5-20225	7/5/2012	Field Sample	EMSL27	NOT QC	11/8/2012	TEM-ISO	ISO 10312	25	1295	0.013	4	1.0E+06	25	25	1	1.0
VB	Surface Water	FC-Pond	P5-20233	7/11/2012	Field Sample	EMSL27	NOT QC	10/18/2012	TEM-ISO	ISO 10312	10	360	0.013	5	5.5E+05	25	14	1	0.55
VB	Surface Water	FC-Pond	P5-20235	7/19/2012	Field Sample	EMSL27	NOT QC	10/16/2012	TEM-ISO	ISO 10312	10	360	0.013	60	4.6E+04	2	0.092	0	0
VB	Surface Water	FC-Pond	P5-20239	7/26/2012	Field Sample	EMSL27	NOT QC	11/12/2012	TEM-ISO	ISO 10312	15	360	0.013	4	4.6E+05	54	25	6	2.8
VB	Surface Water	FC-Pond	P5-20243	8/2/2012	Field Sample	EMSL27	NOT QC	11/13/2012	TEM-ISO	ISO 10312	15	360	0.013	4	4.6E+05	66	30	21	9.7
VB	Surface Water	FC-Pond	P5-20249	8/9/2012	Field Sample	EMSL27	NOT QC	11/16/2012	TEM-ISO	ISO 10312	10	360	0.013	9	3.1E+05	26	8.0	6	1.8
VB	Surface Water	FC-Pond	P5-20253	8/16/2012	Field Sample	EMSL27	NOT QC	11/19/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+05	53	37	8	5.5
VB	Surface Water	FC-Pond	P5-20256	8/23/2012	Field Sample	EMSL27	NOT QC	11/20/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+05	29	20	6	4.2
VB	Surface Water	FC-Pond	P5-20260	8/30/2012	Field Sample	EMSL27	NOT QC	11/21/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+05	93	64	9	6.2
VB	Pore Water (In)	LRC-2	P5-20009	5/10/2012	Field Sample	EMSL27	NOT QC	6/14/2012	TEM-ISO	ISO 10312	60	360	0.013	4	1.2E+07	40	462	5	58
VB	Pore Water (Out)	LRC-2	P5-20010	5/10/2012	Field Sample	EMSL27	NOT QC	6/15/2012	TEM-ISO	ISO 10312	60	360	0.013	4	1.2E+07	56	646	7	81
VB	Surface Water	LRC-2	P5-20011	5/10/2012	Field Sample	EMSL27	NOT QC	6/12/2012	TEM-ISO	ISO 10312	10	360	0.013	35	7.9E+04	25	2.0	6	0.47
VB	Surface Water	LRC-2	P5-20018	5/14/2012	Field Sample	EMSL04	NOT QC	6/1/2012	TEM-ISO	ISO 10312	15	1295	0.0132	77	8.5E+04	0	0	0	0
VB	Pore Water (In)	LRC-2	P5-20020	5/14/2012	Field Sample	EMSL04	NOT QC	5/22/2012	TEM-ISO	ISO 10312	30	1295	0.0132	4	8.2E+06	50	409	8	65
VB	Pore Water (In)	LRC-2	P5-20032	5/17/2012	Field Sample	EMSL04	NOT QC	6/15/2012	TEM-ISO	ISO 10312	75	1295	0.0132	4	3.3E+06	41	134	4	13
VB	Pore Water (Out)	LRC-2	P5-20033	5/17/2012	Field Sample	EMSL04	NOT QC	6/12/2012	TEM-ISO	ISO 10312	75	1295	0.0132	4	3.3E+06	74	242	4	13
VB	Surface Water	LRC-2	P5-20034	5/17/2012	Field Sample	EMSL04	NOT QC	6/14/2012	TEM-ISO	ISO 10312	30	1295	0.0132	4	8.2E+05	60	49	7	5.7
VB	Surface Water	LRC-2	P5-20035	5/17/2012	Field Sample	EMSL04	NOT QC	6/14/2012	TEM-ISO	ISO 10312	60	1295	0.0132	16	1.0E+05	25	2.6	1	0.10
VB	Surface Water	LRC-2	P5-20042	5/21/2012	Field Sample	EMSL22	NOT QC	7/24/2012	TEM-ISO	ISO 10312	25	1295	0.013	4	1.0E+06	34	34	7	7.0
VB	Pore Water (In)	LRC-2	P5-20043	5/21/2012	Field Sample	EMSL22	NOT QC	7/25/2012	TEM-ISO	ISO 10312	10	1295	0.013	5	2.0E+06	122	243	10	20
VB	Surface Water	LRC-2	P5-20057	5/24/2012	Field Sample	EMSL27	NOT QC	6/28/2012	TEM-ISO	ISO 10312	75	1295	0.013	4	3.3E+05	29	9.6	4	1.3
VB	Pore Water (In)	LRC-2	P5-20058	5/24/2012	Field Sample	EMSL27	NOT QC	6/29/2012	TEM-ISO	ISO 10312	35	1295	0.013	4	7.1E+05	26	19	3	2.1
VB	Surface Water	LRC-2	P5-20073	5/28/2012	Field Sample	EMSL27	NOT QC	6/18/2012	TEM-ISO	ISO 10312	25	360	0.013	4	2.8E+05	30	8.3	6	1.7
VB	Pore Water (In)	LRC-2	P5-20074	5/28/2012	Field Sample	EMSL27	NOT QC	6/20/2012	TEM-ISO	ISO 10312	5	360	0.013	4	1.4E+06	93	129	23	32
VB	Surface Water	LRC-2	P5-20081	5/31/2012	Field Sample	EMSL27	NOT QC	7/11/2012	TEM-ISO	ISO 10312	10	360	0.013	8	3.5E+05	25	8.7	9	3.1
VB	Pore Water (In)	LRC-2	P5-20082	5/31/2012	Field Sample	EMSL27	NOT QC	7/9/2012	TEM-ISO	ISO 10312	5	360	0.013	4	1.4E+06	57	79	23	32
VB	Surface Water	LRC-2	P5-20100	6/4/2012	Field Sample	EMSL27	NOT QC	7/12/2012	TEM-ISO	ISO 10312	50	1295	0.013	10	2.0E+05	26	5.2	1	0.20
VB	Pore Water (In)	LRC-2	P5-20101	6/4/2012	Field Sample	EMSL27	NOT QC	7/16/2012	TEM-ISO	ISO 10312	15	1295	0.013	14	4.7E+05	26	12	5	2.4
VB	Pore Water (In)	LRC-2	P5-20114	6/7/2012	Field Sample	EMSL27	NOT QC	7/20/2012	TEM-ISO	ISO 10312	20	1295	0.013	28	1.8E+05	28	5.0	8	1.4
VB	Surface Water	LRC-2	P5-20115	6/7/2012	Field Sample	EMSL27	NOT QC	7/24/2012	TEM-ISO	ISO 10312	30	1295	0.013	8	4.2E+05	25	10	10	4.2
VB	Surface Water	LRC-2	P5-20205	6/11/2012	Field Sample	EMSL27	NOT QC	7/17/2012	TEM-ISO	ISO 10312	20	360	0.013	7	2.0E+05	25	4.9	8	1.6
VB	Pore Water (In)	LRC-4	P5-20005	5/10/2012	Field Sample	EMSL27	NOT QC	6/11/2012	TEM-ISO	ISO 10312	60	360	0.013	4	1.2E+07	77	888	15	173
VB	Surface Water	LRC-4	P5-20006	5/10/2012	Field Sample	EMSL27	NOT QC	6/13/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+05	33	23	4	2.8
VB	Pore Water (Out)	LRC-4	P5-20007	5/10/2012	Field Sample	EMSL27	NOT QC	6/12/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+07	39	2700	6	415
VB	Surface Water	LRC-4	P5-20016	5/14/2012	Field Sample	EMSL04	NOT QC	5/24/2012	TEM-ISO	ISO 10312	30	1295	0.0132	4	8.2E+05	46	38	2	1.6
VB	Pore Water (In)	LRC-4	P5-20017	5/14/2012	Field Sample	EMSL04	NOT QC	5/29/2012	TEM-ISO	ISO 10312	30	1295	0.0132	4	8.2E+07	42	3434	4	327
VB	Pore Water (In)	LRC-4	P5-20028	5/17/2012	Field Sample	EMSL04	NOT QC	6/8/2012	TEM-ISO	ISO 10312	30	1295	0.0132	4	8.2E+06	67	548	14	114
VB	Pore Water (Out)	LRC-4	P5-20029	5/17/2012	Field Sample	EMSL04	NOT QC	6/11/2012	TEM-ISO	ISO 10312	15	1295	0.0132	4	1.6E+07	104	1701	16	262
VB	Surface Water	LRC-4	P5-20030	5/17/2012	Field Sample	EMSL04	NOT QC	6/8/2012	TEM-ISO	ISO 10312	100	1295	0.0132	4	2.5E+05	41	10	11	2.7
VB	Surface Water	LRC-4	P5-20031	5/17/2012	Field Sample	EMSL04	NOT QC	6/11/2012	TEM-ISO	ISO 10312	100	1295	0.0132	4	2.5E+05	41	10	17	4.2
VB	Surface Water	LRC-4	P5-20040	5/21/2012	Field Sample	EMSL22	NOT QC	6/27/2012	TEM-ISO	ISO 10312	25	1295	0.013	4	1.0E+06	58	58	6	6.0
VB	Pore Water (In)	LRC-4	P5-20041	5/21/2012	Field Sample	EMSL22	NOT QC	7/5/2012	TEM-ISO	ISO 10312	10	1295	0.013	4	2.5E+07	122	3038	16	398
VB	Surface Water	LRC-4	P5-20055	5/24/2012	Field Sample	EMSL27	NOT QC	6/28/2012	TEM-ISO	ISO 10312	75	1295	0.013	4	3.3E+05	29	9.6	8	2.7
VB	Pore Water (In)	LRC-4	P5-20056	5/24/2012	Field Sample	EMSL27	NOT QC	6/28/2012	TEM-ISO	ISO 10312	25	1295	0.013	4	1.0E+06	40	40	6	6.0
VB	Surface Water	LRC-4	P5-20070	5/28/2012	Field Sample	EMSL27	NOT QC	6/15/2012	TEM-ISO	ISO 10312	25	360	0.013	4	2.8E+05	60	17	15	4.2

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
VB	Pore Water (In)	LRC-4	P5-20072	5/28/2012	Field Sample	EMSL27	NOT QC	6/18/2012	TEM-ISO	ISO 10312	5	360	0.013	4	1.4E+06	71	98	17	24
VB	Surface Water	LRC-4	P5-20079	5/31/2012	Field Sample	EMSL27	NOT QC	7/6/2012	TEM-ISO	ISO 10312	25	360	0.013	5	2.2E+05	25	5.5	3	0.66
VB	Pore Water (In)	LRC-4	P5-20080	5/31/2012	Field Sample	EMSL27	NOT QC	7/11/2012	TEM-ISO	ISO 10312	20	360	0.013	4	3.5E+05	65	23	18	6.2
VB	Surface Water	LRC-4	P5-20098	6/4/2012	Field Sample	EMSL27	NOT QC	7/11/2012	TEM-ISO	ISO 10312	25	1295	0.013	9	4.4E+05	26	12	4	1.8
VB	Pore Water (In)	LRC-4	P5-20099	6/4/2012	Field Sample	EMSL27	NOT QC	7/12/2012	TEM-ISO	ISO 10312	5	1295	0.013	4	5.0E+06	56	279	17	85
VB	Pore Water (In)	LRC-4	P5-20112	6/7/2012	Field Sample	EMSL27	NOT QC	7/18/2012	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	36	60	9	15
VB	Surface Water	LRC-4	P5-20113	6/7/2012	Field Sample	EMSL27	NOT QC	7/19/2012	TEM-ISO	ISO 10312	75	1295	0.013	7	1.9E+05	28	5.3	5	0.95
VB	Surface Water	LRC-4	P5-20203	6/11/2012	Field Sample	EMSL27	NOT QC	7/17/2012	TEM-ISO	ISO 10312	20	360	0.013	4	3.5E+05	26	9.0	3	1.0
VB	Pore Water (In)	LRC-5	P5-20001	5/10/2012	Field Sample	EMSL27	NOT QC	6/14/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+07	42	2908	7	485
VB	Surface Water	LRC-5	P5-20002	5/10/2012	Field Sample	EMSL27	NOT QC	6/7/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+05	58	40	11	7.6
VB	Pore Water (Out)	LRC-5	P5-20003	5/10/2012	Field Sample	EMSL27	NOT QC	6/11/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+07	30	2077	4	277
VB	Surface Water	LRC-5	P5-20014	5/14/2012	Field Sample	EMSL04	NOT QC	5/22/2012	TEM-ISO	ISO 10312	15	1295	0.0132	4	1.6E+06	36	59	4	6.5
VB	Pore Water (In)	LRC-5	P5-20015	5/14/2012	Field Sample	EMSL04	NOT QC	5/23/2012	TEM-ISO	ISO 10312	15	1295	0.0132	4	1.6E+06	55	90	1	1.6
VB	Pore Water (In)	LRC-5	P5-20024	5/17/2012	Field Sample	EMSL04	NOT QC	6/4/2012	TEM-ISO	ISO 10312	30	1295	0.0132	4	8.2E+06	42	343	13	106
VB	Pore Water (Out)	LRC-5	P5-20025	5/17/2012	Field Sample	EMSL04	NOT QC	7/20/2012	TEM-ISO	ISO 10312	30	1295	0.0132	4	8.2E+06	64	523	19	155
VB	Surface Water	LRC-5	P5-20026	5/17/2012	Field Sample	EMSL04	NOT QC	6/5/2012	TEM-ISO	ISO 10312	90	1295	0.0132	4	2.7E+05	48	13	7	1.9
VB	Surface Water	LRC-5	P5-20027	5/17/2012	Field Sample	EMSL04	NOT QC	8/16/2013	TEM-ISO	ISO 10312	30	1282	0.0132	4	8.1E+05	60	49	16	13
VB	Surface Water	LRC-5	P5-20038	5/21/2012	Field Sample	EMSL22	NOT QC	6/21/2012	TEM-ISO	ISO 10312	25	1295	0.013	4	1.0E+06	55	55	9	9.0
VB	Pore Water (In)	LRC-5	P5-20039	5/21/2012	Field Sample	EMSL22	NOT QC	6/25/2012	TEM-ISO	ISO 10312	10	385	0.013	4	7.4E+05	96	71	18	13
VB	Surface Water	LRC-5	P5-20053	5/24/2012	Field Sample	EMSL27	NOT QC	6/28/2012	TEM-ISO	ISO 10312	60	1295	0.013	4	4.2E+05	28	12	3	1.2
VB	Pore Water (In)	LRC-5	P5-20054	5/24/2012	Field Sample	EMSL27	NOT QC	6/27/2012	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	43	71	9	15
VB	Surface Water	LRC-5	P5-20069	5/28/2012	Field Sample	EMSL27	NOT QC	6/15/2012	TEM-ISO	ISO 10312	25	360	0.013	4	2.8E+05	79	22	19	5.3
VB	Pore Water (In)	LRC-5	P5-20071	5/28/2012	Field Sample	EMSL27	NOT QC	6/18/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+06	103	713	23	159
VB	Surface Water	LRC-5	P5-20077	5/31/2012	Field Sample	EMSL27	NOT QC	7/6/2012	TEM-ISO	ISO 10312	50	360	0.013	4	1.4E+05	54	7.5	12	1.7
VB	Pore Water (In)	LRC-5	P5-20078	5/31/2012	Field Sample	EMSL27	NOT QC	7/6/2012	TEM-ISO	ISO 10312	25	360	0.013	4	2.8E+05	128	35	38	11
VB	Surface Water	LRC-5	P5-20096	6/4/2012	Field Sample	EMSL27	NOT QC	7/10/2012	TEM-ISO	ISO 10312	50	1295	0.013	4	5.0E+05	85	42	16	8.0
VB	Pore Water (In)	LRC-5	P5-20097	6/4/2012	Field Sample	EMSL27	NOT QC	7/11/2012	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	56	93	16	27
VB	Pore Water (In)	LRC-5	P5-20110	6/7/2012	Field Sample	EMSL27	NOT QC	7/9/2012	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	31	51	7	12
VB	Surface Water	LRC-5	P5-20111	6/7/2012	Field Sample	EMSL27	NOT QC	7/18/2012	TEM-ISO	ISO 10312	30	1295	0.013	15	2.2E+05	25	5.5	6	1.3
VB	Surface Water	LRC-5	P5-20201	6/11/2012	Field Sample	EMSL27	NOT QC	7/17/2012	TEM-ISO	ISO 10312	20	360	0.013	4	3.5E+05	30	10	8	2.8
VB	Surface Water	MP	P5-20065	5/24/2012	Field Sample	EMSL27	NOT QC	7/5/2012	TEM-ISO	ISO 10312	75	1295	0.013	13	1.0E+05	28	2.9	5	0.51
VB	Surface Water	MP	P5-20090	5/31/2012	Field Sample	EMSL27	NOT QC	7/9/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	8	0.37	0	0
VB	Surface Water	MP	P5-20104	6/6/2012	Field Sample	EMSL27	NOT QC	7/18/2012	TEM-ISO	ISO 10312	10	360	0.013	7	4.0E+05	27	11	5	2.0
VB	Surface Water	MP	P5-20202	6/15/2012	Field Sample	EMSL27	NOT QC	7/20/2012	TEM-ISO	ISO 10312	5	360	0.013	52	1.1E+05	26	2.8	0	0
VB	Surface Water	MP	P5-20216	6/21/2012	Field Sample	EMSL27	NOT QC	7/23/2012	TEM-ISO	ISO 10312	5	360	0.013	9	6.2E+05	26	16	2	1.2
VB	Surface Water	MP	P5-20220	6/29/2012	Field Sample	EMSL27	NOT QC	10/15/2012	TEM-ISO	ISO 10312	50	1295	0.013	6	3.3E+05	25	8.3	3	1.0
VB	Surface Water	MP	P5-20228	7/5/2012	Field Sample	EMSL27	NOT QC	11/8/2012	TEM-ISO	ISO 10312	25	1295	0.013	39	1.0E+05	25	2.6	6	0.61
VB	Surface Water	MP	P5-20230	7/11/2012	Field Sample	EMSL27	NOT QC	10/15/2012	TEM-ISO	ISO 10312	25	360	0.013	25	4.4E+04	11	0.49	1	0.044
VB	Surface Water	MP	P5-20237	7/19/2012	Field Sample	EMSL27	NOT QC	10/16/2012	TEM-ISO	ISO 10312	10	360	0.013	4	6.9E+05	75	52	3	2.1
VB	Surface Water	MP	P5-20241	7/26/2012	Field Sample	EMSL27	NOT QC	11/12/2012	TEM-ISO	ISO 10312	15	360	0.013	18	1.0E+05	25	2.6	4	0.41
VB	Surface Water	MP	P5-20247	8/2/2012	Field Sample	EMSL27	NOT QC	11/14/2012	TEM-ISO	ISO 10312	15	360	0.013	79	2.3E+04	13	0.30	2	0.047
VB	Surface Water	MP	P5-20251	8/9/2012	Field Sample	EMSL27	NOT QC	11/16/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
VB	Surface Water	MP	P5-20255	8/16/2012	Field Sample	EMSL27	NOT QC	11/19/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
VB	Surface Water	MP	P5-20259	8/23/2012	Field Sample	EMSL27	NOT QC	11/20/2012	TEM-ISO	ISO 10312	10	360	0.013	53	5.2E+04	26	1.4	3	0.16
VB	Surface Water	MP	P5-20265	8/30/2012	Field Sample	EMSL27	NOT QC	11/23/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
VB	Pore Water (In)	NSY-R1	P5-20013	5/10/2012	Field Sample	EMSL27	NOT QC	6/13/2012	TEM-ISO	ISO 10312	60	360	0.013	54	8.5E+05	25	21	2	1.7
VB	Surface Water	NSY-R1	P5-20023	5/14/2012	Field Sample	EMSL04	NOT QC	5/22/2012	TEM-ISO	ISO 10312	60	1295	0.0132	33	5.0E+04	0	0	0	0
VB	Pore Water (In)	NSY-R1	P5-20037	5/17/2012	Field Sample	EMSL04	NOT QC	6/28/2012	TEM-ISO	ISO 10312	15	1295	0.0132	131	5.0E+04	7	0.35	2	0.10
VB	Surface Water	NSY-R1	P5-20045	5/21/2012	Field Sample	EMSL22	NOT QC	8/8/2012	TEM-ISO	ISO 10312	25	1295	0.013	77	5.2E+04	2	0.10	1	0.052
VB	Pore Water (In)	NSY-R1	P5-20060	5/24/2012	Field Sample	EMSL27	NOT QC	6/29/2012	TEM-ISO	ISO 10312	45	1295	0.013	45	4.9E+04	0	0	0	0
VB	Surface Water	NSY-R1	P5-20076	5/28/2012	Field Sample	EMSL27	NOT QC	6/21/2012	TEM-ISO	ISO 10312	25	360	0.013	77	1.4E+04	0	0	0	0

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
VB	Pore Water (In)	NSY-R1	P5-20084	5/31/2012	Field Sample	EMSL27	NOT QC	7/10/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	1	0.046	1	0.046
VB	Surface Water	NSY-R1	P5-20094	6/4/2012	Field Sample	EMSL27	NOT QC	7/10/2012	TEM-ISO	ISO 10312	50	1295	0.013	45	4.4E+04	0	0	0	0
VB	Pore Water (In)	NSY-R1	P5-20108	6/7/2012	Field Sample	EMSL27	NOT QC	7/9/2012	TEM-ISO	ISO 10312	60	1295	0.013	40	4.2E+04	0	0	0	0
VB	Pore Water (In)	NSY-R1	P5-20208	6/12/2012	Field Sample	EMSL27	NOT QC	7/18/2012	TEM-ISO	ISO 10312	50	360	0.013	13	4.3E+04	1	0.043	0	0
VB	Surface Water	NSY-R1	P5-20210	6/11/2012	Field Sample	EMSL27	NOT QC	7/17/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	0	0	0	0
VB	Pore Water (In)	NSY-R1	P5-20214	6/19/2012	Field Sample	EMSL27	NOT QC	7/20/2012	TEM-ISO	ISO 10312	10	360	0.013	77	3.6E+04	2	0.072	0	0
VB	Surface Water	Tepee Pond 1	P5-20067	5/24/2012	Field Sample	EMSL27	NOT QC	7/5/2012	TEM-ISO	ISO 10312	75	1295	0.013	30	4.4E+04	0	0	0	0
VB	Surface Water	Tepee Pond 1	P5-20273	8/31/2012	Field Sample	EMSL27	NOT QC	12/6/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
VB	Surface Water	TP	P5-20064	5/24/2012	Field Sample	EMSL27	NOT QC	7/5/2012	TEM-ISO	ISO 10312	75	1295	0.013	5	2.7E+05	29	7.7	4	1.1
VB	Surface Water	TP	P5-20089	5/31/2012	Field Sample	EMSL27	NOT QC	7/6/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	11	0.51	2	0.092
VB	Surface Water	TP	P5-20107	6/6/2012	Field Sample	EMSL27	NOT QC	7/19/2012	TEM-ISO	ISO 10312	5	360	0.013	6	9.2E+05	25	23	5	4.6
VB	Surface Water	TP	P5-20213	6/15/2012	Field Sample	EMSL27	NOT QC	7/19/2012	TEM-ISO	ISO 10312	20	360	0.013	7	2.0E+05	25	4.9	4	0.79
VB	Surface Water	TP	P5-20219	6/21/2012	Field Sample	EMSL27	NOT QC	7/23/2012	TEM-ISO	ISO 10312	5	360	0.013	4	1.4E+06	38	53	14	19
VB	Surface Water	TP	P5-20221	6/29/2012	Field Sample	EMSL27	NOT QC	10/15/2012	TEM-ISO	ISO 10312	50	1295	0.013	40	5.0E+04	0	0	0	0
VB	Surface Water	TP	P5-20229	7/5/2012	Field Sample	EMSL27	NOT QC	11/9/2012	TEM-ISO	ISO 10312	25	1295	0.013	29	1.4E+05	25	3.4	4	0.55
VB	Surface Water	TP	P5-20231	7/11/2012	Field Sample	EMSL27	NOT QC	10/17/2012	TEM-ISO	ISO 10312	25	360	0.013	4	2.8E+05	26	7.2	2	0.55
VB	Surface Water	TP	P5-20236	7/19/2012	Field Sample	EMSL27	NOT QC	10/16/2012	TEM-ISO	ISO 10312	10	360	0.013	60	4.6E+04	1	0.046	0	0
VB	Surface Water	TP	P5-20240	7/26/2012	Field Sample	EMSL27	NOT QC	11/12/2012	TEM-ISO	ISO 10312	15	360	0.013	4	4.6E+05	32	15	1	0.46
VB	Surface Water	TP	P5-20244	8/2/2012	Field Sample	EMSL27	NOT QC	11/13/2012	TEM-ISO	ISO 10312	15	360	0.013	9	2.1E+05	25	5.1	4	0.82
VB	Surface Water	TP	P5-20250	8/9/2012	Field Sample	EMSL27	NOT QC	11/16/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
VB	Surface Water	TP	P5-20254	8/16/2012	Field Sample	EMSL27	NOT QC	11/19/2012	TEM-ISO	ISO 10312	10	360	0.013	7	4.0E+05	25	9.9	3	1.2
VB	Surface Water	TP	P5-20258	8/23/2012	Field Sample	EMSL27	NOT QC	11/20/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	5	0.17	0	0
VB	Surface Water	TP	P5-20264	8/30/2012	Field Sample	EMSL27	NOT QC	11/23/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
VB	Pore Water (In)	URC-2	P5-20012	5/10/2012	Field Sample	EMSL27	NOT QC	6/13/2012	TEM-ISO	ISO 10312	60	360	0.013	52	8.9E+05	25	22	2	1.8
VB	Surface Water	URC-2	P5-20021	5/14/2012	Field Sample	EMSL04	NOT QC	5/24/2012	TEM-ISO	ISO 10312	15	1295	0.0132	13	5.0E+05	26	13	3	1.5
VB	Pore Water (In)	URC-2	P5-20036	5/17/2012	Field Sample	EMSL04	NOT QC	6/15/2012	TEM-ISO	ISO 10312	60	1295	0.0132	12	1.4E+05	27	3.7	7	0.95
VB	Surface Water	URC-2	P5-20044	5/21/2012	Field Sample	EMSL22	NOT QC	8/1/2012	TEM-ISO	ISO 10312	25	1295	0.013	77	5.2E+04	13	0.67	0	0
VB	Pore Water (In)	URC-2	P5-20059	5/24/2012	Field Sample	EMSL27	NOT QC	6/29/2012	TEM-ISO	ISO 10312	75	1295	0.013	5	2.7E+05	25	6.6	1	0.27
VB	Surface Water	URC-2	P5-20075	5/28/2012	Field Sample	EMSL27	NOT QC	6/20/2012	TEM-ISO	ISO 10312	25	360	0.013	32	3.5E+04	26	0.90	2	0.069
VB	Pore Water (In)	URC-2	P5-20083	5/31/2012	Field Sample	EMSL27	NOT QC	7/10/2012	TEM-ISO	ISO 10312	50	36	0.013	12	4.6E+03	20	0.092	2	0.0092
VB	Surface Water	URC-2	P5-20095	6/4/2012	Field Sample	EMSL27	NOT QC	7/10/2012	TEM-ISO	ISO 10312	25	1295	0.013	77	5.2E+04	0	0	0	0
VB	Pore Water (In)	URC-2	P5-20109	6/7/2012	Field Sample	EMSL27	NOT QC	7/9/2012	TEM-ISO	ISO 10312	75	1295	0.013	19	7.0E+04	25	1.7	3	0.21
VB	Pore Water (In)	URC-2	P5-20204	6/12/2012	Field Sample	EMSL27	NOT QC	7/18/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	19	0.88	7	0.32
VB	Surface Water	URC-2	P5-20209	6/11/2012	Field Sample	EMSL27	NOT QC	7/17/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	0	0	0	0
VB	Pore Water (In)	URC-2	P5-20215	6/19/2012	Field Sample	EMSL27	NOT QC	7/20/2012	TEM-ISO	ISO 10312	10	360	0.013	39	7.1E+04	25	1.8	3	0.21
N&E-2012a	Surface Water	#1-Granite Creek	NE-00006	5/17/2012	Field Sample	EMSL22	NOT QC	10/25/2012	TEM-ISO	ISO 10312	25	360	0.013	23	4.8E+04	0	0	0	0
N&E-2012a	Surface Water	#2-Granite Creek	NE-00007	5/17/2012	Field Sample	EMSL22	NOT QC	10/25/2012	TEM-ISO	ISO 10312	15	360	0.013	37	5.0E+04	2	0.10	1	0.050
N&E-2012a	Surface Water	#3-Libby Creek	NE-00009	5/17/2012	Field Sample	EMSL22	NOT QC	10/25/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	0	0	0	0
N&E-2012a	Surface Water	#4-Libby Creek	NE-00010	5/17/2012	Field Sample	EMSL22	NOT QC	10/27/2012	TEM-ISO	ISO 10312	10	360	0.013	56	4.9E+04	1	0.049	1	0.049
N&E-2012a	Surface Water	#5-Flower Creek	NE-00016	5/18/2012	Field Sample	EMSL27	NOT QC	10/24/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	0	0	0	0
N&E-2012a	Surface Water	#6-Flower Creek	NE-00015	5/18/2012	Field Sample	EMSL27	NOT QC	10/24/2012	TEM-ISO	ISO 10312	25	360	0.013	25	4.4E+04	0	0	0	0
N&E-2012a	Surface Water	#7-Flower Creek	NE-00014	5/18/2012	Field Sample	EMSL27	NOT QC	10/22/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	0	0	0	0
N&E-2012a	Surface Water	#8-Pipe Creek	NE-00004	5/11/2012	Field Sample	EMSL22	NOT QC	10/27/2012	TEM-ISO	ISO 10312	25	360	0.013	23	4.8E+04	0	0	0	0
N&E-2012a	Surface Water	#9-Pipe Creek	NE-00001	5/11/2012	Field Sample	EMSL22	NOT QC	10/27/2012	TEM-ISO	ISO 10312	25	360	0.013	23	4.8E+04	2	0.096	0	0
N&E-2012a	Surface Water	#10-Pipe Creek	NE-00005	5/11/2012	Field Sample	EMSL22	NOT QC	10/29/2012	TEM-ISO	ISO 10312	25	360	0.013	23	4.8E+04	0	0	0	0
N&E-2012a	Surface Water	#11-Fisher River	NE-00012	5/18/2012	Field Sample	EMSL27	NOT QC	10/22/2012	TEM-ISO	ISO 10312	10	360	0.013	60	4.6E+04	0	0	0	0
N&E-2012a	Surface Water	#12-Callahan Creek	NE-00024	5/18/2012	Field Sample	EMSL27	NOT QC	10/24/2012	TEM-ISO	ISO 10312	25	360	0.013	25	4.4E+04	0	0	0	0
N&E-2012a	Surface Water	#13-Callahan Creek	NE-00019	5/18/2012	Field Sample	EMSL27	NOT QC	10/23/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	0	0	0	0
N&E-2012a	Surface Water	#14-Callahan Creek	NE-00021	5/18/2012	Field Sample	EMSL27	NOT QC	10/24/2012	TEM-ISO	ISO 10312	25	360	0.013	25	4.4E+04	0	0	0	0
N&E-2012a	Surface Water	#20-Kootenai River	NE-00018	5/18/2012	Field Sample	EMSL27	NOT QC	10/23/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	0	0	0	0
N&E-2012a	Surface Water	#24-Kootenai River	NE-00022	5/18/2012	Field Sample	EMSL27	NOT QC	10/23/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	0	0	0	0

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
N&E-2012a	Surface Water	#25-Kootenai River	NE-00020	5/18/2012	Field Sample	EMSL27	NOT QC	10/23/2012	TEM-ISO	ISO 10312	50	360	0.013	12	4.6E+04	0	0	0	0
N&E-2012a	Surface Water	#1-Granite Creek	NE-00027	9/19/2012	Field Sample	EMSL27	NOT QC	11/7/2012	TEM-ISO	ISO 10312	50	360	0.013	25	2.2E+04	0	0	0	0
N&E-2012a	Surface Water	#2-Granite Creek	NE-00025	9/19/2012	Field Sample	EMSL27	NOT QC	11/7/2012	TEM-ISO	ISO 10312	50	360	0.013	25	2.2E+04	0	0	0	0
N&E-2012a	Surface Water	#3-Libby Creek	NE-00029	9/19/2012	Field Sample	EMSL27	NOT QC	11/7/2012	TEM-ISO	ISO 10312	50	360	0.013	25	2.2E+04	0	0	0	0
N&E-2012a	Surface Water	#4-Libby Creek	NE-00033	9/19/2012	Field Sample	EMSL27	NOT QC	11/7/2012	TEM-ISO	ISO 10312	50	360	0.013	25	2.2E+04	0	0	0	0
N&E-2012a	Surface Water	#5-Flower Creek	NE-00047	9/20/2012	Field Sample	EMSL27	NOT QC	11/15/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
N&E-2012a	Surface Water	#6-Flower Creek	NE-00044	9/20/2012	Field Sample	EMSL27	NOT QC	11/15/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
N&E-2012a	Surface Water	#7-Flower Creek	NE-00042	9/20/2012	Field Sample	EMSL27	NOT QC	11/14/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
N&E-2012a	Surface Water	#8-Pipe Creek	NE-00036	9/20/2012	Field Sample	EMSL27	NOT QC	11/14/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
N&E-2012a	Surface Water	#9-Pipe Creek	NE-00038	9/20/2012	Field Sample	EMSL27	NOT QC	11/14/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
N&E-2012a	Surface Water	#10-Pipe Creek	NE-00040	9/20/2012	Field Sample	EMSL27	NOT QC	11/14/2012	TEM-ISO	ISO 10312	10	360	0.013	80	3.5E+04	0	0	0	0
N&E-2012a	Surface Water	#11-Fisher River	NE-00050	9/21/2012	Field Sample	EMSL27	NOT QC	11/6/2012	TEM-ISO	ISO 10312	50	360	0.013	24	2.3E+04	0	0	0	0
N&E-2012a	Surface Water	#12-Callahan Creek	NE-00059	9/21/2012	Field Sample	EMSL27	NOT QC	11/6/2012	TEM-ISO	ISO 10312	50	360	0.013	25	2.2E+04	0	0	0	0
N&E-2012a	Surface Water	#13-Callahan Creek	NE-00057	9/21/2012	Field Sample	EMSL27	NOT QC	11/6/2012	TEM-ISO	ISO 10312	50	360	0.013	25	2.2E+04	0	0	0	0
N&E-2012a	Surface Water	#14-Callahan Creek	NE-00055	9/21/2012	Field Sample	EMSL27	NOT QC	11/6/2012	TEM-ISO	ISO 10312	50	360	0.013	25	2.2E+04	0	0	0	0
N&E-2012a	Surface Water	#20-Kootenai River	NE-00064	9/22/2012	Field Sample	EMSL27	NOT QC	11/6/2012	TEM-ISO	ISO 10312	50	360	0.013	25	2.2E+04	1	0.022	0	0
N&E-2012a	Surface Water	#24-Kootenai River	NE-00074	9/22/2012	Field Sample	EMSL27	NOT QC	11/6/2012	TEM-ISO	ISO 10312	50	360	0.013	25	2.2E+04	0	0	0	0
N&E-2012a	Surface Water	#25-Kootenai River	NE-00076	9/22/2012	Field Sample	EMSL27	NOT QC	11/6/2012	TEM-ISO	ISO 10312	50	360	0.013	25	2.2E+04	1	0.022	1	0.022
VB-2013	Surface Water	LRC-2	P5-20297	5/6/2013	Field Sample	EMSL27	NOT QC	5/29/2013	TEM-ISO	ISO 10312	10	1295	0.013	23	4.3E+05	25	11	1	0.43
VB-2013	Pore Water (In)	LRC-2	P5-20299	5/6/2013	Field Sample	EMSL27	NOT QC	5/30/2013	TEM-ISO	ISO 10312	10	1295	0.013	4	2.5E+06	28	70	5	12
VB-2013	Surface Water	LRC-2	P5-20309	5/9/2013	Field Sample	EMSL27	NOT QC	5/30/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	26	35	2	2.7
VB-2013	Pore Water (In)	LRC-2	P5-20310	5/9/2013	Field Sample	EMSL27	NOT QC	5/30/2013	TEM-ISO	ISO 10312	15	1295	0.013	21	3.2E+05	26	8.2	2	0.63
VB-2013	Surface Water	LRC-2	P5-20315	5/13/2013	Field Sample	EMSL27	NOT QC	6/7/2013	TEM-ISO	ISO 10312	15	1295	0.013	85	7.8E+04	5	0.39	1	0.078
VB-2013	Pore Water (In)	LRC-2	P5-20316	5/13/2013	Field Sample	EMSL27	NOT QC	6/7/2013	TEM-ISO	ISO 10312	15	1295	0.013	7	9.5E+05	26	25	8	7.6
VB-2013	Surface Water	LRC-2	P5-20325	5/16/2013	Field Sample	EMSL04	NOT QC	7/19/2013	TEM-ISO	ISO 10312	15	1295	0.0132	62	1.1E+05	25	2.6	5	0.53
VB-2013	Pore Water (In)	LRC-2	P5-20326	5/16/2013	Field Sample	EMSL04	NOT QC	7/21/2013	TEM-ISO	ISO 10312	15	1295	0.0132	4	1.6E+06	33	54	5	8.2
VB-2013	Surface Water	LRC-2	P5-20331	5/20/2013	Field Sample	EMSL27	NOT QC	6/17/2013	TEM-ISO	ISO 10312	15	1295	0.013	18	3.7E+05	25	9.2	6	2.2
VB-2013	Pore Water (In)	LRC-2	P5-20332	5/20/2013	Field Sample	EMSL27	NOT QC	6/17/2013	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	34	56	7	12
VB-2013	Surface Water	LRC-2	P5-20341	5/23/2013	Field Sample	EMSL27	NOT QC	6/18/2013	TEM-ISO	ISO 10312	15	1295	0.013	28	2.4E+05	25	5.9	3	0.71
VB-2013	Pore Water (In)	LRC-2	P5-20342	5/23/2013	Field Sample	EMSL27	NOT QC	6/19/2013	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	29	48	6	10
VB-2013	Surface Water	LRC-2	P5-20347	5/27/2013	Field Sample	EMSL27	NOT QC	6/21/2013	TEM-ISO	ISO 10312	15	1295	0.013	22	3.0E+05	25	7.5	2	0.60
VB-2013	Pore Water (In)	LRC-2	P5-20348	5/27/2013	Field Sample	EMSL27	NOT QC	6/24/2013	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	30	50	12	20
VB-2013	Surface Water	LRC-2	P5-20360	5/30/2013	Field Sample	EMSL27	NOT QC	6/26/2013	TEM-ISO	ISO 10312	10	1295	0.013	80	1.2E+05	1	0.12	0	0
VB-2013	Pore Water (In)	LRC-2	P5-20361	5/30/2013	Field Sample	EMSL27	NOT QC	6/26/2013	TEM-ISO	ISO 10312	10	1295	0.013	16	6.2E+05	25	16	3	1.9
VB-2013	Surface Water	LRC-4	P5-20294	5/6/2013	Field Sample	EMSL27	NOT QC	5/23/2013	TEM-ISO	ISO 10312	10	1295	0.013	8	1.2E+06	27	34	1	1.2
VB-2013	Pore Water (In)	LRC-4	P5-20295	5/6/2013	Field Sample	EMSL27	NOT QC	5/23/2013	TEM-ISO	ISO 10312	10	1295	0.013	4	2.5E+06	28	70	3	7.5
VB-2013	Surface Water	LRC-4	P5-20307	5/9/2013	Field Sample	EMSL27	NOT QC	5/30/2013	TEM-ISO	ISO 10312	15	1295	0.013	7	9.5E+05	27	26	4	3.8
VB-2013	Pore Water (In)	LRC-4	P5-20308	5/9/2013	Field Sample	EMSL27	NOT QC	5/30/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	29	39	7	9.3
VB-2013	Surface Water	LRC-4	P5-20313	5/13/2013	Field Sample	EMSL27	NOT QC	6/6/2013	TEM-ISO	ISO 10312	15	1295	0.013	7	9.5E+05	27	26	5	4.7
VB-2013	Pore Water (In)	LRC-4	P5-20314	5/13/2013	Field Sample	EMSL27	NOT QC	6/6/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	25	33	6	8.0
VB-2013	Surface Water	LRC-4	P5-20323	5/16/2013	Field Sample	EMSL27	NOT QC	6/10/2013	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	25	42	5	8.3
VB-2013	Pore Water (In)	LRC-4	P5-20324	5/16/2013	Field Sample	EMSL27	NOT QC	6/12/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	27	36	3	4.0
VB-2013	Surface Water	LRC-4	P5-20329	5/20/2013	Field Sample	EMSL27	NOT QC	6/17/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	26	35	5	6.6
VB-2013	Pore Water (In)	LRC-4	P5-20330	5/20/2013	Field Sample	EMSL27	NOT QC	6/17/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	27	36	4	5.3
VB-2013	Surface Water	LRC-4	P5-20339	5/23/2013	Field Sample	EMSL27	NOT QC	6/18/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	26	35	4	5.3
VB-2013	Pore Water (In)	LRC-4	P5-20340	5/23/2013	Field Sample	EMSL27	NOT QC	6/18/2013	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	32	53	5	8.3
VB-2013	Surface Water	LRC-4	P5-20345	5/27/2013	Field Sample	EMSL27	NOT QC	6/21/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	25	33	6	8.0
VB-2013	Pore Water (In)	LRC-4	P5-20346	5/27/2013	Field Sample	EMSL27	NOT QC	6/21/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	25	33	4	5.3
VB-2013	Surface Water	LRC-4	P5-20356	5/30/2013	Field Sample	EMSL27	NOT QC	6/26/2013	TEM-ISO	ISO 10312	10	1295	0.013	14	7.1E+05	25	18	9	6.4
VB-2013	Pore Water (In)	LRC-4	P5-20357	5/30/2013	Field Sample	EMSL27	NOT QC	6/26/2013	TEM-ISO	ISO 10312	10	1295	0.013	7	1.4E+06	25	36	2	2.8
VB-2013	Surface Water	LRC-5	P5-20290	5/6/2013	Field Sample	EMSL27	NOT QC	5/16/2013	TEM-ISO	ISO 10312	10	1295	0.013	7	1.4E+06	27	38	2	2.8

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
VB-2013	Pore Water (In)	LRC-5	P5-20292	5/6/2013	Field Sample	EMSL27	NOT QC	5/21/2013	TEM-ISO	ISO 10312	10	1295	0.013	6	1.7E+06	26	43	5	8.3
VB-2013	Surface Water	LRC-5	P5-20305	5/9/2013	Field Sample	EMSL27	NOT QC	5/23/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	25	33	7	9.3
VB-2013	Pore Water (In)	LRC-5	P5-20306	5/9/2013	Field Sample	EMSL27	NOT QC	5/23/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	27	36	7	9.3
VB-2013	Surface Water	LRC-5	P5-20311	5/13/2013	Field Sample	EMSL27	NOT QC	6/5/2013	TEM-ISO	ISO 10312	15	1295	0.013	9	7.4E+05	25	18	3	2.2
VB-2013	Pore Water (In)	LRC-5	P5-20312	5/13/2013	Field Sample	EMSL27	NOT QC	6/5/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	27	36	5	6.6
VB-2013	Surface Water	LRC-5	P5-20321	5/16/2013	Field Sample	EMSL27	NOT QC	6/10/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	29	39	3	4.0
VB-2013	Pore Water (In)	LRC-5	P5-20322	5/16/2013	Field Sample	EMSL27	NOT QC	6/10/2013	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	27	45	9	15
VB-2013	Surface Water	LRC-5	P5-20327	5/20/2013	Field Sample	EMSL27	NOT QC	6/17/2013	TEM-ISO	ISO 10312	15	1295	0.013	6	1.1E+06	25	28	3	3.3
VB-2013	Pore Water (In)	LRC-5	P5-20328	5/20/2013	Field Sample	EMSL27	NOT QC	6/17/2013	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	26	43	1	1.7
VB-2013	Surface Water	LRC-5	P5-20337	5/23/2013	Field Sample	EMSL27	NOT QC	6/18/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	30	40	4	5.3
VB-2013	Pore Water (In)	LRC-5	P5-20338	5/23/2013	Field Sample	EMSL27	NOT QC	6/18/2013	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	34	56	9	15
VB-2013	Surface Water	LRC-5	P5-20343	5/27/2013	Field Sample	EMSL27	NOT QC	6/19/2013	TEM-ISO	ISO 10312	15	1295	0.013	23	2.9E+05	25	7.2	4	1.2
VB-2013	Pore Water (In)	LRC-5	P5-20344	5/27/2013	Field Sample	EMSL27	NOT QC	6/21/2013	TEM-ISO	ISO 10312	15	1295	0.013	5	1.3E+06	28	37	1	1.3
VB-2013	Surface Water	LRC-5	P5-20353	5/30/2013	Field Sample	EMSL27	NOT QC	6/25/2013	TEM-ISO	ISO 10312	10	1295	0.013	8	1.2E+06	25	31	4	5.0
VB-2013	Pore Water (In)	LRC-5	P5-20354	5/30/2013	Field Sample	EMSL27	NOT QC	6/25/2013	TEM-ISO	ISO 10312	10	1295	0.013	7	1.4E+06	25	36	3	4.3
VB-2013	Surface Water	NC	P5-20304	5/7/2013	Field Sample	EMSL27	NOT QC	5/15/2013	TEM-ISO	ISO 10312	15	360	0.0064	79	4.7E+04	0	0	0	0
VB-2013	Surface Water	NC	P5-20366	6/4/2013	Field Sample	EMSL27	NOT QC	6/27/2013	TEM-ISO	ISO 10312	10	1295	0.013	80	1.2E+05	0	0	0	0
VB-2013	Surface Water	NSY-R1	P5-20302	5/6/2013	Field Sample	EMSL27	NOT QC	5/31/2013	TEM-ISO	ISO 10312	10	1295	0.013	85	1.2E+05	0	0	0	0
VB-2013	Pore Water (In)	NSY-R1	P5-20303	5/6/2013	Field Sample	EMSL27	NOT QC	5/31/2013	TEM-ISO	ISO 10312	10	1295	0.013	85	1.2E+05	1	0.12	0	0
VB-2013	Surface Water	NSY-R1	P5-20319	5/13/2013	Field Sample	EMSL27	NOT QC	6/7/2013	TEM-ISO	ISO 10312	15	1295	0.013	85	7.8E+04	0	0	0	0
VB-2013	Pore Water (In)	NSY-R1	P5-20320	5/13/2013	Field Sample	EMSL27	NOT QC	6/7/2013	TEM-ISO	ISO 10312	15	1295	0.013	85	7.8E+04	0	0	0	0
VB-2013	Surface Water	NSY-R1	P5-20335	5/20/2013	Field Sample	EMSL27	NOT QC	6/14/2013	TEM-ISO	ISO 10312	15	1295	0.013	84	7.9E+04	0	0	0	0
VB-2013	Pore Water (In)	NSY-R1	P5-20336	5/20/2013	Field Sample	EMSL27	NOT QC	6/12/2013	TEM-ISO	ISO 10312	15	1295	0.013	80	8.3E+04	1	0.083	1	0.083
VB-2013	Surface Water	NSY-R1	P5-20351	5/27/2013	Field Sample	EMSL27	NOT QC	6/24/2013	TEM-ISO	ISO 10312	15	1295	0.013	80	8.3E+04	0	0	0	0
VB-2013	Pore Water (In)	NSY-R1	P5-20352	5/27/2013	Field Sample	EMSL27	NOT QC	6/24/2013	TEM-ISO	ISO 10312	15	1295	0.013	80	8.3E+04	0	0	0	0
VB-2013	Surface Water	NSY-R1	P5-20364	6/3/2013	Field Sample	EMSL27	NOT QC	6/27/2013	TEM-ISO	ISO 10312	10	1295	0.013	80	1.2E+05	0	0	0	0
VB-2013	Pore Water (In)	NSY-R1	P5-20365	6/3/2013	Field Sample	EMSL27	NOT QC	6/27/2013	TEM-ISO	ISO 10312	10	1295	0.013	80	1.2E+05	0	0	0	0
VB-2013	Surface Water	NSY-R1	P5-20367	6/10/2013	Field Sample	EMSL27	NOT QC	7/5/2013	TEM-ISO	ISO 10312	10	1295	0.013	80	1.2E+05	0	0	0	0
VB-2013	Pore Water (In)	NSY-R1	P5-20368	6/10/2013	Field Sample	EMSL27	NOT QC	7/5/2013	TEM-ISO	ISO 10312	10	1295	0.013	80	1.2E+05	0	0	0	0
VB-2013	Pore Water (In)	NSY-R1	P5-20373	6/17/2013	Field Sample	EMSL27	NOT QC	7/14/2013	TEM-ISO	ISO 10312	10	1295	0.013	85	1.2E+05	0	0	0	0
VB-2013	Surface Water	NSY-R1	P5-20374	6/17/2013	Field Sample	EMSL27	NOT QC	7/14/2013	TEM-ISO	ISO 10312	10	1295	0.013	85	1.2E+05	0	0	0	0
VB-2013	Surface Water	URC-2	P5-20300	5/6/2013	Field Sample	EMSL27	NOT QC	5/30/2013	TEM-ISO	ISO 10312	10	1295	0.013	85	1.2E+05	0	0	0	0
VB-2013	Pore Water (In)	URC-2	P5-20301	5/6/2013	Field Sample	EMSL27	NOT QC	5/30/2013	TEM-ISO	ISO 10312	10	1295	0.013	80	1.2E+05	6	0.75	0	0
VB-2013	Surface Water	URC-2	P5-20317	5/13/2013	Field Sample	EMSL27	NOT QC	6/7/2013	TEM-ISO	ISO 10312	15	1295	0.013	85	7.8E+04	1	0.078	0	0
VB-2013	Pore Water (In)	URC-2	P5-20318	5/13/2013	Field Sample	EMSL27	NOT QC	6/7/2013	TEM-ISO	ISO 10312	15	1295	0.013	85	7.8E+04	2	0.16	1	0.078
VB-2013	Surface Water	URC-2	P5-20333	5/20/2013	Field Sample	EMSL27	NOT QC	6/17/2013	TEM-ISO	ISO 10312	15	1295	0.013	85	7.8E+04	0	0	0	0
VB-2013	Pore Water (In)	URC-2	P5-20334	5/20/2013	Field Sample	EMSL27	NOT QC	6/17/2013	TEM-ISO	ISO 10312	15	1295	0.013	100	6.6E+04	4	0.27	2	0.13
VB-2013	Surface Water	URC-2	P5-20349	5/27/2013	Field Sample	EMSL27	NOT QC	6/24/2013	TEM-ISO	ISO 10312	15	1295	0.013	80	8.3E+04	0	0	0	0
VB-2013	Pore Water (In)	URC-2	P5-20350	5/27/2013	Field Sample	EMSL27	NOT QC	6/24/2013	TEM-ISO	ISO 10312	15	1295	0.013	80	8.3E+04	0	0	0	0
VB-2013	Surface Water	URC-2	P5-20362	6/3/2013	Field Sample	EMSL27	NOT QC	6/27/2013	TEM-ISO	ISO 10312	10	1295	0.013	85	1.2E+05	0	0	0	0
VB-2013	Pore Water (In)	URC-2	P5-20363	6/3/2013	Field Sample	EMSL27	NOT QC	6/27/2013	TEM-ISO	ISO 10312	10	1295	0.013	79	1.3E+05	0	0	0	0
VB-2013	Surface Water	URC-2	P5-20369	6/10/2013	Field Sample	EMSL27	NOT QC	7/5/2013	TEM-ISO	ISO 10312	10	1295	0.013	80	1.2E+05	0	0	0	0
VB-2013	Pore Water (In)	URC-2	P5-20370	6/10/2013	Field Sample	EMSL27	NOT QC	7/5/2013	TEM-ISO	ISO 10312	10	1295	0.013	80	1.2E+05	0	0	0	0
VB-2013	Pore Water (In)	URC-2	P5-20371	6/17/2013	Field Sample	EMSL27	NOT QC	7/8/2013	TEM-ISO	ISO 10312	10	1295	0.013	85	1.2E+05	1	0.12	0	0
VB-2013	Surface Water	URC-2	P5-20372	6/17/2013	Field Sample	EMSL27	NOT QC	7/14/2013	TEM-ISO	ISO 10312	10	1295	0.013	85	1.2E+05	0	0	0	0
WT-2015	Surface Water	East-TGC	WT-10002	4/14/2015	Field Sample	EMSL03	NOT QC	4/23/2015	TEM-ISO	ISO 10312	100	1359	0.0128	4	2.7E+05	29	7.7	0	0
WT-2015	Surface Water	East-TGP	WT-10003	4/14/2015	Field Sample	EMSL03	NOT QC	4/27/2015	TEM-ISO	ISO 10312	25	1359	0.0128	20	2.1E+05	25	5.3	2	0.42
WT-2015	Surface Water	LRC-4	WT-10005	4/15/2015	Field Sample	EMSL03	NOT QC	4/28/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	59	31	10	5.2
WT-2015	Surface Water	LRC-3	WT-10006	4/15/2015	Field Sample	EMSL03	NOT QC	4/29/2015	TEM-ISO	ISO 10312	100	1359	0.0128	4	2.7E+05	80	21	4	1.1
WT-2015	Surface Water	LRC-2A	WT-10007	4/15/2015	Field Sample	EMSL03	NOT QC	5/1/2015	TEM-ISO	ISO 10312	50	1359	0.0128	4	5.3E+05	37	20	7	3.7
WT-2015	Surface Water	LRC-2	WT-10009	4/15/2015	Field Sample	EMSL03	NOT QC	5/7/2015	TEM-ISO	ISO 10312	50	1359	0.013	4	5.2E+05	36	19	3	1.6

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
WT-2015	Surface Water	CC-2	WT-10010	4/15/2015	Field Sample	EMSL03	NOT QC	5/3/2015	TEM-ISO	ISO 10312	100	1359	0.0131	4	2.6E+05	48	12	0	0
WT-2015	Surface Water	TP-TOE1A	WT-10012	4/15/2015	Field Sample	EMSL03	NOT QC	5/5/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	18	0.89	5	0.25
WT-2015	Surface Water	D1	WT-10015	4/16/2015	Field Sample	EMSL22	NOT QC	5/7/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	D2	WT-10017	4/16/2015	Field Sample	EMSL22	NOT QC	5/8/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	5	0.25	0	0
WT-2015	Surface Water	D3	WT-10018	4/16/2015	Field Sample	EMSL22	NOT QC	5/8/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	2	0.099	0	0
WT-2015	Surface Water	D4	WT-10019	4/16/2015	Field Sample	EMSL22	NOT QC	5/9/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	D5	WT-10020	4/16/2015	Field Sample	EMSL22	NOT QC	5/9/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D6	WT-10021	4/16/2015	Field Sample	EMSL22	NOT QC	5/30/2015	TEM-ISO	ISO 10312	5	1359	0.0131	77	2.7E+05	0	0	0	0
WT-2015	Surface Water	D7	WT-10022	4/16/2015	Field Sample	EMSL22	NOT QC	5/15/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	2	0.099	0	0
WT-2015	Surface Water	D9	WT-10023	4/16/2015	Field Sample	EMSL22	NOT QC	5/16/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D10	WT-10024	4/16/2015	Field Sample	EMSL22	NOT QC	5/16/2015	TEM-ISO	ISO 10312	100	1359	0.0131	22	4.7E+04	0	0	0	0
WT-2015	Surface Water	D12	WT-10026	4/16/2015	Field Sample	EMSL22	NOT QC	5/20/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	TP-Overflow-A	WT-10027	4/16/2015	Field Sample	EMSL22	NOT QC	5/20/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	UTP	WT-10031	4/17/2015	Field Sample	EMSL22	NOT QC	5/22/2015	TEM-ISO	ISO 10312	100	1359	0.0131	8	1.3E+05	26	3.4	4	0.52
WT-2015	Surface Water	URC-1	WT-10032	4/17/2015	Field Sample	EMSL22	NOT QC	5/23/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	FC-1	WT-10034	4/17/2015	Field Sample	EMSL22	NOT QC	5/27/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	14	0.69	1	0.0494002
WT-2015	Surface Water	CC-3A	WT-10035	4/17/2015	Field Sample	EMSL22	NOT QC	5/29/2015	TEM-ISO	ISO 10312	10	1359	0.0131	22	4.7E+05	25	12	4	1.9
WT-2015	Surface Water	D1	WT-10047	4/21/2015	Field Sample	EMSL03	NOT QC	5/17/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	5	0.25	0	0
WT-2015	Surface Water	D2	WT-10048	4/21/2015	Field Sample	EMSL03	NOT QC	5/17/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	11	0.55	2	0.0995604
WT-2015	Surface Water	D3	WT-10049	4/21/2015	Field Sample	EMSL03	NOT QC	5/18/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	2	0.10	0	0
WT-2015	Surface Water	D4	WT-10050	4/21/2015	Field Sample	EMSL03	NOT QC	5/18/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	1	0.050	0	0
WT-2015	Surface Water	D5	WT-10051	4/21/2015	Field Sample	EMSL03	NOT QC	5/18/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	0	0	0	0
WT-2015	Surface Water	D6	WT-10052	4/21/2015	Field Sample	EMSL03	NOT QC	5/19/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	0	0	0	0
WT-2015	Surface Water	D7	WT-10053	4/21/2015	Field Sample	EMSL03	NOT QC	5/19/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	5	0.25	0	0
WT-2015	Surface Water	D9	WT-10054	4/21/2015	Field Sample	EMSL03	NOT QC	5/19/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	1	0.050	1	0.050
WT-2015	Surface Water	D11	WT-10056	4/21/2015	Field Sample	EMSL03	NOT QC	5/20/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	8	0.40	2	0.10
WT-2015	Surface Water	D12	WT-10057	4/21/2015	Field Sample	EMSL03	NOT QC	5/22/2015	TEM-ISO	ISO 10312	100	1359	0.0128	22	4.8E+04	0	0	0	0
WT-2015	Surface Water	LRC-6	WT-10037	4/20/2015	Field Sample	EMSL03	NOT QC	5/10/2015	TEM-ISO	ISO 10312	50	1359	0.013	4	5.2E+05	42	22	7	3.7
WT-2015	Surface Water	East-TGC	WT-10038	4/20/2015	Field Sample	EMSL03	NOT QC	5/11/2015	TEM-ISO	ISO 10312	100	1359	0.013	4	2.6E+05	27	7.1	0	0
WT-2015	Surface Water	East-TGP	WT-10039	4/20/2015	Field Sample	EMSL03	NOT QC	5/11/2015	TEM-ISO	ISO 10312	100	1359	0.013	10	1.0E+05	25	2.6	2	0.21
WT-2015	Surface Water	LRC-5	WT-10040	4/20/2015	Field Sample	EMSL03	NOT QC	5/12/2015	TEM-ISO	ISO 10312	25	1359	0.013	5	8.4E+05	27	23	5	4.2
WT-2015	Surface Water	LRC-4	WT-10041	4/20/2015	Field Sample	EMSL03	NOT QC	5/13/2015	TEM-ISO	ISO 10312	25	1359	0.013	5	8.4E+05	26	22	9	7.5
WT-2015	Surface Water	LRC-3	WT-10042	4/20/2015	Field Sample	EMSL03	NOT QC	5/13/2015	TEM-ISO	ISO 10312	100	1359	0.013	4	2.6E+05	49	13	8	2.1
WT-2015	Surface Water	LRC-2A	WT-10043	4/20/2015	Field Sample	EMSL03	NOT QC	5/13/2015	TEM-ISO	ISO 10312	25	1359	0.013	4	1.0E+06	32	33	4	4.2
WT-2015	Surface Water	LRC-2	WT-10044	4/20/2015	Field Sample	EMSL03	NOT QC	5/14/2015	TEM-ISO	ISO 10312	100	1359	0.013	4	2.6E+05	39	10	3	0.78
WT-2015	Surface Water	MP	WT-10045	4/20/2015	Field Sample	EMSL03	NOT QC	5/15/2015	TEM-ISO	ISO 10312	100	1359	0.013	5	2.1E+05	30	6.3	3	0.63
WT-2015	Surface Water	CC-2	WT-10046	4/21/2015	Field Sample	EMSL03	NOT QC	5/15/2015	TEM-ISO	ISO 10312	100	1359	0.013	4	2.6E+05	35	9.1	6	1.6
WT-2015	Surface Water	D7	WT-10105	4/28/2015	Field Sample	EMSL04	NOT QC	5/18/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	10	0.49	0	0
WT-2015	Surface Water	D8	WT-10106	4/28/2015	Field Sample	EMSL04	NOT QC	5/19/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	24	1.2	4	0.20
WT-2015	Surface Water	LRC-6	WT-10116	5/4/2015	Field Sample	EMSL22	NOT QC	6/5/2015	TEM-ISO	ISO 10312	10	1359	0.0131	12	8.6E+05	25	22	3	2.6
WT-2015	Surface Water	East-TGC	WT-10117	5/4/2015	Field Sample	EMSL22	NOT QC	6/6/2015	TEM-ISO	ISO 10312	50	1359	0.0131	13	1.6E+05	25	4.0	0	0
WT-2015	Surface Water	East-TGP	WT-10118	5/4/2015	Field Sample	EMSL22	NOT QC	6/6/2015	TEM-ISO	ISO 10312	100	1359	0.0131	7	1.5E+05	25	3.7	3	0.44
WT-2015	Surface Water	LRC-4	WT-10121	5/5/2015	Field Sample	EMSL22	NOT QC	6/12/2015	TEM-ISO	ISO 10312	25	1359	0.0131	8	5.2E+05	25	13	2	1.0
WT-2015	Surface Water	LRC-3	WT-10122	5/4/2015	Field Sample	EMSL22	NOT QC	6/12/2015	TEM-ISO	ISO 10312	25	1359	0.0131	7	5.9E+05	25	15	1	0.59
WT-2015	Surface Water	D10	WT-10055	4/21/2015	Field Sample	EMSL03	NOT QC	5/20/2015	TEM-ISO	ISO 10312	100	1359	0.013	10	1.0E+05	26	2.7	3	0.31
WT-2015	Surface Water	TP-TOE1A	WT-10059	4/22/2015	Field Sample	EMSL03	NOT QC	5/28/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	3	0.15	0	0
WT-2015	Surface Water	TP	WT-10060	4/22/2015	Field Sample	EMSL03	NOT QC	5/21/2015	TEM-ISO	ISO 10312	25	1359	0.013	5	8.4E+05	36	30	2	1.7
WT-2015	Surface Water	UTP	WT-10081	4/22/2015	Field Sample	EMSL03	NOT QC	5/27/2015	TEM-ISO	ISO 10312	50	1359	0.013	4	5.2E+05	27	14	4	2.1
WT-2015	Surface Water	URC-1	WT-10082	4/22/2015	Field Sample	EMSL03	NOT QC	6/24/2015	TEM-ISO	ISO 10312	50	1359	0.013	42	5.0E+04	0	0	0	0
WT-2015	Surface Water	FC-1	WT-10083	4/22/2015	Field Sample	EMSL03	NOT QC	6/26/2015	TEM-ISO	ISO 10312	50	1359	0.013	36	5.8E+04	23	1.3	2	0.12
WT-2015	Surface Water	LRC-6	WT-10080	4/27/2015	Field Sample	EMSL04	NOT QC	6/26/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	37	19	4	2.1

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
WT-2015	Surface Water	East-TGC	WT-10086	4/27/2015	Field Sample	EMSL04	NOT QC	6/29/2015	TEM-ISO	ISO 10312	100	1359	0.0131	4	2.6E+05	26	6.7	3	0.78
WT-2015	Surface Water	LRC-4	WT-10089	4/27/2015	Field Sample	EMSL04	NOT QC	6/5/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	38	20	3	1.6
WT-2015	Surface Water	LRC-2A	WT-10092	4/27/2015	Field Sample	EMSL04	NOT QC	7/3/2015	TEM-ISO	ISO 10312	50	1359	0.0131	6	3.5E+05	27	9.3	2	0.69
WT-2015	Surface Water	D11	WT-10109	4/28/2015	Field Sample	EMSL04	NOT QC	6/19/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	D12	WT-10110	4/28/2015	Field Sample	EMSL04	NOT QC	6/26/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	TP	WT-10111	4/29/2015	Field Sample	EMSL04	NOT QC	6/26/2015	TEM-ISO	ISO 10312	25	1359	0.0131	4	1.0E+06	31	32	3	3.1
WT-2015	Surface Water	URC-1	WT-10114	4/29/2015	Field Sample	EMSL04	NOT QC	7/7/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	CC-3B	WT-10085	4/22/2015	Field Sample	EMSL03	NOT QC	7/7/2015	TEM-ISO	ISO 10312	50	1359	0.013	22	9.5E+04	25	2.4	0	0
WT-2015	Surface Water	LRC-2	WT-10124	5/4/2015	Field Sample	EMSL22	NOT QC	6/16/2015	TEM-ISO	ISO 10312	100	1359	0.0131	8	1.3E+05	25	3.2	4	0.52
WT-2015	Surface Water	MP	WT-10126	5/4/2015	Field Sample	EMSL22	NOT QC	7/11/2015	TEM-ISO	ISO 10312	50	1359	0.0131	42	4.9E+04	20	0.99	3	0.15
WT-2015	Surface Water	TP-TOE1A	WT-10127	5/5/2015	Field Sample	EMSL22	NOT QC	7/12/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	7	0.35	1	0.049
WT-2015	Surface Water	D1	WT-10128	5/5/2015	Field Sample	EMSL22	NOT QC	7/12/2015	TEM-ISO	ISO 10312	50	1359	0.0131	42	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	D2	WT-10130	5/5/2015	Field Sample	EMSL22	NOT QC	7/14/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D3	WT-10131	5/5/2015	Field Sample	EMSL22	NOT QC	7/15/2015	TEM-ISO	ISO 10312	50	1359	0.0131	42	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	D4	WT-10132	5/5/2015	Field Sample	EMSL22	NOT QC	7/15/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	1	0.049
WT-2015	Surface Water	TP	WT-10028	4/17/2015	Field Sample	EMSL22	NOT QC	5/20/2015	TEM-ISO	ISO 10312	100	1359	0.0131	4	2.6E+05	28	7.3	3	0.78
WT-2015	Surface Water	D5	WT-10133	5/5/2015	Field Sample	EMSL22	NOT QC	7/21/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	2	0.099	1	0.049
WT-2015	Surface Water	D6	WT-10134	5/5/2015	Field Sample	EMSL22	NOT QC	7/21/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D7	WT-10135	5/5/2015	Field Sample	EMSL22	NOT QC	7/21/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	4	0.20	0	0
WT-2015	Surface Water	D8	WT-10136	5/5/2015	Field Sample	EMSL22	NOT QC	7/21/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	15	0.74	2	0.099
WT-2015	Surface Water	D9	WT-10137	5/5/2015	Field Sample	EMSL22	NOT QC	7/22/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D10	WT-10138	5/5/2015	Field Sample	EMSL22	NOT QC	7/25/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	2	0.099	1	0.049
WT-2015	Surface Water	D11	WT-10139	5/5/2015	Field Sample	EMSL22	NOT QC	7/25/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D12	WT-10140	5/5/2015	Field Sample	EMSL22	NOT QC	7/25/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	TP	WT-10141	5/5/2015	Field Sample	EMSL22	NOT QC	7/29/2015	TEM-ISO	ISO 10312	25	1359	0.0131	6	6.9E+05	29	20	5	3.5
WT-2015	Surface Water	UTP	WT-10142	5/5/2015	Field Sample	EMSL22	NOT QC	7/29/2015	TEM-ISO	ISO 10312	100	1359	0.0131	5	2.1E+05	28	5.8	3	0.62
WT-2015	Surface Water	URC-1	WT-10143	5/6/2015	Field Sample	EMSL22	NOT QC	7/29/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	FC-1	WT-10144	5/6/2015	Field Sample	EMSL22	NOT QC	7/30/2015	TEM-ISO	ISO 10312	25	1359	0.0131	13	3.2E+05	25	8.0	1	0.32
WT-2015	Surface Water	CC-3A	WT-10145	5/6/2015	Field Sample	EMSL22	NOT QC	7/30/2015	TEM-ISO	ISO 10312	50	1359	0.0131	26	8.0E+04	25	2.0	2	0.16
WT-2015	Surface Water	LRC-5	WT-10088	4/27/2015	Field Sample	EMSL04	NOT QC	7/2/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	36	19	9	4.7
WT-2015	Surface Water	LRC-2	WT-10093	4/27/2015	Field Sample	EMSL04	NOT QC	7/23/2015	TEM-ISO	ISO 10312	50	1359	0.0131	8	2.6E+05	25	6.5	1	0.26
WT-2015	Surface Water	CC-2	WT-10094	4/27/2015	Field Sample	EMSL04	NOT QC	7/26/2015	TEM-ISO	ISO 10312	50	1359	0.0131	6	3.5E+05	26	9.0	3	1.0
WT-2015	Surface Water	CC-3B	WT-10095	4/28/2015	Field Sample	EMSL04	NOT QC	7/28/2015	TEM-ISO	ISO 10312	25	1359	0.0131	67	6.2E+04	22	1.4	2	0.12
WT-2015	Surface Water	MP	WT-10096	4/28/2015	Field Sample	EMSL04	NOT QC	7/28/2015	TEM-ISO	ISO 10312	50	1359	0.0131	11	1.9E+05	26	4.9	2	0.38
WT-2015	Surface Water	TP-TOE1A	WT-10097	4/28/2015	Field Sample	EMSL04	NOT QC	7/29/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	3	0.15	1	0.049
WT-2015	Surface Water	D1	WT-10098	4/28/2015	Field Sample	EMSL04	NOT QC	8/3/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	2	0.099	0	0
WT-2015	Surface Water	D2	WT-10100	4/28/2015	Field Sample	EMSL04	NOT QC	7/30/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	1	0.049
WT-2015	Surface Water	D3	WT-10101	4/28/2015	Field Sample	EMSL04	NOT QC	8/3/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D4	WT-10102	4/28/2015	Field Sample	EMSL04	NOT QC	8/3/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	D5	WT-10103	4/28/2015	Field Sample	EMSL04	NOT QC	8/3/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D6	WT-10104	4/28/2015	Field Sample	EMSL04	NOT QC	7/8/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	D9	WT-10107	4/28/2015	Field Sample	EMSL04	NOT QC	7/17/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	3	0.15	0	0
WT-2015	Surface Water	UTP	WT-10113	4/29/2015	Field Sample	EMSL04	NOT QC	7/6/2015	TEM-ISO	ISO 10312	50	1359	0.0131	8	2.6E+05	26	6.7	7	1.8
WT-2015	Surface Water	FC-1	WT-10115	4/29/2015	Field Sample	EMSL04	NOT QC	7/7/2015	TEM-ISO	ISO 10312	100	1359	0.0131	11	9.4E+04	26	2.5	0	0
WT-2015	Surface Water	LRC-4	WT-10177	5/18/2015	Field Sample	EMSL04	NOT QC	8/17/2015	TEM-ISO	ISO 10312	50	1359	0.013	4	5.2E+05	34	18	6	3.1
WT-2015	Surface Water	LRC-2A	WT-10180	5/18/2015	Field Sample	EMSL04	NOT QC	8/27/2015	TEM-ISO	ISO 10312	50	1359	0.013	4	5.2E+05	33	17	8	4.2
WT-2015	Surface Water	CC-2	WT-10187	5/18/2015	Field Sample	EMSL04	NOT QC	9/4/2015	TEM-ISO	ISO 10312	100	1359	0.0131	8	1.3E+05	26	3.4	4	0.52
WT-2015	Surface Water	MP	WT-10188	5/18/2015	Field Sample	EMSL04	NOT QC	8/28/2015	TEM-ISO	ISO 10312	50	1359	0.0131	23	9.0E+04	25	2.3	2	0.18
WT-2015	Surface Water	TP-TOE1A	WT-10189	5/18/2015	Field Sample	EMSL04	NOT QC	9/18/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	2	0.10	1	0.050
WT-2015	Surface Water	D1	WT-10190	5/19/2015	Field Sample	EMSL04	NOT QC	9/19/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D2	WT-10191	5/19/2015	Field Sample	EMSL04	NOT QC	9/20/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
WT-2015	Surface Water	D3	WT-10192	5/19/2015	Field Sample	EMSL04	NOT QC	9/20/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D4	WT-10193	5/19/2015	Field Sample	EMSL04	NOT QC	9/20/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	LRC-5	WT-10176	5/18/2015	Field Sample	EMSL04	NOT QC	10/8/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	34	18	3	1.6
WT-2015	Surface Water	LRC-3	WT-10178	5/18/2015	Field Sample	EMSL04	NOT QC	10/8/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	25	13	2	1.0
WT-2015	Surface Water	LRC-2	WT-10186	5/18/2015	Field Sample	EMSL04	NOT QC	10/12/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	27	14	2	1.0
WT-2015	Surface Water	D5	WT-10195	5/19/2015	Field Sample	EMSL04	NOT QC	10/7/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D6	WT-10196	5/19/2015	Field Sample	EMSL04	NOT QC	10/7/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D7	WT-10197	5/19/2015	Field Sample	EMSL04	NOT QC	10/7/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D8	WT-10198	5/19/2015	Field Sample	EMSL04	NOT QC	10/7/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D10	WT-10201	5/19/2015	Field Sample	EMSL04	NOT QC	10/12/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	CC-3A	WT-10205	5/20/2015	Field Sample	EMSL04	NOT QC	10/12/2015	TEM-ISO	ISO 10312	50	1359	0.0131	36	5.8E+04	26	1.5	6	0.35
WT-2015	Surface Water	D9	WT-10199	5/19/2015	Field Sample	EMSL04	NOT QC	10/8/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	1	0.049	0	0
WT-2015	Surface Water	D11	WT-10202	5/19/2015	Field Sample	EMSL04	NOT QC	10/16/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	D12	WT-10203	5/19/2015	Field Sample	EMSL04	NOT QC	10/14/2015	TEM-ISO	ISO 10312	100	1359	0.0131	15	6.9E+04	25	1.7	6	0.41
WT-2015	Surface Water	TP	WT-10204	5/19/2015	Field Sample	EMSL04	NOT QC	10/12/2015	TEM-ISO	ISO 10312	100	1359	0.0131	6	1.7E+05	27	4.7	3	0.52
WT-2015	Surface Water	FC-1	WT-10206	5/20/2015	Field Sample	EMSL04	NOT QC	10/12/2015	TEM-ISO	ISO 10312	100	1359	0.0131	11	9.4E+04	25	2.4	1	0.094
WT-2015	Surface Water	UTP	WT-10207	5/20/2015	Field Sample	EMSL04	NOT QC	10/13/2015	TEM-ISO	ISO 10312	100	1359	0.0131	9	1.2E+05	23	2.7	7	0.81
WT-2015	Surface Water	URC-1	WT-10208	5/20/2015	Field Sample	EMSL04	NOT QC	10/14/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	East-TGC	WT-10209	5/21/2015	Field Sample	EMSL04	NOT QC	10/14/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	22	1.1	0	0
WT-2015	Surface Water	East-TGP	WT-10210	5/21/2015	Field Sample	EMSL04	NOT QC	10/16/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	3	0.15	0	0
WT-2015	Surface Water	LRC-3	WT-10153	5/12/2015	Field Sample	EMSL04	NOT QC	10/26/2015	TEM-ISO	ISO 10312	25	1359	0.0126	6	7.2E+05	27	19	1	0.72
WT-2015	Surface Water	LRC-6	WT-10147	5/12/2015	Field Sample	EMSL03	NOT QC	8/5/2015	TEM-ISO	ISO 10312	50	1359	0.0128	4	5.3E+05	45	24	7	3.7
WT-2015	Surface Water	East-TGC	WT-10148	5/12/2015	Field Sample	EMSL03	NOT QC	8/7/2015	TEM-ISO	ISO 10312	100	1359	0.0131	13	8.0E+04	25	2.0	0	0
WT-2015	Surface Water	East-TGP	WT-10149	5/12/2015	Field Sample	EMSL03	NOT QC	8/11/2015	TEM-ISO	ISO 10312	50	1359	0.0128	9	2.4E+05	26	6.1	0	0
WT-2015	Surface Water	LRC-5	WT-10150	5/12/2015	Field Sample	EMSL04	NOT QC	10/21/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	27	14	5	2.6
WT-2015	Surface Water	LRC-4	WT-10152	5/12/2015	Field Sample	EMSL04	NOT QC	10/22/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	30	16	6	3.1
WT-2015	Surface Water	LRC-2A	WT-10154	5/12/2015	Field Sample	EMSL04	NOT QC	10/27/2015	TEM-ISO	ISO 10312	100	1359	0.0131	4	2.6E+05	30	7.8	4	1.0
WT-2015	Surface Water	LRC-2	WT-10155	5/12/2015	Field Sample	EMSL04	NOT QC	10/27/2015	TEM-ISO	ISO 10312	100	1359	0.0131	7	1.5E+05	26	3.9	4	0.59
WT-2015	Surface Water	CC-2	WT-10156	5/12/2015	Field Sample	EMSL04	NOT QC	10/30/2015	TEM-ISO	ISO 10312	50	1359	0.0131	9	2.3E+05	26	6.0	3	0.69
WT-2015	Surface Water	MP	WT-10157	5/13/2015	Field Sample	EMSL04	NOT QC	10/29/2015	TEM-ISO	ISO 10312	50	1359	0.0131	5	4.1E+05	28	12	2	0.83
WT-2015	Surface Water	TP-TOE1A	WT-10158	5/13/2015	Field Sample	EMSL04	NOT QC	10/29/2015	TEM-ISO	ISO 10312	100	1359	0.0134	21	4.8E+04	2	0.097	1	0.048
WT-2015	Surface Water	D1	WT-10159	5/13/2015	Field Sample	EMSL04	NOT QC	10/29/2015	TEM-ISO	ISO 10312	100	1359	0.0131	22	4.7E+04	0	0	0	0
WT-2015	Surface Water	D2	WT-10160	5/13/2015	Field Sample	EMSL04	NOT QC	10/29/2015	TEM-ISO	ISO 10312	100	1359	0.0134	21	4.8E+04	3	0.14	0	0
WT-2015	Surface Water	D3	WT-10161	5/13/2015	Field Sample	EMSL04	NOT QC	10/30/2015	TEM-ISO	ISO 10312	100	1359	0.0131	22	4.7E+04	0	0	0	0
WT-2015	Surface Water	D4	WT-10162	5/13/2015	Field Sample	EMSL04	NOT QC	11/2/2015	TEM-ISO	ISO 10312	100	1359	0.0131	22	4.7E+04	1	0.047	0	0
WT-2015	Surface Water	D5	WT-10163	5/13/2015	Field Sample	EMSL04	NOT QC	11/2/2015	TEM-ISO	ISO 10312	100	1359	0.0131	22	4.7E+04	0	0	0	0
WT-2015	Surface Water	D6	WT-10165	5/13/2015	Field Sample	EMSL04	NOT QC	11/2/2015	TEM-ISO	ISO 10312	100	1359	0.0131	22	4.7E+04	0	0	0	0
WT-2015	Surface Water	D7	WT-10166	5/13/2015	Field Sample	EMSL04	NOT QC	11/3/2015	TEM-ISO	ISO 10312	100	1359	0.0131	22	4.7E+04	2	0.094	0	0
WT-2015	Surface Water	D8	WT-10167	5/13/2015	Field Sample	EMSL04	NOT QC	11/4/2015	TEM-ISO	ISO 10312	100	1359	0.0131	22	4.7E+04	6	0.28	1	0.047
WT-2015	Surface Water	D9	WT-10168	5/13/2015	Field Sample	EMSL04	NOT QC	11/4/2015	TEM-ISO	ISO 10312	100	1359	0.0131	22	4.7E+04	1	0.047	0	0
WT-2015	Surface Water	D10	WT-10169	5/13/2015	Field Sample	EMSL04	NOT QC	11/4/2015	TEM-ISO	ISO 10312	100	1359	0.0131	22	4.7E+04	0	0	0	0
WT-2015	Surface Water	D11	WT-10170	5/13/2015	Field Sample	EMSL04	NOT QC	10/30/2015	TEM-ISO	ISO 10312	100	1359	0.0134	21	4.8E+04	0	0	0	0
WT-2015	Surface Water	D12	WT-10171	5/13/2015	Field Sample	EMSL04	NOT QC	11/10/2015	TEM-ISO	ISO 10312	100	1359	0.0134	21	4.8E+04	0	0	0	0
WT-2015	Surface Water	TP	WT-10172	5/13/2015	Field Sample	EMSL04	NOT QC	11/10/2015	TEM-ISO	ISO 10312	25	1359	0.0134	6	6.8E+05	25	17	1	0.68
WT-2015	Surface Water	UTP	WT-10182	5/14/2015	Field Sample	EMSL04	NOT QC	11/5/2015	TEM-ISO	ISO 10312	100	1359	0.0131	9	1.2E+05	28	3.2	5	0.58
WT-2015	Surface Water	URC-1	WT-10183	5/14/2015	Field Sample	EMSL04	NOT QC	11/9/2015	TEM-ISO	ISO 10312	100	1359	0.0134	21	4.8E+04	0	0	0	0
WT-2015	Surface Water	FC-1	WT-10184	5/14/2015	Field Sample	EMSL04	NOT QC	11/9/2015	TEM-ISO	ISO 10312	10	1359	0.0134	75	1.4E+05	9	1.2	1	0.14
WT-2015	Surface Water	CC-3A	WT-10185	5/14/2015	Field Sample	EMSL04	NOT QC	11/5/2015	TEM-ISO	ISO 10312	50	1359	0.0131	35	5.9E+04	25	1.5	6	0.36
WT-2015	Surface Water	LRC-6	WT-10173	5/18/2015	Field Sample	EMSL04	NOT QC	10/16/2015	TEM-ISO	ISO 10312	25	1359	0.0134	5	8.1E+05	26	21	4	3.2
WT-2015	Surface Water	LRC-5	WT-10119	5/4/2015	Field Sample	EMSL22	NOT QC	6/9/2015	TEM-ISO	ISO 10312	25	1359	0.0131	5	8.3E+05	25	21	3	2.5
WT-2015	Surface Water	LRC-2A	WT-10123	5/4/2015	Field Sample	EMSL22	NOT QC	6/13/2015	TEM-ISO	ISO 10312	25	1359	0.0131	7	5.9E+05	25	15	6	3.6

Table E-1a: Summary of LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media[a]	Sample Information				Analysis Information									Results			
															Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
WT-2015	Surface Water	CC-2	WT-10125	5/4/2015	Field Sample	EMSL22	NOT QC	7/11/2015	TEM-ISO	ISO 10312	25	1359	0.0131	77	5.4E+04	8	0.43	1	0.054
WT-2015	Surface Water	LRC-6	WT-10001	4/14/2015	Field Sample	EMSL03	NOT QC	4/23/2015	TEM-ISO	ISO 10312	25	1359	0.0128	4	1.1E+06	41	44	5	5.3
WT-2015	Surface Water	LRC-5	WT-10004	4/14/2015	Field Sample	EMSL03	NOT QC	4/28/2015	TEM-ISO	ISO 10312	50	1359	0.0128	4	5.3E+05	38	20	2	1.1
WT-2015	Surface Water	MP	WT-10011	4/15/2015	Field Sample	EMSL03	NOT QC	5/4/2015	TEM-ISO	ISO 10312	100	1359	0.0131	4	2.6E+05	30	7.8	4	1.0
WT-2015	Surface Water	D11	WT-10025	4/16/2015	Field Sample	EMSL22	NOT QC	5/19/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Surface Water	East-TGP	WT-10087	4/27/2015	Field Sample	EMSL04	NOT QC	5/17/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	14	0.69	3	0.15
WT-2015	Surface Water	LRC-3	WT-10091	4/27/2015	Field Sample	EMSL04	NOT QC	5/19/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	41	21	5	2.6
WT-2015	Surface Water	D10	WT-10108	4/28/2015	Field Sample	EMSL04	NOT QC	6/19/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0

Notes:

[a] Samples from Phase VB and VB-2013 were collected from the pore water inside the Whitlock-Vibert box (Pore Water [In]), from the adjacent pore water in the gravel (Pore Water [Out]) or from the overlying stream water (Surface Water).

Sample was collected as part of a water sampling pilot study using either a peristaltic pump or vacuum tube method.

* See Tables 4-1 and 4-2 for definitions of each Phase.

µm = micron

Conc. = concentration

EFA = effective filter area

GO = grid opening

ID = identification

L = liter

LAA = Libby amphibole asbestos

MFL = million fibers per liter

mL = milliliters

mm = millimeter

N = number of asbestos structures

QC = quality control

TEM = transmission electron microscopy

Table E-1b: Summary of LAA Results for Groundwater
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information				Analysis Information										Results			
																Total LAA		LAA > 10 µm in length	
		Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Examined	Sensitivity (1/L)	N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
IIB	Groundwater	Well C	P2-00780	7/22/2008	Field Sample	EMSL27	Not QC	12/22/2008	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	2	0.10	0	0
IIB	Groundwater	Well D	P2-00787	7/23/2008	Field Sample	EMSL27	Not QC	12/23/2008	TEM-ISO	ISO 10312	25	1295	0.013	50	8.0E+05	0	0	0	0
IIB	Groundwater	Well E	P2-00789	7/23/2008	Field Sample	EMSL27	Not QC	12/30/2008	TEM-ISO	ISO 10312	100	1295	0.013	1	1.0E+06	34	34	2	2.0
IIB	Groundwater	Well H	P2-00793	7/24/2008	Field Sample	EMSL27	Not QC	1/5/2009	TEM-ISO	ISO 10312	25	1295	0.013	3	1.3E+06	31	41	2	2.7
IIB	Groundwater	Well A	P2-00795	7/24/2008	Field Sample	EMSL27	Not QC	1/6/2009	TEM-ISO	ISO 10312	10	1295	0.013	4	2.5E+06	26	65	1	2.5
IIB	Groundwater	Well C	P2-01041	9/29/2008	Field Sample	EMSL27	Not QC	1/2/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIB	Groundwater	Well E	P2-01045	9/30/2008	Field Sample	EMSL27	Not QC	1/4/2009	TEM-ISO	ISO 10312	100	1295	0.013	1	1.0E+06	62	62	3	3.0
IIB	Groundwater	Well A	P2-01047	9/30/2008	Field Sample	EMSL27	Not QC	1/4/2009	TEM-ISO	ISO 10312	25	1295	0.013	50	8.0E+05	0	0	0	0
IIB	Groundwater	Well D	P2-01050	9/30/2008	Field Sample	EMSL27	Not QC	1/4/2009	TEM-ISO	ISO 10312	50	1295	0.013	50	4.0E+05	0	0	0	0
IIB	Groundwater	WELL C	P2-01130	6/9/2009	Field Sample	EMSL27	Not QC	6/12/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	1	0.050	0	0
IIB	Groundwater	WELL E	P2-01133	6/9/2009	Field Sample	EMSL27	Not QC	6/12/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	18	0.90	3	0.15
IIB	Groundwater	WELL D	P2-01136	6/10/2009	Field Sample	EMSL27	Not QC	6/15/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIB	Groundwater	WELL A	P2-01138	6/10/2009	Field Sample	EMSL27	Not QC	6/15/2009	TEM-ISO	ISO 10312	100	1295	0.013	20	5.0E+04	0	0	0	0
IIB	Groundwater	WELL H	P2-01139	6/10/2009	Field Sample	EMSL27	Not QC	6/15/2009	TEM-ISO	ISO 10312	100	1295	0.013	5	2.0E+05	27	5.4	1	0.20
WT-2015	Groundwater	BH-01A-1	WT-10074	4/17/2015	Field Sample	EMSL04	NOT QC	4/28/2015	TEM-ISO	ISO 10312	25	1359	0.0131	15	2.8E+05	13.0	3.6	2.2	0.61
WT-2015	Groundwater	BH-01A-1	WT-10235	5/21/2015	Field Sample	EMSL04	NOT QC	8/20/2015	TEM-ISO	ISO 10312	50	1359	0.0131	12	1.7E+05	15.4	2.7	3.4	0.58
WT-2015	Groundwater	BH-01A-2	WT-10078	4/19/2015	Field Sample	EMSL04	NOT QC	5/1/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	52.8	27	2.8	1.4
WT-2015	Groundwater	BH-01A-2	WT-10234	5/21/2015	Field Sample	EMSL04	NOT QC	8/19/2015	TEM-ISO	ISO 10312	10	1359	0.0131	5	2.1E+06	25.0	52	3.7	7.7
WT-2015	Groundwater	BH-03A-1	WT-10076	4/19/2015	Field Sample	EMSL04	NOT QC	4/29/2015	TEM-ISO	ISO 10312	10	1359	0.0131	4	2.6E+06	53.8	140	4.8	12
WT-2015	Groundwater	BH-03A-1	WT-10229	5/19/2015	Field Sample	EMSL04	NOT QC	8/6/2015	TEM-ISO	ISO 10312	50	1359	0.013	4	5.2E+05	36.8	19	2.8	1.5
WT-2015	Groundwater	BH-05A-1	WT-10073	4/17/2015	Field Sample	EMSL04	NOT QC	4/29/2015	TEM-ISO	ISO 10312	25	1359	0.0131	77	5.4E+04	0	0	0	0
WT-2015	Groundwater	BH-05A-1	WT-10231	5/20/2015	Field Sample	EMSL04	NOT QC	8/12/2015	TEM-ISO	ISO 10312	10	1359	0.013	77	1.4E+05	0	0	0	0
WT-2015	Groundwater	BH-05A-2	WT-10077	4/19/2015	Field Sample	EMSL04	NOT QC	4/30/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	5.2E+05	28.8	15	1.8	0.93
WT-2015	Groundwater	BH-05A-2	WT-10233	5/21/2015	Field Sample	EMSL04	NOT QC	8/14/2015	TEM-ISO	ISO 10312	50	1359	0.013	7	3.0E+05	19.4	5.8	0.6	0.19
WT-2015	Groundwater	BH-07A-1	WT-10064	4/15/2015	Field Sample	EMSL04	NOT QC	5/8/2015	TEM-ISO	ISO 10312	10	1359	0.0131	77	1.3E+05	0.0	0	0	0
WT-2015	Groundwater	BH-07A-1	WT-10223	5/18/2015	Field Sample	EMSL04	NOT QC	8/4/2015	TEM-ISO	ISO 10312	10	1359	0.013	77	1.4E+05	0.0	0	0	0
WT-2015	Groundwater	BH-07A-2	WT-10065	4/15/2015	Field Sample	EMSL04	NOT QC	5/14/2015	TEM-ISO	ISO 10312	50	1359	0.0131	7	3.0E+05	27.4	8.1	5.6	1.7
WT-2015	Groundwater	BH-07A-2	WT-10226	5/19/2015	Field Sample	EMSL04	NOT QC	8/5/2015	TEM-ISO	ISO 10312	25	1359	0.013	5	8.4E+05	24.0	20	5.7	4.8
WT-2015	Groundwater	BH-07B-1	WT-10067	4/15/2015	Field Sample	EMSL04	NOT QC	5/11/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	4.1	0.20	0	0
WT-2015	Groundwater	BH-07B-1	WT-10228	5/19/2015	Field Sample	EMSL04	NOT QC	8/6/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	0	0	0	0
WT-2015	Groundwater	BH-09-1	WT-10062	4/14/2015	Field Sample	EMSL04	NOT QC	5/4/2015	TEM-ISO	ISO 10312	100	1359	0.0131	4	2.6E+05	36.8	9.5	2.8	0.72
WT-2015	Groundwater	BH-09-1	WT-10222	5/18/2015	Field Sample	EMSL04	NOT QC	8/5/2015	TEM-ISO	ISO 10312	100	1359	0.013	6	1.7E+05	22.2	3.9	1.7	0.29
WT-2015	Groundwater	Well C	WT-10061	4/14/2015	Field Sample	EMSL04	NOT QC	5/8/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	4.9E+04	0	0	0	0
WT-2015	Groundwater	Well C	WT-10221	5/18/2015	Field Sample	EMSL04	NOT QC	8/4/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	5.0E+04	0	0	0	0

Notes:

*Concentration values presented reflect the equipment rinsate blank adjusted concenctration, per LFM-OU3-02. Structure counts were derived based on the adjusted concentration.

* See Tables 4-1 and 4-2 for definitions of each Phase.

µm = micron
Conc. = concentration
EFA = effective filter area
EPA = U.S. Environmental Protection Agency
GO = grid opening
ID = identification
ISO = International Organization for Standardization
L = liter
LAA = Libby amphibole asbestos
MFL = million fibers per liter
mL = milliliters
mm = millimeter
N = number of asbestos structures
TEM = transmission electron microscopy

Table E-1c: Summary of LAA Results for Sediment
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analytical Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc. (mass %)	LAA Bin
I	Sediment	CC-1	P1-00395	10/11/2007	Field Sample	EMSL27	Not QC	1/11/2008	PLM-VE	126.1	4	C
I	Sediment	CC-1	P1-00395	10/11/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	28.6	5.2	n/a
I	Sediment	CCS-1	P1-00396	10/12/2007	Field Sample	EMSL27	Not QC	1/11/2008	PLM-VE	170.2	2	C
I	Sediment	CCS-1	P1-00396	10/12/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	53.3	Tr	n/a
I	Sediment	CCS-6	P1-00397	10/12/2007	Field Sample	EMSL27	Not QC	1/11/2008	PLM-VE	163.9	2	C
I	Sediment	CCS-6	P1-00397	10/12/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	21.8	Tr	n/a
I	Sediment	CCS-8	P1-00398	10/12/2007	Field Sample	EMSL27	Not QC	1/11/2008	PLM-VE	75.6	6	C
I	Sediment	CCS-8	P1-00398	10/12/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	33.6	4.1	n/a
I	Sediment	CC-2	P1-00399	10/12/2007	Field Sample	EMSL27	Not QC	1/11/2008	PLM-VE	153.9	<1	B2
I	Sediment	CC-2	P1-00399	10/12/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	37.4	2.0	n/a
I	Sediment	CCS-9	P1-00400	10/12/2007	Field Sample	EMSL27	Not QC	1/11/2008	PLM-VE	111.9	7	C
I	Sediment	CCS-9	P1-00400	10/12/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	8.7	Tr	n/a
I	Sediment	CCS-11	P1-00402	10/13/2007	Field Sample	EMSL27	Not QC	1/11/2008	PLM-VE	183.3	<1	B2
I	Sediment	CCS-11	P1-00402	10/13/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	26.4	2.0	n/a
I	Sediment	CCS-14	P1-00403	10/13/2007	Field Sample	EMSL27	Not QC	1/11/2008	PLM-VE	129.6	<1	B2
I	Sediment	CCS-14	P1-00403	10/13/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	4.1	Tr	n/a
I	Sediment	FC-1	P1-00404	10/13/2007	Field Sample	EMSL27	Not QC	1/11/2008	PLM-VE	200.9	ND	A
I	Sediment	FC-1	P1-00404	10/13/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	3.2	ND	n/a
I	Sediment	FC-Pond	P1-00405	10/13/2007	Field Sample	EMSL27	Not QC	1/11/2008	PLM-VE	89.2	<1	B2
I	Sediment	FC-2	P1-00406	10/13/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	203.7	Tr	B1
I	Sediment	FC-2	P1-00406	10/13/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	14.3	ND	n/a
I	Sediment	TP	P1-00407	10/14/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	100.2	<1	B2
I	Sediment	TP	P1-00407	10/14/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	6.6	Tr	n/a
I	Sediment	URC-2	P1-00408	10/14/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	123.1	<1	B2
I	Sediment	URC-2	P1-00408	10/14/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	47.9	Tr	n/a
I	Sediment	URC-1	P1-00409	10/14/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	137.7	ND	A
I	Sediment	CCS-16	P1-00289	10/15/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	119	4	C
I	Sediment	TP-TOE2	P1-00325	10/15/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	183.2	3	C
I	Sediment	TP-TOE2	P1-00325	10/15/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	29	0.34	n/a
I	Sediment	TP-TOE1	P1-00326	10/15/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	142.2	2	C
I	Sediment	TP-TOE1	P1-00326	10/15/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	30.6	3.8	n/a
I	Sediment	MP	P1-00348	10/15/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	166.7	<1	B2
I	Sediment	LRC-6	P1-00327	10/16/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	183.5	<1	B2
I	Sediment	LRC-5	P1-00328	10/16/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	129.8	<1	B2
I	Sediment	LRC-5	P1-00328	10/16/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	35	Tr	n/a
I	Sediment	LRC-4	P1-00329	10/16/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	137.8	<1	B2
I	Sediment	LRC-3	P1-00335	10/16/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	98.9	2	C

Table E-1c: Summary of LAA Results for Sediment
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analytical Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc. (mass %)	LAA Bin
I	Sediment	LRC-2	P1-00336	10/17/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	256.9	<1	B2
I	Sediment	LRC-2	P1-00336	10/17/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	36.2	Tr	n/a
I	Sediment	LRC-1	P1-00338	10/17/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	210.9	<1	B2
I	Sediment	LRC-1	P1-00338	10/17/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	44.7	1.3	n/a
IIA	Sediment	LRC-6	P2-00461	6/24/2008	Field Sample	EMSL04	Not QC	9/26/2008	PLM-VE	95.3	<1	B2
IIA	Sediment	LRC-5	P2-00464	6/25/2008	Field Sample	EMSL04	Not QC	9/26/2008	PLM-VE	111.6	Tr	B1
IIA	Sediment	LRC-4	P2-00465	6/25/2008	Field Sample	EMSL04	Not QC	9/26/2008	PLM-VE	129.5	Tr	B1
IIA	Sediment	LRC-3	P2-00466	6/25/2008	Field Sample	EMSL04	Not QC	9/26/2008	PLM-VE	138.2	Tr	B1
IIA	Sediment	LRC-2	P2-00531	6/25/2008	Field Sample	EMSL04	Not QC	9/29/2008	PLM-VE	120.6	Tr	B1
IIA	Sediment	LRC-1	P2-00533	6/25/2008	Field Sample	EMSL04	Not QC	9/29/2008	PLM-VE	105	<1	B2
IIA	Sediment	CC-2	P2-00534	6/25/2008	Field Sample	EMSL04	Not QC	9/29/2008	PLM-VE	99.2	Tr	B1
IIA	Sediment	TP-TOE2	P2-00469	6/26/2008	Field Sample	EMSL04	Not QC	9/24/2008	PLM-VE	145.5	2	C
IIA	Sediment	TP-TOE2	P2-00469	6/26/2008	Field Sample	EMSL04	Not QC	9/26/2008	PLM-Grav	10.4	Tr	n/a
IIA	Sediment	TP-TOE1	P2-00470	6/26/2008	Field Sample	EMSL04	Not QC	9/24/2008	PLM-VE	122.1	<1	B2
IIA	Sediment	URC-2	P2-00472	6/27/2008	Field Sample	EMSL04	Not QC	9/24/2008	PLM-VE	139.3	Tr	B1
IIA	Sediment	URC-1A	P2-00473	6/27/2008	Field Sample	EMSL04	Not QC	9/24/2008	PLM-VE	118.4	Tr	B1
IIA	Sediment	URC-1A	P2-00473	6/27/2008	Field Sample	EMSL04	Not QC	9/26/2008	PLM-Grav	4.2	ND	n/a
IIA	Sediment	URC-1	P2-00474	6/27/2008	Field Sample	EMSL04	Not QC	9/25/2008	PLM-VE	94.9	ND	A
IIA	Sediment	FC-2	P2-00475	6/27/2008	Field Sample	EMSL04	Not QC	9/25/2008	PLM-VE	73.3	Tr	B1
IIA	Sediment	TP-1	P2-00477	6/27/2008	Field Sample	EMSL04	Not QC	9/25/2008	PLM-VE	117.8	<1	B2
IIA	Sediment	TP-2	P2-00478	6/27/2008	Field Sample	EMSL04	Not QC	9/24/2008	PLM-VE	82.9	<1	B2
IIA	Sediment	FC-1	P2-00481	6/28/2008	Field Sample	EMSL04	Not QC	9/30/2008	PLM-VE	87.7	Tr	B1
IIA	Sediment	TP-4	P2-00482	6/28/2008	Field Sample	EMSL04	Not QC	9/30/2008	PLM-VE	81.6	Tr	B1
IIA	Sediment	TP-3	P2-00483	6/28/2008	Field Sample	EMSL04	Not QC	9/24/2008	PLM-VE	105.2	<1	B2
IIA	Sediment	CCS-6	P2-00485	6/28/2008	Field Sample	EMSL04	Not QC	9/30/2008	PLM-VE	102.7	<1	B2
IIA	Sediment	CCS-8	P2-00486	6/28/2008	Field Sample	EMSL04	Not QC	9/30/2008	PLM-VE	90	<1	B2
IIA	Sediment	CCS-1	P2-00487	6/28/2008	Field Sample	EMSL04	Not QC	9/24/2008	PLM-VE	114.4	3	C
IIA	Sediment	CCS-16	P2-00489	6/28/2008	Field Sample	EMSL04	Not QC	9/29/2008	PLM-VE	136.4	<1	B2
IIA	Sediment	CCS-16	P2-00489	6/28/2008	Field Sample	EMSL04	Not QC	10/9/2008	PLM-Grav	6.6	Tr	n/a
IIA	Sediment	CC-1	P2-00490	6/29/2008	Field Sample	EMSL04	Not QC	9/25/2008	PLM-VE	118.2	3	C
IIA	Sediment	CC-1	P2-00490	6/29/2008	Field Sample	EMSL04	Not QC	9/26/2008	PLM-Grav	9.2	Tr	n/a
IIA	Sediment	CCS-9	P2-00492	6/29/2008	Field Sample	EMSL04	Not QC	9/25/2008	PLM-VE	162	2	C
IIA	Sediment	CCS-9	P2-00492	6/29/2008	Field Sample	EMSL04	Not QC	9/30/2008	PLM-Grav	10.5	5.7	n/a
IIA	Sediment	CCS-11	P2-00493	6/29/2008	Field Sample	EMSL04	Not QC	9/25/2008	PLM-VE	116.8	Tr	B1
IIA	Sediment	CCS-11	P2-00493	6/29/2008	Field Sample	EMSL04	Not QC	9/30/2008	PLM-Grav	4.5	Tr	n/a
IIA	Sediment	CCS-14	P2-00494	6/29/2008	Field Sample	EMSL04	Not QC	9/24/2008	PLM-VE	116.4	Tr	B1
IIA	Sediment	FC-POND-1	P2-00496	6/30/2008	Field Sample	EMSL04	Not QC	10/7/2008	PLM-VE	111.1	<1	B2

Table E-1c: Summary of LAA Results for Sediment
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analytical Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc. (mass %)	LAA Bin
IIA	Sediment	FC-POND-2	P2-00497	6/30/2008	Field Sample	EMSL04	Not QC	10/7/2008	PLM-VE	99.3	<1	B2
IIA	Sediment	FC-POND-2	P2-00497	6/30/2008	Field Sample	EMSL04	Not QC	10/8/2008	PLM-Grav	29.8	0.39	n/a
IIA	Sediment	FC-POND-3	P2-00498	6/30/2008	Field Sample	EMSL04	Not QC	10/1/2008	PLM-VE	105.4	Tr	B1
IIA	Sediment	FC-POND-4	P2-00499	6/30/2008	Field Sample	EMSL04	Not QC	9/29/2008	PLM-VE	98.8	<1	B2
IIA	Sediment	FC-POND-4D	P2-00501	6/30/2008	Field Sample	EMSL04	Not QC	10/7/2008	PLM-VE	94.8	Tr	B1
IIA	Sediment	FC-POND-5	P2-00502	6/30/2008	Field Sample	EMSL04	Not QC	10/1/2008	PLM-VE	81.7	<1	B2
IIA	Sediment	TP-6	P2-00503	7/1/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	129.9	Tr	B1
IIA	Sediment	TP-7	P2-00504	7/1/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	115.2	Tr	B1
IIA	Sediment	TP-8	P2-00505	7/1/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	113.7	Tr	B1
IIA	Sediment	TP-9	P2-00506	7/1/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	98.1	Tr	B1
IIA	Sediment	TP-10	P2-00507	7/1/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	99.3	Tr	B1
IIA	Sediment	TP-10D	P2-00508	7/1/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	125.4	Tr	B1
IIA	Sediment	TP-11	P2-00509	7/1/2008	Field Sample	EMSL04	Not QC	10/2/2008	PLM-VE	109.2	<1	B2
IIA	Sediment	CC-POND-2	P2-00511	7/1/2008	Field Sample	EMSL04	Not QC	10/3/2008	PLM-VE	150.9	Tr	B1
IIA	Sediment	CC-POND-2	P2-00511	7/1/2008	Field Sample	EMSL04	Not QC	10/8/2008	PLM-Grav	27.1	ND	n/a
IIA	Sediment	CC-POND-1	P2-00512	7/1/2008	Field Sample	EMSL04	Not QC	10/3/2008	PLM-VE	108.5	<1	B2
IIA	Sediment	CC-POND-3	P2-00513	7/1/2008	Field Sample	EMSL04	Not QC	10/3/2008	PLM-VE	101.2	Tr	B1
IIA	Sediment	TP-17	P2-00514	7/1/2008	Field Sample	EMSL04	Not QC	9/30/2008	PLM-VE	101.5	Tr	B1
IIA	Sediment	TP-16	P2-00515	7/1/2008	Field Sample	EMSL04	Not QC	10/2/2008	PLM-VE	102.6	Tr	B1
IIA	Sediment	TP-15	P2-00516	7/1/2008	Field Sample	EMSL04	Not QC	10/3/2008	PLM-VE	122	Tr	B1
IIA	Sediment	TP-14	P2-00517	7/1/2008	Field Sample	EMSL04	Not QC	10/5/2008	PLM-VE	112.7	Tr	B1
IIA	Sediment	TP-13	P2-00518	7/1/2008	Field Sample	EMSL04	Not QC	9/30/2008	PLM-VE	112	<1	B2
IIA	Sediment	TP-12	P2-00519	7/1/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	94	Tr	B1
IIA	Sediment	MP-1	P2-00520	7/1/2008	Field Sample	EMSL04	Not QC	10/1/2008	PLM-VE	115.2	Tr	B1
IIA	Sediment	MP-2	P2-00522	7/1/2008	Field Sample	EMSL04	Not QC	10/2/2008	PLM-VE	43.6	Tr	B1
IIA	Sediment	MP-3	P2-00524	7/1/2008	Field Sample	EMSL04	Not QC	10/2/2008	PLM-VE	127.4	Tr	B1
IIA	Sediment	MP-4	P2-00525	7/2/2008	Field Sample	EMSL04	Not QC	10/1/2008	PLM-VE	88.4	Tr	B1
IIA	Sediment	MP-5	P2-00526	7/2/2008	Field Sample	EMSL04	Not QC	10/5/2008	PLM-VE	98.3	Tr	B1
IIA	Sediment	CC-POND-4	P2-00536	7/2/2008	Field Sample	EMSL04	Not QC	10/2/2008	PLM-VE	104.3	Tr	B1
IIA	Sediment	CC-POND-5	P2-00537	7/2/2008	Field Sample	EMSL04	Not QC	10/3/2008	PLM-VE	114.1	Tr	B1
IIA	Sediment	CC-POND-5D	P2-00538	7/2/2008	Field Sample	EMSL04	Not QC	10/3/2008	PLM-VE	105	Tr	B1
IIA	Sediment	KR-9	P2-00860	8/20/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	101	Tr	B1
IIA	Sediment	KR-9	P2-00860	8/20/2008	Field Sample	EMSL04	Not QC	10/8/2008	PLM-Grav	42.9	ND	n/a
IIA	Sediment	KR-10	P2-00861	8/20/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	82.5	Tr	B1
IIA	Sediment	KR-10	P2-00861	8/20/2008	Field Sample	EMSL04	Not QC	10/8/2008	PLM-Grav	45	ND	n/a
IIA	Sediment	KR-11	P2-00862	8/20/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	118.5	Tr	B1
IIA	Sediment	KR-11	P2-00862	8/20/2008	Field Sample	EMSL04	Not QC	10/8/2008	PLM-Grav	12.3	ND	n/a

Table E-1c: Summary of LAA Results for Sediment
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analytical Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc. (mass %)	LAA Bin
IIA	Sediment	KR-12	P2-00863	8/20/2008	Field Sample	EMSL04	Not QC	10/6/2008	PLM-VE	156.7	ND	A
IIA	Sediment	KR-13	P2-00864	8/20/2008	Field Sample	EMSL04	Not QC	10/7/2008	PLM-VE	116.8	Tr	B1
IIA	Sediment	UKR-2	P2-00866	8/20/2008	Field Sample	EMSL04	Not QC	10/7/2008	PLM-VE	123.9	ND	A
IIA	Sediment	LRC-6	P2-00941	9/9/2008	Field Sample	Hygeia	Not QC	9/25/2008	PLM-VE	136.9	<1	B2
IIA	Sediment	LRC-5	P2-00942	9/9/2008	Field Sample	Hygeia	Not QC	9/25/2008	PLM-VE	149.3	<1	B2
IIA	Sediment	LRC-5	P2-00942	9/9/2008	Field Sample	Hygeia	Not QC	10/2/2008	PLM-Grav	8.1	Tr	n/a
IIA	Sediment	LRC-4	P2-00943	9/9/2008	Field Sample	Hygeia	Not QC	9/25/2008	PLM-VE	136.8	<1	B2
IIA	Sediment	LRC-3	P2-00944	9/9/2008	Field Sample	Hygeia	Not QC	9/25/2008	PLM-VE	158.7	<1	B2
IIA	Sediment	LRC-2	P2-00945	9/9/2008	Field Sample	Hygeia	Not QC	9/25/2008	PLM-VE	107.1	<1	B2
IIA	Sediment	LRC-2	P2-00945	9/9/2008	Field Sample	Hygeia	Not QC	10/2/2008	PLM-Grav	28.3	5.0	n/a
IIA	Sediment	TP-2	P2-00948	9/10/2008	Field Sample	Hygeia	Not QC	9/26/2008	PLM-VE	76.5	<1	B2
IIA	Sediment	TP-1	P2-00949	9/10/2008	Field Sample	Hygeia	Not QC	9/26/2008	PLM-VE	96.8	<1	B2
IIA	Sediment	TP-3	P2-00950	9/10/2008	Field Sample	Hygeia	Not QC	9/26/2008	PLM-VE	94.3	2	C
IIA	Sediment	TP-5	P2-00951	9/10/2008	Field Sample	Hygeia	Not QC	9/25/2008	PLM-VE	115.8	<1	B2
IIA	Sediment	TP-4	P2-00952	9/10/2008	Field Sample	Hygeia	Not QC	9/26/2008	PLM-VE	96.7	2	C
IIA	Sediment	LRC-1	P2-00953	9/10/2008	Field Sample	Hygeia	Not QC	9/26/2008	PLM-VE	146.3	<1	B2
IIA	Sediment	LRC-1	P2-00953	9/10/2008	Field Sample	Hygeia	Not QC	10/1/2008	PLM-Grav	19.4	Tr	n/a
IIA	Sediment	CC-2	P2-00954	9/10/2008	Field Sample	Hygeia	Not QC	9/25/2008	PLM-VE	139.6	<1	B2
IIA	Sediment	CC-2	P2-00954	9/10/2008	Field Sample	Hygeia	Not QC	10/2/2008	PLM-Grav	43.6	Tr	n/a
IIA	Sediment	TP-TOE2	P2-01010	9/10/2008	Field Sample	Hygeia	Not QC	9/26/2008	PLM-VE	112.4	2	C
IIA	Sediment	MP-3	P2-00961	9/11/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	101.7	Tr	B1
IIA	Sediment	MP-2	P2-00962	9/11/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	127	1	C
IIA	Sediment	MP-1	P2-00963	9/11/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	130.2	1	C
IIA	Sediment	MP-4	P2-00964	9/11/2008	Field Sample	Hygeia	Not QC	9/26/2008	PLM-VE	97.1	1	C
IIA	Sediment	MP-5	P2-00965	9/11/2008	Field Sample	Hygeia	Not QC	9/26/2008	PLM-VE	109.1	2	C
IIA	Sediment	TP-TOE1	P2-00968	9/12/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	148.5	1	C
IIA	Sediment	TP-13	P2-00969	9/12/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	121.8	<1	B2
IIA	Sediment	TP-14	P2-00970	9/12/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	99.9	<1	B2
IIA	Sediment	TP-15	P2-00971	9/12/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	111.7	Tr	B1
IIA	Sediment	TP-16	P2-00972	9/12/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	92.1	<1	B2
IIA	Sediment	TP-17	P2-00973	9/12/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	117.4	<1	B2
IIA	Sediment	TP-12	P2-00974	9/12/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	108.2	<1	B2
IIA	Sediment	TP-10	P2-00975	9/12/2008	Field Sample	Hygeia	Not QC	10/3/2008	PLM-VE	104.6	1	C
IIA	Sediment	TP-11	P2-00977	9/13/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	76.2	Tr	B1
IIA	Sediment	TP-8	P2-00979	9/13/2008	Field Sample	Hygeia	Not QC	10/9/2008	PLM-VE	87.4	<1	B2
IIA	Sediment	TP-9	P2-00980	9/13/2008	Field Sample	Hygeia	Not QC	10/9/2008	PLM-VE	96	<1	B2
IIA	Sediment	TP-7	P2-00981	9/13/2008	Field Sample	Hygeia	Not QC	10/9/2008	PLM-VE	79.1	2	C

Table E-1c: Summary of LAA Results for Sediment
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analytical Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc. (mass %)	LAA Bin
IIA	Sediment	TP-6	P2-00982	9/13/2008	Field Sample	Hygeia	Not QC	10/9/2008	PLM-VE	99.9	<1	B2
IIA	Sediment	URC-2	P2-00983	9/13/2008	Field Sample	Hygeia	Not QC	10/9/2008	PLM-VE	98.2	Tr	B1
IIA	Sediment	URC-1A	P2-00986	9/14/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	110.7	ND	A
IIA	Sediment	URC-1A	P2-00986	9/14/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-Grav	29.7	ND	n/a
IIA	Sediment	CC-1	P2-00987	9/14/2008	Field Sample	Hygeia	Not QC	10/9/2008	PLM-VE	146.1	<1	B2
IIA	Sediment	CCS-16	P2-00989	9/14/2008	Field Sample	Hygeia	Not QC	10/9/2008	PLM-VE	131.5	2	C
IIA	Sediment	CCS-6	P2-00990	9/14/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	129.3	2	C
IIA	Sediment	CCS-1	P2-00991	9/14/2008	Field Sample	Hygeia	Not QC	10/9/2008	PLM-VE	106.3	1	C
IIA	Sediment	CCS-8	P2-00992	9/14/2008	Field Sample	Hygeia	Not QC	10/9/2008	PLM-VE	82.2	1	C
IIA	Sediment	URC-1	P2-00994	9/14/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	123.4	ND	A
IIA	Sediment	FC-2	P2-00995	9/14/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	148	Tr	B1
IIA	Sediment	FC-2	P2-00995	9/14/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-Grav	44.5	ND	n/a
IIA	Sediment	FC-1	P2-00997	9/14/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	106	Tr	B1
IIA	Sediment	FC-POND-2	P2-00998	9/14/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	88.2	<1	B2
IIA	Sediment	FC-POND-4	P2-00999	9/14/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	105.9	<1	B2
IIA	Sediment	FC-POND-5	P2-01008	9/14/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	83.1	<1	B2
IIA	Sediment	FC-POND-1	P2-01009	9/14/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	116.2	2	C
IIA	Sediment	FC-POND-3	P2-01011	9/14/2008	Field Sample	Hygeia	Not QC	10/14/2008	PLM-VE	89.3	<1	B2
IIA	Sediment	CCS-9	P2-01001	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-VE	102.4	5	C
IIA	Sediment	CCS-9	P2-01001	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-Grav	22.4	19	n/a
IIA	Sediment	CCS-11	P2-01002	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-VE	112.1	<1	B2
IIA	Sediment	CCS-11	P2-01002	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-Grav	9.8	ND	n/a
IIA	Sediment	CCS-14	P2-01003	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-VE	148.5	<1	B2
IIA	Sediment	CCS-14	P2-01003	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-Grav	4.5	Tr	n/a
IIA	Sediment	CC-POND-1	P2-01013	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-VE	118.8	2	C
IIA	Sediment	CC-POND-2	P2-01014	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-VE	95.6	<1	B2
IIA	Sediment	CC-POND-2	P2-01014	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-Grav	8.1	ND	n/a
IIA	Sediment	CC-POND-3	P2-01015	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-VE	102.9	<1	B2
IIA	Sediment	CC-POND-4	P2-01016	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-VE	92.8	Tr	B1
IIA	Sediment	CC-POND-5	P2-01017	9/15/2008	Field Sample	Hygeia	Not QC	10/20/2008	PLM-VE	109.1	Tr	B1
IIC	Sediment	LRC-5	P2-01070	10/1/2008	Field Sample	Hygeia	Not QC	10/27/2008	PLM-VE	128.4	2	C
IIC	Sediment	LRC-5	P2-01070	10/1/2008	Field Sample	Hygeia	Not QC	10/27/2008	PLM-Grav	10	Tr	n/a
IIC	Sediment	LRC-2	P2-01071	10/1/2008	Field Sample	Hygeia	Not QC	10/27/2008	PLM-VE	149.8	2	C
IIC	Sediment	LRC-2	P2-01071	10/1/2008	Field Sample	Hygeia	Not QC	10/27/2008	PLM-Grav	17.8	2.1	n/a
IIC	Sediment	LRC-3	P2-01072	10/2/2008	Field Sample	Hygeia	Not QC	10/27/2008	PLM-VE	129.7	2	C
IIC	Sediment	CC-1	P2-01073	10/2/2008	Field Sample	Hygeia	Not QC	10/27/2008	PLM-VE	105.2	5	C
IIC	Sediment	CC-1	P2-01073	10/2/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-Grav	12.3	Tr	n/a

Table E-1c: Summary of LAA Results for Sediment
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analytical Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc. (mass %)	LAA Bin
IIC	Sediment	TP-TOE2	P2-01074	10/2/2008	Field Sample	Hygeia	Not QC	10/27/2008	PLM-VE	132	2	C
IIC	Sediment	URC-2	P2-01075	10/2/2008	Field Sample	Hygeia	Not QC	10/27/2008	PLM-VE	104.7	Tr	B1
IIC	Sediment	URC-1A	P2-01076	10/2/2008	Field Sample	Hygeia	Not QC	10/27/2008	PLM-VE	117	ND	A
IIC	Sediment	URC-1A	P2-01076	10/2/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-Grav	13.6	ND	n/a
IIC	Sediment	FC-2	P2-01077	10/2/2008	Field Sample	Hygeia	Not QC	10/27/2008	PLM-VE	81	Tr	B1
IIC	Sediment	FC-2	P2-01077	10/2/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-Grav	18.9	ND	n/a
IIC	Sediment	BTT-R1	P2-01078	10/3/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-VE	134.9	ND	A
IIC	Sediment	BTT-R1	P2-01078	10/3/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-Grav	11.5	ND	n/a
IIC	Sediment	CC-1	P2-01079	10/7/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-VE	96.5	5	C
IIC	Sediment	CC-1	P2-01079	10/7/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-Grav	9	11	n/a
IIC	Sediment	TP-TOE2	P2-01080	10/7/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-VE	106.5	3	C
IIC	Sediment	TP-TOE2	P2-01080	10/7/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-Grav	4.2	Tr	n/a
IIC	Sediment	NSY-R1	P2-01082	10/7/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-VE	150	ND	A
IIC	Sediment	NSY-R1	P2-01082	10/7/2008	Field Sample	Hygeia	Not QC	10/30/2008	PLM-Grav	--	ND	n/a
VA	Sediment	KR-21	P5-10084	9/19/2012	Field Sample	EMSL27	Not QC	10/10/2012	PLM-VE	100.5	<1	B2
VA	Sediment	KR-20	P5-10094	9/19/2012	Field Sample	EMSL27	Not QC	10/10/2012	PLM-VE	108.6	<1	B2
VA	Sediment	LK-1	P5-10106	9/19/2012	Field Sample	EMSL27	Not QC	10/10/2012	PLM-VE	96.1	ND	A
VA	Sediment	LK-2	P5-10107	9/19/2012	Field Sample	EMSL27	Not QC	10/10/2012	PLM-VE	82.9	ND	A
VB	Sediment	Banana Lake	P5-20051	5/23/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-VE	117.5	ND	A
VB	Sediment	Banana Lake	P5-20051	5/23/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-Grav	28.1	ND	n/a
VB	Sediment	Banana Lake	P5-20285	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-VE	87.2	ND	A
VB	Sediment	Banana Lake	REF4	4/28/2012	Field Sample	EMSL27	Not QC	5/7/2012	PLM-VE	79.1	ND	A
VB	Sediment	Bobtail Pond	P5-20050	5/23/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-VE	91.2	ND	A
VB	Sediment	Bobtail Pond	P5-20050	5/23/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-Grav	14.4	ND	n/a
VB	Sediment	Bobtail Pond	P5-20287	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-VE	77.3	ND	A
VB	Sediment	Bobtail Pond 1	REF5	4/28/2012	Field Sample	EMSL27	Not QC	5/7/2012	PLM-VE	77	ND	A
VB	Sediment	Bobtail Pond 2	REF6	4/28/2012	Field Sample	EMSL27	Not QC	5/7/2012	PLM-VE	81.5	ND	A
VB	Sediment	CC-1	CC1-LT1-R1	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	90.6	5	C
VB	Sediment	CC-1	CC1-LT1-R2	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	109.2	3	C
VB	Sediment	CC-1	CC1-LT1-R3	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	103.9	2	C
VB	Sediment	CC-1	CC1-LT1-R4	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	82.3	3	C
VB	Sediment	CC-1	CC1-LT1-R5	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	96.2	3	C
VB	Sediment	CC-1	CC1-LT2-R1	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	79.8	3	C
VB	Sediment	CC-1	CC1-LT2-R2	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	83.2	2	C
VB	Sediment	CC-1	CC1-LT2-R3	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	87	2	C
VB	Sediment	CC-1	CC1-LT2-R4	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	94.4	1	C
VB	Sediment	CC-1	CC1-LT2-R5	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	92.5	2	C

Table E-1c: Summary of LAA Results for Sediment
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analytical Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc. (mass %)	LAA Bin
VB	Sediment	CC-1	CC1-LT3-R1	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	98.1	7	C
VB	Sediment	CC-1	CC1-LT3-R2	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	95.9	5	C
VB	Sediment	CC-1	CC1-LT3-R3	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	95.9	7	C
VB	Sediment	CC-1	CC1-LT3-R4	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	111.9	7	C
VB	Sediment	CC-1	CC1-LT3-R5	4/25/2012	Field Sample	EMSL27	NOT QC	5/2/2012	PLM-VE	94.4	4	C
VB	Sediment	CC-Pond	CCP	4/27/2012	Field Sample	EMSL27	Not QC	5/7/2012	PLM-VE	88.6	10	C
VB	Sediment	CC-Pond	P5-20046	5/21/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-VE	123.6	5	C
VB	Sediment	CC-Pond	P5-20046	5/21/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-Grav	30.1	0.32	n/a
VB	Sediment	CC-Pond	P5-20280	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-VE	111.2	4	C
VB	Sediment	CC-Pond	P5-20280	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-Grav	13.1	18	n/a
VB	Sediment	FC-Pond	FCP	4/27/2012	Field Sample	EMSL27	Not QC	5/7/2012	PLM-VE	76.3	4	C
VB	Sediment	FC-Pond	P5-20047	5/21/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-VE	122.6	1.5	C
VB	Sediment	FC-Pond	P5-20047	5/21/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-Grav	37	Tr	n/a
VB	Sediment	FC-Pond	P5-20282	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-VE	91	3	C
VB	Sediment	FC-Pond	P5-20282	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-Grav	14	4.8	n/a
VB	Sediment	MP	MP	4/27/2012	Field Sample	EMSL27	Not QC	5/7/2012	PLM-VE	94	<1	B2
VB	Sediment	MP	P5-20048	5/23/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-VE	100.3	<1	B2
VB	Sediment	MP	P5-20048	5/23/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-Grav	22.3	Tr	n/a
VB	Sediment	MP	P5-20284	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-VE	98.7	Tr	B1
VB	Sediment	MP	P5-20284	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-Grav	8.5	Tr	n/a
VB	Sediment	Schrieber Lake	REF3	4/28/2012	Field Sample	EMSL27	Not QC	5/7/2012	PLM-VE	85	ND	A
VB	Sediment	Tepee Pond 1	P5-20052	5/23/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-VE	94.4	ND	A
VB	Sediment	Tepee Pond 1	P5-20052	5/23/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-Grav	42.2	ND	n/a
VB	Sediment	Tepee Pond 1	P5-20286	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-VE	84.3	ND	A
VB	Sediment	Tepee Pond 1	REF1	4/28/2012	Field Sample	EMSL27	Not QC	5/7/2012	PLM-VE	88.5	ND	A
VB	Sediment	Tepee Pond 2	REF2	4/28/2012	Field Sample	EMSL27	Not QC	5/7/2012	PLM-VE	80.1	ND	A
VB	Sediment	TP	P5-20049	5/23/2012	Field Sample	EMSL27	Not QC	5/30/2012	PLM-VE	71	<1	B2
VB	Sediment	TP	P5-20283	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-VE	100.9	1.5	C
VB	Sediment	TP	P5-20283	9/7/2012	Field Sample	EMSL27	Not QC	10/9/2012	PLM-Grav	21.7	0.018	n/a
VB	Sediment	TP	TP	4/27/2012	Field Sample	EMSL27	Not QC	5/7/2012	PLM-VE	88.7	<1	B2
VB	Sediment	TP-TOE2	TPTOE2-LT1-R1	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	91.5	7	C
VB	Sediment	TP-TOE2	TPTOE2-LT1-R2	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	80.8	10	C
VB	Sediment	TP-TOE2	TPTOE2-LT1-R3	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	97.1	4	C
VB	Sediment	TP-TOE2	TPTOE2-LT1-R4	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	94.6	5	C
VB	Sediment	TP-TOE2	TPTOE2-LT1-R5	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	100	4	C
VB	Sediment	TP-TOE2	TPTOE2-LT2-R1	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	98.5	2	C
VB	Sediment	TP-TOE2	TPTOE2-LT2-R2	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	101.5	1	C

Table E-1c: Summary of LAA Results for Sediment
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analytical Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc. (mass %)	LAA Bin
VB	Sediment	TP-TOE2	TPTOE2-LT2-R3	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	86.4	2	C
VB	Sediment	TP-TOE2	TPTOE2-LT2-R4	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	106.7	2	C
VB	Sediment	TP-TOE2	TPTOE2-LT2-R5	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	90.7	3	C
VB	Sediment	TP-TOE2	TPTOE2-LT3-R1	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	74.5	3	C
VB	Sediment	TP-TOE2	TPTOE2-LT3-R2	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	84.1	3	C
VB	Sediment	TP-TOE2	TPTOE2-LT3-R3	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	82.1	4	C
VB	Sediment	TP-TOE2	TPTOE2-LT3-R4	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	80.7	5	C
VB	Sediment	TP-TOE2	TPTOE2-LT3-R5	4/25/2012	Field Sample	EMSL27	NOT QC	5/3/2012	PLM-VE	91.5	4	C
N&E-2012a	Sediment	#2-Granite Creek	NE-00026	9/19/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	124.5	TR	B1
N&E-2012a	Sediment	#2-Granite Creek	NE-00026	9/19/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	24.5	ND	n/a
N&E-2012a	Sediment	#1-Granite Creek	NE-00028	9/19/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	123.9	TR	B1
N&E-2012a	Sediment	#1-Granite Creek	NE-00028	9/19/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	23	ND	n/a
N&E-2012a	Sediment	#3-Libby Creek	NE-00031	9/19/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	84	ND	A
N&E-2012a	Sediment	#4-Libby Creek	NE-00034	9/19/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	125.2	ND	A
N&E-2012a	Sediment	#4-Libby Creek	NE-00034	9/19/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	27.5	ND	n/a
N&E-2012a	Sediment	#8-Pipe Creek	NE-00037	9/20/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	110.7	ND	A
N&E-2012a	Sediment	#8-Pipe Creek	NE-00037	9/20/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	21	ND	n/a
N&E-2012a	Sediment	#9-Pipe Creek	NE-00039	9/20/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	111	ND	A
N&E-2012a	Sediment	#9-Pipe Creek	NE-00039	9/20/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	15.6	ND	n/a
N&E-2012a	Sediment	#10-Pipe Creek	NE-00041	9/20/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	101.7	TR	B1
N&E-2012a	Sediment	#10-Pipe Creek	NE-00041	9/20/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	14.8	ND	n/a
N&E-2012a	Sediment	#7-Flower Creek	NE-00043	9/20/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	117.9	TR	B1
N&E-2012a	Sediment	#7-Flower Creek	NE-00043	9/20/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	19.6	ND	n/a
N&E-2012a	Sediment	#6-Flower Creek	NE-00045	9/20/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	99.7	TR	B1
N&E-2012a	Sediment	#6-Flower Creek	NE-00045	9/20/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	14.7	ND	n/a
N&E-2012a	Sediment	#5-Flower Creek	NE-00049	9/20/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	93.1	ND	A
N&E-2012a	Sediment	#5-Flower Creek	NE-00049	9/20/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	15.4	ND	n/a
N&E-2012a	Sediment	#11-Fisher River	NE-00052	9/21/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	127.8	ND	A
N&E-2012a	Sediment	#11-Fisher River	NE-00052	9/21/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	21.4	ND	n/a
N&E-2012a	Sediment	#14-Callahan Creek	NE-00056	9/21/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	109.5	ND	A
N&E-2012a	Sediment	#14-Callahan Creek	NE-00056	9/21/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	21.2	ND	n/a
N&E-2012a	Sediment	#13-Callahan Creek	NE-00058	9/21/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	105.8	TR	B1
N&E-2012a	Sediment	#13-Callahan Creek	NE-00058	9/21/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	19.2	ND	n/a
N&E-2012a	Sediment	#12-Callahan Creek	NE-00060	9/21/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	112.9	TR	B1
N&E-2012a	Sediment	#12-Callahan Creek	NE-00060	9/21/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	14.4	ND	n/a
N&E-2012a	Sediment	#15-Kootenai River	NE-00061	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	111	ND	A
N&E-2012a	Sediment	#15-Kootenai River	NE-00061	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	21.6	ND	n/a

Table E-1c: Summary of LAA Results for Sediment
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analytical Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc. (mass %)	LAA Bin
N&E-2012a	Sediment	#18-Kootenai River	NE-00062	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	101.5	<1	B2
N&E-2012a	Sediment	#20-Kootenai River	NE-00066	9/22/2012	Field Sample	ESATR8	NOT QC	12/4/2012	PLM-VE	94.3	TR	B1
N&E-2012a	Sediment	#21-Kootenai River	NE-00068	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	101.6	<1	B2
N&E-2012a	Sediment	#22-Kootenai River	NE-00069	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	98.7	TR	B1
N&E-2012a	Sediment	#16-Kootenai River	NE-00070	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	98	<1	B2
N&E-2012a	Sediment	#17-Kootenai River	NE-00071	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	86.1	TR	B1
N&E-2012a	Sediment	#19-Kootenai River	NE-00072	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	92.7	<1	B2
N&E-2012a	Sediment	#23-Kootenai River	NE-00073	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	85.3	TR	B1
N&E-2012a	Sediment	#24-Kootenai River	NE-00075	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-VE	94.1	<1	B2
N&E-2012a	Sediment	#25-Kootenai River	NE-00077	9/22/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	92.9	TR	B1
N&E-2012a	Sediment	#26-Kootenai River	NE-00078	9/22/2012	Field Sample	ESATR8	NOT QC	11/7/2012	PLM-VE	110.3	TR	B1
N&E-2012a	Sediment	#26-Kootenai River	NE-00078	9/22/2012	Field Sample	ESATR8	NOT QC	11/6/2012	PLM-Grav	27.4	ND	n/a

Notes:

* See Tables 4-1 and 4-2 for definitions of each Phase.

-- no coarse fraction

<1% = less than 1% (Bin B2)

ID = identification

LAA = Libby amphibole asbestos

n/a = not applicable

ND = not detected (Bin A)

PLM-Grav = polarized light microscopy, gravimetric

PLM-VE = polarized light microscopy, visual area estimation

Tr = trace (Bin B1)

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
I	Forest Soil	SL45-13	P1-00032	10/2/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	5.4	ND	n/a
I	Forest Soil	SL45-13	P1-00032	10/2/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	114.8	ND	A
I	Forest Soil	SL45-14	P1-00034	10/2/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	6.8	ND	n/a
I	Forest Soil	SL45-14	P1-00034	10/2/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	158.4	ND	A
I	Forest Soil	SL45-11	P1-00036	10/3/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	58	ND	A
I	Forest Soil	SL45-10	P1-00038	10/3/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	7.6	ND	n/a
I	Forest Soil	SL45-10	P1-00038	10/3/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	82.4	ND	A
I	Forest Soil	SL45-07	P1-00040	10/3/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	21.5	ND	n/a
I	Forest Soil	SL45-07	P1-00040	10/3/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	120.3	ND	A
I	Forest Soil	SL15-16	P1-00042	10/2/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	28.3	ND	n/a
I	Forest Soil	SL15-16	P1-00042	10/2/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	83.7	ND	A
I	Forest Soil	SL15-14	P1-00044	10/2/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	4.9	ND	n/a
I	Forest Soil	SL15-14	P1-00044	10/2/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	71.6	ND	A
I	Forest Soil	SL15-12	P1-00046	10/3/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	51.9	ND	n/a
I	Forest Soil	SL15-12	P1-00046	10/3/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	66.3	ND	A
I	Forest Soil	SL45-16	P1-00052	10/2/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	3.3	ND	n/a
I	Forest Soil	SL45-16	P1-00052	10/2/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	86.6	ND	A
I	Forest Soil	SL45-15	P1-00054	10/2/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	27.9	ND	n/a
I	Forest Soil	SL45-15	P1-00054	10/2/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	113.7	ND	A
I	Forest Soil	SL15-13	P1-00056	10/2/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	119	ND	A
I	Forest Soil	SL45-12	P1-00059	10/3/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	118.6	ND	A
I	Forest Soil	SL45-12	P1-00059	10/3/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	11.3	ND	n/a
I	Forest Soil	SL15-15	P1-00062	10/2/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	16.5	ND	n/a
I	Forest Soil	SL15-15	P1-00062	10/2/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	97.8	ND	A
I	Forest Soil	SL15-11	P1-00064	10/3/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	175.2	ND	A
I	Forest Soil	SL15-11	P1-00064	10/3/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	3.7	ND	n/a
I	Forest Soil	SL75-14	P1-00066	10/3/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	111	ND	A
I	Forest Soil	SL75-14	P1-00066	10/3/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	17.2	ND	n/a
I	Forest Soil	SL15-10	P1-00068	10/4/2007	Field Sample	EMSL27	Not QC	3/14/2008	PLM-VE	88	ND	A
I	Forest Soil	SL15-10	P1-00068	10/4/2007	Field Sample	EMSL27	Not QC	3/14/2008	PLM-Grav	23.9	ND	n/a
I	Forest Soil	SL45-05	P1-00073	10/4/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	137.5	ND	A
I	Forest Soil	SL45-05	P1-00073	10/4/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	17.4	ND	n/a
I	Forest Soil	SL135-04	P1-00077	10/4/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	132.5	ND	A
I	Forest Soil	SL135-04	P1-00077	10/4/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	6.5	ND	n/a
I	Forest Soil	SL135-07	P1-00080	10/4/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	61.5	ND	A
I	Forest Soil	SL135-07	P1-00080	10/4/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	7.7	ND	n/a

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
I	Forest Soil	SL45-09	P1-00081	10/3/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	113.9	ND	A
I	Forest Soil	SL45-09	P1-00081	10/3/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	48.3	ND	n/a
I	Forest Soil	SL45-08	P1-00083	10/3/2007	Field Sample	EMSL27	Not QC	3/14/2008	PLM-VE	145.4	ND	A
I	Forest Soil	SL45-08	P1-00083	10/3/2007	Field Sample	EMSL27	Not QC	3/14/2008	PLM-Grav	52.2	ND	n/a
I	Forest Soil	SL45-06	P1-00085	10/4/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	127.3	ND	A
I	Forest Soil	SL45-06	P1-00085	10/4/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	17.5	ND	n/a
I	Forest Soil	SL135-05	P1-00087	10/4/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	120.9	ND	A
I	Forest Soil	SL135-05	P1-00087	10/4/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	65.4	ND	n/a
I	Forest Soil	SL135-06	P1-00089	10/4/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	167.6	ND	A
I	Forest Soil	SL135-06	P1-00089	10/4/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	39	ND	n/a
I	Forest Soil	SL75-13	P1-00093	10/3/2007	Field Sample	EMSL27	Not QC	3/14/2008	PLM-VE	167	ND	A
I	Forest Soil	SL15-08	P1-00096	10/4/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	153.8	ND	A
I	Forest Soil	SL15-08	P1-00096	10/4/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	5.1	ND	n/a
I	Forest Soil	SL15-07	P1-00098	10/4/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	132.4	ND	A
I	Forest Soil	SL15-07	P1-00098	10/4/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	16.9	ND	n/a
I	Forest Soil	SL15-05	P1-00100	10/5/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	79.5	ND	A
I	Forest Soil	SL75-15	P1-00103	10/5/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	143.9	ND	A
I	Forest Soil	SL75-15	P1-00103	10/5/2007	Field Sample	EMSL27	Not QC	1/29/2008	PLM-Grav	20.1	ND	n/a
I	Forest Soil	SL195-07	P1-00106	10/5/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	104.5	ND	A
I	Forest Soil	SL195-07	P1-00106	10/5/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	11.9	Tr	n/a
I	Forest Soil	SL75-05	P1-00108	10/6/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	132.7	ND	A
I	Forest Soil	SL75-05	P1-00108	10/6/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	19.3	ND	n/a
I	Forest Soil	SL75-06	P1-00110	10/6/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	160	ND	A
I	Forest Soil	SL75-06	P1-00110	10/6/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	26.1	ND	n/a
I	Forest Soil	SL195-11	P1-00112	10/7/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	90.6	ND	A
I	Forest Soil	SL195-11	P1-00112	10/7/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	4.8	ND	n/a
I	Forest Soil	SL195-06	P1-00115	10/8/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	18.4	ND	n/a
I	Forest Soil	SL195-06	P1-00115	10/8/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	102.1	ND	A
I	Forest Soil	SL15-06	P1-00122	10/5/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	97.2	ND	A
I	Forest Soil	SL15-06	P1-00122	10/5/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	4	ND	n/a
I	Forest Soil	SL15-09	P1-00124	10/4/2007	Field Sample	EMSL27	Not QC	3/14/2008	PLM-VE	110.4	ND	A
I	Forest Soil	SL15-09	P1-00124	10/4/2007	Field Sample	EMSL27	Not QC	3/14/2008	PLM-Grav	35.7	ND	n/a
I	Forest Soil	SL75-09	P1-00128	10/5/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	157.8	ND	A
I	Forest Soil	SL75-09	P1-00128	10/5/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	5.4	ND	n/a
I	Forest Soil	SL75-16	P1-00130	10/5/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	177	ND	A
I	Forest Soil	SL75-16	P1-00130	10/5/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	20.9	ND	n/a

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
I	Forest Soil	SL315-03	P1-00132	10/7/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	178.6	ND	A
I	Forest Soil	SL315-03	P1-00132	10/7/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	24.6	ND	n/a
I	Forest Soil	SL195-04	P1-00134	10/8/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	33.7	ND	n/a
I	Forest Soil	SL195-04	P1-00134	10/8/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	90.3	ND	A
I	Forest Soil	SL195-03	P1-00136	10/8/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	37	ND	n/a
I	Forest Soil	SL195-03	P1-00136	10/8/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	170	ND	A
I	Forest Soil	SL135-02	P1-00138	10/12/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	11.5	Tr	n/a
I	Forest Soil	SL135-02	P1-00138	10/12/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	103.6	Tr	B1
I	Forest Soil	SL135-01	P1-00140	10/12/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	12.3	13	n/a
I	Forest Soil	SL135-01	P1-00140	10/12/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	274.4	6	C
I	Forest Soil	SL15-04	P1-00141	10/5/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	130.1	ND	A
I	Forest Soil	SL15-04	P1-00141	10/5/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	22.1	ND	n/a
I	Forest Soil	SL45-04	P1-00143	10/5/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	119.6	ND	A
I	Forest Soil	SL45-04	P1-00143	10/5/2007	Field Sample	EMSL27	Not QC	1/29/2008	PLM-Grav	12.8	ND	n/a
I	Forest Soil	SL315-06	P1-00145	10/6/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	176.5	ND	A
I	Forest Soil	SL315-06	P1-00145	10/6/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	12.7	ND	n/a
I	Forest Soil	SL315-07	P1-00147	10/6/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	97.6	ND	A
I	Forest Soil	SL315-07	P1-00147	10/6/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	33	ND	n/a
I	Forest Soil	SL195-12	P1-00149	10/7/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	120.5	ND	A
I	Forest Soil	SL195-12	P1-00149	10/7/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	16.2	ND	n/a
I	Forest Soil	SL315-04	P1-00152	10/5/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	197.8	ND	A
I	Forest Soil	SL315-04	P1-00152	10/5/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	16.8	ND	n/a
I	Forest Soil	SL315-05	P1-00155	10/6/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	94.2	ND	A
I	Forest Soil	SL315-05	P1-00155	10/6/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	15.8	ND	n/a
I	Forest Soil	SL315-08	P1-00158	10/6/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	89.3	ND	A
I	Forest Soil	SL315-08	P1-00158	10/6/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	10.3	ND	n/a
I	Forest Soil	SL135-08	P1-00160	10/6/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	115.5	ND	A
I	Forest Soil	SL135-08	P1-00160	10/6/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	30.2	ND	n/a
I	Forest Soil	SL195-08	P1-00162	10/5/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	130.2	ND	A
I	Forest Soil	SL195-08	P1-00162	10/5/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	32.3	ND	n/a
I	Forest Soil	SL75-04	P1-00164	10/6/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	136.6	Tr	B1
I	Forest Soil	SL75-04	P1-00164	10/6/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	44.7	ND	n/a
I	Forest Soil	SL135-03	P1-00166	10/6/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	159.3	ND	A
I	Forest Soil	SL135-03	P1-00166	10/6/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	30.6	ND	n/a
I	Forest Soil	SL75-07	P1-00168	10/6/2007	Field Sample	EMSL27	Not QC	3/14/2008	PLM-VE	102	ND	A
I	Forest Soil	SL75-07	P1-00168	10/6/2007	Field Sample	EMSL27	Not QC	3/14/2008	PLM-Grav	14.2	ND	n/a

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
I	Forest Soil	SL75-08	P1-00170	10/6/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	126.8	ND	A
I	Forest Soil	SL75-08	P1-00170	10/6/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	16.2	ND	n/a
I	Forest Soil	SL195-10	P1-00172	10/7/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	99.1	ND	A
I	Forest Soil	SL255-06	P1-00174	10/9/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	80.5	Tr	n/a
I	Forest Soil	SL255-06	P1-00174	10/9/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	150.1	ND	A
I	Forest Soil	SL255-05	P1-00177	10/9/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	19.5	ND	n/a
I	Forest Soil	SL255-05	P1-00177	10/9/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	152.9	ND	A
I	Forest Soil	SL255-04	P1-00180	10/9/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	10.1	ND	n/a
I	Forest Soil	SL255-04	P1-00180	10/9/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	77.9	ND	A
I	Forest Soil	SL195-05	P1-00192	10/8/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	74.6	ND	A
I	Forest Soil	SL195-05	P1-00192	10/8/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	7.2	ND	n/a
I	Forest Soil	SL45-01	P1-00202	10/12/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	4.8	Tr	n/a
I	Forest Soil	SL45-01	P1-00202	10/12/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	107.9	<1	B2
I	Forest Soil	SL195-02	P1-00204	10/12/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	3	ND	n/a
I	Forest Soil	SL195-02	P1-00204	10/12/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	137	ND	A
I	Forest Soil	SL255-03	P1-00212	10/9/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	18.6	ND	n/a
I	Forest Soil	SL255-03	P1-00212	10/9/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	117.6	ND	A
I	Forest Soil	SL255-02	P1-00214	10/11/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	38.6	Tr	n/a
I	Forest Soil	SL255-02	P1-00214	10/11/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	113.6	ND	A
I	Forest Soil	SL315-01	P1-00216	10/11/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	120.9	Tr	B1
I	Forest Soil	SL315-02	P1-00218	10/11/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	2.9	ND	n/a
I	Forest Soil	SL315-02	P1-00218	10/11/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	111.9	ND	A
I	Forest Soil	SL15-02	P1-00220	10/11/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	17.5	ND	n/a
I	Forest Soil	SL15-02	P1-00220	10/11/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	120.1	Tr	B1
I	Forest Soil	SL45-02	P1-00222	10/11/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	7.8	Tr	n/a
I	Forest Soil	SL45-02	P1-00222	10/11/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	109.3	ND	A
I	Forest Soil	SL15-03	P1-00224	10/11/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	21.3	Tr	n/a
I	Forest Soil	SL15-03	P1-00224	10/11/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	115.9	Tr	B1
I	Forest Soil	SL45-03	P1-00226	10/11/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	29.8	Tr	n/a
I	Forest Soil	SL45-03	P1-00226	10/11/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	122.8	Tr	B1
I	Forest Soil	SL75-02	P1-00228	10/12/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	77.9	Tr	B1
I	Forest Soil	SL75-03	P1-00230	10/12/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	16.7	ND	n/a
I	Forest Soil	SL75-03	P1-00230	10/12/2007	Field Sample	EMSL27	Not QC	1/15/2008	PLM-VE	130	ND	A
AMP	Soil	VW-1-01	VW-1-01	11/5/2012	Field Sample	EMSL27	Not QC	11/9/2012	PLM-Grav	12.1	0.073	n/a
AMP	Soil	VW-1-01	VW-1-01	11/5/2012	Field Sample	EMSL27	Not QC	11/9/2012	PLM-VE	105.6	<1	B2
AMP	Soil	VW-1-02	VW-1-02	11/5/2012	Field Sample	EMSL27	Not QC	11/9/2012	PLM-Grav	11.7	Tr	n/a

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
AMP	Soil	VW-1-02	VW-1-02	11/5/2012	Field Sample	EMSL27	Not QC	11/9/2012	PLM-VE	111.4	<1	B2
AMP	Soil	VW-1-03	VW-1-03	11/5/2012	Field Sample	EMSL27	Not QC	11/9/2012	PLM-VE	87.3	<1	B2
AMP	Soil	VW-1-04	VW-1-04	11/6/2012	Field Sample	EMSL27	Not QC	11/9/2012	PLM-VE	92	<1	B2
AMP	Soil	VW-1-05	VW-1-05	11/5/2012	Field Sample	EMSL27	Not QC	11/9/2012	PLM-VE	91.9	Tr	B1
AMP	Soil	VW-1-06	VW-1-06	11/5/2012	Field Sample	EMSL27	Not QC	11/9/2012	PLM-VE	92.5	<1	B2
AMP	Soil	VW-1-07	VW-1-007	6/25/2013	Field Sample	EMSL27	Not QC	7/29/2013	PLM-VE	86.1	1	C
AMP	Soil	VW-1-08	VW-1-008	6/25/2013	Field Sample	EMSL27	Not QC	7/29/2013	PLM-VE	94.6	<1	B2
AMP	Soil	VW-1-09	VW-1-009	6/25/2013	Field Sample	EMSL27	Not QC	7/29/2013	PLM-VE	89.8	<1	B2
AMP	Soil	VW-1-10	VW-1-010	6/25/2013	Field Sample	EMSL27	Not QC	8/2/2013	PLM-VE	90.5	2	C
AMP	Soil	VW-1-11	VW-1-011	6/25/2013	Field Sample	EMSL27	Not QC	7/29/2013	PLM-VE	91.4	<1	B2
AMP	Soil	VW-1-12	VW-1-012	6/25/2013	Field Sample	EMSL27	Not QC	8/2/2013	PLM-VE	92	<1	B2
AMP	Soil	VW-1-13	VW-1-013	6/28/2013	Field Sample	EMSL27	Not QC	8/2/2013	PLM-VE	86.7	<1	B2
AMP	Soil	VW-1-14	VW-1-014	6/28/2013	Field Sample	EMSL27	Not QC	8/2/2013	PLM-VE	81.9	2	C
AMP	Soil	VW-1-15	VW-1-015	7/9/2013	Field Sample	EMSL27	Not QC	8/2/2013	PLM-Grav	24.2	Tr	n/a
AMP	Soil	VW-1-15	VW-1-015	7/9/2013	Field Sample	EMSL27	Not QC	8/2/2013	PLM-VE	106.9	2	C
TEST PIT	Soil	GT-01	GT-10086	6/16/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	82.5	Tr	B1
TEST PIT	Soil	GT-01	GT-10087	6/16/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	125.8	Tr	B1
TEST PIT	Soil	GT-01	GT-10087	6/16/2014	Field Sample	EMSL27	Not QC	7/7/2014	PLM-Grav	36.2	Tr	n/a
TEST PIT	Soil	GT-01	GT-10088	6/16/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	93.8	Tr	B1
TEST PIT	Soil	GT-02	GT-10082	6/15/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	129	ND	A
TEST PIT	Soil	GT-02	GT-10082	6/15/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	32.6	ND	n/a
TEST PIT	Soil	GT-02	GT-10085	6/15/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	134.6	Tr	B1
TEST PIT	Soil	GT-02	GT-10085	6/15/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	38	Tr	n/a
TEST PIT	Soil	GT-03	GT-10077	6/15/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	88.3	Tr	B1
TEST PIT	Soil	GT-03	GT-10078	6/15/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	92.8	<1	B2
TEST PIT	Soil	GT-03	GT-10080	6/15/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	127.3	Tr	B1
TEST PIT	Soil	GT-03	GT-10080	6/15/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	24.2	Tr	n/a
TEST PIT	Soil	GT-04	GT-10072	6/14/2014	Field Sample	EMSL27	Not QC	6/26/2014	PLM-VE	90.4	2	C
TEST PIT	Soil	GT-05	GT-10066	6/14/2014	Field Sample	EMSL27	Not QC	6/26/2014	PLM-VE	116.8	<1	B2
TEST PIT	Soil	GT-05	GT-10066	6/14/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	22.3	Tr	n/a
TEST PIT	Soil	GT-05	GT-10067	6/14/2014	Field Sample	EMSL27	Not QC	6/26/2014	PLM-VE	133.1	Tr	B1
TEST PIT	Soil	GT-05	GT-10067	6/14/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	37.6	Tr	n/a
TEST PIT	Soil	GT-05	GT-10068	6/14/2014	Field Sample	EMSL27	Not QC	6/26/2014	PLM-VE	122.3	2	C
TEST PIT	Soil	GT-05	GT-10068	6/14/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	33.2	Tr	n/a
TEST PIT	Soil	GT-05	GT-10069	6/14/2014	Field Sample	EMSL27	Not QC	6/26/2014	PLM-VE	125.9	Tr	B1
TEST PIT	Soil	GT-05	GT-10069	6/14/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	5.6	ND	n/a

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
TEST PIT	Soil	GT-06	GT-10059	6/14/2014	Field Sample	EMSL27	Not QC	6/25/2014	PLM-VE	120.4	Tr	B1
TEST PIT	Soil	GT-06	GT-10059	6/14/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	32.2	ND	n/a
TEST PIT	Soil	GT-06	GT-10060	6/14/2014	Field Sample	EMSL27	Not QC	6/25/2014	PLM-VE	91.3	Tr	B1
TEST PIT	Soil	GT-06	GT-10061	6/14/2014	Field Sample	EMSL27	Not QC	6/25/2014	PLM-VE	126.4	Tr	B1
TEST PIT	Soil	GT-06	GT-10061	6/14/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	20.4	Tr	n/a
TEST PIT	Soil	GT-06	GT-10062	6/14/2014	Field Sample	EMSL27	Not QC	6/25/2014	PLM-VE	126.8	2	C
TEST PIT	Soil	GT-06	GT-10062	6/14/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	15.2	Tr	n/a
TEST PIT	Soil	GT-06	GT-10063	6/14/2014	Field Sample	EMSL27	Not QC	6/25/2014	PLM-VE	119.5	<1	B2
TEST PIT	Soil	GT-06	GT-10063	6/14/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	12.7	Tr	n/a
TEST PIT	Soil	GT-07A	GT-10099	6/16/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	118.6	Tr	B1
TEST PIT	Soil	GT-07A	GT-10099	6/16/2014	Field Sample	EMSL27	Not QC	7/7/2014	PLM-Grav	30.3	ND	n/a
TEST PIT	Soil	GT-07	GT-10100	6/16/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	126	Tr	B1
TEST PIT	Soil	GT-07	GT-10100	6/16/2014	Field Sample	EMSL27	Not QC	7/7/2014	PLM-Grav	27.4	ND	n/a
TEST PIT	Soil	GT-07	GT-10101	6/16/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	123	Tr	B1
TEST PIT	Soil	GT-07	GT-10101	6/16/2014	Field Sample	EMSL27	Not QC	7/7/2014	PLM-Grav	3.9	Tr	n/a
TEST PIT	Soil	GT-07	GT-10102	6/16/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	90.5	<1	B2
TEST PIT	Soil	GT-08	GT-10095	6/16/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	127.9	Tr	B1
TEST PIT	Soil	GT-08	GT-10095	6/16/2014	Field Sample	EMSL27	Not QC	7/7/2014	PLM-Grav	24.2	ND	n/a
TEST PIT	Soil	GT-08	GT-10096	6/16/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	132.3	Tr	B1
TEST PIT	Soil	GT-08	GT-10096	6/16/2014	Field Sample	EMSL27	Not QC	7/7/2014	PLM-Grav	31.4	ND	n/a
TEST PIT	Soil	GT-09	GT-10091	6/16/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	92.2	Tr	B1
TEST PIT	Soil	GT-09	GT-10092	6/16/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	134	Tr	B1
TEST PIT	Soil	GT-09	GT-10092	6/16/2014	Field Sample	EMSL27	Not QC	7/7/2014	PLM-Grav	36.1	Tr	n/a
TEST PIT	Soil	GT-09	GT-10093	6/16/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	85.4	<1	B2
TEST PIT	Soil	GT-10	GT-10110	6/17/2014	Field Sample	EMSL27	Not QC	7/8/2014	PLM-VE	80.3	2	C
TEST PIT	Soil	GT-10	GT-10111	6/17/2014	Field Sample	EMSL27	Not QC	7/8/2014	PLM-VE	84.4	1	C
TEST PIT	Soil	GT-11	GT-10105	6/17/2014	Field Sample	EMSL27	Not QC	7/8/2014	PLM-VE	84.8	4	C
TEST PIT	Soil	GT-11	GT-10108	6/17/2014	Field Sample	EMSL27	Not QC	7/8/2014	PLM-VE	90.6	2	C
TEST PIT	Soil	GT-12	GT-10055	6/13/2014	Field Sample	EMSL27	Not QC	6/25/2014	PLM-VE	127.1	<1	B2
TEST PIT	Soil	GT-12	GT-10055	6/13/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	20.2	Tr	n/a
TEST PIT	Soil	GT-12	GT-10056	6/13/2014	Field Sample	EMSL27	Not QC	6/25/2014	PLM-VE	88.1	2	C
TEST PIT	Soil	GT-12	GT-10057	6/13/2014	Field Sample	EMSL27	Not QC	6/25/2014	PLM-VE	91.1	2	C
TEST PIT	Soil	GT-12	GT-10058	6/13/2014	Field Sample	EMSL27	Not QC	6/25/2014	PLM-VE	95.6	Tr	B1
TEST PIT	Soil	GT-13	GT-10051	6/13/2014	Field Sample	EMSL27	Not QC	6/24/2014	PLM-VE	87.9	2	C
TEST PIT	Soil	GT-13	GT-10052	6/13/2014	Field Sample	EMSL27	Not QC	6/24/2014	PLM-VE	86.9	Tr	B1
TEST PIT	Soil	GT-13	GT-10053	6/13/2014	Field Sample	EMSL27	Not QC	6/25/2014	PLM-VE	124.1	<1	B2

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
TEST PIT	Soil	GT-13	GT-10053	6/13/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	25.3	Tr	n/a
TEST PIT	Soil	GT-14	GT-10022	6/12/2014	Field Sample	EMSL27	Not QC	7/24/2014	PLM-VE	95.9	3	C
TEST PIT	Soil	GT-14	GT-10024	6/12/2014	Field Sample	EMSL27	Not QC	7/28/2014	PLM-Grav	27.5	Tr	n/a
TEST PIT	Soil	GT-14	GT-10024	6/12/2014	Field Sample	EMSL27	Not QC	7/24/2014	PLM-VE	112.4	Tr	B1
TEST PIT	Soil	GT-15	GT-10026	6/12/2014	Field Sample	EMSL27	Not QC	7/24/2014	PLM-VE	93.3	Tr	B1
TEST PIT	Soil	GT-15	GT-10027	6/12/2014	Field Sample	EMSL27	Not QC	7/28/2014	PLM-Grav	14.7	Tr	n/a
TEST PIT	Soil	GT-15	GT-10027	6/12/2014	Field Sample	EMSL27	Not QC	7/24/2014	PLM-VE	126.9	Tr	B1
TEST PIT	Soil	GT-15	GT-10029	6/12/2014	Field Sample	EMSL27	Not QC	7/28/2014	PLM-Grav	34.5	Tr	n/a
TEST PIT	Soil	GT-15	GT-10029	6/12/2014	Field Sample	EMSL27	Not QC	7/24/2014	PLM-VE	130.7	Tr	B1
TEST PIT	Soil	GT-15	GT-10030	6/12/2014	Field Sample	EMSL27	Not QC	7/28/2014	PLM-Grav	29.1	19	n/a
TEST PIT	Soil	GT-15	GT-10030	6/12/2014	Field Sample	EMSL27	Not QC	7/24/2014	PLM-VE	117.6	3	C
TEST PIT	Soil	GT-16	GT-10130	6/19/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	100.4	1	C
TEST PIT	Soil	GT-16	GT-10132	6/19/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	85.7	<1	B2
TEST PIT	Soil	GT-17	GT-10128	6/18/2014	Field Sample	EMSL04	Not QC	10/27/2014	PLM-VE	116.1	<1	B2
TEST PIT	Soil	GT-17	GT-10128	6/18/2014	Field Sample	EMSL27	Not QC	7/2/2014	PLM-Grav	23.7	Tr	n/a
TEST PIT	Soil	GT-17	GT-10129	6/18/2014	Field Sample	EMSL04	Not QC	10/27/2014	PLM-VE	93.5	Tr	B1
TEST PIT	Soil	GT-18	GT-10126	6/18/2014	Field Sample	EMSL04	Not QC	10/27/2014	PLM-VE	124.5	<1	B2
TEST PIT	Soil	GT-18	GT-10126	6/18/2014	Field Sample	EMSL27	Not QC	7/2/2014	PLM-Grav	19.7	Tr	n/a
TEST PIT	Soil	GT-18	GT-10127	6/18/2014	Field Sample	EMSL04	Not QC	10/27/2014	PLM-VE	109.6	<1	B2
TEST PIT	Soil	GT-18	GT-10127	6/18/2014	Field Sample	EMSL27	Not QC	7/2/2014	PLM-Grav	16.4	Tr	n/a
TEST PIT	Soil	GT-19	GT-10122	6/18/2014	Field Sample	EMSL04	Not QC	10/27/2014	PLM-VE	87.1	ND	A
TEST PIT	Soil	GT-19	GT-10123	6/18/2014	Field Sample	EMSL04	Not QC	10/27/2014	PLM-VE	97.6	1	C
TEST PIT	Soil	GT-20	GT-10116	6/17/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	93.5	1	C
TEST PIT	Soil	GT-20	GT-10117	6/17/2014	Field Sample	EMSL04	Not QC	10/27/2014	PLM-VE	96.4	1	C
TEST PIT	Soil	GT-20	GT-10118	6/17/2014	Field Sample	EMSL04	Not QC	10/27/2014	PLM-VE	99.9	<1	B2
TEST PIT	Soil	GT-20	GT-10120	6/17/2014	Field Sample	EMSL04	Not QC	10/27/2014	PLM-VE	128.5	1	C
TEST PIT	Soil	GT-20	GT-10120	6/17/2014	Field Sample	EMSL27	Not QC	7/2/2014	PLM-Grav	26	Tr	n/a
TEST PIT	Soil	GT-21	GT-10016	6/11/2014	Field Sample	EMSL27	Not QC	7/25/2014	PLM-Grav	20.4	ND	n/a
TEST PIT	Soil	GT-21	GT-10016	6/11/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	131.6	Tr	B1
TEST PIT	Soil	GT-21	GT-10019	6/11/2014	Field Sample	EMSL27	Not QC	7/25/2014	PLM-Grav	23.8	ND	n/a
TEST PIT	Soil	GT-21	GT-10019	6/11/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	131.3	Tr	B1
TEST PIT	Soil	GT-21	GT-10021	6/11/2014	Field Sample	EMSL27	Not QC	7/28/2014	PLM-Grav	28.6	Tr	n/a
TEST PIT	Soil	GT-21	GT-10021	6/11/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	124.7	Tr	B1
TEST PIT	Soil	GT-22	GT-10009	6/11/2014	Field Sample	EMSL27	Not QC	7/25/2014	PLM-Grav	34.4	Tr	n/a
TEST PIT	Soil	GT-22	GT-10009	6/11/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	129.2	Tr	B1
TEST PIT	Soil	GT-22	GT-10013	6/11/2014	Field Sample	EMSL27	Not QC	7/25/2014	PLM-Grav	20.4	ND	n/a

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
TEST PIT	Soil	GT-22	GT-10013	6/11/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	124.4	Tr	B1
TEST PIT	Soil	GT-22	GT-10014	6/11/2014	Field Sample	EMSL27	Not QC	7/25/2014	PLM-Grav	24.8	ND	n/a
TEST PIT	Soil	GT-22	GT-10014	6/11/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	127.9	Tr	B1
TEST PIT	Soil	GT-23	GT-10003	6/11/2014	Field Sample	EMSL27	Not QC	7/25/2014	PLM-Grav	25.5	Tr	n/a
TEST PIT	Soil	GT-23	GT-10003	6/11/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	125	Tr	B1
TEST PIT	Soil	GT-23	GT-10004	6/11/2014	Field Sample	EMSL27	Not QC	7/25/2014	PLM-Grav	25.7	Tr	n/a
TEST PIT	Soil	GT-23	GT-10004	6/11/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	111.8	Tr	B1
TEST PIT	Soil	GT-23	GT-10006	6/11/2014	Field Sample	EMSL27	Not QC	7/25/2014	PLM-Grav	22.5	Tr	n/a
TEST PIT	Soil	GT-23	GT-10006	6/11/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	123.9	<1	B2
TEST PIT	Soil	GT-23	GT-10008	6/11/2014	Field Sample	EMSL27	Not QC	7/25/2014	PLM-Grav	22.9	Tr	n/a
TEST PIT	Soil	GT-23	GT-10008	6/11/2014	Field Sample	EMSL04	Not QC	11/6/2014	PLM-VE	123.8	<1	B2
TEST PIT	Soil	GT-24	GT-10031	6/12/2014	Field Sample	EMSL27	Not QC	7/28/2014	PLM-Grav	20.2	ND	n/a
TEST PIT	Soil	GT-24	GT-10031	6/12/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	123.3	Tr	B1
TEST PIT	Soil	GT-24	GT-10032	6/12/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	93.5	Tr	B1
TEST PIT	Soil	GT-24	GT-10033	6/12/2014	Field Sample	EMSL27	Not QC	7/28/2014	PLM-Grav	36.9	1.4	n/a
TEST PIT	Soil	GT-24	GT-10033	6/12/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	133	Tr	B1
TEST PIT	Soil	GT-25	GT-10035	6/12/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	96.3	Tr	B1
TEST PIT	Soil	GT-25	GT-10036	6/12/2014	Field Sample	EMSL27	Not QC	7/28/2014	PLM-Grav	39.4	Tr	n/a
TEST PIT	Soil	GT-25	GT-10036	6/12/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	116.1	Tr	B1
TEST PIT	Soil	GT-25	GT-10040	6/12/2014	Field Sample	EMSL27	Not QC	7/28/2014	PLM-Grav	25.3	ND	n/a
TEST PIT	Soil	GT-25	GT-10040	6/12/2014	Field Sample	EMSL04	Not QC	11/7/2014	PLM-VE	130.6	Tr	B1
TEST PIT	Soil	GT-26	GT-10046	6/13/2014	Field Sample	EMSL27	Not QC	6/23/2014	PLM-VE	93.6	3	C
TEST PIT	Soil	GT-26	GT-10047	6/13/2014	Field Sample	EMSL27	Not QC	6/23/2014	PLM-VE	92.8	Tr	B1
TEST PIT	Soil	GT-26	GT-10048	6/13/2014	Field Sample	EMSL27	Not QC	6/24/2014	PLM-VE	123.3	Tr	B1
TEST PIT	Soil	GT-26	GT-10048	6/13/2014	Field Sample	EMSL27	Not QC	6/30/2014	PLM-Grav	15.9	Tr	n/a
TEST PIT	Soil	GT-27	GT-10041	6/13/2014	Field Sample	EMSL27	Not QC	6/23/2014	PLM-VE	98.9	2	C
TEST PIT	Soil	GT-27	GT-10043	6/13/2014	Field Sample	EMSL27	Not QC	6/23/2014	PLM-VE	89.8	Tr	B1
TEST PIT	Soil	LRC-184	GT-10074	6/14/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	91.8	Tr	B1
TEST PIT	Soil	LRC-185	GT-10075	6/14/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	94.4	1	C
TEST PIT	Soil	LRC-190	GT-10076	6/14/2014	Field Sample	EMSL04	Not QC	11/5/2014	PLM-VE	88.7	1	C
TEST PIT	Soil	LRC-198	GT-10121	6/17/2014	Field Sample	EMSL04	Not QC	10/27/2014	PLM-VE	118.6	1	C
TEST PIT	Soil	LRC-198	GT-10121	6/17/2014	Field Sample	EMSL27	Not QC	7/2/2014	PLM-Grav	22.8	Tr	n/a
MT-2015	Soil	TS-A-01	TS-00126	9/25/2015	Field Sample	EMSL04	NOT QC	10/2/2015	PLM-VE	113.5	Tr	B1
MT-2015	Soil	TS-A-01	TS-00126	9/25/2015	Field Sample	EMSL04	Not QC	10/5/2015	PLM-Grav	21.6	Tr	n/a
MT-2015	Soil	TS-A-02	TS-00127	9/25/2015	Field Sample	EMSL04	NOT QC	10/2/2015	PLM-VE	103	Tr	B1
MT-2015	Soil	TS-A-02	TS-00127	9/25/2015	Field Sample	EMSL04	Not QC	10/5/2015	PLM-Grav	24.2	Tr	n/a

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
MT-2015	Soil	TS-C-01	TS-00128	9/25/2015	Field Sample	EMSL04	NOT QC	10/2/2015	PLM-VE	111.4	Tr	B1
MT-2015	Soil	TS-C-01	TS-00128	9/25/2015	Field Sample	EMSL04	Not QC	10/7/2015	PLM-Grav	21.2	Tr	n/a
MT-2015	Soil	TS-C-02	TS-00129	9/25/2015	Field Sample	EMSL04	NOT QC	10/2/2015	PLM-VE	102	Tr	B1
MT-2015	Soil	TS-C-02	TS-00129	9/25/2015	Field Sample	EMSL04	Not QC	10/7/2015	PLM-Grav	21.7	Tr	n/a
MT-2015	Soil	TS-C-03	TS-00130	9/25/2015	Field Sample	EMSL04	NOT QC	10/2/2015	PLM-VE	104.5	1	C
MT-2015	Soil	TS-C-03	TS-00130	9/25/2015	Field Sample	EMSL04	Not QC	10/7/2015	PLM-Grav	19.1	Tr	n/a
MT-2015	Soil	TS-C-04	TS-00131	9/25/2015	Field Sample	EMSL04	NOT QC	10/2/2015	PLM-VE	96.7	1	C
MT-2015	Soil	TS-C-04	TS-00131	9/25/2015	Field Sample	EMSL04	Not QC	10/7/2015	PLM-Grav	14.3	4.5	n/a
MT-2015	Soil	TS-A-03	TS-00132	9/25/2015	Field Sample	EMSL04	NOT QC	10/2/2015	PLM-VE	115.9	Tr	B1
MT-2015	Soil	TS-A-03	TS-00132	9/25/2015	Field Sample	EMSL04	Not QC	10/7/2015	PLM-Grav	25.1	Tr	n/a
MT-2015	Soil	TS-A-04	TS-00133	9/25/2015	Field Sample	EMSL04	NOT QC	10/5/2015	PLM-VE	107.5	Tr	B1
MT-2015	Soil	TS-A-04	TS-00133	9/25/2015	Field Sample	EMSL04	Not QC	10/8/2015	PLM-Grav	17.1	Tr	n/a
MT-2015	Soil	TS-A-05	TS-00134	9/25/2015	Field Sample	EMSL04	NOT QC	10/5/2015	PLM-VE	102.9	<1	B2
MT-2015	Soil	TS-A-05	TS-00134	9/25/2015	Field Sample	EMSL04	Not QC	10/8/2015	PLM-Grav	21.8	Tr	n/a
MT-2015	Soil	TS-A-06	TS-00135	9/25/2015	Field Sample	EMSL04	NOT QC	10/5/2015	PLM-VE	107.8	Tr	B1
MT-2015	Soil	TS-A-06	TS-00135	9/25/2015	Field Sample	EMSL04	Not QC	10/8/2015	PLM-Grav	16.5	Tr	n/a
MT-2015	Soil	TS-A-07	TS-00137	9/25/2015	Field Sample	EMSL04	NOT QC	10/5/2015	PLM-VE	109	Tr	B1
MT-2015	Soil	TS-A-07	TS-00137	9/25/2015	Field Sample	EMSL04	Not QC	10/8/2015	PLM-Grav	13.7	ND	n/a
MT-2015	Soil	TS-B-01	TS-00138	9/25/2015	Field Sample	EMSL04	NOT QC	10/12/2015	PLM-VE	119.3	<1	B2
MT-2015	Soil	TS-B-01	TS-00138	9/25/2015	Field Sample	EMSL04	Not QC	10/8/2015	PLM-Grav	23.2	Tr	n/a
MT-2015	Soil	TS-B-02	TS-00139	9/25/2015	Field Sample	EMSL04	NOT QC	10/12/2015	PLM-VE	112.3	<1	B2
MT-2015	Soil	TS-B-02	TS-00139	9/25/2015	Field Sample	EMSL04	Not QC	10/8/2015	PLM-Grav	16.7	Tr	n/a
MT-2015	Soil	TS-B-03	TS-00140	9/25/2015	Field Sample	EMSL04	NOT QC	10/12/2015	PLM-VE	102.8	Tr	B1
MT-2015	Soil	TS-B-03	TS-00140	9/25/2015	Field Sample	EMSL04	Not QC	10/8/2015	PLM-Grav	15.9	Tr	n/a
MT-2015	Soil	TS-B-04	TS-00141	9/25/2015	Field Sample	EMSL04	NOT QC	10/12/2015	PLM-VE	111.8	1	C
MT-2015	Soil	TS-B-04	TS-00141	9/25/2015	Field Sample	EMSL04	Not QC	10/9/2015	PLM-Grav	16.5	Tr	n/a
MT-2015	Soil	TS-B-05	TS-00142	9/25/2015	Field Sample	EMSL04	NOT QC	10/12/2015	PLM-VE	109.5	<1	B2
MT-2015	Soil	TS-B-05	TS-00142	9/25/2015	Field Sample	EMSL04	Not QC	10/9/2015	PLM-Grav	25	Tr	n/a
MT-2015	Soil	TS-B-06	TS-00143	9/25/2015	Field Sample	EMSL04	NOT QC	10/12/2015	PLM-VE	111.7	2	C
MT-2015	Soil	TS-B-06	TS-00143	9/25/2015	Field Sample	EMSL04	Not QC	10/9/2015	PLM-Grav	13.9	Tr	n/a
MT-2015	Soil	TS-B-07	TS-00144	9/25/2015	Field Sample	EMSL04	NOT QC	10/12/2015	PLM-VE	99.6	3	C
MT-2015	Soil	TS-B-07	TS-00144	9/25/2015	Field Sample	EMSL04	Not QC	10/9/2015	PLM-Grav	15.5	6.1	n/a
MT-2015	Soil	TS-B-08	TS-00145	9/25/2015	Field Sample	EMSL04	NOT QC	10/12/2015	PLM-VE	102.6	2	C
MT-2015	Soil	TS-B-08	TS-00145	9/25/2015	Field Sample	EMSL04	Not QC	10/9/2015	PLM-Grav	17.3	Tr	n/a
MT-2015	Soil	TS-C-05	TS-00146	9/25/2015	Field Sample	EMSL04	NOT QC	10/12/2015	PLM-VE	104.8	2	C
MT-2015	Soil	TS-C-05	TS-00146	9/25/2015	Field Sample	EMSL04	Not QC	10/9/2015	PLM-Grav	15.4	Tr	n/a

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
MT-2015	Soil	TS-C-06	TS-00148	9/25/2015	Field Sample	EMSL04	NOT QC	10/12/2015	PLM-VE	101.9	10	C
MT-2015	Soil	TS-C-06	TS-00148	9/25/2015	Field Sample	EMSL04	Not QC	10/9/2015	PLM-Grav	22.4	18	n/a
MT-2015	Soil	TS-C-07	TS-00149	9/25/2015	Field Sample	EMSL04	NOT QC	10/13/2015	PLM-VE	101.9	Tr	B1
MT-2015	Soil	TS-C-07	TS-00149	9/25/2015	Field Sample	EMSL04	Not QC	10/9/2015	PLM-Grav	13.4	Tr	n/a
MT-2015	Soil	TS-C-08	TS-00150	9/25/2015	Field Sample	EMSL22	NOT QC	10/7/2015	PLM-VE	102.9	<1	B2
MT-2015	Soil	TS-C-08	TS-00150	9/25/2015	Field Sample	EMSL22	Not QC	10/17/2015	PLM-Grav	14.2	Tr	n/a
MT-2015	Soil	TS-C-09	TS-00151	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	101.3	<1	B2
MT-2015	Soil	TS-C-09	TS-00151	9/25/2015	Field Sample	EMSL22	Not QC	10/17/2015	PLM-Grav	12	Tr	n/a
MT-2015	Soil	TS-C-10	TS-00152	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	112.2	<1	B2
MT-2015	Soil	TS-C-10	TS-00152	9/25/2015	Field Sample	EMSL22	Not QC	10/17/2015	PLM-Grav	14.8	Tr	n/a
MT-2015	Soil	TS-C-11	TS-00153	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	103.5	25	C
MT-2015	Soil	TS-C-11	TS-00153	9/25/2015	Field Sample	EMSL22	Not QC	10/17/2015	PLM-Grav	14.1	11	n/a
MT-2015	Soil	TS-C-12	TS-00154	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	106.5	<1	B2
MT-2015	Soil	TS-C-12	TS-00154	9/25/2015	Field Sample	EMSL22	Not QC	10/17/2015	PLM-Grav	15	Tr	n/a
MT-2015	Soil	TS-C-13	TS-00156	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	101.6	2	C
MT-2015	Soil	TS-C-13	TS-00156	9/25/2015	Field Sample	EMSL22	Not QC	10/17/2015	PLM-Grav	16.7	31	n/a
MT-2015	Soil	TS-C-14	TS-00157	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	106.1	<1	B2
MT-2015	Soil	TS-C-14	TS-00157	9/25/2015	Field Sample	EMSL22	Not QC	10/17/2015	PLM-Grav	13.8	Tr	n/a
MT-2015	Soil	TS-C-15	TS-00158	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	108.1	5	C
MT-2015	Soil	TS-C-15	TS-00158	9/25/2015	Field Sample	EMSL22	Not QC	10/17/2015	PLM-Grav	17.4	Tr	n/a
MT-2015	Soil	TS-C-16	TS-00160	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	102.9	5	C
MT-2015	Soil	TS-C-16	TS-00160	9/25/2015	Field Sample	EMSL22	Not QC	10/17/2015	PLM-Grav	16.6	9.7	n/a
MT-2015	Soil	TS-A-08	TS-00281	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	98.8	<1	B2
MT-2015	Soil	TS-A-08	TS-00281	9/25/2015	Field Sample	EMSL22	Not QC	10/19/2015	PLM-Grav	15.4	28	n/a
MT-2015	Soil	TS-A-09	TS-00282	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	106.5	Tr	B1
MT-2015	Soil	TS-A-09	TS-00282	9/25/2015	Field Sample	EMSL22	Not QC	10/19/2015	PLM-Grav	17.4	Tr	n/a
MT-2015	Soil	TS-A-10	TS-00283	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	104.9	Tr	B1
MT-2015	Soil	TS-A-10	TS-00283	9/25/2015	Field Sample	EMSL22	Not QC	10/19/2015	PLM-Grav	17.8	ND	n/a
MT-2015	Soil	TS-A-11	TS-00284	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	113.3	ND	A
MT-2015	Soil	TS-A-11	TS-00284	9/25/2015	Field Sample	EMSL22	Not QC	10/19/2015	PLM-Grav	13.6	ND	n/a
MT-2015	Soil	TS-A-12	TS-00285	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	94.9	Tr	B1
MT-2015	Soil	TS-A-12	TS-00285	9/25/2015	Field Sample	EMSL22	Not QC	10/19/2015	PLM-Grav	10	ND	n/a
MT-2015	Soil	TS-A-13	TS-00286	9/25/2015	Field Sample	EMSL22	NOT QC	10/8/2015	PLM-VE	101.3	ND	A
MT-2015	Soil	TS-A-13	TS-00286	9/25/2015	Field Sample	EMSL22	Not QC	10/19/2015	PLM-Grav	13.2	ND	n/a
SP-2015	Forest Soil	SP15-Pre-S1	SB-00013	5/12/2015	Field Sample	EMSL04	NOT QC	5/15/2015	PLM-VE	104.6	Tr	B1
SP-2015	Forest Soil	SP15-Pre-S1	SB-00013	5/12/2015	Field Sample	EMSL04	Not QC	5/18/2015	PLM-Grav	14.6	Tr	n/a

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
SP-2015	Forest Soil	SP15-Pre-S2	SB-00014	5/12/2015	Field Sample	EMSL04	NOT QC	5/15/2015	PLM-VE	99.7	Tr	B1
SP-2015	Forest Soil	SP15-Pre-S2	SB-00014	5/12/2015	Field Sample	EMSL04	Not QC	5/18/2015	PLM-Grav	19.5	Tr	n/a
SP-2015	Forest Soil	SP15-Pre-S3	SB-00015	5/12/2015	Field Sample	EMSL04	NOT QC	5/15/2015	PLM-VE	112.9	<1	B2
SP-2015	Forest Soil	SP15-Pre-S3	SB-00015	5/12/2015	Field Sample	EMSL04	Not QC	5/18/2015	PLM-Grav	20	Tr	n/a
SP-2015	Forest Soil	SP15-Post-S1	SB-00201	5/15/2015	Field Sample	EMSL04	NOT QC	5/21/2015	PLM-VE	99.5	Tr	B1
SP-2015	Forest Soil	SP15-Post-S1	SB-00201	5/15/2015	Field Sample	EMSL04	Not QC	5/22/2015	PLM-Grav	10.2	Tr	n/a
SP-2015	Forest Soil	SP15-Post-S2	SB-00202	5/15/2015	Field Sample	EMSL04	NOT QC	5/21/2015	PLM-VE	100.2	Tr	B1
SP-2015	Forest Soil	SP15-Post-S2	SB-00202	5/15/2015	Field Sample	EMSL04	Not QC	5/22/2015	PLM-Grav	10.8	Tr	n/a
SP-2015	Forest Soil	SP15-Post-S3	SB-00203	5/15/2015	Field Sample	EMSL04	NOT QC	5/21/2015	PLM-VE	111.8	Tr	B1
SP-2015	Forest Soil	SP15-Post-S3	SB-00203	5/15/2015	Field Sample	EMSL04	Not QC	5/22/2015	PLM-Grav	23.9	Tr	n/a
UB-2015	Forest Soil	B15-Pre-S1	UB-00009	5/26/2015	Field Sample	EMSL04	NOT QC	6/5/2015	PLM-VE	88	Tr	B1
UB-2015	Forest Soil	B15-Pre-S2	UB-00010	5/26/2015	Field Sample	EMSL04	NOT QC	6/5/2015	PLM-VE	95.6	Tr	B1
UB-2015	Forest Soil	B15-Pre-S3	UB-00011	5/26/2015	Field Sample	EMSL04	NOT QC	6/5/2015	PLM-VE	96.7	Tr	B1
UB-2015	Forest Soil	B15-Post-S1	UB-00097	6/23/2015	Field Sample	EMSL04	NOT QC	7/6/2015	PLM-VE	82.2	Tr	B1
UB-2015	Forest Soil	B15-Post-S2	UB-00098	6/23/2015	Field Sample	EMSL04	NOT QC	7/6/2015	PLM-VE	86.3	Tr	B1
UB-2015	Forest Soil	B15-Post-S3	UB-00099	6/23/2015	Field Sample	EMSL04	NOT QC	7/6/2015	PLM-VE	97.4	Tr	B1
WFM-2015	Forest Soil	LSF-12-1	SM-30163	9/3/2015	Field Sample	EMSL45	NOT QC	9/21/2015	PLM-VE	84	ND	A
WFM-2015	Forest Soil	LSF-12-2	SM-30167	9/3/2015	Field Sample	EMSL45	NOT QC	9/21/2015	PLM-VE	83	ND	A
WFM-2015	Forest Soil	LSF-13-1	SM-30141	9/2/2015	Field Sample	EMSL45	Not QC	9/21/2015	PLM-VE	120	ND	A
WFM-2015	Forest Soil	LSF-13-1	SM-30141	9/2/2015	Field Sample	EMSL45	Not QC	9/21/2015	PLM-Grav	23	ND	n/a
WFM-2015	Forest Soil	LSF-13-2	SM-30143	9/2/2015	Field Sample	EMSL45	NOT QC	9/21/2015	PLM-VE	120	ND	A
WFM-2015	Forest Soil	LSF-13-2	SM-30143	9/2/2015	Field Sample	EMSL45	NOT QC	9/21/2015	PLM-Grav	33	ND	n/a
WFM-2015	Forest Soil	LSF-13-3	SM-30147	9/2/2015	Field Sample	EMSL45	Not QC	9/21/2015	PLM-VE	89	ND	A
WFM-2015	Forest Soil	LSF-13-4	SM-30151	9/2/2015	Field Sample	EMSL45	NOT QC	9/21/2015	PLM-VE	118	ND	A
WFM-2015	Forest Soil	LSF-13-4	SM-30151	9/2/2015	Field Sample	EMSL45	NOT QC	9/21/2015	PLM-Grav	33	ND	n/a
WFM-2015	Forest Soil	LSF-13-5	SM-30153	9/2/2015	Field Sample	EMSL45	NOT QC	9/21/2015	PLM-VE	99	ND	A
WFM-2015	Forest Soil	LSF-13-6	SM-30155	9/3/2015	Field Sample	EMSL45	NOT QC	9/21/2015	PLM-VE	121	ND	A
WFM-2015	Forest Soil	LSF-13-6	SM-30155	9/3/2015	Field Sample	EMSL45	NOT QC	9/21/2015	PLM-Grav	29	ND	n/a
WFM-2015	Forest Soil	LSF-13-7	SM-30159	9/3/2015	Field Sample	EMSL45	NOT QC	9/21/2015	PLM-VE	97	ND	A

Notes:

* See Tables 4-1 and 4-2 for definitions of each Phase.

***Applicable for PLM-VE results only*

< 1 = less than 1% (Bin B2)

LAA = Libby amphibole asbestos

n/a = not applicable

Table E-1d: Summary of LAA Results for Soil and Forest Soil
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**

ND = not detected (Bin A)

PLM-Grav = polarized light microscopy, gravimetric

PLM-VE = polarized light microscopy, visual area estimation

Tr = trace (Bin B1)

Table E-1e: Summary of LAA Results for Mine Waste
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
I	Mine Waste	MS-16	P1-00205	10/17/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	27.5	5.2	n/a
I	Mine Waste	MS-16	P1-00205	10/17/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	192.5	2	C
I	Mine Waste	MS-15	P1-00206	10/17/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	4.5	Tr	n/a
I	Mine Waste	MS-15	P1-00206	10/17/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	142.7	5	C
I	Mine Waste	MS-28	P1-00290	10/15/2007	Field Sample	EMSL27	Not QC	1/21/2008	PLM-Grav	22.8	33	n/a
I	Mine Waste	MS-28	P1-00290	10/15/2007	Field Sample	EMSL27	Not QC	1/9/2008	PLM-VE	156.8	< 1	B2
I	Mine Waste	MS-26	P1-00292	10/15/2007	Field Sample	EMSL04	Not QC	12/21/2007	PLM-Grav	30.7	2.1	n/a
I	Mine Waste	MS-26	P1-00292	10/15/2007	Field Sample	EMSL04	Not QC	12/21/2007	PLM-VE	139.6	3	C
I	Mine Waste	MS-7	P1-00294	10/16/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	32.5	10	n/a
I	Mine Waste	MS-7	P1-00294	10/16/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	155.9	2	C
I	Mine Waste	MS-29	P1-00298	10/15/2007	Field Sample	EMSL04	Not QC	12/21/2007	PLM-Grav	72.9	13	n/a
I	Mine Waste	MS-29	P1-00298	10/15/2007	Field Sample	EMSL04	Not QC	12/21/2007	PLM-VE	119.2	2	C
I	Mine Waste	MS-27	P1-00299	10/15/2007	Field Sample	EMSL27	Not QC	1/21/2008	PLM-Grav	40.8	19	n/a
I	Mine Waste	MS-27	P1-00299	10/15/2007	Field Sample	EMSL27	Not QC	1/9/2008	PLM-VE	172.9	< 1	B2
I	Mine Waste	MS-8	P1-00330	10/16/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	11.8	Tr	n/a
I	Mine Waste	MS-8	P1-00330	10/16/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	130.8	< 1	B2
I	Mine Waste	MS-4	P1-00332	10/18/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	44	Tr	n/a
I	Mine Waste	MS-4	P1-00332	10/18/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	124.1	< 1	B2
I	Mine Waste	MS-23	P1-00340	10/13/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	16.3	Tr	n/a
I	Mine Waste	MS-23	P1-00340	10/13/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	103.6	ND	A
I	Mine Waste	MS-19	P1-00341	10/13/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	4	8.2	n/a
I	Mine Waste	MS-19	P1-00341	10/13/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	109.8	< 1	B2
I	Mine Waste	MS-30	P1-00342	10/13/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	27.1	2.8	n/a
I	Mine Waste	MS-30	P1-00342	10/13/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	174.9	< 1	B2
I	Mine Waste	MS-17	P1-00343	10/13/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	26.6	11	n/a
I	Mine Waste	MS-17	P1-00343	10/13/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	150	< 1	B2
I	Mine Waste	MS-34	P1-00344	10/13/2007	Field Sample	EMSL27	Not QC	1/21/2008	PLM-Grav	52.1	5	n/a
I	Mine Waste	MS-34	P1-00344	10/13/2007	Field Sample	EMSL27	Not QC	1/9/2008	PLM-VE	179.8	< 1	B2
I	Mine Waste	MS-14	P1-00345	10/13/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	6.9	37	n/a
I	Mine Waste	MS-14	P1-00345	10/13/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	153.4	< 1	B2
I	Mine Waste	MS-20	P1-00350	10/14/2007	Field Sample	EMSL27	Not QC	1/21/2008	PLM-Grav	15.6	Tr	n/a
I	Mine Waste	MS-20	P1-00350	10/14/2007	Field Sample	EMSL27	Not QC	1/9/2008	PLM-VE	101.9	< 1	B2
I	Mine Waste	MS-32	P1-00351	10/14/2007	Field Sample	EMSL27	Not QC	1/21/2008	PLM-Grav	16.3	17	n/a
I	Mine Waste	MS-32	P1-00351	10/14/2007	Field Sample	EMSL27	Not QC	1/9/2008	PLM-VE	159.2	< 1	B2
I	Mine Waste	MS-18	P1-00352	10/14/2007	Field Sample	EMSL27	Not QC	1/21/2008	PLM-Grav	15.5	19	n/a
I	Mine Waste	MS-18	P1-00352	10/14/2007	Field Sample	EMSL27	Not QC	1/9/2008	PLM-VE	163	< 1	B2
I	Mine Waste	MS-24	P1-00353	10/14/2007	Field Sample	EMSL27	Not QC	1/21/2008	PLM-Grav	24.4	14	n/a
I	Mine Waste	MS-24	P1-00353	10/14/2007	Field Sample	EMSL27	Not QC	1/9/2008	PLM-VE	149.6	2	C

Table E-1e: Summary of LAA Results for Mine Waste
Libby Asbestos Superfund Site, OU3 Study Area

Sample Information						Analysis Information					Results	
Phase*	Media	Station ID	Index ID	Sample Date	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Sample Mass (g)	LAA Conc.(mass %)	LAA Bin**
I	Mine Waste	MS-6	P1-00355	10/16/2007	Field Sample	EMSL27	Not QC	1/21/2008	PLM-Grav	27.8	2.7	n/a
I	Mine Waste	MS-6	P1-00355	10/16/2007	Field Sample	EMSL27	Not QC	1/9/2008	PLM-VE	174.5	< 1	B2
I	Mine Waste	MS-9	P1-00356	10/16/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	31	5.8	n/a
I	Mine Waste	MS-9	P1-00356	10/16/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	143.1	< 1	B2
I	Mine Waste	MS-5	P1-00357	10/17/2007	Field Sample	EMSL27	Not QC	1/24/2008	PLM-Grav	1.41	Tr	n/a
I	Mine Waste	MS-5	P1-00357	10/17/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	133.7	< 1	B2
I	Mine Waste	MS-25	P1-00362	10/12/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	9.1	17	n/a
I	Mine Waste	MS-25	P1-00362	10/12/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	135.3	8	C
I	Mine Waste	MS-35	P1-00363	10/12/2007	Field Sample	EMSL04	Not QC	12/21/2007	PLM-Grav	30.6	0.065	n/a
I	Mine Waste	MS-35	P1-00363	10/12/2007	Field Sample	EMSL04	Not QC	12/21/2007	PLM-VE	166.1	TR	B1
I	Mine Waste	MS-33	P1-00364	10/12/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	38.4	1.6	n/a
I	Mine Waste	MS-33	P1-00364	10/12/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	95.3	< 1	B2
I	Mine Waste	MS-13	P1-00365	10/12/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	7.3	Tr	n/a
I	Mine Waste	MS-13	P1-00365	10/12/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	154.7	Tr	B1
I	Mine Waste	MS-10	P1-00366	10/12/2007	Field Sample	EMSL04	Not QC	12/21/2007	PLM-Grav	42.8	0.86	n/a
I	Mine Waste	MS-10	P1-00366	10/12/2007	Field Sample	EMSL04	Not QC	12/21/2007	PLM-VE	134.4	< 1	B2
I	Mine Waste	MS-11	P1-00367	10/12/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	12	0.66	n/a
I	Mine Waste	MS-11	P1-00367	10/12/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	130.9	< 1	B2
I	Mine Waste	MS-12	P1-00369	10/12/2007	Field Sample	EMSL27	Not QC	1/23/2008	PLM-Grav	23.1	26	n/a
I	Mine Waste	MS-12	P1-00369	10/12/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	183.2	< 1	B2
I	Mine Waste	MS-1	P1-00370	10/11/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	54	Tr	n/a
I	Mine Waste	MS-1	P1-00370	10/11/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	124.3	< 1	B2
I	Mine Waste	MS-2	P1-00371	10/11/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	19.5	Tr	n/a
I	Mine Waste	MS-2	P1-00371	10/11/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	161.2	< 1	B2
I	Mine Waste	MS-2	P1-00371	10/11/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	19.5	Tr	n/a
I	Mine Waste	MS-2	P1-00371	10/11/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	161.2	< 1	B2
I	Mine Waste	MS-3	P1-00372	10/11/2007	Field Sample	EMSL27	Not QC	1/22/2008	PLM-Grav	83.3	Tr	n/a
I	Mine Waste	MS-3	P1-00372	10/11/2007	Field Sample	EMSL27	Not QC	1/10/2008	PLM-VE	164.8	Tr	B1
I	Mine Waste	MS-36	P1-00375	10/12/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	14.9	3.4	n/a
I	Mine Waste	MS-36	P1-00375	10/12/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	226.6	< 1	B2
I	Mine Waste	MS-37	P1-00376	10/12/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	17.7	2.1	n/a
I	Mine Waste	MS-37	P1-00376	10/12/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	121.6	< 1	B2
I	Mine Waste	MS-38	P1-00377	10/12/2007	Field Sample	EMSL27	Not QC	1/25/2008	PLM-Grav	65.5	3.9	n/a
I	Mine Waste	MS-38	P1-00377	10/12/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	123.2	< 1	B2
I	Mine Waste	MS-21	P1-00378	10/13/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	5	Tr	n/a
I	Mine Waste	MS-21	P1-00378	10/13/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	183.6	< 1	B2
I	Mine Waste	MS-22	P1-00379	10/13/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	19.5	4.3	n/a
I	Mine Waste	MS-22	P1-00379	10/13/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	142.8	< 1	B2
I	Mine Waste	MS-31	P1-00389	10/13/2007	Field Sample	EMSL27	Not QC	1/28/2008	PLM-Grav	32	7.5	n/a
I	Mine Waste	MS-31	P1-00389	10/13/2007	Field Sample	EMSL27	Not QC	1/14/2008	PLM-VE	187.4	< 1	B2

Notes:

* See Tables 4-1 and 4-2 for definitions of each Phase.

***Applicable for PLM-VE results only*

< 1 = less than 1% (Bin B2)

LAA = Libby amphibole asbestos

n/a = not applicable

ND = not detected (Bin A)

PLM-Grav = polarized light microscopy, gravimetric

PLM-VE = polarized light microscopy, visual area estimation

Tr = trace (Bin B1)

Table E-1f: Summary of LAA Results for Duff Material
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Duff Mass (g, dw)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(g)^{-1}$	N Structures	Duff Conc. (Ms/g, dw)	N Structures	Duff Conc. (Ms/g, dw)
CL-2012	Duff	CL-A	CL-3-0001	8/7/2012	Field Sample	529	EMSL04	6/27/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	5.8E-06	7.9E+06	88	690	13	103
CL-2012	Duff	CL-A	CL-3-0001	8/7/2012	Field Sample	529	EMSL04	7/1/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	5.8E-06	7.9E+06	76	600	15	118
CL-2012	Duff	CL-A	CL-3-0001	8/7/2012	Field Sample	529	EMSL04	8/29/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	5.8E-06	7.9E+06	78	620	22	174
CL-2012	Duff	CL-B	CL-3-0003	8/7/2012	Field Sample	293	EMSL04	7/2/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	8.9E-06	9.3E+06	49	450	15	139
CL-2012	Duff	CL-B	CL-3-0003	8/7/2012	Field Sample	293	EMSL04	7/2/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	8.9E-06	9.3E+06	58	540	16	148
CL-2012	Duff	CL-B	CL-3-0003	8/7/2012	Field Sample	293	EMSL04	8/23/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	8.9E-06	9.3E+06	66	610	21	194
CL-2012	Duff	CL-C	CL-3-0007	8/7/2012	Field Sample	406	EMSL04	7/9/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	6	4.7E-06	8.6E+06	30	260	6	51
CL-2012	Duff	CL-C	CL-3-0007	8/7/2012	Field Sample	406	EMSL04	7/9/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	6	4.7E-06	8.6E+06	25	210	2	17
CL-2012	Duff	CL-C	CL-3-0007	8/7/2012	Field Sample	406	EMSL04	8/23/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	6	4.7E-06	8.6E+06	26	220	11	94
CL-2012	Duff	CL-D	CL-3-0009	8/7/2012	Field Sample	242	EMSL04	7/10/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	2.2E-05	4.6E+06	32	150	11	50
CL-2012	Duff	CL-D	CL-3-0009	8/7/2012	Field Sample	242	EMSL04	7/11/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	2.2E-05	4.6E+06	25	110	8	37
CL-2012	Duff	CL-D	CL-3-0009	8/7/2012	Field Sample	242	EMSL04	8/24/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	2.2E-05	4.6E+06	39	180	13	59
CL-2012	Duff	CL-E	CL-3-0011	8/7/2012	Field Sample	281	EMSL04	7/3/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1.5E-05	5.7E+06	77	440	23	130
CL-2012	Duff	CL-E	CL-3-0011	8/7/2012	Field Sample	281	EMSL04	7/10/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1.5E-05	5.7E+06	58	330	15	85
CL-2012	Duff	CL-E	CL-3-0011	8/7/2012	Field Sample	281	EMSL04	8/24/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1.5E-05	5.7E+06	64	360	17	96
CL-2014	Duff	CL-F-1	CL-40001	8/25/2014	Field Sample	184	EMSL27	9/16/2014	TEM-ISO	NOT QC	Indirect - Ashed	1275	0.013	4	0.00063	2.1E+05	0	0	0	0
CL-2014	Duff	CL-F-2	CL-40004	8/25/2014	Field Sample	161	EMSL27	9/16/2014	TEM-ISO	NOT QC	Indirect - Ashed	1275	0.013	4	0.00097	1.6E+05	0	0	0	0
CL-2014	Duff	CL-F-3	CL-40005	8/25/2014	Field Sample	157	EMSL27	9/16/2014	TEM-ISO	NOT QC	Indirect - Ashed	1275	0.013	4	0.00059	2.7E+05	2	0.53	0	0
CL-2014	Duff	CL-F-4	CL-40007	8/25/2014	Field Sample	207	EMSL27	9/16/2014	TEM-ISO	NOT QC	Indirect - Ashed	1275	0.013	4	0.00059	2.0E+05	0	0	0	0
CL-2014	Duff	CL-F-5	CL-40009	8/25/2014	Field Sample	244	EMSL27	9/16/2014	TEM-ISO	NOT QC	Indirect - Ashed	1275	0.013	4	0.00035	2.9E+05	1	0.29	1	0.29
I	Duff	SL45-13	P1-00032	10/2/2007	Field Sample	400	EMSL04	8/27/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	5	5.5E-06	8.9E+06	6	54	1	8.9
I	Duff	SL45-14	P1-00034	10/2/2007	Field Sample	330	EMSL04	8/28/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	6	5.9E-06	8.4E+06	4	34	1	8.4
I	Duff	SL45-11	P1-00036	10/3/2007	Field Sample	325	EMSL04	9/19/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	11	2.9E-06	9.5E+06	11	100	1	10
I	Duff	SL45-10	P1-00038	10/3/2007	Field Sample	424	EMSL04	9/21/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	6	4E-06	9.6E+06	9	86	1	10
I	Duff	SL45-07	P1-00040	10/3/2007	Field Sample	252	EMSL04	4/23/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	5	8.6E-06	9.1E+06	48	440	8	73
I	Duff	SL45-07	P1-00040	10/3/2007	Field Sample	252	EMSL04	8/6/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	5	8.6E-06	8.9E+06	30	267	7	62
I	Duff	SL45-07	P1-00040	10/3/2007	Field Sample	252	EMSL04	8/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	5	8.6E-06	8.9E+06	26	231	8	71
I	Duff	SL15-16	P1-00042	10/2/2007	Field Sample	150	EMSL04	8/29/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	2.1E-05	7.9E+06	0	0	0	0
I	Duff	SL15-14	P1-00044	10/2/2007	Field Sample	199	EMSL04	9/4/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	6	9.6E-06	8.6E+06	0	0	0	0
I	Duff	SL15-12	P1-00046	10/3/2007	Field Sample	240	EMSL04	9/22/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.2E-05	8.8E+06	1	8.8	0	0
I	Duff	SL45-16	P1-00052	10/2/2007	Field Sample	243	EMSL04	9/4/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	5	8.1E-06	9.9E+06	0	0	0	0
I	Duff	SL45-16	P1-00052	10/2/2007	Field Sample	243	EMSL04	8/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	5	8.1E-06	9.8E+06	3	29	0	0
I	Duff	SL45-16	P1-00052	10/2/2007	Field Sample	243	EMSL04	8/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	5	8.1E-06	9.8E+06	2	20	1	10
I	Duff	SL45-15	P1-00054	10/2/2007	Field Sample	212	EMSL04	9/8/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	5	1.1E-05	8.7E+06	1	8.7	1	8.7
I	Duff	SL45-15	P1-00054	10/2/2007	Field Sample	212	EMSL04	8/6/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	5	1.1E-05	8.6E+06	2	17	0	0
I	Duff	SL45-15	P1-00054	10/2/2007	Field Sample	212	EMSL04	8/6/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	5	1.1E-05	8.6E+06	5	43	1	8.6
I	Duff	SL15-13	P1-00056	10/2/2007	Field Sample	159	EMSL04	9/17/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.8E-05	8.5E+06	0	0	0	0
I	Duff	SL45-12	P1-00059	10/3/2007	Field Sample	162	EMSL04	9/23/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	8	8.1E-06	9.4E+06	14	130	8	75
I	Duff	SL15-15	P1-00062	10/2/2007	Field Sample	255	EMSL04	9/18/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.5E-05	6.5E+06	3	19	0	0

Table E-1f: Summary of LAA Results for Duff Material
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Duff Mass (g, dw)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(g)^{-1}$	N Structures	Duff Conc. (Ms/g, dw)	N Structures	Duff Conc. (Ms/g, dw)
I	Duff	SL15-11	P1-00064	10/3/2007	Field Sample	307	EMSL04	9/29/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.6E-05	5.0E+06	7	35	2	10
I	Duff	SL75-14	P1-00066	10/3/2007	Field Sample	343	EMSL04	10/2/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	8.3E-06	8.6E+06	4	34	0	0
I	Duff	SL15-10	P1-00068	10/4/2007	Field Sample	199	EMSL04	10/6/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	5	1.2E-05	8.4E+06	0	0	0	0
I	Duff	SL45-05	P1-00073	10/4/2007	Field Sample	237	EMSL04	4/22/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	6	8E-06	8.8E+06	27	240	7	62
I	Duff	SL135-04	P1-00077	10/4/2007	Field Sample	230	EMSL04	10/15/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.4E-05	7.4E+06	1	7.4	0	0
I	Duff	SL135-07	P1-00080	10/4/2007	Field Sample	227	EMSL04	10/17/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.4E-05	7.7E+06	8	61	2	15
I	Duff	SL45-09	P1-00081	10/3/2007	Field Sample	204	EMSL04	9/23/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	9	5.8E-06	9.2E+06	16	150	3	28
I	Duff	SL45-08	P1-00083	10/3/2007	Field Sample	251	EMSL04	9/24/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	14	3E-06	9.4E+06	44	410	2	19
I	Duff	SL45-08	P1-00083	10/3/2007	Field Sample	251	EMSL04	8/13/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	14	3E-06	9.3E+06	13	121	3	28
I	Duff	SL45-08	P1-00083	10/3/2007	Field Sample	251	EMSL04	8/13/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	14	3E-06	9.3E+06	12	112	5	47
I	Duff	SL45-06	P1-00085	10/4/2007	Field Sample	140	EMSL04	4/22/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	4	2.9E-05	6.2E+06	16	100	4	25
I	Duff	SL135-05	P1-00087	10/4/2007	Field Sample	221	EMSL04	10/21/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.4E-05	7.8E+06	4	31	1	7.8
I	Duff	SL135-06	P1-00089	10/4/2007	Field Sample	269	EMSL04	10/20/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	24	1.5E-06	1.0E+07	4	40	0	0
I	Duff	SL75-13	P1-00093	10/3/2007	Field Sample	109	EMSL04	9/22/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	3E-05	7.5E+06	0	0	0	0
I	Duff	SL15-08	P1-00096	10/4/2007	Field Sample	148	EMSL04	10/23/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	7	9.6E-06	9.9E+06	6	59	0	0
I	Duff	SL15-07	P1-00098	10/4/2007	Field Sample	136	EMSL04	10/27/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	7	1.1E-05	9.4E+06	4	37	0	0
I	Duff	SL15-05	P1-00100	10/5/2007	Field Sample	185	EMSL04	5/27/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	5	2.3E-05	4.7E+06	9	42	2	9.4
I	Duff	SL75-15	P1-00103	10/5/2007	Field Sample	307	EMSL04	1/18/2009	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	8.7E-06	9.2E+06	7	64	0	0
I	Duff	SL195-07	P1-00106	10/5/2007	Field Sample	153	EMSL04	10/17/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	5	1.5E-05	8.5E+06	1	8.5	1	8.5
I	Duff	SL75-05	P1-00108	10/6/2007	Field Sample	445	EMSL04	6/10/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	10	2.1E-06	1.1E+07	51	550	15	162
I	Duff	SL75-06	P1-00110	10/6/2007	Field Sample	172	EMSL04	6/17/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	4	2.5E-05	5.9E+06	14	82	2	12
I	Duff	SL195-11	P1-00112	10/7/2007	Field Sample	255	EMSL04	10/28/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	8	5.5E-06	8.8E+06	4	35	1	8.8
I	Duff	SL195-06	P1-00115	10/8/2007	Field Sample	248	EMSL04	1/13/2009	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.1E-05	9.0E+06	25	220	4	36
I	Duff	SL15-06	P1-00122	10/5/2007	Field Sample	207	EMSL04	10/16/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.9E-05	6.3E+06	8	50	4	25
I	Duff	SL15-09	P1-00124	10/4/2007	Field Sample	279	EMSL04	10/7/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	5	8.2E-06	8.5E+06	4	34	2	17
I	Duff	SL75-09	P1-00128	10/5/2007	Field Sample	209	EMSL04	10/13/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	15	3.2E-06	9.7E+06	10	100	3	29
I	Duff	SL315-03	P1-00132	10/7/2007	Field Sample	502	EMSL27	4/3/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	7	3.2E-06	8.8E+06	25	220	0	0
I	Duff	SL195-04	P1-00134	10/8/2007	Field Sample	219	EMSL27	3/31/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	4	2.5E-05	4.5E+06	6	27	2	8.9
I	Duff	SL195-03	P1-00136	10/8/2007	Field Sample	444	EMSL27	3/28/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	7	3.9E-06	8.2E+06	12	100	2	16
I	Duff	SL135-02	P1-00138	10/12/2007	Field Sample	148	EMSL04	1/5/2009	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	2	2.9E-05	1.1E+07	70	790	10	113
I	Duff	SL135-01	P1-00140	10/12/2007	Field Sample	229	EMSL04	1/12/2009	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	1	1.2E-05	3.5E+07	55	1,900	10	347
I	Duff	SL15-04	P1-00141	10/5/2007	Field Sample	260	EMSL04	5/20/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	4	9E-06	1.1E+07	57	610	9	96
I	Duff	SL45-04	P1-00143	10/5/2007	Field Sample	201	EMSL04	5/19/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	5	1E-05	1.0E+07	30	300	6	60
I	Duff	SL315-06	P1-00145	10/6/2007	Field Sample	142	EMSL04	10/22/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	2E-05	8.5E+06	5	42	0	0
I	Duff	SL315-07	P1-00147	10/6/2007	Field Sample	424	EMSL04	10/27/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	6	4.1E-06	9.5E+06	0	0	0	0
I	Duff	SL195-12	P1-00149	10/7/2007	Field Sample	178	EMSL04	10/29/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	13	4.4E-06	9.7E+06	1	10	0	0
I	Duff	SL315-04	P1-00152	10/5/2007	Field Sample	418	EMSL04	5/7/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	8	3.1E-06	9.8E+06	4	39	3	29
I	Duff	SL315-05	P1-00155	10/6/2007	Field Sample	226	EMSL04	10/20/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.3E-05	8.5E+06	6	51	3	26
I	Duff	SL315-08	P1-00158	10/6/2007	Field Sample	261	EMSL04	11/4/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.5E-05	6.1E+06	3	18	2	12

Table E-1f: Summary of LAA Results for Duff Material
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Duff Mass (g, dw)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(g)^{-1}$	N Structures	Duff Conc. (Ms/g, dw)	N Structures	Duff Conc. (Ms/g, dw)
I	Duff	SL135-08	P1-00160	10/6/2007	Field Sample	275	EMSL04	10/27/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	5	7.9E-06	9.0E+06	2	18	1	9.0
I	Duff	SL195-08	P1-00162	10/5/2007	Field Sample	354	EMSL04	10/13/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	7.5E-06	9.2E+06	0	0	0	0
I	Duff	SL75-04	P1-00164	10/6/2007	Field Sample	477	EMSL04	6/12/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	6	4.1E-06	8.5E+06	12	100	4	34
I	Duff	SL135-03	P1-00166	10/6/2007	Field Sample	407	EMSL04	10/16/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	5	5.9E-06	8.2E+06	4	33	1	8.2
I	Duff	SL75-07	P1-00168	10/6/2007	Field Sample	576	EMSL04	6/17/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	8	2.3E-06	9.3E+06	6	56	2	19
I	Duff	SL75-08	P1-00170	10/6/2007	Field Sample	338	EMSL04	10/16/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	13	2.4E-06	9.2E+06	6	55	1	9.2
I	Duff	SL195-10	P1-00172	10/7/2007	Field Sample	315	EMSL04	10/29/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	12	2.7E-06	9.5E+06	2	19	2	19
I	Duff	SL255-06	P1-00174	10/9/2007	Field Sample	507	EMSL04	11/22/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	6	3.3E-06	9.8E+06	2	20	2	20
I	Duff	SL255-05	P1-00177	10/9/2007	Field Sample	319	EMSL04	11/5/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	6	5.6E-06	9.1E+06	4	36	1	9.1
I	Duff	SL255-04	P1-00180	10/9/2007	Field Sample	368	EMSL04	11/9/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	5	1.3E-06	4.2E+07	53	2,200	12	505
I	Duff	SL195-05	P1-00192	10/8/2007	Field Sample	186	EMSL04	1/14/2009	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	4	1.8E-05	7.1E+06	13	93	2	14
I	Duff	SL45-01	P1-00202	10/12/2007	Field Sample	222	EMSL27	4/4/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	1	9.8E-06	4.6E+07	70	3,200	9	412
I	Duff	SL195-02	P1-00204	10/12/2007	Field Sample	288	EMSL04	1/6/2009	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	1	9.8E-06	3.5E+07	52	1,800	4	139
I	Duff	SL255-03	P1-00212	10/9/2007	Field Sample	822	EMSL04	12/18/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	8	2.3E-06	6.6E+06	55	360	8	53
I	Duff	SL255-02	P1-00214	10/11/2007	Field Sample	270	EMSL04	1/8/2009	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	3	8.3E-06	1.5E+07	51	740	3	44
I	Duff	SL315-01	P1-00216	10/11/2007	Field Sample	297	EMSL04	2/1/2009	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	1	6.6E-06	5.0E+07	57	2,800	10	499
I	Duff	SL315-02	P1-00218	10/11/2007	Field Sample	252	EMSL04	12/30/2008	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	2	1.7E-05	1.2E+07	65	750	5	58
I	Duff	SL15-02	P1-00220	10/11/2007	Field Sample	350	EMSL04	1/25/2009	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	1	6.3E-06	4.5E+07	50	2,200	5	223
I	Duff	SL15-02	P1-00220	10/11/2007	Field Sample	350	EMSL04	8/1/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	6.3E-06	1.1E+07	92	1,015	25	276
I	Duff	SL15-02	P1-00220	10/11/2007	Field Sample	350	EMSL04	8/11/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	6.3E-06	1.1E+07	112	1,236	30	331
I	Duff	SL45-02	P1-00222	10/11/2007	Field Sample	323	EMSL27	4/1/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	2	5.3E-06	2.9E+07	105	3,100	19	558
I	Duff	SL45-02	P1-00222	10/11/2007	Field Sample	323	EMSL04	8/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	5.3E-06	1.4E+07	91	1,302	30	429
I	Duff	SL45-02	P1-00222	10/11/2007	Field Sample	323	EMSL04	8/8/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	5.3E-06	1.4E+07	97	1,388	36	515
I	Duff	SL15-03	P1-00224	10/11/2007	Field Sample	394	EMSL04	1/26/2009	TEM-ISO	Not QC	Indirect - Ashed	1276	0.013	2	1.1E-05	1.1E+07	69	790	10	114
I	Duff	SL45-03	P1-00226	10/11/2007	Field Sample	526	EMSL27	3/31/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	2	4.3E-06	2.2E+07	119	2,600	18	398
I	Duff	SL75-02	P1-00228	10/12/2007	Field Sample	311	EMSL27	4/8/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	6	2.7E-06	2.0E+07	50	1,000	14	281
I	Duff	SL75-03	P1-00230	10/12/2007	Field Sample	430	EMSL27	4/9/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	3	1.3E-06	5.7E+07	55	3,100	10	572
N&E-2012b	Duff	NE-18	NE-00080	10/8/2012	Field Sample	233	EMSL04	12/7/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	80	1.3E-05	4.0E+05	0	0	0	0
N&E-2012b	Duff	NE-20	NE-00088	10/8/2012	Field Sample	249	EMSL04	12/7/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	80	8.6E-06	5.7E+05	0	0	0	0
N&E-2012b	Duff	NE-23	NE-00092	10/8/2012	Field Sample	412	EMSL04	12/8/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	80	2.8E-06	1.1E+06	0	0	0	0
N&E-2012b	Duff	NE-22	NE-00094	10/8/2012	Field Sample	224	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	80	7.1E-06	7.8E+05	0	0	0	0
N&E-2012b	Duff	NE-36	NE-00096	10/9/2012	Field Sample	166	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2.5E-05	5.8E+06	0	0	0	0
N&E-2012b	Duff	NE-37	NE-00098	10/9/2012	Field Sample	124	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	6.4E-05	3.1E+06	0	0	0	0
N&E-2012b	Duff	NE-42	NE-00103	10/9/2012	Field Sample	193	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	5E-05	2.6E+06	0	0	0	0
N&E-2012b	Duff	NE-34	NE-00105	10/9/2012	Field Sample	249	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2.9E-05	3.4E+06	0	0	0	0
N&E-2012b	Duff	NE-43	NE-00107	10/9/2012	Field Sample	191	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	3.6E-05	3.6E+06	0	0	0	0
N&E-2012b	Duff	NE-35	NE-00109	10/9/2012	Field Sample	208	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	5.9E-05	2.0E+06	0	0	0	0
N&E-2012b	Duff	NE-14	NE-00116	10/10/2012	Field Sample	303	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	10	4.6E-06	7.1E+06	0	0	0	0
N&E-2012b	Duff	NE-29	NE-00118	10/10/2012	Field Sample	161	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	4.7E-05	3.3E+06	0	0	0	0
N&E-2012b	Duff	NE-28	NE-00120	10/10/2012	Field Sample	154	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	3.3E-05	4.8E+06	0	0	0	0
N&E-2012b	Duff	NE-46	NE-00124	10/10/2012	Field Sample	183	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	4.1E-05	3.2E+06	0	0	0	0
N&E-2012b	Duff	NE-39	NE-00126	10/10/2012	Field Sample	230	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2.1E-05	5.1E+06	0	0	0	0

Table E-1f: Summary of LAA Results for Duff Material
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Duff Mass (g, dw)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(g)^{-1}$	N Structures	Duff Conc. (Ms/g, dw)	N Structures	Duff Conc. (Ms/g, dw)
N&E-2012b	Duff	NE-38	NE-00128	10/10/2012	Field Sample	146	EMSL27	12/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	6.5E-05	2.6E+06	0	0	0	0
N&E-2012b	Duff	NE-27	NE-00130	10/11/2012	Field Sample	271	EMSL27	1/11/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1.5E-05	6.2E+06	0	0	0	0
N&E-2012b	Duff	NE-26	NE-00134	10/11/2012	Field Sample	162	EMSL27	1/11/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	3.4E-05	4.5E+06	1	4.5	1	4.5
N&E-2012b	Duff	NE-24	NE-00136	10/11/2012	Field Sample	253	EMSL27	1/11/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	5	7.9E-06	9.8E+06	0	0	0	0
N&E-2012b	Duff	NE-48	NE-00138	10/11/2012	Field Sample	272	EMSL27	1/14/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1.6E-05	5.7E+06	1	5.7	0	0
N&E-2012b	Duff	NE-1	NE-00140	10/12/2012	Field Sample	305	Hygeia	12/18/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	5	9.6E-06	8.8E+06	0	0	0	0
N&E-2012b	Duff	NE-5	NE-00142	10/12/2012	Field Sample	276	Hygeia	12/18/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	15	3.1E-06	1.0E+07	0	0	0	0
N&E-2012b	Duff	NE-7	NE-00146	10/12/2012	Field Sample	184	Hygeia	12/18/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	14	5.2E-06	9.6E+06	1	10	0	0
N&E-2012b	Duff	NE-41	NE-00148	10/12/2012	Field Sample	213	Hygeia	12/18/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	16	3.9E-06	9.7E+06	0	0	0	0
N&E-2012b	Duff	NE-33	NE-00150	10/15/2012	Field Sample	189	Hygeia	12/19/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	15	4.7E-06	9.7E+06	0	0	0	0
N&E-2012b	Duff	NE-44	NE-00152	10/15/2012	Field Sample	221	Hygeia	12/19/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	10	6.4E-06	9.1E+06	0	0	0	0
N&E-2012b	Duff	NE-32	NE-00154	10/15/2012	Field Sample	240	Hygeia	12/19/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	21	2.6E-06	9.8E+06	1	10	1	10
N&E-2012b	Duff	NE-31	NE-00156	10/15/2012	Field Sample	349	Hygeia	12/19/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	32	1.2E-06	9.7E+06	1	10	1	10
N&E-2012b	Duff	NE-30	NE-00158	10/15/2012	Field Sample	311	Hygeia	12/20/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	17	2.5E-06	9.7E+06	0	0	0	0
N&E-2012b	Duff	NE-45	NE-00160	10/15/2012	Field Sample	251	Hygeia	12/20/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	14	3.7E-06	9.9E+06	0	0	0	0
N&E-2012b	Duff	NE-8	NE-00202	10/18/2012	Field Sample	54	RESI	1/3/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	4	5E-04	1.2E+06	1	1.2	0	0
N&E-2012b	Duff	NE-50	NE-00204	10/11/2012	Field Sample	224	EMSL27	1/14/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2.1E-05	5.2E+06	0	0	0	0
N&E-2012b	Duff	NE-47	NE-00206	10/11/2012	Field Sample	371	EMSL27	1/14/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1.2E-05	5.7E+06	0	0	0	0
N&E-2012b	Duff	NE-19	NE-00208	10/11/2012	Field Sample	223	EMSL27	1/14/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2.2E-05	5.1E+06	4	20	2	10
N&E-2012b	Duff	NE-2	NE-00210	10/16/2012	Field Sample	129	RESI	1/9/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	9	3E-04	3.5E+05	0	0	0	0
N&E-2012b	Duff	NE-4	NE-00214	10/16/2012	Field Sample	48	RESI	1/15/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	14	4E-04	4.7E+05	3	1.4	0	0
N&E-2012b	Duff	NE-13	NE-00218	10/16/2012	Field Sample	30	RESI	1/23/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	11	3E-04	1.2E+06	0	0	0	0
N&E-2012b	Duff	NE-40	NE-00220	10/16/2012	Field Sample	40	RESI	1/24/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	10	2E-04	1.6E+06	0	0	0	0
N&E-2012b	Duff	NE-11	NE-00222	10/16/2012	Field Sample	36	RESI	1/24/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	10	6E-04	5.8E+05	4	2.3	0	0
N&E-2012b	Duff	NE-9	NE-00224	10/16/2012	Field Sample	34	RESI	1/24/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	11	2E-04	2.1E+06	1	2.1	0	0
N&E-2012b	Duff	NE-10	NE-00226	10/16/2012	Field Sample	21	RESI	1/25/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	9	8E-04	8.4E+05	18	15	0	0
N&E-2012b	Duff	NE-15	NE-00230	10/18/2012	Field Sample	44	RESI	1/3/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	8	1E-04	2.8E+06	2	5.7	1	2.8
N&E-2012b	Duff	NE-17	NE-00232	10/18/2012	Field Sample	23	RESI	1/3/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	4	4E-04	3.4E+06	6	20	0	0
N&E-2012b	Duff	NE-21	NE-00234	10/18/2012	Field Sample	23	RESI	1/3/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	9	2E-04	2.9E+06	3	8.8	0	0
N&E-2012b	Duff	NE-49	NE-00236	10/18/2012	Field Sample	45	RESI	1/4/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	10	2E-04	1.5E+06	1	1.5	0	0
N&E-2012b	Duff	NE-51	NE-00238	10/18/2012	Field Sample	20	RESI	1/4/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	9	8E-04	9.0E+05	6	5.4	0	0
N&E-2012b	Duff	NE-25	NE-00132	10/11/2012	Field Sample	183	EMSL27	1/11/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	3E-05	4.1E+06	0	0	0	0
N&E-2012b	Duff	NE-25	NE-00132	10/11/2012	Field Sample	183	EMSL27	5/8/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	6	3E-05	2.8E+06	0	0	0	0
N&E-2012b	Duff	NE-25	NE-00132	10/11/2012	Field Sample	183	EMSL27	5/10/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	6	3E-05	2.8E+06	0	0	0	0
N&E-2012b	Duff	NE-6	NE-00144	10/12/2012	Field Sample	203	Hygeia	12/18/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	20	3E-06	9.9E+06	1	9.9	0	0
N&E-2012b	Duff	NE-6	NE-00144	10/12/2012	Field Sample	203	Hygeia	5/13/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	20	3E-06	9.9E+06	1	9.9	0	0
N&E-2012b	Duff	NE-6	NE-00144	10/12/2012	Field Sample	203	Hygeia	5/13/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	20	3E-06	9.9E+06	1	9.9	0	0
N&E-2012b	Duff	NE-3	NE-00212	10/16/2012	Field Sample	78	RESI	1/9/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	10	5E-04	3.2E+05	1	0.32	0	0
N&E-2012b	Duff	NE-3	NE-00212	10/16/2012	Field Sample	365	RESI	6/18/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	16	5E-05	4.3E+05	1	0.43	0	0
N&E-2012b	Duff	NE-3	NE-00212	10/16/2012	Field Sample	365	RESI	6/18/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	16	5E-05	4.7E+05	0	0	0	0
N&E-2012b	Duff	NE-12	NE-00216	10/16/2012	Field Sample	75	RESI	1/15/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	10	3E-04	4.8E+05	6	2.9	1	0.48
N&E-2012b	Duff	NE-12	NE-00216	10/16/2012	Field Sample	175	RESI	6/10/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	14	3E-05	2.0E+06	1	2.0	1	2.0
N&E-2012b	Duff	NE-12	NE-00216	10/16/2012	Field Sample	175	RESI	6/10/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	17	2E-05	2.0E+06	0	0	0	0
N&E-2012b	Duff	NE-16	NE-00228	10/18/2012	Field Sample	14	RESI	1/3/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	4	6E-04	3.6E+06	7	25	1	3.6

Table E-1f: Summary of LAA Results for Duff Material
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Duff Mass (g, dw)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(g)^{-1}$	N Structures	Duff Conc. (Ms/g, dw)	N Structures	Duff Conc. (Ms/g, dw)
N&E-2012b	Duff	NE-16	NE-00228	10/18/2012	Field Sample	213	RESI	6/10/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	18	6E-05	5.4E+05	1	0.54	0	0
N&E-2012b	Duff	NE-16	NE-00228	10/18/2012	Field Sample	213	RESI	6/10/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	16	6E-05	6.1E+05	2	1.2	1	0.6
CONST	Duff	SG-DB1	LD-D0012	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						4	4.66	0	0
CONST	Duff	SG-DB3	LD-D0013	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						9	5.33	0	0
CONST	Duff	SG-DB4	LD-D0015	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						8	8.02	2	2.0
CONST	Duff	SG-DB5	LD-D0016	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						1	1.54	0	0
CONST	Duff	SG-DB6	LD-D0017	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						7	20	2	5.7
CONST	Duff	SG-DB7	LD-D0018	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						6	8.87	2	3.0
SP-2015	Duff	SP15-Duff1	SB-00007	5/12/2015	Field Sample	65	EMSL04	6/8/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	4	1E-04	3.0E+06	4	12	0	0
SP-2015	Duff	SP15-Duff2	SB-00008	5/12/2015	Field Sample	65	EMSL04	6/8/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	8	2E-05	8.8E+06	17	150	7	62
SP-2015	Duff	SP15-Duff3	SB-00009	5/12/2015	Field Sample	81	EMSL04	6/8/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	6	2E-05	9.2E+06	9	83	1	9.2
SP-2015	Duff	SP15-Duff4	SB-00010	5/12/2015	Field Sample	76	EMSL04	6/9/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	4	4E-05	9.6E+06	11	106	2	19
SP-2015	Duff	SP15-Duff5	SB-00011	5/12/2015	Field Sample	96	EMSL04	6/10/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	4	5E-05	5.8E+06	46	269	10	58
UB-2015	Duff	B15-Duff1	UB-00004	5/26/2015	Field Sample	52	EMSL04	6/23/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	4	1E-04	4.8E+06	5	24	0	0
UB-2015	Duff	B15-Duff2	UB-00005	5/26/2015	Field Sample	88	EMSL04	6/24/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	8	2E-05	9.7E+06	14	135	5	48
UB-2015	Duff	B15-Duff3	UB-00006	5/26/2015	Field Sample	62	EMSL04	6/24/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	4	7E-05	6.4E+06	6	39	1	6.4
UB-2015	Duff	B15-Duff4	UB-00007	5/26/2015	Field Sample	62	EMSL04	6/24/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	4	7E-05	5.8E+06	1	5.8	1	5.8
UB-2015	Duff	B15-Duff5	UB-00008	5/26/2015	Field Sample	53	EMSL04	6/25/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	5	4E-05	9.1E+06	6	54	1	9.1
WFM-2015	Duff	LSF-12-1	SM-30165	9/3/2015	Field Sample	249	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	5	1E-05	8.8E+06	0	0	0	0
WFM-2015	Duff	LSF-12-1	SM-30165	9/3/2015	Field Sample	249	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	5	1E-05	8.7E+06	0	0	0	0
WFM-2015	Duff	LSF-12-1	SM-30165	9/3/2015	Field Sample	249	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	5	1E-05	8.9E+06	0	0	0	0
WFM-2015	Duff	LSF-12-2	SM-30169	9/3/2015	Field Sample	264	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	4	1E-05	9.8E+06	1	9.8	0	0
WFM-2015	Duff	LSF-12-2	SM-30169	9/3/2015	Field Sample	264	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	4	1E-05	9.9E+06	0	0	0	0
WFM-2015	Duff	LSF-12-2	SM-30169	9/3/2015	Field Sample	264	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	4	1E-05	9.7E+06	1	9.7	0	0
WFM-2015	Duff	LSF-13-2	SM-30145	9/2/2015	Field Sample	625	EMSL45	10/14/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	15	1E-06	9.5E+06	0	0	0	0
WFM-2015	Duff	LSF-13-2	SM-30145	9/2/2015	Field Sample	625	EMSL45	10/14/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	16	1E-06	9.6E+06	0	0	0	0
WFM-2015	Duff	LSF-13-2	SM-30145	9/2/2015	Field Sample	625	EMSL45	10/14/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	15	1E-06	9.7E+06	0	0	0	0
WFM-2015	Duff	LSF-13-3	SM-30149	9/2/2015	Field Sample	441	EMSL45	10/14/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	8	4E-06	9.1E+06	0	0	0	0
WFM-2015	Duff	LSF-13-3	SM-30149	9/2/2015	Field Sample	441	EMSL45	10/14/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	8	4E-06	9.6E+06	0	0	0	0
WFM-2015	Duff	LSF-13-3	SM-30149	9/2/2015	Field Sample	441	EMSL45	10/14/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	8	4E-06	9.9E+06	0	0	0	0
WFM-2015	Duff	LSF-13-6	SM-30157	9/3/2015	Field Sample	845	EMSL45	10/20/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	15	1E-06	9.5E+06	0	0	0	0
WFM-2015	Duff	LSF-13-6	SM-30157	9/3/2015	Field Sample	845	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	14	1E-06	1.0E+07	0	0	0	0
WFM-2015	Duff	LSF-13-6	SM-30157	9/3/2015	Field Sample	845	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	14	1E-06	1.0E+07	1	10	0	0
WFM-2015	Duff	LSF-13-7	SM-30161	9/3/2015	Field Sample	267	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	6	9E-06	9.0E+06	0	0	0	0
WFM-2015	Duff	LSF-13-7	SM-30161	9/3/2015	Field Sample	267	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	6	9E-06	9.1E+06	0	0	0	0
WFM-2015	Duff	LSF-13-7	SM-30161	9/3/2015	Field Sample	267	EMSL45	10/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.0101	6	9E-06	9.2E+06	0	0	0	0

Notes:

* See Tables 4-1 and 4-2 for definitions of each Phase.

Conc. = concentration

Table E-1f: Summary of LAA Results for Duff Material
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Duff Mass (g, dw)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(g)^{-1}$	N Structures	Duff Conc. (Ms/g, dw)	N Structures	Duff Conc. (Ms/g, dw)

dw = dry weight
EFA = effective filter area
g = gram
GO = grid opening
ID = identification
ISO = International Organization for Standardization
LAA = Libby amphibole asbestos
mm = millimeter
Ms/g = million structures per gram
N = number of asbestos structures
PCME = phase contrast microscopy - equivalent
QC = quality control
TEM = transmission electron microscopy

Table E-1g: Summary of LAA Results for Tree Bark
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Sample Surface Area (cm^2)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($1/cm^2$)	N Structures	Surface Loading (Ms/cm^2)	N Structures	Surface Loading (Ms/cm^2)
CL-2012	Tree Bark	CL-A	CL-3-0002	8/7/2012	Field Sample	88.1	EMSL04	7/2/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1E-03	2.8E+05	54	15	10	2.8
CL-2012	Tree Bark	CL-A	CL-3-0002	8/7/2012	Field Sample	88.1	EMSL04	8/20/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	6	1E-03	1.8E+05	52	10	9	1.7
CL-2012	Tree Bark	CL-A	CL-3-0002	8/7/2012	Field Sample	88.1	EMSL04	6/27/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	5	1E-03	2.2E+05	56	12	8	1.8
CL-2012	Tree Bark	CL-B	CL-3-0004	8/7/2012	Field Sample	88.1	EMSL04	6/28/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1E-02	2.8E+04	10	0.28	0	0
CL-2012	Tree Bark	CL-B	CL-3-0004	8/7/2012	Field Sample	88.1	EMSL04	6/28/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1E-02	2.8E+04	22	0.61	4	0.11
CL-2012	Tree Bark	CL-B	CL-3-0004	8/7/2012	Field Sample	88.1	EMSL04	8/17/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	6	1E-02	1.8E+04	22	0.4	5	0.092
CL-2012	Tree Bark	CL-C	CL-3-0008	8/7/2012	Field Sample	87.0	EMSL04	6/29/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1E-02	2.8E+04	17	0.47	4	0.11
CL-2012	Tree Bark	CL-C	CL-3-0008	8/7/2012	Field Sample	87.0	EMSL04	6/30/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	5	1E-02	2.2E+04	28	0.63	8	0.18
CL-2012	Tree Bark	CL-C	CL-3-0008	8/7/2012	Field Sample	87.0	EMSL04	8/20/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	6	1E-02	1.9E+04	32	0.6	5	0.093
CL-2012	Tree Bark	CL-D	CL-3-0010	8/7/2012	Field Sample	88.1	EMSL04	6/30/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1E-02	2.8E+04	73	2	11	0.30
CL-2012	Tree Bark	CL-D	CL-3-0010	8/7/2012	Field Sample	88.1	EMSL04	7/1/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1E-02	2.8E+04	57	1.6	9	0.25
CL-2012	Tree Bark	CL-D	CL-3-0010	8/7/2012	Field Sample	88.1	EMSL04	8/17/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	6	1E-02	1.8E+04	39	0.72	4	0.073
CL-2012	Tree Bark	CL-E	CL-3-0012	8/7/2012	Field Sample	88.1	EMSL04	7/1/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1E-02	2.8E+04	53	1.5	8	0.22
CL-2012	Tree Bark	CL-E	CL-3-0012	8/7/2012	Field Sample	88.1	EMSL04	7/2/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	4	1E-02	2.8E+04	55	1.5	8	0.22
CL-2012	Tree Bark	CL-E	CL-3-0012	8/7/2012	Field Sample	88.1	EMSL04	8/20/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	6	1E-02	1.8E+04	48	0.88	14	0.26
CL-2014	Tree Bark	CL-F-1	CL-40002	8/25/2014	Field Sample	13.3	EMSL04	9/17/2014	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	76	4E-04	4.0E+04	0	0	0	0
CL-2014	Tree Bark	CL-F-2	CL-40003	8/25/2014	Field Sample	13.3	EMSL04	9/18/2014	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	76	3E-04	5.4E+04	1	0.054	1	0.054
CL-2014	Tree Bark	CL-F-3	CL-40006	8/25/2014	Field Sample	13.3	EMSL04	9/18/2014	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	76	1E-04	1.2E+05	0	0	0	0
CL-2014	Tree Bark	CL-F-4	CL-40008	8/25/2014	Field Sample	13.3	EMSL04	9/19/2014	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	76	6E-04	2.5E+04	1	0.025	1	0.025
CL-2014	Tree Bark	CL-F-5	CL-40010	8/25/2014	Field Sample	13.3	EMSL04	9/18/2014	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.0132	76	9E-05	1.6E+05	0	0	0	0
I	Tree Bark	SL45-13	P1-00031	10/2/2007	Field Sample	16.3	EMSL04	12/5/2007	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	34	2E-02	9.7E+03	8	0.078	2	0.019
I	Tree Bark	SL45-14	P1-00033	10/2/2007	Field Sample	16.3	EMSL04	12/5/2007	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	34	2E-02	9.7E+03	1	0.01	0	0
I	Tree Bark	SL45-11	P1-00035	10/3/2007	Field Sample	16.3	EMSL19	1/7/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	34	2E-02	9.7E+03	33	0.32	14	0.14
I	Tree Bark	SL45-10	P1-00037	10/3/2007	Field Sample	16.3	EMSL04	12/5/2007	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	34	2E-02	9.7E+03	0	0	0	0
I	Tree Bark	SL45-07	P1-00039	10/3/2007	Field Sample	16.3	EMSL19	1/11/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	6	1E-02	1.1E+05	51	5.6	12	1.3
I	Tree Bark	SL45-07	P1-00039	10/3/2007	Field Sample	16.3	EMSL27	7/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	7	1E-02	8.7E+04	54	4.7	20	1.7
I	Tree Bark	SL45-07	P1-00039	10/3/2007	Field Sample	16.3	EMSL27	7/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	11	1E-02	5.6E+04	52	2.9	17	0.94
I	Tree Bark	SL15-16	P1-00041	10/2/2007	Field Sample	16.3	EMSL19	1/3/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	14	5E-02	9.5E+03	0	0	0	0
I	Tree Bark	SL15-14	P1-00043	10/2/2007	Field Sample	16.3	EMSL19	1/3/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	14	5E-02	9.5E+03	0	0	0	0
I	Tree Bark	SL15-12	P1-00045	10/3/2007	Field Sample	16.3	EMSL19	1/8/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	34	2E-02	9.7E+03	0	0	0	0
I	Tree Bark	SL45-16	P1-00051	10/2/2007	Field Sample	16.3	EMSL19	1/4/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	14	5E-02	9.5E+03	0	0	0	0
I	Tree Bark	SL45-16	P1-00051	10/2/2007	Field Sample	16.3	EMSL27	7/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	12	5E-02	1.0E+04	1	0.01	1	0.010
I	Tree Bark	SL45-16	P1-00051	10/2/2007	Field Sample	16.3	EMSL27	7/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	12	5E-02	1.0E+04	0	0	0	0
I	Tree Bark	SL45-15	P1-00053	10/2/2007	Field Sample	16.3	EMSL19	1/4/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	14	5E-02	9.5E+03	3	0.028	2	0.019
I	Tree Bark	SL45-15	P1-00053	10/2/2007	Field Sample	16.3	EMSL27	7/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	12	5E-02	1.0E+04	0	0	0	0
I	Tree Bark	SL45-15	P1-00053	10/2/2007	Field Sample	16.3	EMSL27	7/23/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	12	5E-02	1.0E+04	0	0	0	0
I	Tree Bark	SL15-13	P1-00057	10/2/2007	Field Sample	16.3	EMSL19	1/4/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	14	5E-02	9.5E+03	0	0	0	0
I	Tree Bark	SL45-12	P1-00058	10/3/2007	Field Sample	16.3	EMSL19	1/10/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	14	5E-02	9.5E+03	85	0.8	12	0.11

Table E-1g: Summary of LAA Results for Tree Bark
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Sample Surface Area (cm^2)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($1/cm^2$)	N Structures	Surface Loading (Ms/cm^2)	N Structures	Surface Loading (Ms/cm^2)
I	Tree Bark	SL45-09	P1-00060	10/3/2007	Field Sample	16.3	EMSL19	1/11/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	14	5E-02	9.5E+03	32	0.3	9	0.085
I	Tree Bark	SL15-15	P1-00061	10/2/2007	Field Sample	16.3	EMSL19	1/8/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	100	5E-03	1.3E+04	0	0	0	0
I	Tree Bark	SL15-11	P1-00063	10/3/2007	Field Sample	16.3	EMSL19	1/18/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	14	5E-02	9.5E+03	0	0	0	0
I	Tree Bark	SL75-14	P1-00065	10/3/2007	Field Sample	16.3	EMSL19	2/14/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	14	5E-02	8.7E+03	13	0.11	3	0.026
I	Tree Bark	SL15-10	P1-00067	10/4/2007	Field Sample	16.3	EMSL19	2/25/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	34	2E-02	9.0E+03	4	0.036	2	0.018
I	Tree Bark	SL45-05	P1-00071	10/4/2007	Field Sample	16.3	EMSL19	1/22/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	24	5E-02	5.1E+03	8	0.041	1	0.0051
I	Tree Bark	SL135-04	P1-00075	10/4/2007	Field Sample	16.3	EMSL19	3/5/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	15	5E-03	8.1E+04	52	4.2	5	0.41
I	Tree Bark	SL135-07	P1-00079	10/4/2007	Field Sample	16.3	EMSL19	3/12/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	68	1E-02	9.0E+03	13	0.12	2	0.018
I	Tree Bark	SL45-08	P1-00082	10/3/2007	Field Sample	16.3	EMSL19	1/17/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.012	13	5E-02	1.0E+04	54	0.55	18	0.18
I	Tree Bark	SL45-08	P1-00082	10/3/2007	Field Sample	16.3	EMSL27	7/23/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	12	5E-02	1.0E+04	39	0.40	17	0.17
I	Tree Bark	SL45-08	P1-00082	10/3/2007	Field Sample	16.3	EMSL27	7/24/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	12	5E-02	1.0E+04	44	0.45	11	0.11
I	Tree Bark	SL45-06	P1-00084	10/4/2007	Field Sample	16.3	EMSL19	2/1/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	9	2E-02	3.4E+04	50	1.7	16	0.54
I	Tree Bark	SL135-05	P1-00086	10/4/2007	Field Sample	16.3	EMSL19	3/3/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	34	2E-02	9.0E+03	33	0.3	10	0.090
I	Tree Bark	SL135-06	P1-00088	10/4/2007	Field Sample	16.3	EMSL19	3/13/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	26	5E-03	4.7E+04	51	2.4	19	0.89
I	Tree Bark	SL15-04	P1-00090	10/5/2007	Field Sample	16.3	EMSL04	3/13/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	1	2E-02	3.1E+05	53	16	16	4.9
I	Tree Bark	SL75-13	P1-00091	10/3/2007	Field Sample	16.3	EMSL19	3/26/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	34	2E-02	9.0E+03	6	0.054	3	0.027
I	Tree Bark	SL15-08	P1-00095	10/4/2007	Field Sample	16.3	EMSL19	2/25/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	34	2E-02	9.0E+03	16	0.14	6	0.054
I	Tree Bark	SL15-07	P1-00097	10/4/2007	Field Sample	16.3	EMSL19	3/3/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	19	1E-02	3.2E+04	50	1.6	9	0.29
I	Tree Bark	SL15-05	P1-00099	10/5/2007	Field Sample	16.3	EMSL04	3/5/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	6	5E-02	2.0E+04	51	1	9	0.18
I	Tree Bark	SL75-15	P1-00101	10/5/2007	Field Sample	16.3	EMSL04	3/6/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	7	1E-01	8.7E+03	30	0.26	4	0.035
I	Tree Bark	SL195-07	P1-00105	10/5/2007	Field Sample	16.3	EMSL04	3/3/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	4	2E-01	7.6E+03	8	0.061	2	0.015
I	Tree Bark	SL75-05	P1-00107	10/6/2007	Field Sample	16.3	EMSL04	3/27/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	2	5E-02	6.1E+04	66	4	13	0.79
I	Tree Bark	SL75-06	P1-00109	10/6/2007	Field Sample	16.3	EMSL04	3/25/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	4	2E-02	7.6E+04	57	4.4	11	0.84
I	Tree Bark	SL195-11	P1-00111	10/7/2007	Field Sample	16.3	EMSL27	2/18/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	29	2E-02	1.1E+04	50	0.53	8	0.084
I	Tree Bark	SL195-06	P1-00113	10/8/2007	Field Sample	16.3	EMSL27	2/13/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	8	5E-02	1.5E+04	51	0.78	15	0.23
I	Tree Bark	SL15-06	P1-00121	10/5/2007	Field Sample	16.3	EMSL04	2/25/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	4	5E-02	3.1E+04	53	1.6	7	0.21
I	Tree Bark	SL15-09	P1-00123	10/4/2007	Field Sample	16.3	EMSL19	3/24/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	34	2E-02	9.0E+03	10	0.09	6	0.054
I	Tree Bark	SL75-09	P1-00127	10/5/2007	Field Sample	16.3	EMSL04	2/28/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	13	5E-02	9.4E+03	36	0.34	11	0.10
I	Tree Bark	SL75-16	P1-00129	10/5/2007	Field Sample	16.3	EMSL04	2/28/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	13	5E-02	9.4E+03	9	0.085	0	0
I	Tree Bark	SL315-03	P1-00131	10/7/2007	Field Sample	16.3	EMSL27	2/7/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	3	1E-01	2.0E+04	65	1.3	15	0.31
I	Tree Bark	SL195-04	P1-00133	10/8/2007	Field Sample	16.3	EMSL27	2/20/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	7	1E-01	8.7E+03	2	0.018	1	0.0087
I	Tree Bark	SL195-03	P1-00135	10/8/2007	Field Sample	16.3	EMSL27	2/19/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	3	5E-02	4.1E+04	54	2.2	19	0.77
I	Tree Bark	SL135-02	P1-00137	10/12/2007	Field Sample	17.1	EMSL27	3/3/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	1	5E-02	1.2E+05	64	7.4	15	1.7
I	Tree Bark	SL135-01	P1-00139	10/12/2007	Field Sample	16.3	EMSL27	3/6/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	1	1E-01	6.1E+04	127	7.8	35	2.1
I	Tree Bark	SL45-04	P1-00142	10/5/2007	Field Sample	16.3	EMSL04	2/4/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	2	5E-02	6.1E+04	62	3.8	21	1.3
I	Tree Bark	SL315-06	P1-00144	10/6/2007	Field Sample	16.3	EMSL04	4/2/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	10	2E-02	3.1E+04	50	1.5	7	0.21
I	Tree Bark	SL315-07	P1-00146	10/6/2007	Field Sample	16.3	EMSL04	3/31/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	7	1E-01	8.7E+03	2	0.018	1	0.0087
I	Tree Bark	SL195-12	P1-00148	10/7/2007	Field Sample	16.3	EMSL04	4/2/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	7	1E-01	8.7E+03	3	0.026	2	0.017

Table E-1g: Summary of LAA Results for Tree Bark
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Sample Surface Area (cm^2)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($1/cm^2$)	N Structures	Surface Loading (Ms/cm^2)	N Structures	Surface Loading (Ms/cm^2)
I	Tree Bark	SL315-04	P1-00151	10/5/2007	Field Sample	16.3	EMSL04	2/8/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	12	5E-02	1.0E+04	58	0.59	15	0.15
I	Tree Bark	SL315-05	P1-00153	10/6/2007	Field Sample	16.3	EMSL04	3/10/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	13	5E-02	9.4E+03	23	0.22	4	0.038
I	Tree Bark	SL315-08	P1-00157	10/6/2007	Field Sample	16.3	EMSL04	3/28/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	14	5E-02	8.7E+03	5	0.044	3	0.026
I	Tree Bark	SL135-08	P1-00159	10/6/2007	Field Sample	16.3	EMSL04	3/13/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	13	5E-02	9.4E+03	19	0.18	2	0.019
I	Tree Bark	SL195-08	P1-00161	10/5/2007	Field Sample	16.3	EMSL04	2/8/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	13	5E-02	9.4E+03	17	0.16	4	0.038
I	Tree Bark	SL75-04	P1-00163	10/6/2007	Field Sample	16.3	EMSL04	3/10/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	7	1E-01	8.7E+03	44	0.38	7	0.061
I	Tree Bark	SL135-03	P1-00165	10/6/2007	Field Sample	16.3	EMSL04	4/8/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	3	2E-02	1.0E+05	53	5.4	8	0.81
I	Tree Bark	SL75-07	P1-00167	10/6/2007	Field Sample	16.3	EMSL04	3/7/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	14	5E-02	8.7E+03	6	0.052	2	0.017
I	Tree Bark	SL75-08	P1-00169	10/6/2007	Field Sample	16.3	EMSL04	3/12/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	14	5E-02	8.7E+03	28	0.24	12	0.10
I	Tree Bark	SL195-10	P1-00171	10/7/2007	Field Sample	16.3	EMSL27	2/15/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	7	1E-01	8.7E+03	35	0.31	12	0.10
I	Tree Bark	SL255-06	P1-00173	10/9/2007	Field Sample	17.2	EMSL27	3/10/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	2	2E-02	1.4E+05	61	8.8	13	1.9
I	Tree Bark	SL255-05	P1-00175	10/9/2007	Field Sample	17.0	EMSL27	3/10/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	6	1E-01	9.8E+03	51	0.5	8	0.078
I	Tree Bark	SL255-04	P1-00179	10/9/2007	Field Sample	17.2	EMSL27	3/13/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	1	5E-02	1.2E+05	57	6.6	12	1.4
I	Tree Bark	SL195-05	P1-00191	10/8/2007	Field Sample	16.3	EMSL27	2/14/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	7	5E-02	1.7E+04	55	1	21	0.37
I	Tree Bark	SL45-01	P1-00201	10/12/2007	Field Sample	16.5	EMSL27	2/29/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	2	5E-02	6.0E+04	70	4.2	7	0.42
I	Tree Bark	SL195-02	P1-00203	10/12/2007	Field Sample	17.6	EMSL27	3/5/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	1	5E-02	1.1E+05	50	5.7	13	1.5
I	Tree Bark	SL255-03	P1-00211	10/9/2007	Field Sample	17.3	EMSL27	2/28/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	7	1E-01	8.2E+03	25	0.21	7	0.058
I	Tree Bark	SL255-02	P1-00213	10/11/2007	Field Sample	16.7	EMSL27	2/27/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	1	1E-01	6.0E+04	53	3.2	7	0.42
I	Tree Bark	SL315-01	P1-00215	10/11/2007	Field Sample	16.9	EMSL27	2/25/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	1	5E-02	1.2E+05	84	10	36	4.2
I	Tree Bark	SL315-02	P1-00217	10/11/2007	Field Sample	16.7	EMSL27	2/25/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	2	1E-01	3.0E+04	61	1.8	13	0.39
I	Tree Bark	SL15-02	P1-00219	10/11/2007	Field Sample	17.2	EMSL27	2/25/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	1	1E-01	5.8E+04	58	3.4	13	0.75
I	Tree Bark	SL15-02	P1-00219	10/11/2007	Field Sample	17.2	EMSL27	7/25/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	4	1E-01	1.4E+04	78	1.1	27	0.39
I	Tree Bark	SL15-02	P1-00219	10/11/2007	Field Sample	17.2	EMSL27	7/25/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	4	1E-01	1.4E+04	98	1.4	40	0.58
I	Tree Bark	SL45-02	P1-00221	10/11/2007	Field Sample	16.6	EMSL27	2/25/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	2	2E-01	1.5E+04	57	0.86	14	0.21
I	Tree Bark	SL45-02	P1-00221	10/11/2007	Field Sample	16.6	EMSL27	7/25/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	4	2E-01	7.5E+03	54	0.41	13	0.098
I	Tree Bark	SL45-02	P1-00221	10/11/2007	Field Sample	16.6	EMSL27	7/25/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	4	2E-01	7.4E+03	56	0.41	22	0.16
I	Tree Bark	SL15-03	P1-00223	10/11/2007	Field Sample	16.3	EMSL27	2/20/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	3	1E-01	2.0E+04	61	1.2	18	0.37
I	Tree Bark	SL45-03	P1-00225	10/11/2007	Field Sample	17.2	EMSL27	2/20/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	2	1E-01	2.9E+04	55	1.6	10	0.29
I	Tree Bark	SL75-02	P1-00227	10/12/2007	Field Sample	17.0	EMSL27	2/28/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	4	2E-01	7.3E+03	6	0.044	0	0
I	Tree Bark	SL75-03	P1-00229	10/12/2007	Field Sample	16.7	EMSL27	3/3/2008	TEM-ISO	Not QC	Indirect - Ashed	1295	0.013	1	5E-02	1.2E+05	108	13	26	3.1
IVA	Tree Bark	Slash Pile A	SP4-00787	9/15/2010	Field Sample	19.7	EMSL04	9/22/2010	TEM-ISO	Not QC	Indirect - Ashed	1282	0.0126	5	2E-02	5.2E+04	56	2.9	7	0.36
IVA	Tree Bark	Slash Pile A	SP4-00788	9/15/2010	Field Sample	19.5	EMSL04	9/24/2010	TEM-ISO	Not QC	Indirect - Ashed	1282	0.0126	5	2E-02	5.2E+04	55	2.9	9	0.47
IVA	Tree Bark	Slash Pile B	SP4-00795	9/15/2010	Field Sample	19.6	EMSL04	9/27/2010	TEM-ISO	Not QC	Indirect - Ashed	1282	0.0126	4	2E-02	6.5E+04	67	4.4	8	0.52
IVA	Tree Bark	Slash Pile B	SP4-00796	9/15/2010	Field Sample	18.2	EMSL04	9/28/2010	TEM-ISO	Not QC	Indirect - Ashed	1282	0.0126	2	2E-02	1.4E+05	58	8.1	7	0.98
N&E-2012b	Tree Bark	NE-18	NE-00079	10/8/2012	Field Sample	51.7	EMSL27	12/5/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.6E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-23	NE-00091	10/8/2012	Field Sample	50.2	EMSL27	12/5/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.8E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-22	NE-00093	10/8/2012	Field Sample	50.5	EMSL27	12/5/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1E-02	4.1E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-37	NE-00097	10/9/2012	Field Sample	52.4	EMSL27	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.2E+04	0	0	0	0

Table E-1g: Summary of LAA Results for Tree Bark
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Sample Surface Area (cm^2)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($1/cm^2$)	N Structures	Surface Loading (Ms/cm^2)	N Structures	Surface Loading (Ms/cm^2)
N&E-2012b	Tree Bark	NE-42	NE-00102	10/9/2012	Field Sample	50.8	EMSL27	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	3E-02	1.5E+04	4	0.059	2	0.030
N&E-2012b	Tree Bark	NE-34	NE-00104	10/9/2012	Field Sample	53.8	EMSL27	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1E-02	4.2E+04	1	0.042	0	0
N&E-2012b	Tree Bark	NE-43	NE-00106	10/9/2012	Field Sample	51.6	EMSL27	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.1E+04	2	0.042	0	0
N&E-2012b	Tree Bark	NE-35	NE-00108	10/9/2012	Field Sample	51.8	EMSL27	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	9E-03	5.1E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-29	NE-00117	10/10/2012	Field Sample	53.8	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	4E-02	1.1E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-28	NE-00119	10/10/2012	Field Sample	51.3	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	6E-02	7.7E+03	0	0	0	0
N&E-2012b	Tree Bark	NE-46	NE-00123	10/10/2012	Field Sample	51.7	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	4E-02	1.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-39	NE-00125	10/10/2012	Field Sample	51.5	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	4E-02	1.2E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-38	NE-00127	10/10/2012	Field Sample	51.6	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	3.1E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-27	NE-00129	10/11/2012	Field Sample	51.0	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.1E+04	2	0.042	1	0.021
N&E-2012b	Tree Bark	NE-25	NE-00131	10/11/2012	Field Sample	50.7	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	4E-02	1.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-26	NE-00133	10/11/2012	Field Sample	53.2	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	4E-02	1.2E+04	1	0.012	0	0
N&E-2012b	Tree Bark	NE-24	NE-00135	10/11/2012	Field Sample	50.9	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	4E-02	1.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-48	NE-00137	10/11/2012	Field Sample	51.8	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1E-02	3.7E+04	1	0.037	0	0
N&E-2012b	Tree Bark	NE-1	NE-00139	10/12/2012	Field Sample	51.3	Hygeia	12/31/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	6.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-5	NE-00141	10/12/2012	Field Sample	51.3	Hygeia	12/31/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	6.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-6	NE-00143	10/12/2012	Field Sample	51.3	Hygeia	12/31/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	27	1E-03	9.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-7	NE-00145	10/12/2012	Field Sample	51.3	Hygeia	12/31/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	27	1E-03	9.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-41	NE-00147	10/12/2012	Field Sample	51.3	Hygeia	12/31/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	27	1E-03	9.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-33	NE-00149	10/15/2012	Field Sample	51.3	Hygeia	1/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	6.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-44	NE-00151	10/15/2012	Field Sample	51.3	Hygeia	1/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	6.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-32	NE-00153	10/15/2012	Field Sample	51.3	Hygeia	1/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	6.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-31	NE-00155	10/15/2012	Field Sample	51.3	Hygeia	1/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	6.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-30	NE-00157	10/15/2012	Field Sample	51.3	Hygeia	1/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	6.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-45	NE-00159	10/15/2012	Field Sample	51.3	Hygeia	1/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	6.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-8	NE-00201	10/18/2012	Field Sample	17.1	RESI	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	11	1E-01	6.7E+03	1	0.0067	0	0
N&E-2012b	Tree Bark	NE-50	NE-00203	10/11/2012	Field Sample	53.9	EMSL27	12/12/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1E-02	3.4E+04	1	0.034	0	0
N&E-2012b	Tree Bark	NE-47	NE-00205	10/11/2012	Field Sample	53.1	EMSL27	12/12/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.7E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-19	NE-00207	10/11/2012	Field Sample	52.5	EMSL27	12/12/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1E-02	3.6E+04	1	0.036	0	0
N&E-2012b	Tree Bark	NE-2	NE-00209	10/16/2012	Field Sample	17.1	RESI	12/13/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	6	5E-02	2.4E+04	13	0.32	2	0.049
N&E-2012b	Tree Bark	NE-3	NE-00211	10/16/2012	Field Sample	17.1	RESI	12/19/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	11	5E-02	1.3E+04	2	0.027	0	0
N&E-2012b	Tree Bark	NE-4	NE-00213	10/16/2012	Field Sample	17.1	RESI	11/28/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	5	5E-02	2.9E+04	12	0.35	4	0.12
N&E-2012b	Tree Bark	NE-12	NE-00215	10/16/2012	Field Sample	17.1	RESI	12/19/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	11	5E-02	1.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-13	NE-00217	10/16/2012	Field Sample	17.1	RESI	12/13/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	11	1E-01	6.7E+03	1	0.0067	0	0
N&E-2012b	Tree Bark	NE-11	NE-00221	10/16/2012	Field Sample	17.1	RESI	12/21/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	4	5E-02	3.7E+04	27	0.99	6	0.22
N&E-2012b	Tree Bark	NE-10	NE-00225	10/16/2012	Field Sample	17.1	RESI	12/20/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	17	5E-03	8.6E+04	4	0.35	2	0.17
N&E-2012b	Tree Bark	NE-16	NE-00227	10/18/2012	Field Sample	17.1	RESI	12/12/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	11	5E-02	1.3E+04	6	0.080	1	0.013
N&E-2012b	Tree Bark	NE-15	NE-00229	10/18/2012	Field Sample	17.1	RESI	12/12/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	11	2E-01	4.5E+03	3	0.013	0	0

Table E-1g: Summary of LAA Results for Tree Bark
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Sample Surface Area (cm^2)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($1/cm^2$)	N Structures	Surface Loading (Ms/cm^2)	N Structures	Surface Loading (Ms/cm^2)
N&E-2012b	Tree Bark	NE-17	NE-00231	10/18/2012	Field Sample	17.1	RESI	11/29/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	11	5E-02	1.3E+04	13	0.17	4	0.053
N&E-2012b	Tree Bark	NE-21	NE-00233	10/18/2012	Field Sample	17.1	RESI	12/5/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	10	5E-02	1.5E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-49	NE-00235	10/18/2012	Field Sample	17.1	RESI	12/20/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	4	5E-02	3.7E+04	16	0.59	4	0.15
N&E-2012b	Tree Bark	NE-51	NE-00237	10/18/2012	Field Sample	17.1	RESI	12/22/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	11	2E-01	4.5E+03	1	0.0045	0	0
N&E-2012b	Tree Bark	NE-20	NE-00087	10/8/2012	Field Sample	52.7	EMSL27	12/5/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.3E+04	110	2.6	26	0.60
N&E-2012b	Tree Bark	NE-20	NE-00087	10/8/2012	Field Sample	52.7	EMSL27	5/9/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.3E+04	113	2.6	33	0.77
N&E-2012b	Tree Bark	NE-20	NE-00087	10/8/2012	Field Sample	52.7	EMSL27	5/13/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.3E+04	88	2.0	33	0.77
N&E-2012b	Tree Bark	NE-36	NE-00095	10/9/2012	Field Sample	51.9	EMSL27	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	9E-03	5.1E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-36	NE-00095	10/9/2012	Field Sample	51.9	EMSL27	5/8/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	6	9E-03	3.4E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-36	NE-00095	10/9/2012	Field Sample	51.9	EMSL27	5/13/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	6	9E-03	3.4E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-14	NE-00115	10/10/2012	Field Sample	51.6	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.8E+04	4	0.11	1	0.03
N&E-2012b	Tree Bark	NE-14	NE-00115	10/10/2012	Field Sample	51.6	EMSL27	5/9/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.8E+04	3	0.085	1	0.03
N&E-2012b	Tree Bark	NE-14	NE-00115	10/10/2012	Field Sample	51.6	EMSL27	5/13/2013	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	2.8E+04	3	0.085	0	0
N&E-2012b	Tree Bark	NE-40	NE-00219	10/16/2012	Field Sample	17.1	RESI	12/22/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	5	3E-02	4.9E+04	17	0.83	2	0.10
N&E-2012b	Tree Bark	NE-40	NE-00219	10/16/2012	Field Sample	17.1	RESI	5/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	11	1E-01	6.7E+03	2	0.013	0	0
N&E-2012b	Tree Bark	NE-40	NE-00219	10/16/2012	Field Sample	17.1	RESI	5/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	8	1E-02	9.2E+04	8	0.73	5	0.46
N&E-2012b	Tree Bark	NE-9	NE-00223	10/16/2012	Field Sample	17.1	RESI	12/21/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	10	5E-02	1.5E+04	2	0.029	0	0
N&E-2012b	Tree Bark	NE-9	NE-00223	10/16/2012	Field Sample	17.1	RESI	5/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	11	5E-02	1.3E+04	0	0	0	0
N&E-2012b	Tree Bark	NE-9	NE-00223	10/16/2012	Field Sample	17.1	RESI	5/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	11	5E-02	1.3E+04	0	0	0	0
CONST	Tree Bark	SG-DB2	LD-B0019	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						9	0.0912	3	0.030
CONST	Tree Bark	SG-DB3	LD-B0021	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						21	0.167	3	0.024
CONST	Tree Bark	SG-DB4	LD-B0022	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						8	0.0586	1	0.0073
CONST	Tree Bark	SG-DB5	LD-B0023	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						4	0.0217	0	0
CONST	Tree Bark	SG-DB6	LD-B0024	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						11	0.199	1	0.018
CONST	Tree Bark	SG-DB7	LD-80025	6/13/2013	Field Sample		REI		TEM-ISO	NOT QC	Indirect - Ashed						25	0.155	6	0.037
SP-2015	Tree Bark	SP15-TBark1	SB-00001	5/12/2015	Field Sample	39.9	EMSL04	5/28/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	4	1E-02	6.5E+04	29	1.9	3	0.19
SP-2015	Tree Bark	SP15-TBark2	SB-00002	5/12/2015	Field Sample	53.2	EMSL04	5/29/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	4	5E-03	9.7E+04	56	5.5	8	0.78
SP-2015	Tree Bark	SP15-TBark3	SB-00003	5/12/2015	Field Sample	53.2	EMSL04	6/1/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	4	5E-03	9.7E+04	48	4.7	7	0.68
UB-2015	Tree Bark	B15-B1-T1	UB-00012	5/26/2015	Field Sample	39.7	EMSL04	6/24/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	4	1E-02	6.6E+04	0	0	0	0
UB-2015	Tree Bark	B15-B2-T1	UB-00013	5/26/2015	Field Sample	39.9	EMSL04	6/24/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	4	1E-02	6.6E+04	1	0.066	1	0.066
UB-2015	Tree Bark	B15-B3-T1	UB-00014	5/26/2015	Field Sample	39.9	EMSL04	6/24/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	4	5E-02	1.3E+04	2	0.026	0	0
UB-2015	Tree Bark	B15-B4-T1	UB-00015	5/26/2015	Field Sample	20.0	EMSL04	6/25/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0129	11	5E-03	9.6E+04	7	0.67	0	0
WSA	Tree Bark	WA-Near	WA-00005	11/6/2012	Field Sample	17.1	RESI	12/27/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	15	5E-03	9.8E+04	28	2.7	12	1.2
WSA	Tree Bark	WA-Near	WA-00005	11/6/2012	Field Sample	17.1	RESI	1/25/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	2	1E-02	3.7E+05	50	18	9	3.3
WSA	Tree Bark	WA-Near	WA-00005	11/6/2012	Field Sample	17.1	RESI	1/27/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	2	1E-02	3.7E+05	87	32	9	3.3
WSA	Tree Bark	WA-Near	WA-00026	11/8/2012	Field Sample	83.3	EMSL27	12/13/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	4E-02	7.5E+03	0	0	0	0
WSA	Tree Bark	WA-Near	WA-00026	11/8/2012	Field Sample	83.3	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	3E-02	9.8E+03	0	0	0	0
WSA	Tree Bark	WA-Near	WA-00026	11/8/2012	Field Sample	83.3	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	2E-02	1.6E+04	0	0	0	0
WSA	Tree Bark	WA-Near	WA-00050	11/12/2012	Field Sample	85.5	Hygeia	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	16	1E-03	9.5E+04	6	0.57	3	0.28
WSA	Tree Bark	WA-Near	WA-00050	11/12/2012	Field Sample	85.5	Hygeia	12/7/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	16	1E-03	9.5E+04	4	0.38	1	0.095

Table E-1g: Summary of LAA Results for Tree Bark
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Sample Surface Area (cm^2)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($1/cm^2$)	N Structures	Surface Loading (Ms/cm^2)	N Structures	Surface Loading (Ms/cm^2)
WSA	Tree Bark	WA-Near	WA-00050	11/12/2012	Field Sample	85.5	Hygeia	12/7/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	16	1E-03	9.5E+04	6	0.57	1	0.095
WSA	Tree Bark	WA-FC	WA-00004	11/6/2012	Field Sample	17.1	RESI	12/28/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	5	2E-02	9.8E+04	1	0.098	0	0
WSA	Tree Bark	WA-FC	WA-00004	11/6/2012	Field Sample	17.1	RESI	1/9/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	4	2E-01	1.2E+04	43	0.53	9	0.11
WSA	Tree Bark	WA-FC	WA-00004	11/6/2012	Field Sample	17.1	RESI	1/20/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	4	2E-01	1.2E+04	3	0.037	0	0
WSA	Tree Bark	WA-FC	WA-00025	11/8/2012	Field Sample	82.9	EMSL27	12/13/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	3E-02	1.1E+04	1	0.011	0	0
WSA	Tree Bark	WA-FC	WA-00025	11/8/2012	Field Sample	82.9	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	3E-02	1.1E+04	0	0	0	0
WSA	Tree Bark	WA-FC	WA-00025	11/8/2012	Field Sample	82.9	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	3E-02	1.1E+04	1	0.011	1	0.011
WSA	Tree Bark	WA-FC	WA-00049	11/12/2012	Field Sample	85.5	Hygeia	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	3.8E+04	0	0	0	0
WSA	Tree Bark	WA-FC	WA-00049	11/12/2012	Field Sample	85.5	Hygeia	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	3.8E+04	0	0	0	0
WSA	Tree Bark	WA-FC	WA-00049	11/12/2012	Field Sample	85.5	Hygeia	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	3.8E+04	0	0	0	0
WSA	Tree Bark	WA-BC	WA-00003	11/6/2012	Field Sample	17.1	RESI	12/28/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	8	1E-02	9.2E+04	0	0	0	0
WSA	Tree Bark	WA-BC	WA-00003	11/6/2012	Field Sample	17.1	RESI	1/9/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	11	1E-01	6.7E+03	0	0	0	0
WSA	Tree Bark	WA-BC	WA-00003	11/6/2012	Field Sample	17.1	RESI	1/9/2013	TEM-ISO	NOT QC	Indirect - Ashed	1257	0.01	10	1E-01	7.3E+03	4	0.029	1	0.0073
WSA	Tree Bark	WA-BC	WA-00024	11/8/2012	Field Sample	83.6	EMSL27	12/13/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1E-02	2.5E+04	0	0	0	0
WSA	Tree Bark	WA-BC	WA-00024	11/8/2012	Field Sample	83.6	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1E-02	2.5E+04	0	0	0	0
WSA	Tree Bark	WA-BC	WA-00024	11/8/2012	Field Sample	83.6	EMSL27	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1282	0.013	4	1E-02	2.5E+04	2	0.050	1	0.025
WSA	Tree Bark	WA-BC	WA-00048	11/12/2012	Field Sample	85.5	Hygeia	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	3.8E+04	0	0	0	0
WSA	Tree Bark	WA-BC	WA-00048	11/12/2012	Field Sample	85.5	Hygeia	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	3.8E+04	0	0	0	0
WSA	Tree Bark	WA-BC	WA-00048	11/12/2012	Field Sample	85.5	Hygeia	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	4	1E-02	3.8E+04	0	0	0	0

Notes:

* See Tables 4-1 and 4-2 for definitions of each Phase.

ID = identification
ISO = International Organization for Standardization
N = number of asbestos structures
cm^2 = square centimeter
LAA = Libby amphibole asbestos
PCME = phase contrast microscopy - equivalent
EFA = effective filter area
mm = millimeter
QC = quality control
GO = grid opening
Ms/cm^2 = million structures per square centimeter
TEM = transmission electron microscopy

Table E-1h: Summary of LAA Results for Ash
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Ash Mass (g, dw)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(g)^{-1}$	N Structures	Ash Conc. (Ms/g)	N Structures	Ash Conc. (Ms/g)
FIRE	Ash	Souse Gulch	SM-20001	8/1/2013	Field Sample	0.26	EMSL04	11/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1280	0.0132	11	3E-03	1.1E+07	4	45	3	34
FIRE	Ash	Souse Gulch	SM-20001	8/1/2013	Field Sample	0.24	EMSL04	11/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1280	0.0132	12	3E-03	1.1E+07	3	34	1	11
FIRE	Ash	Souse Gulch	SM-20001	8/1/2013	Field Sample	0.25	EMSL04	11/22/2013	TEM-ISO	NOT QC	Indirect - Ashed	1280	0.0132	12	3E-03	1.1E+07	7	75	0	0
FIRE	Ash	Souse Gulch	SM-20002	8/1/2013	Field Sample	0.26	EMSL04	11/25/2013	TEM-ISO	NOT QC	Indirect - Ashed	1280	0.0132	11	3E-03	1.1E+07	5	57	2	23
FIRE	Ash	Souse Gulch	SM-20002	8/1/2013	Field Sample	0.26	EMSL04	11/26/2013	TEM-ISO	NOT QC	Indirect - Ashed	1280	0.0132	11	3E-03	1.1E+07	8	90	2	23
FIRE	Ash	Souse Gulch	SM-20002	8/1/2013	Field Sample	0.26	EMSL04	11/27/2013	TEM-ISO	NOT QC	Indirect - Ashed	1280	0.0132	11	3E-03	1.1E+07	7	79	3	34
FIRE	Ash	Souse Gulch	SM-20003	8/1/2013	Field Sample	0.25	EMSL04	12/2/2013	TEM-ISO	NOT QC	Indirect - Ashed	1280	0.0132	12	3E-03	1.1E+07	4	43	2	22
FIRE	Ash	Souse Gulch	SM-20003	8/1/2013	Field Sample	0.26	EMSL04	12/3/2013	TEM-ISO	NOT QC	Indirect - Ashed	1280	0.0132	11	3E-03	1.1E+07	5	57	2	23
FIRE	Ash	Souse Gulch	SM-20003	8/1/2013	Field Sample	0.26	EMSL04	12/4/2013	TEM-ISO	NOT QC	Indirect - Ashed	1280	0.0132	11	3E-03	1.1E+07	7	79	2	23
SP-2015	Ash	SP15-Ash1	SB-00132	5/14/2015	Field Sample	0.26	EMSL04	6/12/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	4	1E-03	1.0E+08	31	3,092	6	599
SP-2015	Ash	SP15-Ash1	SB-00132	5/14/2015	Field Sample	0.26	EMSL04	6/17/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	4	1E-03	1.0E+08	34	3,392	7	698
SP-2015	Ash	SP15-Ash1	SB-00132	5/14/2015	Field Sample	0.26	EMSL04	6/10/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	4	1E-03	1.0E+08	26	2,594	6	599
SP-2015	Ash	SP15-Ash2	SB-00133	5/14/2015	Field Sample	0.26	EMSL04	6/10/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	4	3E-03	3.3E+07	52	1,729	15	499
SP-2015	Ash	SP15-Ash2	SB-00133	5/14/2015	Field Sample	0.25	EMSL04	6/11/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	5	1E-03	8.3E+07	27	2,241	5	415
SP-2015	Ash	SP15-Ash2	SB-00133	5/14/2015	Field Sample	0.25	EMSL04	6/18/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	6	1E-03	6.9E+07	29	2,006	1	69
SP-2015	Ash	SP15-Ash3	SB-00134	5/14/2015	Field Sample	0.26	EMSL04	6/12/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	4	1E-03	1.0E+08	25	2,494	1	100
SP-2015	Ash	SP15-Ash3	SB-00134	5/14/2015	Field Sample	0.25	EMSL04	6/14/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	5	1E-03	8.3E+07	26	2,158	8	664
SP-2015	Ash	SP15-Ash3	SB-00134	5/14/2015	Field Sample	0.26	EMSL04	6/16/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.0131	4	1E-03	1.0E+08	33	3,292	7	698
UB-2015	Ash	B15-Ash1	UB-00125	6/22/2015	Field Sample	0.25	EMSL04	7/17/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.013	11	1E-03	3.8E+07	27	1,026	9	342
UB-2015	Ash	B15-Ash1	UB-00125	6/22/2015	Field Sample	0.26	EMSL04	7/17/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.013	5	3E-03	2.7E+07	27	724	6	161
UB-2015	Ash	B15-Ash1	UB-00125	6/22/2015	Field Sample	0.26	EMSL04	7/20/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.013	4	3E-03	3.4E+07	25	838	2	67
UB-2015	Ash	B15-Ash2	UB-00126	6/22/2015	Field Sample	0.26	EMSL04	7/20/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.013	10	3E-03	1.3E+07	27	362	4	54
UB-2015	Ash	B15-Ash2	UB-00126	6/22/2015	Field Sample	0.25	EMSL04	7/20/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.013	6	1E-03	7.0E+07	25	1,742	6	418
UB-2015	Ash	B15-Ash2	UB-00126	6/22/2015	Field Sample	0.25	EMSL04	7/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.013	5	3E-03	2.8E+07	26	725	6	167
UB-2015	Ash	B15-Ash3	UB-00127	6/22/2015	Field Sample	0.26	EMSL04	7/21/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.013	6	3E-03	2.2E+07	30	670	8	179
UB-2015	Ash	B15-Ash3	UB-00127	6/22/2015	Field Sample	0.25	EMSL04	7/22/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.013	5	3E-03	2.8E+07	26	725	5	139
UB-2015	Ash	B15-Ash3	UB-00127	6/22/2015	Field Sample	0.25	EMSL04	7/22/2015	TEM-ISO	NOT QC	Indirect - Ashed	1359	0.013	8	3E-03	1.7E+07	26	453	5	87
WSA	Ash	WA-Near	WA-00019	11/7/2012	Field Sample	0.3	Hygeia	12/5/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	52	1E-03	9.9E+06	2	20	1	9.9
WSA	Ash	WA-Near	WA-00019	11/7/2012	Field Sample	0.3	Hygeia	12/5/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	52	1E-03	9.9E+06	2	20	1	9.9
WSA	Ash	WA-Near	WA-00019	11/7/2012	Field Sample	0.3	Hygeia	12/6/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	52	1E-03	1.0E+07	11	109	2	20
WSA	Ash	WA-Near	WA-00034	11/9/2012	Field Sample	0.3	RESI	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	12	5E-03	8.2E+06	8	66	6	49
WSA	Ash	WA-Near	WA-00034	11/9/2012	Field Sample	0.2	RESI	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	16	5E-03	6.5E+06	2	13	2	13
WSA	Ash	WA-Near	WA-00034	11/9/2012	Field Sample	0.3	RESI	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	12	5E-03	8.1E+06	11	89	4	32
WSA	Ash	WA-Near	WA-00063	11/13/2012	Field Sample	0.3	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	8	5E-03	1.0E+07	0	0	0	0
WSA	Ash	WA-Near	WA-00063	11/13/2012	Field Sample	0.3	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	8	5E-03	1.0E+07	0	0	0	0
WSA	Ash	WA-Near	WA-00063	11/13/2012	Field Sample	0.3	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	8	5E-03	1.0E+07	0	0	0	0
WSA	Ash	WA-FC	WA-00018	11/7/2012	Field Sample	0.3	Hygeia	12/4/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	52	1E-03	1.0E+07	0	0	0	0
WSA	Ash	WA-FC	WA-00018	11/7/2012	Field Sample	0.3	Hygeia	12/5/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	52	1E-03	9.9E+06	0	0	0	0
WSA	Ash	WA-FC	WA-00018	11/7/2012	Field Sample	0.3	Hygeia	12/5/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	52	1E-03	9.9E+06	0	0	0	0
WSA	Ash	WA-FC	WA-00033	11/9/2012	Field Sample	0.3	RESI	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	16	5E-03	6.2E+06	0	0	0	0
WSA	Ash	WA-FC	WA-00033	11/9/2012	Field Sample	0.3	RESI	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	16	5E-03	6.3E+06	0	0	0	0

Table E-1h: Summary of LAA Results for Ash
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information					Analysis Information										Results			
																	Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Ash Mass (g, dw)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(g)^{-1}$	N Structures	Ash Conc. (Ms/g)	N Structures	Ash Conc. (Ms/g)
WSA	Ash	WA-FC	WA-00033	11/9/2012	Field Sample	0.3	RESI	12/11/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	16	5E-03	6.1E+06	1	6.1	0	0
WSA	Ash	WA-FC	WA-00062	11/13/2012	Field Sample	0.3	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	8	5E-03	1.0E+07	0	0	0	0
WSA	Ash	WA-FC	WA-00062	11/13/2012	Field Sample	0.3	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	8	5E-03	1.0E+07	0	0	0	0
WSA	Ash	WA-FC	WA-00062	11/13/2012	Field Sample	0.3	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	8	5E-03	1.0E+07	0	0	0	0
WSA	Ash	WA-BC	WA-00014	11/7/2012	Field Sample	0.3	Hygeia	12/3/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	52	1E-03	1.0E+07	0	0	0	0
WSA	Ash	WA-BC	WA-00014	11/7/2012	Field Sample	0.3	Hygeia	12/4/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	52	1E-03	1.0E+07	0	0	0	0
WSA	Ash	WA-BC	WA-00014	11/7/2012	Field Sample	0.3	Hygeia	12/4/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.01	52	1E-03	9.9E+06	0	0	0	0
WSA	Ash	WA-BC	WA-00032	11/9/2012	Field Sample	0.3	RESI	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	16	5E-03	6.0E+06	1	6.0	1	6.0
WSA	Ash	WA-BC	WA-00032	11/9/2012	Field Sample	0.2	RESI	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	14	5E-03	7.2E+06	0	0	0	0
WSA	Ash	WA-BC	WA-00032	11/9/2012	Field Sample	0.3	RESI	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1256	0.01	16	5E-03	6.3E+06	0	0	0	0
WSA	Ash	WA-BC	WA-00061	11/13/2012	Field Sample	0.3	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	8	5E-03	1.0E+07	1	10	1	10
WSA	Ash	WA-BC	WA-00061	11/13/2012	Field Sample	0.3	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	8	5E-03	1.0E+07	0	0	0	0
WSA	Ash	WA-BC	WA-00061	11/13/2012	Field Sample	0.3	EMSL27	12/10/2012	TEM-ISO	NOT QC	Indirect - Ashed	1295	0.013	8	5E-03	1.0E+07	0	0	0	0

Notes:

* See Tables 4-1 and 4-2 for definitions of each Phase.

ID = identification
Conc. = concentration
dw = dry weight
EFA = effective filter area
g = gram
GO = grid opening
ISO = International Organization for Standardization
LAA = Libby amphibole asbestos
mm = millimeter
Ms/g = million structures per gram
N = number of asbestos structures
PCME = phase contrast microscopy - equivalent
QC = quality control
TEM = transmission electron microscopy

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
III	Air	ABS-01	ATV Riding	P3-00451	8/24/2009	Field Sample	20	3.8	80	Hygeia	9/1/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Hiking	P3-00456	8/24/2009	Field Sample	80	1.9	160	Hygeia	9/1/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Fire Building/Burning	P3-00460	8/24/2009	Field Sample	35	1.9	70	Hygeia	9/1/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-02	ATV Riding	P3-00481	8/24/2009	Field Sample	20	4.0	80	Hygeia	9/8/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-00486	8/24/2009	Field Sample	80	2.1	164	Hygeia	9/8/2009	TEM-ISO	Not QC	Direct	385	0.01	39	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-00486	8/24/2009	Field Sample	80	2.1	164	EMSL27	9/4/2013	TEM-ISO	NOT QC	Direct	385	0.013	310	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-02	Fire Building/Burning	P3-00490	8/24/2009	Field Sample	35	2.0	70	Hygeia	9/8/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	ATV Riding	P3-00463	8/25/2009	Field Sample	20	4.0	80	Hygeia	9/4/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	Hiking	P3-00468	8/25/2009	Field Sample	80	2.0	160	Hygeia	9/4/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	Fire Building/Burning	P3-00472	8/25/2009	Field Sample	35	2.0	70	Hygeia	9/4/2009	TEM-ISO	Not QC	Direct	385	0.01	93	1	5.9E-03	0	0	0	0	0	0
III	Air	ABS-08	ATV Riding	P3-00477	8/25/2009	Field Sample	20	4.0	80	Hygeia	9/4/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	ATV Riding	P3-00496	8/25/2009	Field Sample	20	2.0	40	Hygeia	9/8/2009	TEM-ISO	Not QC	Direct	385	0.01	160	1	6.0E-03	2	1.2E-02	2	0.012	2	0.012
III	Air	ABS-03	Hiking	P3-00499	8/25/2009	Field Sample	80	4.0	320	Hygeia	9/8/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Fire Building/Burning	P3-00504	8/25/2009	Field Sample	35	2.0	70	Hygeia	9/9/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-05	ATV Riding	P3-00507	8/25/2009	Field Sample	20	4.0	80	Hygeia	9/9/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Hiking	P3-00512	8/25/2009	Field Sample	80	2.0	160	Hygeia	9/9/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Fire Building/Burning	P3-00516	8/25/2009	Field Sample	35	2.0	70	Hygeia	9/10/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-08	Hiking	P3-00543	8/25/2009	Field Sample	80	4.0	320	Hygeia	9/4/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	Fire Building/Burning	P3-00547	8/25/2009	Field Sample	35	4.0	140	Hygeia	9/4/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	ATV Riding	P3-00479	8/26/2009	Field Sample	20	4.0	80	Hygeia	9/3/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10'	[a] ATV Riding	P3-00519	8/26/2009	Field Sample	20	4.0	79	Hygeia	9/10/2009	TEM-ISO	Not QC	Direct	385	0.01	81	1	6.0E-03	6	3.6E-02	2	0.012	2	0.012
III	Air	ABS-10	Hiking	P3-00523	8/26/2009	Field Sample	80	4.0	320	Hygeia	9/9/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-10	Hiking	P3-00523	8/26/2009	Field Sample	80	4.0	320	EMSL27	9/5/2013	TEM-ISO	NOT QC	Direct	385	0.013	160	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-06'	[b] Fire Building/Burning	P3-00527	8/26/2009	Field Sample	35	4.0	140	Hygeia	9/10/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-00551	8/26/2009	Field Sample	80	4.0	320	Hygeia	9/3/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-00551	8/26/2009	Field Sample	80	4.0	320	EMSL27	9/16/2013	TEM-ISO	NOT QC	Direct	385	0.013	160	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-07	Fire Building/Burning	P3-00556	8/26/2009	Field Sample	35	2.0	70	Hygeia	9/3/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	ATV Riding	P3-00559	8/26/2009	Field Sample	20	4.0	80	Hygeia	9/3/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Hiking	P3-00563	8/26/2009	Field Sample	80	4.0	320	Hygeia	9/3/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Fire Building/Burning	P3-00569	8/26/2009	Field Sample	35	2.0	70	Hygeia	9/3/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	ATV Riding	P3-00532	8/27/2009	Field Sample	20	2.0	40	Hygeia	9/11/2009	TEM-ISO	Not QC	Direct	385	0.01	160	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Hiking	P3-00535	8/27/2009	Field Sample	80	4.0	320	Hygeia	9/10/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Fire Building/Burning	P3-00540	8/27/2009	Field Sample	35	2.0	70	Hygeia	9/11/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	ATV Riding	P3-00572	8/27/2009	Field Sample	20	4.0	79	Hygeia	9/2/2009	TEM-ISO	Not QC	Direct	385	0.01	82	1	5.9E-03	0	0	0	0	0	0
III	Air	ABS-14	Hiking	P3-00577	8/27/2009	Field Sample	80	2.0	160	Hygeia	9/2/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	Fire Building/Burning	P3-00581	8/27/2009	Field Sample	35	2.0	70	Hygeia	9/2/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	ATV Riding	P3-00721	8/31/2009	Field Sample	20	4.0	80	Hygeia	9/14/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-00725	8/31/2009	Field Sample	80	4.0	320	Hygeia	9/14/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-00725	8/31/2009	Field Sample	80	4.0	320	EMSL27	9/6/2013	TEM-ISO	NOT QC	Direct	385	0.013	160	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-02	Fire Building/Burning	P3-00730	8/31/2009	Field Sample	35	2.0	70	Hygeia	9/15/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	ATV Riding	P3-00733	8/31/2009	Field Sample	20	4.1	81	Hygeia	9/15/2009	TEM-ISO	Not QC	Direct	385	0.01	79	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Hiking	P3-00738	8/31/2009	Field Sample	80	2.0	160	Hygeia	9/15/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Fire Building/Burning	P3-00741	8/31/2009	Field Sample	35	4.0	140	Hygeia	9/15/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	ATV Riding	P3-00605	9/1/2009	Field Sample	20	4.2	84	Hygeia	9/22/2009	TEM-ISO	Not QC	Direct	385	0.01	76	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Hiking	P3-00609	9/1/2009	Field Sample	80	4.0	320	Hygeia	9/18/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Fire Building/Burning	P3-00613	9/1/2009	Field Sample	35	4.0	140	Hygeia	9/22/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	ATV Riding	P3-00617	9/1/2009	Field Sample	20	4.0	79	Hygeia	9/22/2009	TEM-ISO	Not QC	Direct	385	0.01	81	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Hiking	P3-00622	9/1/2009	Field Sample	80	2.0	160	Hygeia	9/22/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Fire Building/Burning	P3-00626	9/1/2009	Field Sample	35	2.0	70	Hygeia	9/22/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	ATV Riding	P3-00745	9/1/2009	Field Sample	20	4.0	80	Hygeia	9/16/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.1E-03	1	6.1E-03	0	0	0	0
III	Air	ABS-08	Hiking	P3-00750	9/1/2009	Field Sample	80	2.0	160	Hygeia	9/16/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	Fire Building/Burning	P3-00754	9/1/2009	Field Sample	35	4.0	140	Hygeia	9/16/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	ATV Riding	P3-00758	9/1/2009	Field Sample	20	4.0	80	Hygeia	9/18/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	Hiking	P3-00762	9/1/2009	Field Sample	80	4.1	324	Hygeia	9/16/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	5.9E-03	0	0	0	0	0	0
III	Air	ABS-11	Fire Building/Burning	P3-00766	9/1/2009	Field Sample	35	4.0	140	Hygeia	9/16/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	ATV Riding	P3-00629	9/2/2009	Field Sample	20	4.0	80	Hygeia	9/23/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Hiking	P3-00634	9/2/2009	Field Sample	80	2.0	160	Hygeia	9/23/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Fire Building/Burning	P3-00637	9/2/2009	Field Sample	35	4.0	140	Hygeia	9/23/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	ATV Riding	P3-00641	9/2/2009	Field Sample	20	4.0	80	Hygeia	9/23/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-00645	9/2/2009	Field Sample	80	4.0	320	Hygeia	9/24/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-00645	9/2/2009	Field Sample	80	4.0	320	EMSL27	9/16/2013	TEM-ISO	NOT QC	Direct	385	0.013	160	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-07	Fire Building/Burning	P3-00649	9/2/2009	Field Sample	35	4.0	140	Hygeia	9/24/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-10'	[a] ATV Riding	P3-00770	9/2/2009	Field Sample	20	4.0	80	Hygeia	9/18/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
III	Air	ABS-10	Hiking	P3-00774	9/2/2009	Field Sample	80	4.0	320	Hygeia	9/17/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10	Hiking	P3-00774	9/2/2009	Field Sample	80	4.0	320	EMSL27	9/4/2013	TEM-ISO	NOT QC	Direct	385	0.013	160	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-06' [b]	Fire Building/Burning	P3-00779	9/2/2009	Field Sample	35	2.0	70	Hygeia	9/18/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	ATV Riding	P3-00661	9/3/2009	Field Sample	20	4.0	80	Hygeia	9/22/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	Hiking	P3-00665	9/3/2009	Field Sample	80	4.0	320	Hygeia	9/22/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	Fire Building/Burning	P3-00669	9/3/2009	Field Sample	35	4.0	140	Hygeia	9/24/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	ATV Riding	P3-00784	9/3/2009	Field Sample	20	4.0	80	Hygeia	9/22/2009	TEM-ISO	Not QC	Direct	385	0.01	81	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Hiking	P3-00789	9/3/2009	Field Sample	80	2.0	160	Hygeia	9/18/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Fire Building/Burning	P3-00792	9/3/2009	Field Sample	35	4.0	142	Hygeia	9/22/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	5.9E-03	1	5.9E-03	1	0.0059	1	0.0059
III	Air	ABS-05	ATV Riding	P3-00585	9/8/2009	Field Sample	20	4.0	80	Hygeia	9/25/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Hiking	P3-00589	9/8/2009	Field Sample	80	4.0	320	Hygeia	9/25/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Fire Building/Burning	P3-00593	9/8/2009	Field Sample	35	4.0	140	Hygeia	9/25/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	2	1.2E-02	0	0	0	0
III	Air	ABS-03	ATV Riding	P3-00597	9/8/2009	Field Sample	20	4.0	80	Hygeia	9/25/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Hiking	P3-00673	9/8/2009	Field Sample	80	4.0	320	Hygeia	9/25/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Fire Building/Burning	P3-00677	9/8/2009	Field Sample	35	4.0	140	Hygeia	9/25/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-02	Hiking	P3-00800	9/8/2009	Field Sample	80	4.0	320	Hygeia	9/25/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-00800	9/8/2009	Field Sample	80	4.0	320	EMSL27	9/9/2013	TEM-ISO	NOT QC	Direct	385	0.013	160	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-02	Fire Building/Burning	P3-00805	9/8/2009	Field Sample	35	2.0	70	Hygeia	9/25/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	ATV Riding	P3-00808	9/8/2009	Field Sample	20	4.0	80	Hygeia	9/28/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Hiking	P3-00812	9/8/2009	Field Sample	80	4.1	324	Hygeia	9/28/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	5.9E-03	0	0	0	0	0	0
III	Air	ABS-01	Fire Building/Burning	P3-00816	9/8/2009	Field Sample	35	4.0	140	Hygeia	9/28/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	ATV Riding	P3-00820	9/8/2009	Field Sample	20	4.0	80	Hygeia	9/28/2009	TEM-ISO	Not QC	Direct	385	0.01	81	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	Hiking	P3-00701	9/9/2009	Field Sample	80	4.0	320	Hygeia	9/30/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	ATV Riding	P3-00705	9/9/2009	Field Sample	20	4.0	80	Hygeia	9/29/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	Fire Building/Burning	P3-00709	9/9/2009	Field Sample	35	4.0	140	Hygeia	9/30/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	ATV Riding	P3-00713	9/9/2009	Field Sample	20	4.0	80	Hygeia	9/29/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	Hiking	P3-00717	9/9/2009	Field Sample	80	4.0	320	Hygeia	9/29/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10	Hiking	P3-00825	9/9/2009	Field Sample	80	4.0	320	Hygeia	9/30/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10	Hiking	P3-00825	9/9/2009	Field Sample	80	4.0	320	EMSL27	9/4/2013	TEM-ISO	NOT QC	Direct	385	0.013	160	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-10' [a]	Fire Building/Burning	P3-00829	9/9/2009	Field Sample	35	4.0	140	Hygeia	9/30/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10' [a]	ATV Riding	P3-00833	9/9/2009	Field Sample	20	4.0	80	Hygeia	9/30/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	Fire Building/Burning	P3-00862	9/9/2009	Field Sample	35	2.0	70	Hygeia	9/29/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Hiking	P3-00838	9/10/2009	Field Sample	80	2.0	160	Hygeia	9/30/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	3	1.8E-02	0	0	0	0
III	Air	ABS-13	Fire Building/Burning	P3-00842	9/10/2009	Field Sample	35	2.0	70	Hygeia	10/1/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	3	1.8E-02	2	0.012	2	0.012
III	Air	ABS-13	ATV Riding	P3-00845	9/10/2009	Field Sample	20	4.0	80	Hygeia	10/1/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	ATV Riding	P3-00849	9/10/2009	Field Sample	20	4.0	80	Hygeia	10/1/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-14	Hiking	P3-00854	9/10/2009	Field Sample	80	2.0	162	Hygeia	10/1/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	5.9E-03	0	0	0	0	0	0
III	Air	ABS-14	Fire Building/Burning	P3-00857	9/10/2009	Field Sample	35	4.0	140	Hygeia	10/1/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	ATV Riding	P3-00865	9/10/2009	Field Sample	20	4.0	80	Hygeia	10/2/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Hiking	P3-00869	9/10/2009	Field Sample	80	4.0	320	Hygeia	10/2/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Fire Building/Burning	P3-00874	9/10/2009	Field Sample	35	2.0	70	Hygeia	10/2/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	ATV Riding	P3-00877	9/10/2009	Field Sample	20	4.0	80	Hygeia	10/1/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-00881	9/10/2009	Field Sample	80	4.0	320	Hygeia	10/2/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-00881	9/10/2009	Field Sample	80	4.0	320	EMSL27	9/18/2013	TEM-ISO	NOT QC	Direct	385	0.013	160	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-07	Fire Building/Burning	P3-00885	9/10/2009	Field Sample	35	4.0	140	Hygeia	10/2/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	ATV Riding	P3-00901	9/14/2009	Field Sample	20	4.0	80	Hygeia	10/5/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Hiking	P3-00906	9/14/2009	Field Sample	80	2.0	160	Hygeia	10/5/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Fire Building/Burning	P3-00910	9/14/2009	Field Sample	35	2.0	70	Hygeia	10/5/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	2	1.2E-02	1	0.0060	1	0.0060
III	Air	ABS-05	ATV Riding	P3-00913	9/14/2009	Field Sample	20	4.0	80	Hygeia	10/7/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Hiking	P3-00918	9/14/2009	Field Sample	80	2.0	160	Hygeia	10/7/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Fire Building/Burning	P3-00922	9/14/2009	Field Sample	35	2.0	70	Hygeia	10/7/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	ATV Riding	P3-01001	9/14/2009	Field Sample	20	4.0	80	Hygeia	10/7/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Hiking	P3-01005	9/14/2009	Field Sample	80	4.0	320	Hygeia	10/8/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Fire Building/Burning	P3-01009	9/14/2009	Field Sample	35	4.0	140	Hygeia	10/8/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	ATV Riding	P3-01013	9/14/2009	Field Sample	20	4.0	80	Hygeia	10/8/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-01018	9/14/2009	Field Sample	80	2.0	160	Hygeia	10/8/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-01018	9/14/2009	Field Sample	80	2.0	160	EMSL27	9/9/2013	TEM-ISO	NOT QC	Direct	385	0.013	310	1	6.0E-04	--	--	0	0	0	0
III	Air	ABS-02	Fire Building/Burning	P3-01022	9/14/2009	Field Sample	35	2.0	70	Hygeia	10/8/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-08	ATV Riding	P3-00927	9/15/2009	Field Sample	20	4.0	79	Hygeia	10/7/2009	TEM-ISO	Not QC	Direct	385	0.01	81	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	Hiking	P3-00931	9/15/2009	Field Sample	80	4.0	320	Hygeia	10/7/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	Fire Building/Burning	P3-00935	9/15/2009	Field Sample	35	4.0	140	Hygeia	10/7/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	ATV Riding	P3-00939	9/15/2009	Field Sample	20	4.0	80	Hygeia	10/6/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	Hiking	P3-00944	9/15/2009	Field Sample	80	2.0	160	Hygeia	10/6/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
III	Air	ABS-11	Fire Building/Burning	P3-00948	9/15/2009	Field Sample	35	2.0	70	Hygeia	10/6/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	2	1.2E-02	0	0	0	0
III	Air	ABS-06	ATV Riding	P3-01025	9/15/2009	Field Sample	20	4.0	80	Hygeia	10/8/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Hiking	P3-01029	9/15/2009	Field Sample	80	4.0	320	Hygeia	10/10/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Fire Building/Burning	P3-01034	9/15/2009	Field Sample	35	2.0	70	Hygeia	10/12/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-07	ATV Riding	P3-01037	9/15/2009	Field Sample	20	4.0	80	Hygeia	10/12/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-01041	9/15/2009	Field Sample	80	4.0	320	Hygeia	10/12/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-01041	9/15/2009	Field Sample	80	4.0	320	EMSL27	9/18/2013	TEM-ISO	NOT QC	Direct	385	0.013	160	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-07	Fire Building/Burning	P3-01046	9/15/2009	Field Sample	35	2.0	70	Hygeia	10/13/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10	Hiking	P3-00951	9/16/2009	Field Sample	80	4.0	320	Hygeia	10/5/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10	Hiking	P3-00951	9/16/2009	Field Sample	80	4.0	320	EMSL27	9/4/2013	TEM-ISO	NOT QC	Direct	385	0.013	160	1	5.8E-04	--	--	0	0	0	0
III	Air	ABS-06'	[b] Fire Building/Burning	P3-00955	9/16/2009	Field Sample	35	4.0	139	Hygeia	10/5/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	2	1.2E-02	1	0.0060	1	0.0060
III	Air	ABS-10'	[a] ATV Riding	P3-00959	9/16/2009	Field Sample	20	4.0	80	Hygeia	10/5/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-13	ATV Riding	P3-01049	9/16/2009	Field Sample	20	4.0	80	Hygeia	10/13/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Hiking	P3-01054	9/16/2009	Field Sample	80	2.0	160	Hygeia	10/13/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-13	Fire Building/Burning	P3-01058	9/16/2009	Field Sample	35	2.0	70	Hygeia	10/13/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	ATV Riding	P3-01061	9/16/2009	Field Sample	20	4.0	80	Hygeia	10/13/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	Hiking	P3-01066	9/16/2009	Field Sample	80	2.0	160	Hygeia	10/13/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	Fire Building/Burning	P3-01069	9/16/2009	Field Sample	35	4.0	140	Hygeia	10/13/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-00961	9/21/2009	Field Sample	80	4.0	320	Hygeia	10/26/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Fire Building/Burning	P3-00966	9/21/2009	Field Sample	35	2.0	70	Hygeia	10/26/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-02	ATV Riding	P3-00969	9/21/2009	Field Sample	20	4.0	80	Hygeia	10/26/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	ATV Riding	P3-01074	9/21/2009	Field Sample	20	4.0	80	Hygeia	10/21/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Hiking	P3-01078	9/21/2009	Field Sample	80	4.0	320	Hygeia	10/19/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Fire Building/Burning	P3-01082	9/21/2009	Field Sample	35	4.0	140	Hygeia	10/19/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-06	ATV Riding	P3-00889	9/22/2009	Field Sample	20	4.0	80	Hygeia	10/21/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Hiking	P3-00893	9/22/2009	Field Sample	80	4.0	320	Hygeia	10/21/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Fire Building/Burning	P3-00898	9/22/2009	Field Sample	35	2.0	70	Hygeia	10/22/2009	TEM-ISO	Not QC	Direct	385	0.01	93	1	5.9E-03	6	3.5E-02	2	0.012	2	0.012
III	Air	ABS-05	Hiking	P3-00973	9/22/2009	Field Sample	80	4.0	320	Hygeia	10/26/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Fire Building/Burning	P3-00978	9/22/2009	Field Sample	35	4.0	140	Hygeia	10/26/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	ATV Riding	P3-00982	9/22/2009	Field Sample	20	4.0	80	Hygeia	10/27/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-00987	9/22/2009	Field Sample	80	2.0	160	Hygeia	10/27/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Fire Building/Burning	P3-00991	9/22/2009	Field Sample	35	2.0	70	Hygeia	10/27/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	ATV Riding	P3-00994	9/22/2009	Field Sample	20	4.0	81	Hygeia	10/27/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	ATV Riding	P3-01086	9/22/2009	Field Sample	20	4.0	80	Hygeia	10/21/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Hiking	P3-01090	9/22/2009	Field Sample	80	4.0	320	Hygeia	10/21/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Fire Building/Burning	P3-01094	9/22/2009	Field Sample	35	4.0	140	Hygeia	10/21/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10	Hiking	P3-00998	9/23/2009	Field Sample	80	4.0	318	Hygeia	10/27/2009	TEM-ISO	Not QC	Direct	385	0.01	21	1	5.8E-03	0	0	0	0	0	0
III	Air	ABS-08	ATV Riding	P3-01098	9/23/2009	Field Sample	20	4.0	80	Hygeia	10/23/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	Hiking	P3-01103	9/23/2009	Field Sample	80	4.0	320	Hygeia	10/23/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	Fire Building/Burning	P3-01107	9/23/2009	Field Sample	35	4.0	140	Hygeia	10/24/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	ATV Riding	P3-01111	9/23/2009	Field Sample	20	4.0	80	Hygeia	10/23/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-11	Hiking	P3-01115	9/23/2009	Field Sample	80	4.0	320	Hygeia	10/23/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	Fire Building/Burning	P3-01120	9/23/2009	Field Sample	35	2.0	70	Hygeia	10/23/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10'	[a] Fire Building/Burning	P3-01142	9/23/2009	Field Sample	35	4.0	140	Hygeia	10/27/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	2	1.2E-02	2	0.012	2	0.012
III	Air	ABS-10'	[a] ATV Riding	P3-01146	9/23/2009	Field Sample	20	4.0	80	Hygeia	10/27/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-14	ATV Riding	P3-01123	9/24/2009	Field Sample	20	4.0	80	Hygeia	10/19/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	Hiking	P3-01127	9/24/2009	Field Sample	80	4.0	320	Hygeia	10/19/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	Fire Building/Burning	P3-01131	9/24/2009	Field Sample	35	4.0	140	Hygeia	10/19/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Hiking	P3-01151	9/24/2009	Field Sample	80	2.0	160	Hygeia	10/28/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-03	Fire Building/Burning	P3-01154	9/24/2009	Field Sample	35	4.0	140	Hygeia	10/28/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	ATV Riding	P3-01158	9/24/2009	Field Sample	20	4.0	80	Hygeia	10/28/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Hiking	P3-01163	9/28/2009	Field Sample	80	2.0	160	Hygeia	11/5/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Fire Building/Burning	P3-01167	9/28/2009	Field Sample	35	2.0	70	Hygeia	11/5/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	ATV Riding	P3-01170	9/28/2009	Field Sample	20	4.0	80	Hygeia	11/5/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Hiking	P3-01175	9/28/2009	Field Sample	80	2.0	160	Hygeia	11/11/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-02	ATV Riding	P3-01214	9/28/2009	Field Sample	20	2.0	40	Hygeia	11/3/2009	TEM-ISO	Not QC	Direct	385	0.01	160	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-01218	9/28/2009	Field Sample	80	2.0	160	Hygeia	11/3/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Fire Building/Burning	P3-01222	9/28/2009	Field Sample	35	2.0	70	Hygeia	11/3/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	ATV Riding	P3-01237	9/28/2009	Field Sample	20	4.0	80	Hygeia	11/4/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	Hiking	P3-01242	9/28/2009	Field Sample	80	2.0	160	Hygeia	11/5/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-14	Fire Building/Burning	P3-01246	9/28/2009	Field Sample	35	2.0	70	Hygeia	11/5/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Fire Building/Burning	P3-01283	9/28/2009	Field Sample	35	2.0	70	Hygeia	11/6/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-05	ATV Riding	P3-01286	9/28/2009	Field Sample	20	4.0	80	Hygeia	11/5/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
III	Air	ABS-01	ATV Riding	P3-01201	9/29/2009	Field Sample	20	4.0	80	Hygeia	11/2/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Hiking	P3-01206	9/29/2009	Field Sample	80	2.0	160	Hygeia	11/3/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Fire Building/Burning	P3-01210	9/29/2009	Field Sample	35	2.0	70	Hygeia	11/3/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	ATV Riding	P3-01225	9/29/2009	Field Sample	20	4.0	80	Hygeia	11/4/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Hiking	P3-01232	9/29/2009	Field Sample	80	2.0	160	Hygeia	11/4/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Fire Building/Burning	P3-01233	9/29/2009	Field Sample	35	4.0	140	Hygeia	11/4/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Hiking	P3-01289	9/29/2009	Field Sample	80	2.0	160	Hygeia	11/9/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	Fire Building/Burning	P3-01293	9/29/2009	Field Sample	35	2.0	70	Hygeia	11/9/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-06	ATV Riding	P3-01296	9/29/2009	Field Sample	20	4.0	80	Hygeia	11/9/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-01301	9/29/2009	Field Sample	80	2.0	160	Hygeia	11/6/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Fire Building/Burning	P3-01305	9/29/2009	Field Sample	35	2.0	70	Hygeia	11/9/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	ATV Riding	P3-01309	9/29/2009	Field Sample	20	2.0	39	Hygeia	11/6/2009	TEM-ISO	Not QC	Direct	385	0.01	165	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10' [a]	ATV Riding	P3-01249	9/30/2009	Field Sample	20	4.0	80	Hygeia	11/5/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	3	1.8E-02	1	0.0060	1	0.0060
III	Air	ABS-10	Hiking	P3-01254	9/30/2009	Field Sample	80	2.0	160	Hygeia	11/5/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-10' [a]	Fire Building/Burning	P3-01260	9/30/2009	Field Sample	35	2.0	70	Hygeia	11/11/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	2	1.2E-02	2	0.012	2	0.012
III	Air	ABS-08	Hiking	P3-01313	9/30/2009	Field Sample	80	2.0	160	Hygeia	11/9/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-08	Fire Building/Burning	P3-01317	9/30/2009	Field Sample	35	2.0	70	Hygeia	11/10/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-08	ATV Riding	P3-01321	9/30/2009	Field Sample	20	2.0	40	Hygeia	11/10/2009	TEM-ISO	Not QC	Direct	385	0.01	160	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	Hiking	P3-01325	9/30/2009	Field Sample	80	2.0	160	Hygeia	11/9/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-11	Fire Building/Burning	P3-01329	9/30/2009	Field Sample	35	2.0	70	Hygeia	11/11/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-11	ATV Riding	P3-01333	9/30/2009	Field Sample	20	2.0	40	Hygeia	11/11/2009	TEM-ISO	Not QC	Direct	385	0.01	160	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	ATV Riding	P3-01261	10/5/2009	Field Sample	20	4.0	79	Hygeia	11/16/2009	TEM-ISO	Not QC	Direct	385	0.01	81	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-01	Fire Building/Burning	P3-01270	10/5/2009	Field Sample	35	2.0	70	Hygeia	11/17/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-03	Hiking	P3-01337	10/5/2009	Field Sample	80	2.0	160	Hygeia	11/23/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-03	Fire Building/Burning	P3-01341	10/5/2009	Field Sample	35	2.0	70	Hygeia	11/23/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	5.9E-03	1	5.9E-03	1	0.0059	1	0.0059
III	Air	ABS-03	ATV Riding	P3-01344	10/5/2009	Field Sample	20	4.0	80	Hygeia	11/23/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	ATV Riding	P3-01273	10/6/2009	Field Sample	20	4.0	80	Hygeia	11/16/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Hiking	P3-01280	10/6/2009	Field Sample	80	2.0	160	Hygeia	11/23/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-01349	10/6/2009	Field Sample	80	2.0	158	Hygeia	11/23/2009	TEM-ISO	Not QC	Direct	385	0.01	41	1	5.9E-03	1	5.9E-03	0	0	0	0
III	Air	ABS-02	ATV Riding	P3-01359	10/6/2009	Field Sample	20	2.0	40	Hygeia	11/24/2009	TEM-ISO	Not QC	Direct	385	0.01	160	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Hiking	P3-01362	10/6/2009	Field Sample	80	2.0	160	Hygeia	11/20/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Fire Building/Burning	P3-01366	10/6/2009	Field Sample	35	2.0	70	Hygeia	11/23/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	2	1.2E-02	2	0.012	2	0.012
III	Air	ABS-06	Hiking	P3-01374	10/6/2009	Field Sample	80	2.0	160	Hygeia	11/18/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	2	1.2E-02	0	0	0	0
III	Air	ABS-06	Fire Building/Burning	P3-01378	10/6/2009	Field Sample	35	2.0	70	Hygeia	11/20/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	2	1.2E-02	1	0.0060	1	0.0060
III	Air	ABS-06	ATV Riding	P3-01382	10/6/2009	Field Sample	20	2.0	40	Hygeia	11/20/2009	TEM-ISO	Not QC	Direct	385	0.01	160	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	Fire Building/Burning	P3-01402	10/6/2009	Field Sample	35	2.0	70	Hygeia	11/16/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	1	6.0E-03	0	0	0	0
III	Air	ABS-13	ATV Riding	P3-01405	10/6/2009	Field Sample	20	4.0	80	Hygeia	11/17/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Hiking	P3-01410	10/6/2009	Field Sample	80	2.0	160	Hygeia	11/17/2009	TEM-ISO	Not QC	Direct	385	0.01	40	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-13	Fire Building/Burning	P3-01414	10/6/2009	Field Sample	35	2.0	70	Hygeia	11/17/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	ATV Riding	P3-01418	10/6/2009	Field Sample	20	2.0	40	Hygeia	11/18/2009	TEM-ISO	Not QC	Direct	385	0.01	160	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-14	Fire Building/Burning	P3-01426	10/6/2009	Field Sample	35	2.0	70	Hygeia	11/18/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Hiking	P3-01385	11/9/2009	Field Sample	80	4.0	322	Hygeia	12/2/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	Fire Building/Burning	P3-01389	11/9/2009	Field Sample	35	4.0	140	Hygeia	12/2/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-02	ATV Riding	P3-01393	11/9/2009	Field Sample	20	4.0	80	Hygeia	12/2/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Hiking	P3-01397	11/9/2009	Field Sample	80	4.0	320	Hygeia	12/1/2009	TEM-ISO	NOT QC	Direct	385	0.01	20	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-07	ATV Riding	P3-01441	11/9/2009	Field Sample	20	4.0	80	Hygeia	12/2/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	1	6.0E-03	1	0.0060	1	0.0060
III	Air	ABS-07	Hiking	P3-01445	11/9/2009	Field Sample	80	4.0	320	Hygeia	12/2/2009	TEM-ISO	Not QC	Direct	385	0.01	20	1	6.0E-03	2	1.2E-02	2	0.012	2	0.012
III	Air	ABS-07	Fire Building/Burning	P3-01450	11/9/2009	Field Sample	35	2.0	70	Hygeia	12/2/2009	TEM-ISO	Not QC	Direct	385	0.01	92	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	Fire Building/Burning	P3-01481	11/9/2009	Field Sample	35	4.0	140	Hygeia	12/1/2009	TEM-ISO	Not QC	Direct	385	0.01	46	1	6.0E-03	0	0	0	0	0	0
III	Air	ABS-05	ATV Riding	P3-01485	11/9/2009	Field Sample	20	4.0	80	Hygeia	12/1/2009	TEM-ISO	Not QC	Direct	385	0.01	80	1	6.0E-03	0	0	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00003	7/20/2010	Field Sample	80	4.0	320	Hygeia	7/26/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	3.0E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00003	7/20/2010	Field Sample	80	4.0	320	EMSL22	9/20/2013	TEM-ISO	NOT QC	Direct	385	0.0133	31	1	2.9E-03	--	--	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00006	7/20/2010	Field Sample	80	4.0	320	Hygeia	7/26/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	3.0E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2b Residential wood harvester cutting	P4-00011	7/20/2010	Field Sample	50	1.0	50	Hygeia	7/26/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	7.7E-03	0	0	0	0	0	0
IVA	Air	ABS-02	2b Residential wood harvester cutting	P4-00011	7/20/2010	Field Sample	50	1.0	50	EMSL22	9/20/2013	TEM-ISO	NOT QC	Direct	385	0.0133	141	1	4.1E-03	--	--	0	0	0	0
IVA	Air	ABS-02	2b Residential wood harvester cutting	P4-00014	7/20/2010	Field Sample	50	1.0	50	Hygeia	7/27/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	7.7E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3a USFS worker trail maintenance	P4-00017	7/20/2010	Field Sample	30	1.0	30	Hygeia	7/27/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3a USFS worker trail maintenance	P4-00020	7/20/2010	Field Sample	30	1.0	30	Hygeia	7/30/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3b USFS worker thinning trees	P4-00022	7/20/2010	Field Sample	30	2.0	60	Hygeia	7/30/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3b USFS worker thinning trees	P4-00026	7/20/2010	Field Sample	30	1.0	30	Hygeia	7/30/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3c USFS worker stand exam	P4-00027	7/20/2010	Field Sample	32	4.0	128	Hygeia	8/2/2010	TEM-ISO	Not QC	Direct	385	0.01	63	1	4.8E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3c USFS worker stand exam	P4-00030	7/20/2010	Field Sample	32	4.0	128	Hygeia	8/2/2010	TEM-ISO	Not QC	Direct	385	0.01	63	1	4.8E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00035	7/20/2010	Field Sample	30	1.0	30	Hygeia	8/2/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	3	3.8E-02	2	0.026	2	0.026

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00035	7/20/2010	Field Sample	30	1.0	30	EMSL22	9/17/2013	TEM-ISO	NOT QC	Direct	385	0.0133	79	1	1.2E-02	--	--	0	0	0	0
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00036	7/20/2010	Field Sample	30	4.0	120	Hygeia	9/22/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	80	0.75	4.8E-03	7	3.4E-02	4	0.019	4	0.0077
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00043	7/21/2010	Field Sample	68	1.0	68	Hygeia	8/2/2010	TEM-ISO	Not QC	Direct	385	0.01	16	1	3.5E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00043	7/21/2010	Field Sample	68	1.0	68	EMSL22	9/17/2013	TEM-ISO	NOT QC	Direct	385	0.0133	149	1	2.9E-03	--	--	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00044	7/21/2010	Field Sample	68	4.0	272	Hygeia	8/2/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	3.5E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2b Residential wood harvester cutting	P4-00047	7/21/2010	Field Sample	50	4.0	200	Hygeia	10/22/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.25	6.7E-03	8	5.4E-02	3	0.020	3	0.0081
IVA	Air	ABS-07	2b Residential wood harvester cutting	P4-00047	7/21/2010	Field Sample	50	4.0	200	EMSL22	9/18/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	129	0.25	4.0E-03	--	--	0	0	0	0
IVA	Air	ABS-07	2b Residential wood harvester cutting	P4-00050	7/21/2010	Field Sample	50	4.0	200	Hygeia	10/24/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	48	0.75	4.7E-03	2	9.3E-03	0	0	0	0
IVA	Air	ABS-07	3a USFS worker trail maintenance	P4-00054	7/21/2010	Field Sample	30	2.0	60	Hygeia	8/2/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-07	3a USFS worker trail maintenance	P4-00058	7/21/2010	Field Sample	30	1.0	30	Hygeia	8/2/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3b USFS worker thinning trees	P4-00059	7/21/2010	Field Sample	30	4.0	120	Hygeia	10/25/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	1	4.8E-03	0	0	0	0
IVA	Air	ABS-07	3b USFS worker thinning trees	P4-00064	7/21/2010	Field Sample	30	1.0	30	Hygeia	8/3/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3c USFS worker stand exam	P4-00066	7/21/2010	Field Sample	30	2.0	60	Hygeia	8/3/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	3	1.9E-02	1	0.0064	1	0.0064
IVA	Air	ABS-07	3c USFS worker stand exam	P4-00068	7/21/2010	Field Sample	30	4.0	120	Hygeia	8/3/2010	TEM-ISO	Not QC	Direct	385	0.01	67	1	4.8E-03	0	0	0	0	0	0
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00072	7/21/2010	Field Sample	30	2.0	60	Hygeia	8/3/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	2	1.3E-02	2	0.013	2	0.013
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00076	7/21/2010	Field Sample	30	1.0	30	Hygeia	8/4/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	6	7.7E-02	3	0.038	3	0.038
IVA	Air	ABS-06' [b]	2a Residential wood harvester driving	P4-00077	7/22/2010	Field Sample	78	4.0	312	Hygeia	8/5/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	3.1E-02	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	2a Residential wood harvester driving	P4-00077	7/22/2010	Field Sample	78	4.0	312	EMSL22	9/20/2013	TEM-ISO	NOT QC	Direct	385	0.0133	32	1	2.9E-03	--	--	0	0	0	0
IVA	Air	ABS-06' [b]	2a Residential wood harvester driving	P4-00080	7/22/2010	Field Sample	78	4.0	312	Hygeia	8/5/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	3.1E-02	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	2b Residential wood harvester cutting	P4-00083	7/22/2010	Field Sample	50	4.0	200	Hygeia	10/25/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	48	0.75	4.7E-03	2	9.3E-03	1	0.0047	1	0.0019
IVA	Air	ABS-06' [b]	2b Residential wood harvester cutting	P4-00083	7/22/2010	Field Sample	50	4.0	200	ESATR8	8/9/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0099	41	0.75	5.7E-03	--	--	0	0	0	0
IVA	Air	ABS-06' [b]	2b Residential wood harvester cutting	P4-00086	7/22/2010	Field Sample	50	4.0	200	Hygeia	10/25/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	48	0.75	4.7E-03	3	1.4E-02	1	0.0047	1	0.0019
IVA	Air	ABS-06' [b]	3a USFS worker trail maintenance	P4-00091	7/22/2010	Field Sample	30	1.0	30	Hygeia	8/5/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	3a USFS worker trail maintenance	P4-00092	7/22/2010	Field Sample	30	4.0	120	Hygeia	10/26/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.25	1.1E-02	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	3b USFS worker thinning trees	P4-00098	7/22/2010	Field Sample	30	1.0	30	Hygeia	8/6/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	3b USFS worker thinning trees	P4-00099	7/22/2010	Field Sample	30	4.1	122	Hygeia	10/26/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.25	1.1E-02	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	3c USFS worker stand exam	P4-00104	7/22/2010	Field Sample	30	1.0	30	Hygeia	8/6/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	3c USFS worker stand exam	P4-00106	7/22/2010	Field Sample	30	2.0	60	Hygeia	8/6/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	3d Cutting firelines by hand	P4-00110	7/22/2010	Field Sample	30	1.0	30	Hygeia	8/9/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	3d Cutting firelines by hand	P4-00110	7/22/2010	Field Sample	30	1.0	30	EMSL22	9/11/2013	TEM-ISO	NOT QC	Direct	385	0.0133	79	1	1.2E-02	--	--	0	0	0	0
IVA	Air	ABS-06' [b]	3d Cutting firelines by hand	P4-00112	7/22/2010	Field Sample	30	2.0	60	Hygeia	8/9/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00114	7/27/2010	Field Sample	82	4.0	328	Hygeia	8/10/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	2.9E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00114	7/27/2010	Field Sample	82	4.0	328	EMSL22	9/11/2013	TEM-ISO	NOT QC	Direct	385	0.0133	30	1	2.9E-03	--	--	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00117	7/27/2010	Field Sample	82	4.0	328	Hygeia	8/10/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	2.9E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00120	7/27/2010	Field Sample	20	4.0	80	Hygeia	10/27/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.25	1.7E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00120	7/27/2010	Field Sample	20	4.0	80	EMSL22	9/12/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	451	0.25	2.9E-03	--	--	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00123	7/27/2010	Field Sample	20	4.0	80	Hygeia	10/27/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.25	1.7E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.2 Cutting and stacking	P4-00126	7/27/2010	Field Sample	30	4.0	120	Hygeia	10/27/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.25	1.1E-02	1	1.1E-02	0	0	0	0
IVA	Air	ABS-02	2B.2 Cutting and stacking	P4-00126	7/27/2010	Field Sample	30	4.0	120	EMSL22	9/13/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	255	0.25	3.4E-03	--	--	0	0	0	0
IVA	Air	ABS-02	2B.2 Cutting and stacking	P4-00129	7/27/2010	Field Sample	30	4.0	120	Hygeia	10/28/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.25	1.1E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3a USFS worker trail maintenance	P4-00132	7/27/2010	Field Sample	15	4.0	60	Hygeia	10/28/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3a USFS worker trail maintenance	P4-00136	7/27/2010	Field Sample	15	2.0	30	Hygeia	8/10/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3b USFS worker thinning trees	P4-00140	7/27/2010	Field Sample	15	1.0	15	Hygeia	8/11/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3b USFS worker thinning trees	P4-00143	7/27/2010	Field Sample	15	1.0	15	Hygeia	8/11/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3c USFS worker stand exam	P4-00144	7/27/2010	Field Sample	30	4.0	120	Hygeia	10/28/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3c USFS worker stand exam	P4-00149	7/27/2010	Field Sample	30	1.0	30	Hygeia	8/11/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00151	7/27/2010	Field Sample	15	4.0	60	Hygeia	9/22/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	10	7.7E-02	1	0.0077	1	0.0031
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00151	7/27/2010	Field Sample	15	4.0	60	EMSL22	9/11/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	19	0.75	3.0E-02	--	--	1	0.030	1	0.012
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00154	7/27/2010	Field Sample	15	4.0	60	Hygeia	9/23/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	7	5.4E-02	4	0.031	4	0.012
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00157	7/28/2010	Field Sample	66	4.0	264	Hygeia	8/13/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	3.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00157	7/28/2010	Field Sample	66	4.0	264	EMSL22	9/13/2013	TEM-ISO	NOT QC	Direct	385	0.0133	38	1	2.9E-03	--	--	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00160	7/28/2010	Field Sample	66	4.0	264	Hygeia	8/13/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	3.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00163	7/28/2010	Field Sample	20	4.0	80	Hygeia	10/29/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	5.6E-03	2	1.1E-02	1	0.0056	1	0.0022
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00163	7/28/2010	Field Sample	20	4.0	80	EMSL22	9/17/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	93	0.75	4.7E-03	--	--	0	0	0	0
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00168	7/28/2010	Field Sample	20	1.0	20	Hygeia	8/13/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.9E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2B.2 Cutting and stacking	P4-00171	7/28/2010	Field Sample	30	1.0	30	Hygeia	8/13/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2B.2 Cutting and stacking	P4-00171	7/28/2010	Field Sample	30	1.0	30	EMSL22	9/23/2013	TEM-ISO	NOT QC	Direct	385	0.0133	284	1	3.4E-03	--	--	0	0	0	0
IVA	Air	ABS-07	2B.2 Cutting and stacking	P4-00173	7/28/2010	Field Sample	30	2.0	60	Hygeia	8/17/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	2a Residential wood harvester driving	P4-00181	7/30/2010	Field Sample	76	4.0	303	Hygeia	8/17/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	3.2E-02	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	2a Residential wood harvester driving	P4-00181	7/30/2010	Field Sample	76	4.0	303	EMSL22	9/23/2013	TEM-ISO	NOT QC	Direct	385	0.0133	33	1	2.9E-03	--	--	0	0	0	0
IVA	Air	ABS-06' [b]	2a Residential wood harvester driving	P4-00184	7/30/2010	Field Sample	76	4.0	303	Hygeia	8/17/2010	TEM-ISO	Not QC	Direct	385	0.01	4	1	3.2E-02	0	0	0	0	0	0
IVA	Air	ABS-06' [b]	2B.1 Felling and limbing	P4-00187	7/30/2010	Field Sample	20	4.0	80	Hygeia	11/1/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.25	1.7E-02	1	1.7E-02	0	0	0	0
IVA	Air	ABS-06' [b]	2B.1 Felling and limbing	P4-00187	7/30/2010	Field Sample	20	4.0	80	EMSL22	9/23/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	451	0.25	2.9E-03	--	--	0	0	0	0

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
IVA	Air	ABS-06'	[b] 2B.1 Felling and limbing	P4-00192	7/30/2010	Field Sample	20	1.0	20	Hygeia	8/17/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.9E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.2 Cutting and stacking	P4-00195	7/30/2010	Field Sample	30	1.0	30	Hygeia	8/17/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.2 Cutting and stacking	P4-00195	7/30/2010	Field Sample	30	1.0	30	EMSL22	9/23/2013	TEM-ISO	NOT QC	Direct	385	0.0133	284	1	3.4E-03	--	--	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.2 Cutting and stacking	P4-00198	7/30/2010	Field Sample	30	1.0	30	Hygeia	8/18/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00200	8/3/2010	Field Sample	60	2.0	120	Hygeia	8/18/2010	TEM-ISO	Not QC	Direct	385	0.01	9	1	3.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00200	8/3/2010	Field Sample	60	2.0	120	EMSL22	9/6/2013	TEM-ISO	NOT QC	Direct	385	0.0133	83	1	2.9E-03	--	--	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00202	8/3/2010	Field Sample	60	4.0	240	Hygeia	8/18/2010	TEM-ISO	Not QC	Direct	385	0.01	5	1	3.2E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00205	8/3/2010	Field Sample	20	4.1	81	Hygeia	11/2/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	5.5E-03	4	2.2E-02	2	0.011	2	0.0044
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00205	8/3/2010	Field Sample	20	4.1	81	EMSL22	9/6/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	90	0.75	4.8E-03	--	--	0	0	0	0
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00208	8/3/2010	Field Sample	20	4.1	81	Hygeia	11/2/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	5.5E-03	1	5.5E-03	1	0.0055	1	0.0022
IVA	Air	ABS-07	2B.2 Cutting and stacking	P4-00211	8/3/2010	Field Sample	30	4.0	120	Hygeia	11/2/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	79	0.75	4.7E-03	0	0	0	0	0	0
IVA	Air	ABS-07	2B.2 Cutting and stacking	P4-00211	8/3/2010	Field Sample	30	4.0	120	EMSL22	9/6/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	51	0.75	5.7E-03	--	--	0	0	0	0
IVA	Air	ABS-07	2B.2 Cutting and stacking	P4-00214	8/3/2010	Field Sample	30	4.0	120	Hygeia	11/2/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	80	0.75	4.7E-03	3	1.4E-02	2	0.0093	2	0.0037
IVA	Air	ABS-07	3a USFS worker trail maintenance	P4-00219	8/3/2010	Field Sample	15	1.0	15	Hygeia	8/18/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3a USFS worker trail maintenance	P4-00220	8/3/2010	Field Sample	15	4.0	60	Hygeia	11/4/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	1	7.5E-03	0	0	0	0
IVA	Air	ABS-07	3b USFS worker thinning trees	P4-00223	8/3/2010	Field Sample	15	4.0	60	Hygeia	8/19/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-07	3b USFS worker thinning trees	P4-00226	8/3/2010	Field Sample	15	4.0	60	Hygeia	11/4/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	1	7.5E-03	0	0	0	0
IVA	Air	ABS-07	3c USFS worker stand exam	P4-00229	8/3/2010	Field Sample	30	4.0	120	Hygeia	11/4/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	0	0	0	0	0	0
IVA	Air	ABS-07	3c USFS worker stand exam	P4-00232	8/3/2010	Field Sample	30	4.0	120	Hygeia	11/4/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	7	3.3E-02	2	0.0096	2	0.0038
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00237	8/3/2010	Field Sample	15	1.0	15	Hygeia	8/19/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00237	8/3/2010	Field Sample	15	1.0	15	EMSL22	9/6/2013	TEM-ISO	NOT QC	Direct	385	0.0133	233	1	8.3E-03	--	--	0	0	0	0
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00240	8/3/2010	Field Sample	15	1.0	15	Hygeia	8/19/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2a Residential wood harvester driving	P4-00241	8/3/2010	Field Sample	55	4.0	220	Hygeia	8/19/2010	TEM-ISO	Not QC	Direct	385	0.01	5	1	3.5E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2a Residential wood harvester driving	P4-00241	8/3/2010	Field Sample	55	4.0	220	EMSL22	9/6/2013	TEM-ISO	NOT QC	Direct	385	0.0133	45	1	2.9E-03	--	--	1	0.0029	1	0.0029
IVA	Air	ABS-06'	[b] 2a Residential wood harvester driving	P4-00244	8/3/2010	Field Sample	55	4.0	220	Hygeia	8/19/2010	TEM-ISO	Not QC	Direct	385	0.01	5	1	3.5E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.1 Felling and limbing	P4-00247	8/3/2010	Field Sample	20	4.0	80	Hygeia	11/5/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	5.6E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.1 Felling and limbing	P4-00247	8/3/2010	Field Sample	20	4.0	80	EMSL22	9/7/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	93	0.75	4.7E-03	--	--	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.1 Felling and limbing	P4-00250	8/3/2010	Field Sample	20	4.0	80	Hygeia	11/6/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	5.6E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.2 Cutting and stacking	P4-00253	8/3/2010	Field Sample	30	4.0	120	Hygeia	11/6/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	80	0.75	4.7E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.2 Cutting and stacking	P4-00253	8/3/2010	Field Sample	30	4.0	120	EMSL22	9/7/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	51	0.75	5.7E-03	--	--	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.2 Cutting and stacking	P4-00256	8/3/2010	Field Sample	30	4.0	120	Hygeia	11/6/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	80	0.75	4.7E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3a USFS worker trail maintenance	P4-00259	8/3/2010	Field Sample	15	4.0	60	Hygeia	8/19/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3a USFS worker trail maintenance	P4-00263	8/3/2010	Field Sample	15	2.0	30	Hygeia	8/19/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3b USFS worker thinning trees	P4-00265	8/3/2010	Field Sample	15	4.0	60	Hygeia	11/9/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3b USFS worker thinning trees	P4-00268	8/3/2010	Field Sample	15	4.0	59	Hygeia	11/9/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.6E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3c USFS worker stand exam	P4-00273	8/3/2010	Field Sample	30	1.0	30	Hygeia	8/20/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3c USFS worker stand exam	P4-00275	8/3/2010	Field Sample	30	2.0	60	Hygeia	8/20/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3d Cutting firelines by hand	P4-00277	8/3/2010	Field Sample	15	4.0	60	Hygeia	8/20/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3d Cutting firelines by hand	P4-00280	8/3/2010	Field Sample	15	4.0	60	Hygeia	8/20/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00283	8/4/2010	Field Sample	62	4.0	248	Hygeia	8/22/2010	TEM-ISO	Not QC	Direct	385	0.01	5	1	3.1E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00283	8/4/2010	Field Sample	62	4.0	248	EMSL22	9/18/2013	TEM-ISO	NOT QC	Direct	385	0.0133	40	1	2.9E-03	--	--	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00286	8/4/2010	Field Sample	62	4.0	248	Hygeia	8/22/2010	TEM-ISO	Not QC	Direct	385	0.01	5	1	3.1E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00289	8/4/2010	Field Sample	20	4.0	80	Hygeia	11/10/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.25	1.7E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00289	8/4/2010	Field Sample	20	4.0	80	EMSL22	9/19/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	451	0.25	2.9E-03	--	--	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00292	8/4/2010	Field Sample	20	4.0	80	Hygeia	11/10/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	5.6E-03	0	0	0	0	0	0
IVA	Air	ABS-02	2B.2 Cutting and stacking	P4-00295	8/4/2010	Field Sample	30	4.0	120	Hygeia	11/10/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.25	1.1E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.2 Cutting and stacking	P4-00295	8/4/2010	Field Sample	30	4.0	120	EMSL22	9/19/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	270	0.25	3.2E-03	--	--	0	0	0	0
IVA	Air	ABS-02	2B.2 Cutting and stacking	P4-00298	8/4/2010	Field Sample	30	4.0	120	Hygeia	11/15/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	80	0.75	4.7E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3a USFS worker trail maintenance	P4-00303	8/4/2010	Field Sample	15	1.0	15	Hygeia	8/22/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3a USFS worker trail maintenance	P4-00306	8/4/2010	Field Sample	15	1.0	15	Hygeia	8/22/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3b USFS worker thinning trees	P4-00309	8/4/2010	Field Sample	15	1.0	15	Hygeia	8/23/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3b USFS worker thinning trees	P4-00310	8/4/2010	Field Sample	15	4.0	60	Hygeia	11/15/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	1	7.5E-03	1	0.0075	1	0.0030
IVA	Air	ABS-02	3c USFS worker stand exam	P4-00313	8/4/2010	Field Sample	30	4.0	120	Hygeia	11/15/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3c USFS worker stand exam	P4-00318	8/4/2010	Field Sample	30	1.0	30	Hygeia	8/23/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00319	8/4/2010	Field Sample	15	4.0	60	Hygeia	9/23/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	2	1.5E-02	1	0.0077	1	0.0031
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00319	8/4/2010	Field Sample	15	4.0	60	EMSL22	9/10/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	19	0.75	3.0E-02	--	--	0	0	0	0
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00322	8/4/2010	Field Sample	15	4.1	61	Hygeia	9/29/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.6E-03	1	7.6E-03	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00328	8/5/2010	Field Sample	55	1.0	55	Hygeia	8/24/2010	TEM-ISO	Not QC	Direct	385	0.01	19	1	3.7E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00330	8/5/2010	Field Sample	55	2.0	110	Hygeia	8/24/2010	TEM-ISO	Not QC	Direct	385	0.01	10	1	3.5E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00332	8/5/2010	Field Sample	20	4.1	81	Hygeia	11/18/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	5.5E-03	4	2.2E-02	0	0	0	0
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00335	8/5/2010	Field Sample	20	4.1	81	Hygeia	11/18/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	5.5E-03	9	5.0E-02	2	0.011	2	0.0044
IVA	Air	ABS-07	2B.2 Cutting and stacking	P4-00338	8/5/2010	Field Sample	30	4.0	120	Hygeia	11/19/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	80	0.75	4.7E-03	5	2.3E-02	3	0.014	3	0.0056
IVA	Air	ABS-07	2B.2 Cutting and stacking	P4-00341	8/5/2010	Field Sample	30	4.0	119	Hygeia	11/22/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	81	0.75	4.7E-03	4	1.9E-02	1	0.0047	1	0.0019

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
IVA	Air	ABS-07	3a USFS worker trail maintenance	P4-00344	8/5/2010	Field Sample	15	4.0	60	Hygeia	11/23/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	3	2.2E-02	1	0.0075	1	0.0030
IVA	Air	ABS-07	3a USFS worker trail maintenance	P4-00349	8/5/2010	Field Sample	15	1.0	15	Hygeia	8/24/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3b USFS worker thinning trees	P4-00350	8/5/2010	Field Sample	15	4.0	60	Hygeia	11/23/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	1	7.5E-03	0	0	0	0
IVA	Air	ABS-07	3b USFS worker thinning trees	P4-00353	8/5/2010	Field Sample	15	4.0	60	Hygeia	11/27/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-07	3c USFS worker stand exam	P4-00358	8/5/2010	Field Sample	30	1.0	30	Hygeia	8/24/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3c USFS worker stand exam	P4-00361	8/5/2010	Field Sample	30	1.0	30	Hygeia	8/26/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00362	8/5/2010	Field Sample	15	4.0	60	Hygeia	9/29/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	13	1.0E-01	4	0.031	4	0.012
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00362	8/5/2010	Field Sample	15	4.0	60	EMSL22	9/10/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	19	0.75	3.0E-02	--	--	4	0.12	4	0.049
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00365	8/5/2010	Field Sample	15	4.0	60	Hygeia	9/30/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	16	1.2E-01	6	0.046	6	0.018
IVA	Air	ABS-06'	[b] 2a Residential wood harvester driving	P4-00370	8/5/2010	Field Sample	62	1.0	62	Hygeia	8/24/2010	TEM-ISO	Not QC	Direct	385	0.01	17	1	3.7E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2a Residential wood harvester driving	P4-00371	8/5/2010	Field Sample	62	4.0	248	Hygeia	8/24/2010	TEM-ISO	Not QC	Direct	385	0.01	5	1	3.1E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.1 Felling and limbing	P4-00374	8/5/2010	Field Sample	20	4.0	80	Hygeia	11/27/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	5.6E-03	1	5.6E-03	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.1 Felling and limbing	P4-00377	8/5/2010	Field Sample	20	4.0	80	Hygeia	11/29/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	5.6E-03	1	5.6E-03	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.2 Cutting and stacking	P4-00382	8/5/2010	Field Sample	30	1.0	30	Hygeia	8/26/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.2 Cutting and stacking	P4-00383	8/5/2010	Field Sample	30	4.0	120	Hygeia	11/29/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	80	0.75	4.7E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3a USFS worker trail maintenance	P4-00388	8/5/2010	Field Sample	15	1.0	15	Hygeia	8/26/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3a USFS worker trail maintenance	P4-00391	8/5/2010	Field Sample	15	1.0	15	Hygeia	8/26/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3b USFS worker thinning trees	P4-00394	8/5/2010	Field Sample	15	1.0	15	Hygeia	8/27/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3b USFS worker thinning trees	P4-00397	8/5/2010	Field Sample	15	1.0	15	Hygeia	8/27/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3c USFS worker stand exam	P4-00400	8/5/2010	Field Sample	30	1.0	30	Hygeia	8/30/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3c USFS worker stand exam	P4-00402	8/5/2010	Field Sample	30	2.0	60	Hygeia	8/30/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3d Cutting firelines by hand	P4-00405	8/5/2010	Field Sample	15	2.0	30	Hygeia	8/30/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3d Cutting firelines by hand	P4-00405	8/5/2010	Field Sample	15	2.0	30	EMSL22	9/10/2013	TEM-ISO	NOT QC	Direct	385	0.0133	79	1	1.2E-02	--	--	0	0	0	0
IVA	Air	ABS-06'	[b] 3d Cutting firelines by hand	P4-00408	8/5/2010	Field Sample	15	2.0	30	Hygeia	8/30/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00412	8/10/2010	Field Sample	66	1.0	66	Hygeia	8/31/2010	TEM-ISO	Not QC	Direct	385	0.01	16	1	3.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00415	8/10/2010	Field Sample	66	1.0	65	Hygeia	8/31/2010	TEM-ISO	Not QC	Direct	385	0.01	16	1	3.7E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00416	8/10/2010	Field Sample	15	4.0	60	Hygeia	11/29/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	1	7.5E-03	1	0.0075	1	0.0030
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00419	8/10/2010	Field Sample	15	4.0	60	Hygeia	11/29/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3a USFS worker trail maintenance	P4-00430	8/10/2010	Field Sample	15	1.0	15	Hygeia	8/31/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3a USFS worker trail maintenance	P4-00433	8/10/2010	Field Sample	15	1.0	15	Hygeia	8/31/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3b USFS worker thinning trees	P4-00434	8/10/2010	Field Sample	15	4.0	60	Hygeia	11/30/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3b USFS worker thinning trees	P4-00439	8/10/2010	Field Sample	15	1.0	15	Hygeia	9/1/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3c USFS worker stand exam	P4-00442	8/10/2010	Field Sample	30	1.0	30	Hygeia	9/1/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3c USFS worker stand exam	P4-00445	8/10/2010	Field Sample	30	1.0	30	Hygeia	9/2/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00446	8/10/2010	Field Sample	15	4.0	60	Hygeia	9/30/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	2	1.5E-02	0	0	0	0
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00446	8/10/2010	Field Sample	15	4.0	60	EMSL22	9/11/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	19	0.75	3.0E-02	--	--	0	0	0	0
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00451	8/10/2010	Field Sample	15	1.0	15	Hygeia	9/2/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00454	8/10/2010	Field Sample	10	4.0	40	Hygeia	11/30/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	1.1E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00459	8/10/2010	Field Sample	10	1.0	10	Hygeia	8/31/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	3.9E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.2 Cutting and stacking	P4-00460	8/10/2010	Field Sample	15	4.0	60	Hygeia	11/30/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-02	2B.2 Cutting and stacking	P4-00465	8/10/2010	Field Sample	15	1.0	15	Hygeia	9/2/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00466	8/11/2010	Field Sample	54	4.0	216	Hygeia	9/6/2010	TEM-ISO	Not QC	Direct	385	0.01	5	1	3.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2a Residential wood harvester driving	P4-00470	8/11/2010	Field Sample	54	2.0	109	Hygeia	9/6/2010	TEM-ISO	Not QC	Direct	385	0.01	10	1	3.5E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00472	8/11/2010	Field Sample	15	4.0	60	Hygeia	12/1/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	9	6.7E-02	2	0.015	2	0.0060
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00475	8/11/2010	Field Sample	15	4.0	60	Hygeia	12/1/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	9	6.7E-02	2	0.015	2	0.0060
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00478	8/11/2010	Field Sample	10	4.0	40	Hygeia	12/1/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	1.1E-02	1	1.1E-02	1	0.011	1	0.0045
IVA	Air	ABS-07	2B.1 Felling and limbing	P4-00482	8/11/2010	Field Sample	10	2.0	20	Hygeia	9/6/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.9E-02	0	0	0	0	0	0
IVA	Air	ABS-07	2B.2 Cutting and stacking	P4-00484	8/11/2010	Field Sample	15	4.0	60	Hygeia	12/3/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-07	2B.2 Cutting and stacking	P4-00487	8/11/2010	Field Sample	15	4.0	60	Hygeia	12/3/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	1	7.5E-03	0	0	0	0
IVA	Air	ABS-07	3a USFS worker trail maintenance	P4-00492	8/11/2010	Field Sample	15	1.0	15	Hygeia	9/6/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3a USFS worker trail maintenance	P4-00495	8/11/2010	Field Sample	15	1.0	15	Hygeia	9/6/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3b USFS worker thinning trees	P4-00498	8/11/2010	Field Sample	15	1.0	15	Hygeia	9/7/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3b USFS worker thinning trees	P4-00501	8/11/2010	Field Sample	15	1.0	15	Hygeia	9/7/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3c USFS worker stand exam	P4-00504	8/11/2010	Field Sample	30	1.0	30	Hygeia	9/7/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3c USFS worker stand exam	P4-00507	8/11/2010	Field Sample	30	1.0	30	Hygeia	9/8/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00508	8/11/2010	Field Sample	15	4.0	60	Hygeia	10/3/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	5	3.8E-02	3	0.023	3	0.0092
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00508	8/11/2010	Field Sample	15	4.0	60	EMSL22	9/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	19	0.75	3.0E-02	--	--	0	0	0	0
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00511	8/11/2010	Field Sample	15	4.0	60	Hygeia	10/4/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	3	2.3E-02	1	0.0077	1	0.0031
IVA	Air	ABS-06'	[b] 2a Residential wood harvester driving	P4-00515	8/11/2010	Field Sample	61	4.0	244	Hygeia	12/3/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	5	0.75	3.7E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2a Residential wood harvester driving	P4-00518	8/11/2010	Field Sample	61	4.0	243	Hygeia	12/3/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	5	0.75	3.7E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.1 Felling and limbing	P4-00521	8/11/2010	Field Sample	10	4.0	40	Hygeia	12/3/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	1.1E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.1 Felling and limbing	P4-00524	8/11/2010	Field Sample	10	4.0	40	Hygeia	12/3/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	1.1E-02	1	1.1E-02	0	0	0	0
IVA	Air	ABS-07	3a USFS worker trail maintenance	P4-00527	8/11/2010	Field Sample	15	4.0	60	Hygeia	12/4/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	1	7.5E-03	1	0.0075	1	0.0030

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
IVA	Air	ABS-07	3a USFS worker trail maintenance	P4-00530	8/11/2010	Field Sample	15	4.0	60	Hygeia	12/4/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	1	7.5E-03	0	0	0	0
IVA	Air	ABS-07	3b USFS worker thinning trees	P4-00533	8/11/2010	Field Sample	15	4.0	60	Hygeia	12/4/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-07	3b USFS worker thinning trees	P4-00536	8/11/2010	Field Sample	15	4.0	60	Hygeia	12/4/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	2	1.5E-02	1	0.0075	1	0.0030
IVA	Air	ABS-07	3c USFS worker stand exam	P4-00539	8/11/2010	Field Sample	30	4.0	120	Hygeia	12/6/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	0	0	0	0	0	0
IVA	Air	ABS-07	3c USFS worker stand exam	P4-00544	8/11/2010	Field Sample	30	1.0	30	Hygeia	9/8/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00545	8/11/2010	Field Sample	15	4.0	60	Hygeia	10/5/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	29	2.2E-01	8	0.062	8	0.025
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00545	8/11/2010	Field Sample	15	4.0	60	EMSL22	9/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	19	0.75	3.0E-02	--	--	0	0	0	0
IVA	Air	ABS-07	3d Cutting firelines by hand	P4-00548	8/11/2010	Field Sample	15	4.0	60	Hygeia	10/5/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	16	1.2E-01	6	0.046	6	0.018
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00551	8/12/2010	Field Sample	64	4.0	256	Hygeia	12/6/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	5	0.75	3.5E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2a Residential wood harvester driving	P4-00556	8/12/2010	Field Sample	64	1.0	64	Hygeia	9/8/2010	TEM-ISO	Not QC	Direct	385	0.01	17	1	3.5E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00557	8/12/2010	Field Sample	15	4.0	60	Hygeia	12/6/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00560	8/12/2010	Field Sample	15	4.0	60	Hygeia	12/6/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	2	1.5E-02	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00563	8/12/2010	Field Sample	10	4.0	40	Hygeia	12/6/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	1.1E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.1 Felling and limbing	P4-00566	8/12/2010	Field Sample	10	4.0	40	Hygeia	12/7/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	1.1E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.2 Cutting and stacking	P4-00571	8/12/2010	Field Sample	15	1.0	15	Hygeia	9/8/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	2B.2 Cutting and stacking	P4-00574	8/12/2010	Field Sample	15	1.0	15	Hygeia	9/9/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3a USFS worker trail maintenance	P4-00575	8/12/2010	Field Sample	15	4.0	60	Hygeia	12/7/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	1	7.5E-03	1	0.0075	1	0.0030
IVA	Air	ABS-02	3a USFS worker trail maintenance	P4-00578	8/12/2010	Field Sample	15	4.0	60	Hygeia	12/6/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3b USFS worker thinning trees	P4-00581	8/12/2010	Field Sample	15	4.0	60	Hygeia	12/6/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	1	7.5E-03	0	0	0	0
IVA	Air	ABS-02	3b USFS worker thinning trees	P4-00584	8/12/2010	Field Sample	15	4.0	60	Hygeia	12/8/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3c USFS worker stand exam	P4-00589	8/12/2010	Field Sample	30	1.0	30	Hygeia	9/9/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3c USFS worker stand exam	P4-00590	8/12/2010	Field Sample	30	4.0	120	Hygeia	12/8/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00593	8/12/2010	Field Sample	15	4.0	60	Hygeia	10/7/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	2	1.5E-02	2	0.015	2	0.0062
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00593	8/12/2010	Field Sample	15	4.0	60	EMSL22	9/5/2013	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0133	19	0.75	3.0E-02	--	--	0	0	0	0
IVA	Air	ABS-02	3d Cutting firelines by hand	P4-00596	8/12/2010	Field Sample	15	4.0	60	Hygeia	10/8/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.75	7.7E-03	1	7.7E-03	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.1 Felling and limbing	P4-00599	8/12/2010	Field Sample	15	4.0	60	Hygeia	12/8/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.1 Felling and limbing	P4-00602	8/12/2010	Field Sample	15	4.0	60	Hygeia	12/8/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.2 Cutting and stacking	P4-00606	8/12/2010	Field Sample	15	2.0	30	Hygeia	9/9/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 2B.2 Cutting and stacking	P4-00610	8/12/2010	Field Sample	15	1.0	15	Hygeia	9/9/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3a USFS worker trail maintenance	P4-00619	8/17/2010	Field Sample	15	1.0	15	Hygeia	9/9/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3a USFS worker trail maintenance	P4-00621	8/17/2010	Field Sample	15	2.0	30	Hygeia	9/9/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3b USFS worker thinning trees	P4-00623	8/17/2010	Field Sample	15	4.0	60	Hygeia	12/8/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	2	1.5E-02	0	0	0	0
IVA	Air	ABS-06'	[b] 3b USFS worker thinning trees	P4-00626	8/17/2010	Field Sample	15	4.0	60	Hygeia	12/9/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.5E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3c USFS worker stand exam	P4-00630	8/17/2010	Field Sample	30	2.0	60	Hygeia	9/9/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3c USFS worker stand exam	P4-00632	8/17/2010	Field Sample	30	4.0	120	Hygeia	9/10/2010	TEM-ISO	Not QC	Direct	385	0.01	67	1	4.8E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3d Cutting firelines by hand	P4-00637	8/17/2010	Field Sample	15	1.0	15	Hygeia	9/10/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3d Cutting firelines by hand	P4-00637	8/17/2010	Field Sample	15	1.0	15	EMSL22	9/10/2013	TEM-ISO	NOT QC	Direct	385	0.0133	233	1	8.3E-03	--	--	0	0	0	0
IVA	Air	ABS-06'	[b] 3d Cutting firelines by hand	P4-00639	8/17/2010	Field Sample	15	2.0	30	Hygeia	9/10/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3a USFS worker trail maintenance	P4-00643	8/17/2010	Field Sample	15	1.0	15	Hygeia	9/10/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3a USFS worker trail maintenance	P4-00644	8/17/2010	Field Sample	15	4.1	61	Hygeia	12/9/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	7.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3b USFS worker thinning trees	P4-00648	8/17/2010	Field Sample	15	2.0	30	Hygeia	9/10/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3b USFS worker thinning trees	P4-00652	8/17/2010	Field Sample	15	1.0	15	Hygeia	9/10/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	2.6E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3c USFS worker stand exam	P4-00654	8/17/2010	Field Sample	30	2.0	60	Hygeia	9/11/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3c USFS worker stand exam	P4-00657	8/17/2010	Field Sample	30	2.0	60	Hygeia	9/13/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3d Cutting firelines by hand	P4-00659	8/17/2010	Field Sample	15	4.0	60	Hygeia	9/14/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3d Cutting firelines by hand	P4-00663	8/17/2010	Field Sample	15	2.0	30	Hygeia	9/14/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	RAINY	1 Recreational visitor hiking	P4-00665	8/17/2010	Field Sample	60	4.0	240	Hygeia	12/9/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	1.9E-03	30	5.6E-02	7	0.013	7	0.0052
IVA	Air	RAINY	1 Recreational visitor hiking	P4-00670	8/17/2010	Field Sample	60	1.0	60	Hygeia	9/14/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3e Cutting firelines with heavy equipment	P4-00671	8/18/2010	Field Sample	30	4.0	120	Hygeia	10/8/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	81	0.75	4.7E-03	1	4.7E-03	1	0.0047	1	0.0019
IVA	Air	ABS-02	3e Cutting firelines with heavy equipment	P4-00674	8/18/2010	Field Sample	30	4.0	120	Hygeia	10/8/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.25	1.2E-02	12	1.4E-01	3	0.035	3	0.014
IVA	Air	ABS-02	3e Cutting firelines with heavy equipment	P4-00677	8/18/2010	Field Sample	30	4.0	120	Hygeia	10/11/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	81	0.75	4.7E-03	0	0	0	0	0	0
IVA	Air	ABS-02	3e Cutting firelines with heavy equipment	P4-00680	8/18/2010	Field Sample	30	4.1	122	Hygeia	10/11/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.25	1.1E-02	5	5.7E-02	0	0	0	0
IVA	Air	ABS-02	3e Cutting firelines with heavy equipment	P4-00683	8/18/2010	Field Sample	30	4.0	120	Hygeia	10/12/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	81	0.75	4.7E-03	1	4.7E-03	0	0	0	0
IVA	Air	ABS-02	3e Cutting firelines with heavy equipment	P4-00686	8/18/2010	Field Sample	30	4.0	120	Hygeia	10/12/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.1	2.9E-02	1	2.9E-02	0	0	0	0
IVA	Air	RAINY	1 Recreational visitor hiking	P4-00689	8/19/2010	Field Sample	60	4.0	240	Hygeia	12/10/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	1.9E-03	27	5.0E-02	10	0.019	10	0.0075
IVA	Air	RAINY	1 Recreational visitor hiking	P4-00692	8/19/2010	Field Sample	60	4.0	240	Hygeia	12/10/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	1.9E-03	35	6.5E-02	8	0.015	8	0.0060
IVA	Air	ABS-06'	[b] 3e Cutting firelines with heavy equipment	P4-00695	8/19/2010	Field Sample	30	4.0	120	Hygeia	10/13/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	81	0.75	4.7E-03	5	2.4E-02	4	0.019	4	0.0076
IVA	Air	ABS-06'	[b] 3e Cutting firelines with heavy equipment	P4-00698	8/19/2010	Field Sample	30	4.0	120	Hygeia	10/13/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	81	0.75	4.7E-03	3	1.4E-02	1	0.0047	1	0.0019
IVA	Air	ABS-06'	[b] 3e Cutting firelines with heavy equipment	P4-00703	8/19/2010	Field Sample	30	1.0	30	Hygeia	9/14/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3e Cutting firelines with heavy equipment	P4-00704	8/19/2010	Field Sample	30	4.0	120	Hygeia	10/14/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	81	0.75	4.7E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3e Cutting firelines with heavy equipment	P4-00708	8/19/2010	Field Sample	30	4.0	120	Hygeia	10/14/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	81	0.75	4.7E-03	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3e Cutting firelines with heavy equipment	P4-00711	8/19/2010	Field Sample	30	4.0	120	Hygeia	10/14/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	81	0.75	4.7E-03	3	1.4E-02	2	0.0095	2	0.0038
IVA	Air	RAINY	1 Recreational visitor hiking	P4-00714	8/20/2010	Field Sample	60	4.0	240	Hygeia	12/10/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	62	0.75	3.0E-03	51	1.5E-01	11	0.033	11	0.013

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity (cc^{-1})	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
IVA	Air	RAINY	1 Recreational visitor hiking	P4-00717	8/20/2010	Field Sample	60	4.0	240	Hygeia	12/11/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	65	0.75	2.9E-03	50	1.4E-01	7	0.020	7	0.0080
IVA	Air	ABS-07	3e Cutting firelines with heavy equipment	P4-00720	8/20/2010	Field Sample	30	4.0	120	Hygeia	10/14/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	81	0.75	4.7E-03	8	3.8E-02	0	0	0	0
IVA	Air	ABS-07	3e Cutting firelines with heavy equipment	P4-00723	8/20/2010	Field Sample	30	4.0	119	Hygeia	10/15/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.01	100	0.1	2.9E-02	12	3.5E-01	1	0.029	1	0.012
IVA	Air	ABS-07	3e Cutting firelines with heavy equipment	P4-00726	8/24/2010	Field Sample	30	4.0	120	Hygeia	10/15/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	7	3.3E-02	3	0.014	3	0.0057
IVA	Air	ABS-07	3e Cutting firelines with heavy equipment	P4-00729	8/24/2010	Field Sample	30	4.1	122	Hygeia	10/15/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	77	0.75	4.8E-03	10	4.8E-02	2	0.0096	2	0.0038
IVA	Air	ABS-07	3e Cutting firelines with heavy equipment	P4-00734	8/24/2010	Field Sample	30	1.0	30	Hygeia	9/14/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3e Cutting firelines with heavy equipment	P4-00737	8/24/2010	Field Sample	30	1.0	30	Hygeia	9/14/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-07	3e Cutting firelines with heavy equipment	P4-00739	8/24/2010	Field Sample	30	4.0	120	Hygeia	10/19/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	1	4.8E-03	0	0	0	0
IVA	Air	ABS-07	3e Cutting firelines with heavy equipment	P4-00742	8/24/2010	Field Sample	30	4.1	122	Hygeia	10/19/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	77	0.75	4.8E-03	5	2.4E-02	2	0.0096	2	0.0038
IVA	Air	RAINY	1 Recreational visitor hiking	P4-00745	8/25/2010	Field Sample	60	4.0	237	Hygeia	12/11/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	28	0.75	6.7E-03	51	3.4E-01	17	0.11	17	0.0459
IVA	Air	RAINY	1 Recreational visitor hiking	P4-00750	8/25/2010	Field Sample	60	1.0	60	Hygeia	9/14/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	1	6.4E-03	0	0	0	0
IVA	Air	ABS-07	3e Cutting firelines with heavy equipment	P4-00751	8/25/2010	Field Sample	30	4.1	122	Hygeia	10/20/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	77	0.75	4.8E-03	4	1.9E-02	1	0.0048	1	0.0019
IVA	Air	ABS-07	3e Cutting firelines with heavy equipment	P4-00754	8/25/2010	Field Sample	30	4.1	122	Hygeia	10/21/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	77	0.75	4.8E-03	3	1.4E-02	1	0.0048	1	0.0019
IVA	Air	ABS-06'	[b] 3e Cutting firelines with heavy equipment	P4-00759	8/25/2010	Field Sample	30	1.0	30	Hygeia	9/15/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3e Cutting firelines with heavy equipment	P4-00760	8/25/2010	Field Sample	30	4.0	120	Hygeia	10/21/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	1	4.8E-03	0	0	0	0
IVA	Air	ABS-06'	[b] 3e Cutting firelines with heavy equipment	P4-00765	8/25/2010	Field Sample	30	1.0	30	Hygeia	9/15/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-06'	[b] 3e Cutting firelines with heavy equipment	P4-00766	8/25/2010	Field Sample	30	4.0	120	Hygeia	10/21/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	12	5.7E-02	4	0.019	4	0.0077
IVA	Air	RAINY	1 Recreational visitor hiking	P4-00769	8/26/2010	Field Sample	60	4.0	240	Hygeia	12/12/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	100	0.75	1.9E-03	37	6.9E-02	10	0.019	10	0.0075
IVA	Air	RAINY	1 Recreational visitor hiking	P4-00774	8/26/2010	Field Sample	60	1.0	60	Hygeia	9/15/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	6.4E-03	1	6.4E-03	0	0	0	0
IVA	Air	ABS-02	3e Cutting firelines with heavy equipment	P4-00777	8/26/2010	Field Sample	30	1.0	30	Hygeia	9/15/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	1	1.3E-02	0	0	0	0
IVA	Air	ABS-02	3e Cutting firelines with heavy equipment	P4-00780	8/26/2010	Field Sample	30	1.0	30	Hygeia	9/15/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	0	0	0	0	0	0
IVA	Air	ABS-02	3e Cutting firelines with heavy equipment	P4-00783	8/26/2010	Field Sample	30	1.0	30	Hygeia	9/15/2010	TEM-ISO	Not QC	Direct	385	0.01	100	1	1.3E-02	2	2.6E-02	0	0	0	0
IVA	Air	ABS-02	3e Cutting firelines with heavy equipment	P4-00784	8/26/2010	Field Sample	30	4.0	120	Hygeia	10/22/2010	TEM-ISO	Not QC	Indirect - Ashed	346	0.0103	78	0.75	4.8E-03	6	2.9E-02	0	0	0	0
CL-2012	Air	Comm Log	Hand Felling	CL-30050	9/4/2012	Field Sample	120	4.0	485	EMSL27	10/18/2012	TEM-ISO	NOT QC	Direct	385	0.013	137	1	4.5E-04	--	--	2	0.00089	2	0.00089
CL-2012	Air	Comm Log	Hand Felling	CL-30054	9/4/2012	Field Sample	120	2.0	244	EMSL27	10/19/2012	TEM-ISO	NOT QC	Direct	385	0.013	84	1	1.4E-03	--	--	3	0.0043	3	0.0043
CL-2012	Air	Comm Log	Hand Felling	CL-30056	9/4/2012	Field Sample	60	2.0	122	EMSL27	10/22/2012	TEM-ISO	NOT QC	Direct	385	0.013	145	1	1.7E-03	--	--	3	0.0050	3	0.0050
CL-2012	Air	Comm Log	Skidding/hooking of timber	CL-30057	9/5/2012	Field Sample	120	4.0	482	EMSL27	10/23/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	23	0.25	1.0E-02	--	--	27	0.27	27	0.11
CL-2012	Air	Comm Log	Skidding/hooking of timber	CL-30061	9/5/2012	Field Sample	120	2.0	243	EMSL27	11/1/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	36	0.25	1.3E-02	--	--	26	0.33	26	0.13
CL-2012	Air	Comm Log	Skidding/hooking of timber	CL-30062	9/5/2012	Field Sample	120	4.0	475	EMSL27	10/25/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	20	0.25	1.2E-02	--	--	26	0.30	26	0.12
CL-2012	Air	Comm Log	Skidding/hooking of timber	CL-30064	9/5/2012	Field Sample	105	4.0	418	EMSL27	10/26/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	18	0.25	1.5E-02	--	--	27	0.40	27	0.16
CL-2012	Air	Comm Log	Skidding/hooking of timber	CL-30066	9/6/2012	Field Sample	125	4.0	504	EMSL27	10/29/2012	TEM-ISO	NOT QC	Direct	385	0.013	40	1	1.5E-03	--	--	3	0.0044	3	0.0044
CL-2012	Air	Comm Log	Mechanical processing	CL-30069	9/6/2012	Field Sample	120	4.0	481	EMSL27	10/29/2012	TEM-ISO	NOT QC	Direct	385	0.013	40	1	1.5E-03	--	--	1	0.0015	1	0.0015
CL-2012	Air	Comm Log	Stationary/10 ft.	CL-30076	9/10/2012	Field Sample	57	2.0	115	EMSL27	10/30/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	291	0.5	1.7E-03	--	--	7	0.012	7	0.0047
CL-2012	Air	Comm Log	Stationary/30 ft.	CL-30078	9/10/2012	Field Sample	57	2.0	114	EMSL27	10/31/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	279	0.5	1.7E-03	--	--	13	0.023	13	0.0090
CL-2012	Air	Comm Log	Site restoration	CL-30080	9/10/2012	Field Sample	60	4.0	240	EMSL27	11/1/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	42	0.5	5.5E-03	--	--	25	0.14	25	0.055
CL-2012	Air	Comm Log	Site restoration	CL-30082	9/10/2012	Field Sample	60	4.0	238	EMSL27	11/5/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	144	0.5	1.6E-03	--	--	15	0.024	15	0.010
VA	Air	ISLAND	Fishing	P5-10097	9/19/2012	Field Sample	60	4.0	243	EMSL27	10/12/2012	TEM-ISO	NOT QC	Direct	385	0.013	395	1	3.1E-04	--	--	0	0	0	0
VA	Air	ISLAND	Fishing	P5-10099	9/19/2012	Field Sample	60	4.0	241	EMSL27	10/12/2012	TEM-ISO	NOT QC	Direct	385	0.013	395	1	3.1E-04	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10060	7/27/2013	Field Sample	30	2.0	60	EMSL27	7/27/2013	TEM-ISO	NOT QC	Direct	385	0.013	281	1	1.8E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10061	7/27/2013	Field Sample	30	2.0	60	EMSL27	7/27/2013	TEM-ISO	NOT QC	Direct	385	0.013	310	1	1.6E-03	--	--	1	0.0016	1	0.0016
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10062	7/27/2013	Field Sample	28	2.0	56	EMSL27	7/27/2013	TEM-ISO	NOT QC	Direct	385	0.013	306	1	1.7E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10063	7/27/2013	Field Sample	26	2.0	52	EMSL27	7/27/2013	TEM-ISO	NOT QC	Direct	385	0.013	325	1	1.8E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10064	7/27/2013	Field Sample	30	2.0	60	EMSL27	7/28/2013	TEM-ISO	NOT QC	Direct	385	0.013	321	1	1.5E-03	--	--	2	0.0031	2	0.0031
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10065	7/27/2013	Field Sample	26	2.0	52	EMSL27	7/28/2013	TEM-ISO	NOT QC	Direct	385	0.013	325	1	1.8E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10066	7/27/2013	Field Sample	28	2.0	56	EMSL27	7/28/2013	TEM-ISO	NOT QC	Direct	385	0.013	325	1	1.6E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10067	7/27/2013	Field Sample	30	2.0	60	EMSL27	7/28/2013	TEM-ISO	NOT QC	Direct	385	0.013	285	1	1.7E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10070	7/27/2013	Field Sample	28	2.0	56	EMSL27	7/28/2013	TEM-ISO	NOT QC	Direct	385	0.013	294	1	1.8E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10071	7/27/2013	Field Sample	30	2.0	60	EMSL27	7/28/2013	TEM-ISO	NOT QC	Direct	385	0.013	280	1	1.8E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10072	7/27/2013	Field Sample	30	2.0	60	EMSL27	7/28/2013	TEM-ISO	NOT QC	Direct	385	0.013	282	1	1.8E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10073	7/27/2013	Field Sample	28	2.0	56	EMSL27	7/28/2013	TEM-ISO	NOT QC	Direct	385	0.013	295	1	1.8E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10074	7/27/2013	Field Sample	30	2.0	60	EMSL27	7/27/2013	TEM-ISO	NOT QC	Direct	385	0.013	280	1	1.8E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10075	7/27/2013	Field Sample	30	2.0	60	EMSL27	7/27/2013	TEM-ISO	NOT QC	Direct	385	0.013	280	1	1.8E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS	Wildfire monitoring, fire line	SM-10076	7/27/2013	Field Sample	30	2.0	60	EMSL27	7/27/2013	TEM-ISO	NOT QC	Direct	385	0.013	280	1	1.8E-03	--	--	0	0	0	0
FIRE	Air	Souse Gulch-ABS Helicopter	Wildfire monitoring, Libby Airport Helo	SM-10077	7/27/2013	Field Sample	62	2.0	124	EMSL27	7/27/2013	TEM-ISO	NOT QC	Direct	385	0.013	100	1	2.4E-03	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #35	NE-20003	8/13/2014	Field Sample	30	2.1	64	ESATR8	9/4/2014	TEM-ISO	NOT QC	Direct	385	0.0099	508	1	1.2E-03	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #35	NE-20005	8/13/2014	Field Sample	30	5.5	166	ESATR8	9/8/2014	TEM-ISO	NOT QC	Direct	385	0.0099	241	1	9.7E-04	--	--	2	0.0019	2	0.0019
N&E-2014	Air	N&E	NE Fire Line; Location #32	NE-20009	8/13/2014	Field Sample	30	5.6	169	ESATR8	9/9/2014	TEM-ISO	NOT QC	Direct	385	0.0099	241	1	9.5E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #32	NE-20012	8/13/2014	Field Sample	30	5.6	169	ESATR8	9/15/2014	TEM-ISO	NOT QC	Direct	385	0.0099	236	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #46	NE-20017	8/13/2014	Field Sample	30	2.2	67	ESATR8	9/10/2014	TEM-ISO	NOT QC	Direct	385	0.0099	507	1	1.1E-03	--	--	2	0.0023	2	0.0023
N&E-2014	Air	N&E	NE Fire Line; Location #46	NE-20020	8/13/2014	Field Sample	30	2.2	67	ESATR8	9/15/2014	TEM-ISO	NOT QC	Direct	385	0.0099	506	1	1.1E-03	--	--	1	0.0011	1	0.0011
N&E-2014	Air	N&E	NE Fire Line; Location #40	NE-20025	8/14/2014	Field Sample	30	2.1	64	ESATR8	9/17/2014	TEM-ISO	NOT QC	Direct	385	0.0099	507	1	1.2E-03	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #40	NE-20027	8/14/2014	Field Sample	30	2.1	64	ESATR8	9/19/2014	TEM-ISO	NOT QC	Direct	385	0.0099	507	1	1.2E-03	--	--	1	0.0012	1	0.0012
N&E-2014	Air	N&E	NE Fire Line; Location #19	NE-20030	8/17/2014	Field Sample	30	5.6	169	ESATR8	9/24/2014	TEM-ISO	NOT QC	Direct	385	0.0099	236	1	9.8E-04	--	--	0	0	0	0

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
N&E-2014	Air	N&E	NE Fire Line; Location #19	NE-20032	8/17/2014	Field Sample	30	5.6	169	ESATR8	9/24/2014	TEM-ISO	NOT QC	Direct	385	0.0099	236	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #20	NE-20035	8/17/2014	Field Sample	30	5.6	169	ESATR8	9/25/2014	TEM-ISO	NOT QC	Direct	385	0.0099	236	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #20	NE-20038	8/17/2014	Field Sample	30	2.1	64	ESATR8	9/30/2014	TEM-ISO	NOT QC	Direct	385	0.0099	506	1	1.2E-03	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #22	NE-20040	8/17/2014	Field Sample	30	5.6	169	ESATR8	9/26/2014	TEM-ISO	NOT QC	Direct	385	0.0099	236	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #22	NE-20043	8/17/2014	Field Sample	30	2.1	64	ESATR8	9/29/2014	TEM-ISO	NOT QC	Direct	385	0.0099	507	1	1.2E-03	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #2	NE-20047	8/18/2014	Field Sample	30	5.6	169	EMSL27	9/10/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #2	NE-20049	8/18/2014	Field Sample	30	5.6	169	EMSL27	9/11/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #6	NE-20052	8/18/2014	Field Sample	30	5.6	169	EMSL27	9/25/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #6	NE-20054	8/18/2014	Field Sample	30	5.6	169	EMSL27	9/25/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #46	NE-20057	8/18/2014	Field Sample	30	5.6	169	EMSL27	9/26/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #46	NE-20059	8/18/2014	Field Sample	30	5.6	169	EMSL27	9/30/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #35	NE-20062	8/19/2014	Field Sample	30	5.6	169	EMSL04	9/10/2014	TEM-ISO	NOT QC	Direct	385	0.0132	177	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #35	NE-20064	8/19/2014	Field Sample	30	5.6	169	EMSL04	9/10/2014	TEM-ISO	NOT QC	Direct	385	0.0132	177	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #32	NE-20066	8/19/2014	Field Sample	30	5.6	169	EMSL04	9/11/2014	TEM-ISO	NOT QC	Direct	385	0.0132	177	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #32	NE-20068	8/19/2014	Field Sample	30	5.6	169	EMSL04	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.0132	177	1	9.8E-04	--	--	1	0.00098	1	0.00098
N&E-2014	Air	N&E	NE Fire Line; Location #25	NE-20070	8/19/2014	Field Sample	30	5.6	169	EMSL04	9/15/2014	TEM-ISO	NOT QC	Direct	385	0.0132	177	1	9.8E-04	--	--	1	0.00098	1	0.00098
N&E-2014	Air	N&E	NE Fire Line; Location #25	NE-20072	8/19/2014	Field Sample	30	5.6	169	EMSL04	9/16/2014	TEM-ISO	NOT QC	Direct	385	0.0132	177	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #40	NE-20076	8/20/2014	Field Sample	30	5.6	169	EMSL27	9/30/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #40	NE-20078	8/20/2014	Field Sample	30	5.6	169	EMSL27	9/30/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #19	NE-20080	8/20/2014	Field Sample	30	5.6	169	EMSL27	10/1/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #19	NE-20082	8/20/2014	Field Sample	30	5.6	169	EMSL27	10/1/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #20	NE-20084	8/20/2014	Field Sample	30	5.7	171	EMSL27	10/2/2014	TEM-ISO	NOT QC	Direct	385	0.013	177	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #20	NE-20086	8/20/2014	Field Sample	30	5.6	169	EMSL27	10/2/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #22	NE-20088	8/20/2014	Field Sample	30	5.6	169	EMSL27	10/6/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #22	NE-20090	8/20/2014	Field Sample	30	5.6	169	EMSL27	10/6/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #2	NE-20093	8/21/2014	Field Sample	30	5.6	169	EMSL03	9/15/2014	TEM-ISO	NOT QC	Direct	385	0.0128	182	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #2	NE-20095	8/21/2014	Field Sample	30	5.6	169	EMSL03	9/15/2014	TEM-ISO	NOT QC	Direct	385	0.0128	182	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #6	NE-20097	8/21/2014	Field Sample	30	5.6	169	EMSL03	9/16/2014	TEM-ISO	NOT QC	Direct	385	0.0128	182	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #6	NE-20099	8/21/2014	Field Sample	30	5.6	169	EMSL03	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.0128	182	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #25	NE-20101	8/21/2014	Field Sample	30	5.6	169	EMSL03	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.0128	182	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #25	NE-20103	8/21/2014	Field Sample	30	5.6	169	EMSL03	9/24/2014	TEM-ISO	NOT QC	Direct	385	0.0128	182	1	9.8E-04	--	--	2	0.0020	2	0.0020
N&E-2014	Air	N&E	NE Fire Line; Location #35	NE-20106	8/25/2014	Field Sample	30	5.6	169	EMSL27	9/22/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #35	NE-20108	8/25/2014	Field Sample	30	5.6	169	EMSL27	9/23/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #32	NE-20110	8/25/2014	Field Sample	30	5.6	169	EMSL27	9/23/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #32	NE-20112	8/25/2014	Field Sample	30	5.6	169	EMSL27	9/23/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #46	NE-20114	8/25/2014	Field Sample	30	5.6	169	EMSL27	9/24/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #46	NE-20116	8/25/2014	Field Sample	30	5.6	169	EMSL27	10/1/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #25	NE-20118	8/25/2014	Field Sample	30	5.6	169	EMSL27	10/1/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #25	NE-20120	8/25/2014	Field Sample	30	5.6	169	EMSL27	10/1/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #40	NE-20123	8/26/2014	Field Sample	30	5.6	169	EMSL27	10/7/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #40	NE-20125	8/26/2014	Field Sample	30	5.6	169	EMSL27	10/7/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #19	NE-20127	8/26/2014	Field Sample	30	5.6	169	EMSL27	10/7/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #19	NE-20129	8/26/2014	Field Sample	30	5.6	169	EMSL27	10/7/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #20	NE-20131	8/26/2014	Field Sample	30	5.6	169	EMSL27	10/7/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #20	NE-20133	8/26/2014	Field Sample	30	5.6	169	EMSL27	10/7/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #22	NE-20135	8/26/2014	Field Sample	30	5.6	169	EMSL27	10/9/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #22	NE-20137	8/26/2014	Field Sample	30	5.6	169	EMSL27	10/9/2014	TEM-ISO	NOT QC	Direct	385	0.013	179	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #2	NE-20140	8/27/2014	Field Sample	30	5.6	169	ESATR8	10/2/2014	TEM-ISO	NOT QC	Direct	385	0.0099	236	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #2	NE-20142	8/27/2014	Field Sample	30	5.6	169	ESATR8	10/3/2014	TEM-ISO	NOT QC	Direct	385	0.0099	236	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #6	NE-20144	8/27/2014	Field Sample	30	5.6	169	ESATR8	10/6/2014	TEM-ISO	NOT QC	Direct	385	0.0099	236	1	9.8E-04	--	--	0	0	0	0
N&E-2014	Air	N&E	NE Fire Line; Location #6	NE-20146	8/27/2014	Field Sample	30	5.6	169	ESATR8	10/6/2014	TEM-ISO	NOT QC	Direct	385	0.0099	236	1	9.8E-04	--	--	0	0	0	0
CL-2014	Air	CL-F	CL Hand Felling	CL-40014	8/30/2014	Field Sample	113	2.0	227	EMSL27	9/16/2014	TEM-ISO	NOT QC	Direct	385	0.013	20	1	6.5E-03	--	--	0	0	0	0
CL-2014	Air	CL-F	CL Hand Felling	CL-40018	8/30/2014	Field Sample	91	2.0	183	EMSL27	9/17/2014	TEM-ISO	NOT QC	Direct	385	0.013	25	1	6.5E-03	--	--	1	0.0065	1	0.0065
CL-2014	Air	CL-F	CL Hand Felling	CL-40020	8/30/2014	Field Sample	107	2.1	225	EMSL27	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.013	20	1	6.6E-03	--	--	0	0	0	0
CL-2014	Air	CL-F	CL Skidding/Hooking	CL-40023	8/31/2014	Field Sample	115	2.0	231	EMSL27	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.013	20	1	6.4E-03	--	--	0	0	0	0
CL-2014	Air	CL-F	CL Skidding/Hooking	CL-40026	8/31/2014	Field Sample	128	2.0	257	EMSL27	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.013	18	1	6.4E-03	--	--	0	0	0	0
CL-2014	Air	CL-F	CL Skidding/Hooking	CL-40028	8/31/2014	Field Sample	124	3.9	489	EMSL27	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.013	10	1	6.1E-03	--	--	0	0	0	0
CL-2014	Air	CL-F	CL Skidding/Hooking	CL-40031	8/31/2014	Field Sample	89	2.0	179	EMSL27	9/18/2014	TEM-ISO	NOT QC	Indirect - Ashed	345	0.013	38	0.6	6.5E-03	--	--	1	0.0065	1	0.0026
CL-2014	Air	CL-F	CL Mechanical Processing	CL-40033	9/1/2014	Field Sample	118	2.0	237	EMSL27	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.013	19	1	6.6E-03	--	--	0	0	0	0
CL-2014	Air	CL-F	CL Mechanical Processing	CL-40035	9/1/2014	Field Sample	112	3.9	441	EMSL27	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.013	11	1	6.1E-03	--	--	0	0	0	0
CL-2014	Air	CL-F	CL Mechanical Processing	CL-40039	9/1/2014	Field Sample	91	2.0	183	EMSL27	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.013	25	1	6.5E-03	--	--	0	0	0	0
CL-2014	Air	CL-F	CL Mechanical Processing	CL-40041	9/1/2014	Field Sample	32	2.0	64	EMSL27	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.013	71	1	6.5E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA10	Cutting slabs pre CL Milling	CL-40042	9/2/2014	Field Sample	122	3.9	481	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	10	1	6.2E-03	--	--	0	0	0	0

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
CL-2014	Air	CL-F-SA50	Cutting slabs pre CL Milling	CL-40044	9/2/2014	Field Sample	125	4.0	504	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	9	1	6.5E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA10	Cutting slabs pre CL Milling	CL-40047	9/2/2014	Field Sample	129	3.9	508	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	9	1	6.5E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA50	Cutting slabs pre CL Milling	CL-40049	9/2/2014	Field Sample	125	4.0	495	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	10	1	6.0E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA10	Cutting slabs pre CL Milling	CL-40051	9/2/2014	Field Sample	113	4.0	447	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	11	1	6.0E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA50	Cutting slabs pre CL Milling	CL-40053	9/2/2014	Field Sample	114	4.0	451	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	10	1	6.6E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA10	Cutting slabs pre CL Milling	CL-40055	9/2/2014	Field Sample	128	3.9	504	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	9	1	6.5E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA50	Cutting slabs pre CL Milling	CL-40057	9/2/2014	Field Sample	129	4.0	511	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	9	1	6.4E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA10	CL Milling	CL-40075	9/6/2014	Field Sample	124	4.0	490	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	10	1	6.0E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA50	CL Milling	CL-40077	9/6/2014	Field Sample	123	3.9	485	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	10	1	6.1E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA10	CL Milling	CL-40080	9/6/2014	Field Sample	92	4.0	371	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	13	1	6.1E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA50	CL Milling	CL-40082	9/6/2014	Field Sample	99	3.9	390	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	12	1	6.3E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA10	CL Milling	CL-40084	9/6/2014	Field Sample	123	3.9	485	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	10	1	6.1E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA50	CL Milling	CL-40086	9/6/2014	Field Sample	128	3.9	504	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	9	1	6.5E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA10	CL Milling	CL-40089	9/7/2014	Field Sample	105	3.8	404	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	12	1	6.1E-03	--	--	0	0	0	0
CL-2014	Air	CL-F-SA50	CL Milling	CL-40091	9/7/2014	Field Sample	104	3.9	410	EMSL27	9/12/2014	TEM-ISO	NOT QC	Direct	385	0.013	11	1	6.6E-03	--	--	0	0	0	0
CL-2014	Air	CL-F	CL Site Preparation	CL-40094	9/7/2014	Field Sample	74	3.9	292	EMSL27	9/18/2014	TEM-ISO	NOT QC	Indirect - Ashed	345	0.013	138	0.1	6.6E-03	--	--	3	0.020	3	0.0079
CL-2014	Air	CL-F	CL Site Preparation	CL-40097	9/7/2014	Field Sample	35	3.9	138	EMSL27	9/18/2014	TEM-ISO	NOT QC	Direct	385	0.013	33	1	6.5E-03	--	--	0	0	0	0
SP-2015	Air	SB-Pile	During Pile Construction	SB-00020	5/12/2015	Field Sample	62	1.5	95	ESATR8	5/21/2015	TEM-ISO	NOT QC	Direct	385	0.0097	107	1	3.9E-03	--	--	13	0.051	13	0.051
SP-2015	Air	SB-Pile	During Pile Construction	SB-00022	5/12/2015	Field Sample	53	1.5	81	ESATR8	5/21/2015	TEM-ISO	NOT QC	Direct	385	0.0097	70	1	7.0E-03	--	--	27	0.19	27	0.19
SP-2015	Air	SB-Burn	During Burn	SB-00101	5/14/2015	Field Sample	63	3.3	209	ESATR8	5/22/2015	TEM-ISO	NOT QC	Direct	385	0.0097	49	1	3.9E-03	--	--	1	0.0039	1	0.0039
SP-2015	Air	SB-Burn	During Burn	SB-00103	5/14/2015	Field Sample	60	3.1	187	ESATR8	5/22/2015	TEM-ISO	NOT QC	Direct	385	0.0097	55	1	3.9E-03	--	--	5	0.019	5	0.019
SP-2015	Air	SB-Burn	During Burn	SB-00105	5/14/2015	Field Sample	62	3.3	206	ESATR8	5/22/2015	TEM-ISO	NOT QC	Direct	385	0.0097	50	1	3.9E-03	--	--	1	0.0039	1	0.0039
SP-2015	Air	SB-Burn	During Burn	SB-00107	5/14/2015	Field Sample	62	3.1	193	ESATR8	5/22/2015	TEM-ISO	NOT QC	Direct	385	0.0097	52	1	4.0E-03	--	--	5	0.020	5	0.020
SP-2015	Air	SB-Burn	During Burn	SB-00108	5/14/2015	Field Sample	63	1.4	88	ESATR8	5/26/2015	TEM-ISO	NOT QC	Direct	385	0.0097	115	1	3.9E-03	--	--	2	0.0078	2	0.0078
SP-2015	Air	SB-Burn	During Burn	SB-00111	5/14/2015	Field Sample	62	3.1	193	ESATR8	5/26/2015	TEM-ISO	NOT QC	Direct	385	0.0097	53	1	3.9E-03	--	--	2	0.0078	2	0.0078
SP-2015	Air	SB-Burn	During Burn	SB-00113	5/14/2015	Field Sample	63	3.5	222	EMSL04	5/20/2015	TEM-ISO	NOT QC	Direct	385	0.0131	34	1	3.9E-03	--	--	0	0	0	0
SP-2015	Air	SB-Burn	During Burn	SB-00115	5/14/2015	Field Sample	63	3.2	203	EMSL04	5/20/2015	TEM-ISO	NOT QC	Direct	385	0.0131	37	1	3.9E-03	--	--	0	0	0	0
SP-2015	Air	SB-Burn	During Burn	SB-00117	5/14/2015	Field Sample	51	3.4	175	EMSL04	5/20/2015	TEM-ISO	NOT QC	Direct	385	0.0131	42	1	4.0E-03	--	--	6	0.024	6	0.024
SP-2015	Air	SB-Burn	During Burn	SB-00119	5/14/2015	Field Sample	52	3.1	162	EMSL04	5/21/2015	TEM-ISO	NOT QC	Direct	385	0.0131	46	1	3.9E-03	--	--	7	0.028	7	0.028
SP-2015	Air	SB-DryMop	During Mop-up, Dry	SB-00137	5/14/2015	Field Sample	17	3.1	53	EMSL04	5/20/2015	TEM-ISO	NOT QC	Direct	385	0.0131	139	1	4.0E-03	--	--	19	0.076	19	0.076
SP-2015	Air	SB-DryMop	During Mop-up, Dry	SB-00139	5/14/2015	Field Sample	16	3.1	50	EMSL04	5/21/2015	TEM-ISO	NOT QC	Direct	385	0.0131	84	1	7.0E-03	--	--	25	0.17	25	0.17
SP-2015	Air	SB-WetMop	During Mop-up, Wet	SB-00143	5/14/2015	Field Sample	16	3.3	53	EMSL04	5/22/2015	TEM-ISO	NOT QC	Direct	385	0.0131	139	1	4.0E-03	--	--	11	0.044	11	0.044
SP-2015	Air	SB-WetMop	During Mop-up, Wet	SB-00145	5/14/2015	Field Sample	19	3.1	59	EMSL04	5/26/2015	TEM-ISO	NOT QC	Direct	385	0.0131	125	1	4.0E-03	--	--	12	0.048	12	0.048
SP-2015	Air	SB-WetMop	During Mop-up, Wet	SB-00147	5/14/2015	Field Sample	15	3.3	50	EMSL04	5/27/2015	TEM-ISO	NOT QC	Direct	385	0.0131	147	1	4.0E-03	--	--	10	0.040	10	0.040
SP-2015	Air	SB-WetMop	During Mop-up, Wet	SB-00149	5/14/2015	Field Sample	15	3.1	47	EMSL04	5/21/2015	TEM-ISO	NOT QC	Direct	385	0.0131	116	1	5.4E-03	--	--	26	0.14	26	0.14
UB-2015	Air	UB-Burn	During burn	UB-00052	6/22/2015	Field Sample	21	2.1	43	EMSL04	7/8/2015	TEM-ISO	NOT QC	Direct	385	0.0131	342	1	2.0E-03	--	--	12	0.024	12	0.024
UB-2015	Air	UB-Burn	During burn	UB-00054	6/22/2015	Field Sample	20	2.0	40	EMSL04	7/9/2015	TEM-ISO	NOT QC	Direct	385	0.0131	368	1	2.0E-03	--	--	18	0.036	18	0.036
UB-2015	Air	UB-Burn	During burn	UB-00057	6/22/2015	Field Sample	15	4.0	60	EMSL04	7/12/2015	TEM-ISO	NOT QC	Direct	385	0.0131	155	1	3.2E-03	--	--	26	0.082	26	0.082
UB-2015	Air	UB-Burn	During burn	UB-00059	6/22/2015	Field Sample	18	4.0	72	EMSL04	7/14/2015	TEM-ISO	NOT QC	Direct	385	0.0131	193	1	2.1E-03	--	--	25	0.053	25	0.053
UB-2015	Air	UB-Burn	During burn	UB-00061	6/22/2015	Field Sample	12	3.9	47	EMSL04	7/11/2015	TEM-ISO	NOT QC	Direct	385	0.0131	168	1	3.7E-03	--	--	25	0.093	25	0.093
UB-2015	Air	UB-Burn	During burn	UB-00062	6/22/2015	Field Sample	16	2.1	33	Hygeia	7/14/2015	TEM-ISO	NOT QC	Direct	385	0.0101	312	1	3.7E-03	--	--	25	0.093	25	0.093
UB-2015	Air	UB-Burn	During burn	UB-00065	6/22/2015	Field Sample	17	4.0	67	Hygeia	7/23/2015	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0101	136	0.25	1.5E-02	--	--	25	0.38	25	0.15
UB-2015	Air	UB-Burn	During burn	UB-00067	6/22/2015	Field Sample	16	4.0	64	Hygeia	7/28/2015	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0101	75	0.75	9.5E-03	--	--	25	0.24	25	0.10
UB-2015	Air	UB-DryMop	During mop-up dry	UB-00069	6/22/2015	Field Sample	23	4.0	92	EMSL04	7/13/2015	TEM-ISO	NOT QC	Indirect - Ashed	364.9	0.0131	40	0.05	1.5E-01	--	--	25	3.8	25	1.5
UB-2015	Air	UB-DryMop	During mop-up dry	UB-00071	6/22/2015	Field Sample	20	4.0	80	EMSL04	7/15/2015	TEM-ISO	NOT QC	Indirect - Ashed	364.9	0.0131	32	0.125	8.7E-02	--	--	25	2.2	25	0.87
UB-2015	Air	UB-DryMop	During mop-up dry	UB-00077	6/22/2015	Field Sample	10	4.0	40	ESATR8	7/13/2015	TEM-ISO	NOT QC	Indirect - Ashed	357	0.0097	59	0.35	4.5E-02	--	--	26	1.2	26	0.46
UB-2015	Air	UB-DryMop	During mop-up dry	UB-00078	6/22/2015	Field Sample	11	2.1	23	ESATR8	7/2/2015	TEM-ISO	NOT QC	Direct	385	0.0097	284	1	6.1E-03	--	--	25	0.15	25	0.15
UB-2015	Air	UB-WetMop	During mop-up wet	UB-00081	6/22/2015	Field Sample	17	4.0	69	ESATR8	7/9/2015	TEM-ISO	NOT QC	Direct	385	0.0097	290	1	2.0E-03	--	--	18	0.036	18	0.036
UB-2015	Air	UB-WetMop	During mop-up wet	UB-00083	6/22/2015	Field Sample	20	4.0	80	Hygeia	7/29/2015	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0101	107	0.25	1.6E-02	--	--	24	0.38	24	0.15
UB-2015	Air	UB-WetMop	During mop-up wet	UB-00085	6/22/2015	Field Sample	19	4.1	77	Hygeia	8/3/2015	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0101	43	0.25	4.1E-02	--	--	25	1.0	25	0.41
UB-2015	Air	UB-WetMop	During mop-up wet	UB-00087	6/22/2015	Field Sample	18	4.0	72	Hygeia	8/4/2015	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0101	150	0.25	1.3E-02	--	--	25	0.32	25	0.13
MT-2015	Air	TS-A-On-Road	On-Road ATV Riding - Route A	TS-00002	9/22/2015	Field Sample	15	4.0	60	ESATR8	10/6/2015	TEM-ISO	NOT QC	Direct	385	0.0097	112	1	5.9E-03	--	--	0	0	0	0
MT-2015	Air	TS-A-On-Road	On-Road ATV Riding - Route A	TS-00004	9/22/2015	Field Sample	15	4.0	60	ESATR8	10/6/2015	TEM-ISO	NOT QC	Direct	385	0.0097	111	1	6.0E-03	--	--	2	0.012	2	0.012
MT-2015	Air	TS-A-On-Road	On-Road ATV Riding - Route A	TS-00006	9/22/2015	Field Sample	15	4.0	60	ESATR8	10/6/2015	TEM-ISO	NOT QC	Direct	385	0.0097	111	1	6.0E-03	--	--	0	0	0	0
MT-2015	Air	TS-A-On-Road	On-Road ATV Riding - Route A	TS-00008	9/22/2015	Field Sample	15	4.0	60	ESATR8	10/6/2015	TEM-ISO	NOT QC	Direct	385	0.0097	113	1	5.9E-03	--	--	0	0	0	0
MT-2015	Air	TS-A-On-Road	On-Road ATV Riding - Route A	TS-00010	9/22/2015	Field Sample	15	4.0	60	ESATR8	10/7/2015	TEM-ISO	NOT QC	Direct	385	0.0097	111	1	6.0E-03	--	--	0	0	0	0
MT-2015	Air	TS-A-On-Road	On-Road ATV Riding - Route A	TS-00012	9/22/2015	Field Sample	15	4.0	60	ESATR8	10/7/2015	TEM-ISO	NOT QC	Direct	385	0.0097	111	1	6.0E-03	--	--	1	0.0060	1	0.0060
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00014	9/22/2015	Field Sample	15	4.0	60	ESATR8	10/9/2015	TEM-ISO	NOT QC	Direct	385	0.0097	167	1	4.0E-03	--	--	16	0.063	16	0.063
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00016	9/22/2015	Field Sample	15	4.0	60	ESATR8	10/12/2015	TEM-ISO	NOT QC	Direct	385	0.0097	51	1	1.3E-02	--	--	25	0.32	25	0.32
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00018	9/22/2015	Field Sample	15	4.1	61	ESATR8	10/12/2015	TEM-ISO	NOT QC	Direct	385	0.0097	76	1	8.6E-03	--	--	25	0.21	25	0.21
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00020	9/22/2015	Field Sample	15	4.0	60	ESATR8	10/13/2015	TEM-ISO	NOT QC	Direct	385	0.0097	58	1	1.1E-02	--	--	25	0.29	25	0.29
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00022	9/22/2015	Field Sample	15	4.0	60	ESATR8	10/13/2015	TEM-ISO	NOT QC	Direct	385	0.0097	124	1	5.3E-03	--	--	25	0.13	25	0.13
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00024	9/22/2015	Field Sample	15	4.1	61	ESATR8	10/14/2015	TEM-ISO	NOT QC	Direct	385	0.0097	102	1	6.4E-03	--	--	25	0.16	25	0.16

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00027	9/22/2015	Field Sample	15	4.0	60	EMSL04	10/7/2015	TEM-ISO	NOT QC	Direct	385	0.0134	80	1	6.0E-03	--	--	1	0.0060	1	0.0060
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00029	9/22/2015	Field Sample	15	4.0	60	EMSL04	10/8/2015	TEM-ISO	NOT QC	Direct	385	0.0134	80	1	6.0E-03	--	--	1	0.0060	1	0.0060
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00031	9/22/2015	Field Sample	15	4.0	60	EMSL04	10/9/2015	TEM-ISO	NOT QC	Direct	385	0.0134	80	1	6.0E-03	--	--	0	0	0	0
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00033	9/22/2015	Field Sample	15	4.1	61	EMSL04	10/7/2015	TEM-ISO	NOT QC	Direct	385	0.0134	79	1	6.0E-03	--	--	0	0	0	0
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00035	9/22/2015	Field Sample	16	4.0	64	EMSL04	10/6/2015	TEM-ISO	NOT QC	Direct	385	0.0134	75	1	6.0E-03	--	--	3	0.018	3	0.018
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00037	9/22/2015	Field Sample	16	4.0	64	EMSL04	10/5/2015	TEM-ISO	NOT QC	Direct	385	0.0134	75	1	6.0E-03	--	--	2	0.012	2	0.012
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00041	9/23/2015	Field Sample	15	2.0	30	EMSL04	10/28/2015	TEM-ISO	NOT QC	Direct	385	0.0134	124	1	7.6E-03	--	--	28	0.21	28	0.21
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00044	9/23/2015	Field Sample	15	4.1	61	EMSL04	10/5/2015	TEM-ISO	NOT QC	Direct	385	0.0134	119	1	4.0E-03	--	--	25	0.099	25	0.099
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00046	9/23/2015	Field Sample	15	3.9	59	EMSL04	10/5/2015	TEM-ISO	NOT QC	Direct	385	0.0134	122	1	4.0E-03	--	--	8	0.032	8	0.032
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00048	9/23/2015	Field Sample	15	4.0	59	EMSL04	10/6/2015	TEM-ISO	NOT QC	Direct	385	0.0134	73	1	6.6E-03	--	--	25	0.17	25	0.17
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00050	9/23/2015	Field Sample	15	4.0	60	EMSL03	10/2/2015	TEM-ISO	NOT QC	Direct	385	0.0127	90	1	5.6E-03	--	--	34	0.19	34	0.19
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00052	9/23/2015	Field Sample	15	4.0	60	EMSL03	10/5/2015	TEM-ISO	NOT QC	Direct	385	0.0127	93	1	5.4E-03	--	--	28	0.15	28	0.15
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00054	9/23/2015	Field Sample	15	4.1	61	EMSL03	10/7/2015	TEM-ISO	NOT QC	Direct	385	0.0127	84	1	5.9E-03	--	--	0	0	0	0
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00056	9/23/2015	Field Sample	15	4.0	60	EMSL03	10/7/2015	TEM-ISO	NOT QC	Direct	385	0.0127	85	1	5.9E-03	--	--	2	0.012	2	0.012
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00058	9/23/2015	Field Sample	15	4.1	61	EMSL03	10/12/2015	TEM-ISO	NOT QC	Direct	385	0.0127	83	1	6.0E-03	--	--	2	0.012	2	0.012
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00060	9/23/2015	Field Sample	15	4.1	61	EMSL03	10/12/2015	TEM-ISO	NOT QC	Direct	385	0.0127	84	1	5.9E-03	--	--	2	0.012	2	0.012
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00062	9/23/2015	Field Sample	15	4.0	60	EMSL03	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0128	84	1	6.0E-03	--	--	4	0.024	4	0.024
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00064	9/23/2015	Field Sample	15	4.0	60	EMSL03	10/15/2015	TEM-ISO	NOT QC	Direct	385	0.0127	85	1	5.9E-03	--	--	4	0.024	4	0.024
MT-2015	Air	TS-C-On-Road	On-Road ATV Riding - Route C	TS-00066	9/23/2015	Field Sample	15	4.0	60	EMSL03	10/15/2015	TEM-ISO	NOT QC	Direct	385	0.0127	85	1	5.9E-03	--	--	1	0.0059	1	0.0059
MT-2015	Air	TS-C-On-Road	On-Road ATV Riding - Route C	TS-00068	9/23/2015	Field Sample	15	4.1	61	EMSL03	10/15/2015	TEM-ISO	NOT QC	Direct	385	0.0127	84	1	5.9E-03	--	--	4	0.024	4	0.024
MT-2015	Air	TS-C-On-Road	On-Road ATV Riding - Route C	TS-00070	9/23/2015	Field Sample	15	4.0	60	EMSL03	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0127	85	1	5.9E-03	--	--	0	0	0	0
MT-2015	Air	TS-C-On-Road	On-Road ATV Riding - Route C	TS-00072	9/23/2015	Field Sample	15	4.0	60	EMSL03	10/20/2015	TEM-ISO	NOT QC	Direct	385	0.0127	85	1	5.9E-03	--	--	0	0	0	0
MT-2015	Air	TS-C-On-Road	On-Road ATV Riding - Route C	TS-00074	9/23/2015	Field Sample	15	4.0	60	EMSL45	10/9/2015	TEM-ISO	NOT QC	Direct	385	0.0101	106	1	6.0E-03	--	--	2	0.012	2	0.012
MT-2015	Air	TS-C-On-Road	On-Road ATV Riding - Route C	TS-00076	9/23/2015	Field Sample	15	4.0	60	EMSL45	10/13/2015	TEM-ISO	NOT QC	Direct	385	0.0101	106	1	6.0E-03	--	--	7	0.042	7	0.042
MT-2015	Air	TS-C-On-Road	On-Road ATV Riding - Route C	TS-00077	9/23/2015	Field Sample	15	2.1	31	EMSL45	10/13/2015	TEM-ISO	NOT QC	Direct	385	0.0101	212	1	5.8E-03	--	--	7	0.041	7	0.041
MT-2015	Air	TS-C-On-Road	On-Road ATV Riding - Route C	TS-00079	9/23/2015	Field Sample	15	2.1	31	EMSL45	10/15/2015	TEM-ISO	NOT QC	Direct	385	0.0101	207	1	6.0E-03	--	--	8	0.048	8	0.048
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00081	9/24/2015	Field Sample	15	2.0	30	EMSL45	10/9/2015	TEM-ISO	NOT QC	Direct	385	0.0101	212	1	6.0E-03	--	--	11	0.066	11	0.066
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00084	9/24/2015	Field Sample	15	4.0	60	EMSL45	10/16/2015	TEM-ISO	NOT QC	Direct	385	0.0101	107	1	6.0E-03	--	--	6	0.036	6	0.036
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00087	9/24/2015	Field Sample	15	4.1	61	EMSL45	10/16/2015	TEM-ISO	NOT QC	Direct	385	0.0101	105	1	5.9E-03	--	--	8	0.048	8	0.048
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00088	9/24/2015	Field Sample	15	2.0	30	EMSL45	10/9/2015	TEM-ISO	NOT QC	Direct	385	0.0101	212	1	6.0E-03	--	--	4	0.024	4	0.024
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00091	9/24/2015	Field Sample	15	4.0	60	EMSL45	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0101	106	1	6.0E-03	--	--	11	0.066	11	0.066
MT-2015	Air	TS-Mine-Off-Road	Off-Road ATV Riding	TS-00093	9/24/2015	Field Sample	15	4.0	60	EMSL45	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0101	106	1	6.0E-03	--	--	5	0.030	5	0.030
MT-2015	Air	TS-B-On-Road	On-Road ATV Riding - Route B	TS-00095	9/24/2015	Field Sample	15	4.0	60	EMSL45	10/20/2015	TEM-ISO	NOT QC	Direct	385	0.0101	106	1	6.0E-03	--	--	0	0	0	0
MT-2015	Air	TS-B-On-Road	On-Road ATV Riding - Route B	TS-00097	9/24/2015	Field Sample	15	4.0	60	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	82	1	5.9E-03	--	--	1	0.0059	1	0.0059
MT-2015	Air	TS-B-On-Road	On-Road ATV Riding - Route B	TS-00099	9/24/2015	Field Sample	15	4.0	60	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	82	1	6.0E-03	--	--	1	0.0060	1	0.0060
MT-2015	Air	TS-B-On-Road	On-Road ATV Riding - Route B	TS-00101	9/24/2015	Field Sample	15	4.0	60	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	82	1	6.0E-03	--	--	0	0	0	0
MT-2015	Air	TS-B-On-Road	On-Road ATV Riding - Route B	TS-00103	9/24/2015	Field Sample	15	4.1	61	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	81	1	5.9E-03	--	--	0	0	0	0
MT-2015	Air	TS-B-On-Road	On-Road ATV Riding - Route B	TS-00105	9/24/2015	Field Sample	15	4.1	61	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	81	1	6.0E-03	--	--	0	0	0	0
MT-2015	Air	TS-B-On-Road	On-Road ATV Riding - Route B	TS-00107	9/24/2015	Field Sample	15	4.0	60	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	82	1	6.0E-03	--	--	1	0.0060	1	0.0060
MT-2015	Air	TS-B-On-Road	On-Road ATV Riding - Route B	TS-00109	9/24/2015	Field Sample	15	4.0	60	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	82	1	6.0E-03	--	--	0	0	0	0
MT-2015	Air	TS-B-On-Road	On-Road ATV Riding - Route B	TS-00111	9/24/2015	Field Sample	15	4.0	60	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	83	1	5.9E-03	--	--	1	0.0059	1	0.0059
MT-2015	Air	TS-B-On-Road	On-Road ATV Riding - Route B	TS-00113	9/24/2015	Field Sample	15	4.0	60	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	82	1	6.0E-03	--	--	0	0	0	0
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00115	9/24/2015	Field Sample	15	4.0	60	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	122	1	4.0E-03	--	--	2	0.0080	2	0.0080
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00117	9/24/2015	Field Sample	15	4.1	61	EMSL22	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	121	1	4.0E-03	--	--	4	0.016	4	0.016
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00119	9/24/2015	Field Sample	15	4.1	61	EMSL22	10/20/2015	TEM-ISO	NOT QC	Direct	385	0.0131	121	1	4.0E-03	--	--	9	0.036	9	0.036
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00121	9/24/2015	Field Sample	15	4.0	60	ESATR8	10/15/2015	TEM-ISO	NOT QC	Direct	385	0.0097	141	1	4.7E-03	--	--	25	0.12	25	0.12
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00123	9/24/2015	Field Sample	15	4.0	60	ESATR8	10/19/2015	TEM-ISO	NOT QC	Direct	385	0.0097	110	1	6.0E-03	--	--	25	0.15	25	0.15
MT-2015	Air	TS-Rock Hound	Rock hound	TS-00125	9/24/2015	Field Sample	15	4.0	60	ESATR8	10/20/2015	TEM-ISO	NOT QC	Direct	385	0.0097	82	1	8.1E-03	--	--	25	0.20	25	0.20
WSA	Air	WA-Near	Woodstove Burning	WA-00015	11/7/2012	Field Sample	12	5.5	65	Hygeia	12/3/2012	TEM-ISO	NOT QC	Indirect - Ashed	346	0.01	354	0.25	6.0E-03	--	--	25	0.15	25	0.060
WSA	Air	WA-Near	Woodstove Burning	WA-00037	11/9/2012	Field Sample	12	5.5	65	RESI	12/18/2012	TEM-ISO	NOT QC	Indirect - Ashed	346	0.01	101	0.2	2.6E-02	--	--	32	0.84	32	0.34

Table E-1i: Summary of LAA Results for Activity Based Sampling - Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity ($cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)*	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
WSA	Air	WA-Near	Woodstove Burning	WA-00059	11/13/2012	Field Sample	13	5.5	70	EMSL27	12/4/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	700	0.1	5.7E-03	--	--	7	0.040	7	0.016
WSA	Air	WA-FC	Woodstove Burning	WA-00011	11/7/2012	Field Sample	11	5.5	60	Hygeia	11/29/2012	TEM-ISO	NOT QC	Indirect - Ashed	346	0.01	399	0.25	5.8E-03	--	--	1	0.0058	1	0.0023
WSA	Air	WA-FC	Woodstove Burning	WA-00036	11/9/2012	Field Sample	14	5.5	75	RESI	12/15/2012	TEM-ISO	NOT QC	Indirect - Ashed	346	0.01	421	0.2	5.5E-03	--	--	8	0.044	8	0.018
WSA	Air	WA-FC	Woodstove Burning	WA-00057	11/13/2012	Field Sample	13	5.5	70	EMSL27	11/28/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	700	0.1	5.7E-03	--	--	1	0.0057	1	0.0023
WSA	Air	WA-BC	Woodstove Burning	WA-00008	11/7/2012	Field Sample	13	5.5	70	Hygeia	11/28/2012	TEM-ISO	NOT QC	Indirect - Ashed	346	0.01	341	0.25	5.8E-03	--	--	0	0	0	0
WSA	Air	WA-BC	Woodstove Burning	WA-00035	11/9/2012	Field Sample	15	5.5	80	RESI	12/14/2012	TEM-ISO	NOT QC	Indirect - Ashed	346	0.01	400	0.2	5.4E-03	--	--	4	0.022	4	0.0087
WSA	Air	WA-BC	Woodstove Burning	WA-00055	11/13/2012	Field Sample	12	5.5	65	EMSL27	11/27/2012	TEM-ISO	NOT QC	Indirect - Ashed	360	0.013	1555	0.01	2.7E-02	--	--	0	0	0	0
CONST	Air	SS-Bobcat	Street Sweeper	LD-S0003	5/6/2013	Field Sample				RESI		TEM-ISO	NOT QC	Direct						1	0.00142	0	0	0	0
CONST	Air	SS-Regenrat1	Street Sweeper	LD-S0005	5/7/2013	Field Sample				RESI		TEM-ISO	NOT QC	Direct						0	0	0	0	0	0
CONST	Air	SS-Regenrat2	Street Sweeper	LD-S0006	5/7/2013	Field Sample				RESI		TEM-ISO	NOT QC	Direct						0	0	0	0	0	0
CONST	Air	SS-Regenrat3	Street Sweeper	LD-S0008	5/6/2013	Field Sample				RESI		TEM-ISO	NOT QC	Direct						1	0.00154	1	0.0015	1	0.0015
CONST	Air	SS-Tennant	Street Sweeper	LD-S0010	5/7/2013	Field Sample				RESI		TEM-ISO	NOT QC	Direct						0	0	0	0	0	0

Notes:

[a] ABS activities were performed in an area west of ABS-10 (north of the mine, but within 2 miles); changed ABS Area from ABS-10 to ABS-10'.

[b] ABS area was changed from ABS-10 to ABS-06'; ABS-10 was moved closer to ABS-06 during the study.

* PCME results have been adjusted for all samples prepared indirectly.

-- analysis was performed under low magnification; only PCME structures were recorded

ABS = activity-based sampling

cc^{-1} = per cubic centimeter

Conc. = concentration

EFA = effective filter area

EPA = U.S. Environmental Protection Agency

ID = identification

ISO = International Organization for Standardization

L = liter

LAA = Libby amphibole asbestos

min = minute

mm = millimeter

N = number of asbestos structures

PCME = Phase Contrast Microscopy Equivalent

QC = quality control

s/cc = structures per cubic centimeter

TEM = transmission electron microscopy

Table E-1j: Summary of LAA Results for Perimeter Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)**	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
SP-2015	Air	SB-50-N	Pre-burn; 50 feet	SB-00027	5/14/2015	Field Sample	185	3.1	577	EMSL04	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	13	1	3.9E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-S	Pre-burn; 50 feet	SB-00029	5/14/2015	Field Sample	184	3.1	574	EMSL04	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	13	1	3.9E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-E	Pre-burn; 50 feet	SB-00031	5/14/2015	Field Sample	189	3.1	590	EMSL04	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	13	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-W	Pre-burn; 50 feet	SB-00033	5/14/2015	Field Sample	181	3.1	565	EMSL04	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	14	1	3.7E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-N	During burn; 50 feet	SB-00046	5/14/2015	Field Sample	195	3.1	608	EMSL04	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	13	1	3.7E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-E	During burn; 50 feet	SB-00048	5/14/2015	Field Sample	206	3.2	663	EMSL04	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.7E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-S	During burn; 50 feet	SB-00050	5/14/2015	Field Sample	212	3.2	683	EMSL03	6/18/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.6E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-W	During burn; 50 feet	SB-00052	5/14/2015	Field Sample	180	3.2	580	EMSL03	6/18/2015	TEM-ISO	NOT QC	Direct	385	0.0131	13	1	3.9E-03	--	--	0	0	0	0
SP-2015	Air	SB-100-N	During burn; 100 feet	SB-00055	5/14/2015	Field Sample	198	3.1	618	EMSL03	6/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	4.0E-03	--	--	0	0	0	0
SP-2015	Air	SB-100-E	During burn; 100 feet	SB-00057	5/14/2015	Field Sample	208	3.2	670	EMSL03	6/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	11	1	4.0E-03	--	--	0	0	0	0
SP-2015	Air	SB-100-S	During burn; 100 feet	SB-00059	5/14/2015	Field Sample	213	3.1	665	EMSL03	6/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.7E-03	--	--	0	0	0	0
SP-2015	Air	SB-100-W	During burn; 100 feet	SB-00061	5/14/2015	Field Sample	181	3.2	583	EMSL03	6/19/2015	TEM-ISO	NOT QC	Direct	385	0.0131	13	1	3.9E-03	--	--	0	0	0	0
SP-2015	Air	SB-200-N	During burn; 200 feet	SB-00063	5/14/2015	Field Sample	201	3.1	627	EMSL03	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.9E-03	--	--	0	0	0	0
SP-2015	Air	SB-200-E	During burn; 200 feet	SB-00065	5/14/2015	Field Sample	209	3.1	652	EMSL03	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-200-S	During burn; 200 feet	SB-00067	5/14/2015	Field Sample	216	3.2	696	EMSL03	6/6/2015	TEM-ISO	NOT QC	Direct	385	0.0131	11	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-200-W	During burn; 200 feet	SB-00069	5/14/2015	Field Sample	185	3.1	577	EMSL03	6/8/2015	TEM-ISO	NOT QC	Direct	385	0.0127	15	1	3.5E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-N	During burn; 50 feet	SB-00071	5/14/2015	Field Sample	205	3.1	640	EMSL03	6/7/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.8E-03	--	--	2	7.7E-03	2	7.7E-03
SP-2015	Air	SB-50-E	During burn; 50 feet	SB-00073	5/14/2015	Field Sample	201	3.1	627	EMSL03	6/8/2015	TEM-ISO	NOT QC	Direct	385	0.0127	13	1	3.7E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-S	During burn; 50 feet	SB-00075	5/14/2015	Field Sample	197	3.1	615	EMSL03	5/28/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	4.0E-03	--	--	3	1.2E-02	3	1.2E-02
SP-2015	Air	SB-50-W	During burn; 50 feet	SB-00077	5/14/2015	Field Sample	216	3.1	674	EMSL03	5/29/2015	TEM-ISO	NOT QC	Direct	385	0.0131	11	1	4.0E-03	--	--	18	7.1E-02	18	7.1E-02
SP-2015	Air	SB-100-N	During burn; 100 feet	SB-00079	5/14/2015	Field Sample	202	3.1	630	EMSL03	5/29/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.9E-03	--	--	0	0	0	0
SP-2015	Air	SB-100-E	During burn; 100 feet	SB-00081	5/14/2015	Field Sample	199	3.1	621	EMSL03	6/1/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.9E-03	--	--	1	3.9E-03	1	3.9E-03
SP-2015	Air	SB-100-S	During burn; 100 feet	SB-00083	5/14/2015	Field Sample	197	3.1	615	EMSL03	6/3/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	4.0E-03	--	--	0	0	0	0
SP-2015	Air	SB-100-W	During burn; 100 feet	SB-00085	5/14/2015	Field Sample	209	3.1	652	EMSL03	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.8E-03	--	--	7	2.6E-02	7	2.6E-02
SP-2015	Air	SB-200-N	During burn; 200 feet	SB-00087	5/14/2015	Field Sample	200	3.1	624	EMSL04	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.9E-03	--	--	0	0	0	0
SP-2015	Air	SB-200-E	During burn; 200 feet	SB-00089	5/14/2015	Field Sample	198	3.1	618	EMSL04	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	4.0E-03	--	--	0	0	0	0
SP-2015	Air	SB-200-S	During burn; 200 feet	SB-00091	5/14/2015	Field Sample	196	3.1	612	EMSL04	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	13	1	3.7E-03	--	--	0	0	0	0
SP-2015	Air	SB-200-W	During burn; 200 feet	SB-00093	5/14/2015	Field Sample	207	3.1	646	EMSL04	6/4/2015	TEM-ISO	NOT QC	Direct	385	0.0131	12	1	3.8E-03	--	--	1	3.8E-03	1	3.8E-03
SP-2015	Air	SB-50-N	Post-burn; 50 feet	SB-00205	5/15/2015	Field Sample	181	3.1	565	EMSL03	6/9/2015	TEM-ISO	NOT QC	Direct	385	0.0127	14	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-E	Post-burn; 50 feet	SB-00207	5/15/2015	Field Sample	181	3.1	565	EMSL03	6/9/2015	TEM-ISO	NOT QC	Direct	385	0.0127	14	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-S	Post-burn; 50 feet	SB-00209	5/15/2015	Field Sample	181	3.1	565	EMSL03	6/9/2015	TEM-ISO	NOT QC	Direct	385	0.0127	14	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-W	Post-burn; 50 feet	SB-00211	5/15/2015	Field Sample	181	3.1	565	EMSL03	6/9/2015	TEM-ISO	NOT QC	Direct	385	0.0127	14	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-N	Post-burn; 50 feet	SB-00214	5/15/2015	Field Sample	181	3.1	565	EMSL03	6/9/2015	TEM-ISO	NOT QC	Direct	385	0.0127	14	1	3.8E-03	--	--	1	3.8E-03	1	3.8E-03
SP-2015	Air	SB-50-E	Post-burn; 50 feet	SB-00216	5/15/2015	Field Sample	181	3.1	565	EMSL03	6/9/2015	TEM-ISO	NOT QC	Direct	385	0.0127	14	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-S	Post-burn; 50 feet	SB-00218	5/15/2015	Field Sample	181	3.1	565	EMSL03	6/10/2015	TEM-ISO	NOT QC	Direct	385	0.0127	14	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-W	Post-burn; 50 feet	SB-00220	5/15/2015	Field Sample	181	3.1	565	EMSL03	6/10/2015	TEM-ISO	NOT QC	Direct	385	0.0127	14	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-N	Post-burn; 50 feet	SB-00222	5/16/2015	Field Sample	181	3.2	583	EMSL03	6/10/2015	TEM-ISO	NOT QC	Direct	385	0.0127	13	1	4.0E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-E	Post-burn; 50 feet	SB-00224	5/16/2015	Field Sample	181	3.1	565	EMSL03	6/10/2015	TEM-ISO	NOT QC	Direct	385	0.0127	14	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-S	Post-burn; 50 feet	SB-00226	5/16/2015	Field Sample	181	3.1	565	EMSL03	6/11/2015	TEM-ISO	NOT QC	Direct	385	0.0127	14	1	3.8E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-W	Post-burn; 50 feet	SB-00228	5/16/2015	Field Sample	181	3.2	583	EMSL03	6/11/2015	TEM-ISO	NOT QC	Direct	385	0.0127	13	1	4.0E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-N	Post-burn; 50 feet	SB-00231	5/16/2015	Field Sample	181	3.1	565	ESATR8	5/28/2015	TEM-ISO	NOT QC	Direct	385	0.0097	20	1	3.5E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-E	Post-burn; 50 feet	SB-00233	5/16/2015	Field Sample	181	3.1	565	ESATR8	5/28/2015	TEM-ISO	NOT QC	Direct	385	0.0097	20	1	3.5E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-S	Post-burn; 50 feet	SB-00235	5/16/2015	Field Sample	181	3.1	565	ESATR8	5/28/2015	TEM-ISO	NOT QC	Direct	385	0.0097	20	1	3.5E-03	--	--	0	0	0	0
SP-2015	Air	SB-50-W	Post-burn; 50 feet	SB-00237	5/16/2015	Field Sample	181	3.1	565	ESATR8	5/28/2015	TEM-ISO	NOT QC	Direct	385	0.0097	20	1	3.5E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-W	Pre-burn; 50 feet	UB-00028	5/28/2015	Field Sample	240	4.0	948	ESATR8	6/2/2015	TEM-ISO	NOT QC	Direct	385	0.0097	21	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-N	Pre-burn; 50 feet	UB-00030	5/28/2015	Field Sample	240	4.0	960	ESATR8	6/2/2015	TEM-ISO	NOT QC	Direct	385	0.0097	21	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-E	Pre-burn; 50 feet	UB-00032	5/28/2015	Field Sample	240	4.0	960	ESATR8	6/2/2015	TEM-ISO	NOT QC	Direct	385	0.0097	21	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-S	Pre-burn; 50 feet	UB-00034	5/28/2015	Field Sample	240	4.0	954	ESATR8	6/2/2015	TEM-ISO	NOT QC	Direct	385	0.0097	21	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-S	During burn; 50 feet	UB-00037	6/22/2015	Field Sample	266	4.0	1061	ESATR8	7/16/2015	TEM-ISO	NOT QC	Direct	385	0.0097	20	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-W	During burn; 50 feet	UB-00041	6/22/2015	Field Sample	279	4.0	1119	ESATR8	7/16/2015	TEM-ISO	NOT QC	Direct	385	0.0097	18	1	2.0E-03	--	--	1	2.0E-03	1	2.0E-03
UB-2015	Air	UB-50-N	During burn; 50 feet	UB-00045	6/22/2015	Field Sample	158	4.0	626	Hygeia	7/31/2015	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0101	37	0.75	2.0E-03	--	--	2	3.9E-03	2	1.6E-03
UB-2015	Air	UB-50-E	During burn; 50 feet	UB-00051	6/22/2015	Field Sample	170	4.0	677	EMSL04	7/8/2015	TEM-ISO	NOT QC	Direct	385	0.0131	23	1	1.9E-03	--	--	1	1.9E-03	1	1.9E-03

Table E-1j: Summary of LAA Results for Perimeter Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	ABS Information		Sample Information						Analysis Information										Results					
		ABS Area	ABS Scenario Description	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	Total LAA		PCME LAA		PCME LAA (Adjusted)**	
																				N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
UB-2015	Air	UB-50-N	During burn; 50 feet	UB-00073	6/22/2015	Field Sample	139	3.9	543	EMSL04	7/13/2015	TEM-ISO	NOT QC	Direct	385	0.0131	28	1	1.9E-03	--	--	1	1.9E-03	1	1.9E-03
UB-2015	Air	UB-50-E	During burn; 50 feet	UB-00075	6/22/2015	Field Sample	129	3.9	506	ESATR8	7/15/2015	TEM-ISO	NOT QC	Direct	385	0.0097	41	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-100-S	During burn; 100 feet	UB-00038	6/22/2015	Field Sample	271	4.0	1095	ESATR8	7/16/2015	TEM-ISO	NOT QC	Direct	385	0.0097	20	1	1.8E-03	--	--	0	0	0	0
UB-2015	Air	UB-100-W	During burn; 100 feet	UB-00042	6/22/2015	Field Sample	275	4.0	1097	ESATR8	7/16/2015	TEM-ISO	NOT QC	Direct	385	0.0097	20	1	1.8E-03	--	--	0	0	0	0
UB-2015	Air	UB-100-N	During burn; 100 feet	UB-00046	6/22/2015	Field Sample	283	4.0	1129	Hygeia	8/1/2015	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0101	21	0.75	1.9E-03	--	--	3	5.8E-03	3	2.3E-03
UB-2015	Air	UB-100-E	During burn; 100 feet	UB-00048	6/22/2015	Field Sample	295	4.0	1165	Hygeia	8/1/2015	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0101	20	0.75	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-200-W	During burn; 200 feet	UB-00043	6/22/2015	Field Sample	278	4.0	1106	Hygeia	7/10/2015	TEM-ISO	NOT QC	Direct	385	0.0101	18	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-200-N	During burn; 200 feet	UB-00047	6/22/2015	Field Sample	284	4.0	1122	Hygeia	8/1/2015	TEM-ISO	NOT QC	Indirect - Ashed	346	0.0101	21	0.75	1.9E-03	--	--	2	3.9E-03	2	1.6E-03
UB-2015	Air	UB-200-E	During burn; 200 feet	UB-00049	6/22/2015	Field Sample	295	4.0	1168	Hygeia	7/10/2015	TEM-ISO	NOT QC	Direct	385	0.0101	17	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-S	Post-burn; 50 feet	UB-00089	6/23/2015	Field Sample	240	4.0	962	Hygeia	7/10/2015	TEM-ISO	NOT QC	Direct	385	0.0101	20	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-W	Post-burn; 50 feet	UB-00092	6/23/2015	Field Sample	240	4.0	960	Hygeia	7/10/2015	TEM-ISO	NOT QC	Direct	385	0.0101	20	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-N	Post-burn; 50 feet	UB-00094	6/23/2015	Field Sample	240	4.0	967	Hygeia	7/10/2015	TEM-ISO	NOT QC	Direct	385	0.0101	20	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-E	Post-burn; 50 feet	UB-00095	6/23/2015	Field Sample	240	2.0	480	Hygeia	7/10/2015	TEM-ISO	NOT QC	Direct	385	0.0101	40	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-S	Post-burn; 50 feet	UB-00101	6/23/2015	Field Sample	240	4.0	960	Hygeia	7/10/2015	TEM-ISO	NOT QC	Direct	385	0.0101	20	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-W	Post-burn; 50 feet	UB-00102	6/23/2015	Field Sample	240	2.0	480	Hygeia	7/14/2015	TEM-ISO	NOT QC	Direct	385	0.0101	40	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-N	Post-burn; 50 feet	UB-00104	6/23/2015	Field Sample	240	2.0	480	Hygeia	7/10/2015	TEM-ISO	NOT QC	Direct	385	0.0101	40	1	2.0E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-E	Post-burn; 50 feet	UB-00107	6/23/2015	Field Sample	240	4.0	960	EMSL03	7/20/2015	TEM-ISO	NOT QC	Direct	385	0.013	16	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-S	Post-burn; 50 feet	UB-00109	6/24/2015	Field Sample	240	4.0	967	EMSL03	7/20/2015	TEM-ISO	NOT QC	Direct	385	0.013	16	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-W	Post-burn; 50 feet	UB-00111	6/24/2015	Field Sample	240	4.0	967	EMSL03	7/20/2015	TEM-ISO	NOT QC	Direct	385	0.013	16	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-N	Post-burn; 50 feet	UB-00113	6/24/2015	Field Sample	240	4.0	967	EMSL03	7/20/2015	TEM-ISO	NOT QC	Direct	385	0.013	16	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-E	Post-burn; 50 feet	UB-00115	6/24/2015	Field Sample	240	4.1	977	EMSL03	7/20/2015	TEM-ISO	NOT QC	Direct	385	0.013	16	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-S	Post-burn; 50 feet	UB-00117	6/24/2015	Field Sample	240	4.0	970	EMSL03	7/20/2015	TEM-ISO	NOT QC	Direct	385	0.013	16	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-W	Post-burn; 50 feet	UB-00119	6/24/2015	Field Sample	240	4.0	967	EMSL04	7/24/2015	TEM-ISO	NOT QC	Direct	385	0.013	16	1	1.9E-03	--	--	0	0	0	0
UB-2015	Air	UB-50-N	Post-burn; 50 feet	UB-00121	6/24/2015	Field Sample	240	4.0	967	EMSL04	7/24/2015	TEM-ISO	NOT QC	Direct	385	0.013	16	1	1.9E-03	--	--	1	1.9E-03	1	1.9E-03
UB-2015	Air	UB-50-E	Post-burn; 50 feet	UB-00123	6/24/2015	Field Sample	240	4.0	962	EMSL04	7/24/2015	TEM-ISO	NOT QC	Direct	385	0.013	16	1	1.9E-03	--	--	0	0	0	0
WSA	Air	WS-PERIM	Woodstove During Burn	WA-00002	11/6/2012	Field Sample	360	5.0	2148	EMSL27	11/21/2012	TEM-AHERA	NOT QC	Direct	385	0.013	5	1	2.8E-03	0	0	0	0	0	0
WSA	Air	WS-PERIM	Woodstove During Burn	WA-00021	11/8/2012	Field Sample	360	5.0	2020	EMSL27	11/13/2012	TEM-AHERA	NOT QC	Direct	385	0.13	4	1	3.7E-03	0	0	0	0	0	0
WSA	Air	WS-PERIM	Woodstove During Burn	WA-00045	11/12/2012	Field Sample	360	5.0	1854	EMSL27	11/14/2012	TEM-AHERA	NOT QC	Direct	385	0.013	4	1	4.0E-03	0	0	0	0	0	0
WSA	Air	WS-PERIM	Woodstove During ABS	WA-00001	11/7/2012	Field Sample	2880	2.5	3740	ESATR8	11/21/2012	TEM-ISO	NOT QC	Direct	385	0.0099	260	1	4.0E-05	0	0	0	0	0	0
WSA	Air	WS-PERIM	Woodstove During ABS	WA-00022	11/9/2012	Field Sample	2880	2.5	3918	ESATR8	11/27/2012	TEM-ISO	NOT QC	Direct	385	0.0099	249	1	4.0E-05	0	0	0	0	0	0
WSA	Air	WS-PERIM	Woodstove During ABS	WA-00044	11/13/2012	Field Sample	2880	2.5	3972	ESATR8	11/29/2012	TEM-ISO	NOT QC	Direct	385	0.0099	245	1	4.0E-05	0	0	0	0	0	0
FIRE	Air	F1 - Souse Gulch	Perimeter Monitoring During Fire	SM-10068	7/27/2013	Field Sample	241	2.0	482		7/28/2013	TEM-ISO	NOT QC	Direct	385	0.013	85	1	7.2E-04	--	--	0	0	0	0
FIRE	Air	M1 - Souse Gulch	Perimeter Monitoring During Fire	SM-10080	7/27/2013	Field Sample	1440	2.0	2880		7/28/2013	TEM-ISO	NOT QC	Direct	385	0.013	15	1	6.9E-04	--	--	0	0	0	0

Notes:

* See Tables 4-1 and 4-2 for definitions of each Phase.
** PCME results have been adjusted for all samples prepared indirectly.
-- analysis was performed under low magnification; only PCME structures were recorded
ABS = activity-based sampling
AHERA = Asbestos Hazard and Emergency Response Act
cc^{-1} = per cubic centimeter
Conc. = concentration
EFA = effective filter area
EPA = U.S. Environmental Protection Agency
ID = identification
ISO = International Organization for Standardization
L = liter
LAA = Libby amphibole asbestos
min = minute
mm = millimeter
N = number of asbestos structures
PCME = Phase Contrast Microscopy Equivalent
QC = quality control
s/cc = structures per cubic centimeter
TEM = transmission electron microscopy

Table E-1k: Summary of LAA Results for Ambient Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information							Analysis Information										Results			
																			Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
I	Ambient Air	A-1	P1-00005	10/2/2007	Field Sample	7,198	2.0	14,382	EMSL04	11/15/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-1	P1-00017	10/7/2007	Field Sample	7,137	2.0	14,274	EMSL04	11/19/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-1	P1-00243	10/12/2007	Field Sample	7,134	2.0	14,254	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	5	1	4.5E-04	0	0	0	0
I	Ambient Air	A-1	P1-00277	10/17/2007	Field Sample	7,189	2.0	14,378	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-2	P1-00006	10/2/2007	Field Sample	7,195	2.0	14,376	EMSL04	11/15/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-2	P1-00018	10/7/2007	Field Sample	7,131	2.0	14,262	EMSL04	11/19/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-2	P1-00244	10/12/2007	Field Sample	7,122	2.0	14,244	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	5	1	4.5E-04	0	0	0	0
I	Ambient Air	A-2	P1-00278	10/17/2007	Field Sample	7,187	2.0	14,375	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-3	P1-00010	10/2/2007	Field Sample	7,178	2.0	14,335	EMSL04	11/15/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-3	P1-00024	10/7/2007	Field Sample	7,132	2.0	14,264	EMSL04	11/19/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-3	P1-00250	10/12/2007	Field Sample	7,115	2.0	14,215	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	5	1	4.5E-04	0	0	0	0
I	Ambient Air	A-3	P1-00284	10/17/2007	Field Sample	7,167	2.0	14,334	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-4	P1-00007	10/2/2007	Field Sample	7,194	1.8	12,974	EMSL04	11/15/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	6.2E-04	0	0	0	0
I	Ambient Air	A-4	P1-00020	10/7/2007	Field Sample	7,133	2.0	14,253	EMSL04	11/19/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-4	P1-00245	10/12/2007	Field Sample	7,115	2.0	14,077	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	5	1	4.6E-04	0	0	0	0
I	Ambient Air	A-4	P1-00279	10/17/2007	Field Sample	7,182	2.0	14,208	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-5	P1-00008	10/2/2007	Field Sample	7,187	1.8	12,984	EMSL04	11/15/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	6.2E-04	0	0	0	0
I	Ambient Air	A-5	P1-00022	10/7/2007	Field Sample	7,127	2.0	14,239	EMSL04	11/19/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-5	P1-00247	10/12/2007	Field Sample	7,128	2.0	14,256	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	5	1	4.5E-04	0	0	0	0
I	Ambient Air	A-5	P1-00281	10/17/2007	Field Sample	7,168	2.0	14,336	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-6	P1-00009	10/2/2007	Field Sample	7,184	2.0	14,368	EMSL04	11/15/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-6	P1-00023	10/7/2007	Field Sample	7,121	2.0	14,214	EMSL04	11/19/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-6	P1-00249	10/12/2007	Field Sample	7,130	2.0	14,260	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	5	1	4.5E-04	0	0	0	0
I	Ambient Air	A-6	P1-00283	10/17/2007	Field Sample	7,167	2.0	14,356	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-7	P1-00001	10/2/2007	Field Sample	7,201	2.0	14,402	EMSL04	11/15/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-7	P1-00015	10/7/2007	Field Sample	7,146	2.0	14,263	EMSL04	11/19/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-7	P1-00241	10/12/2007	Field Sample	7,148	2.0	14,296	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	5	1	4.5E-04	0	0	0	0
I	Ambient Air	A-7	P1-00275	10/17/2007	Field Sample	7,185	2.0	14,370	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
I	Ambient Air	A-8	P1-00003	10/2/2007	Field Sample	7,200	1.8	12,934	EMSL04	11/15/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	6.2E-04	0	0	0	0
I	Ambient Air	A-8	P1-00016	10/7/2007	Field Sample	7,140	1.4	9,987	EMSL04	11/19/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	8.0E-04	0	0	0	0
I	Ambient Air	A-8	P1-00242	10/12/2007	Field Sample	7,145	2.0	14,290	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	5	1	4.5E-04	0	0	0	0
I	Ambient Air	A-8	P1-00276	10/17/2007	Field Sample	7,191	2.0	14,382	EMSL04	11/16/2007	TEM-ISO	Not QC	Direct	385	0.012	4	1	5.6E-04	0	0	0	0
IIB	Ambient Air	A-10	P2-00604	7/7/2008	Field Sample	7,141	2.0	14,254	EMSL27	7/16/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-10	P2-00617	7/20/2008	Field Sample	7,110	1.4	9,978	EMSL27	7/29/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	7.4E-04	0	0	0	0
IIB	Ambient Air	A-10	P2-00627	8/5/2008	Field Sample	7,220	2.0	14,663	EMSL27	8/13/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.0E-04	0	0	0	0
IIB	Ambient Air	A-10	P2-00638	8/17/2008	Field Sample	7,120	2.0	14,221	EMSL27	8/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-10	P2-00648	8/31/2008	Field Sample	7,185	2.0	14,392	EMSL27	9/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	0	0	0	0
IIB	Ambient Air	A-10	P2-00659	9/14/2008	Field Sample	7,185	1.6	11,406	EMSL27	9/26/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	6.5E-04	0	0	0	0
IIB	Ambient Air	A-10	P2-00670	9/28/2008	Field Sample	7,120	2.0	14,240	EMSL27	10/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-10	P2-00682	10/12/2008	Field Sample	7,190	2.0	14,380	EMSL27	10/22/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	0	0	0	0

Table E-1k: Summary of LAA Results for Ambient Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information							Analysis Information										Results			
		Station ID	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	Total LAA		PCME LAA	
																			N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
IIB	Ambient Air	A-11	P2-00606	7/7/2008	Field Sample	7,137	2.0	14,253	EMSL27	7/16/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-11	P2-00619	7/20/2008	Field Sample	7,120	1.8	12,843	EMSL27	7/29/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.8E-04	0	0	0	0
IIB	Ambient Air	A-11	P2-00630	8/5/2008	Field Sample	7,190	2.0	14,449	EMSL27	8/13/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	8	4.1E-03	5	2.6E-03
IIB	Ambient Air	A-11	P2-00641	8/17/2008	Field Sample	7,115	2.0	14,230	EMSL27	8/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-11	P2-00650	8/31/2008	Field Sample	7,165	2.0	14,330	EMSL27	9/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-11	P2-00661	9/14/2008	Field Sample	7,190	2.0	14,452	EMSL27	9/26/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	2	1.0E-03	2	1.0E-03
IIB	Ambient Air	A-11	P2-00672	9/28/2008	Field Sample	7,120	2.0	14,240	EMSL27	10/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-11	P2-00684	10/12/2008	Field Sample	7,180	2.0	14,360	EMSL27	10/22/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-12	P2-00609	7/7/2008	Field Sample	7,125	2.0	14,229	EMSL27	7/16/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-12	P2-00622	7/20/2008	Field Sample	7,115	2.0	14,216	EMSL27	7/29/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-12	P2-00633	8/5/2008	Field Sample	7,180	2.0	14,326	EMSL27	8/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-12	P2-00644	8/17/2008	Field Sample	7,115	2.0	14,190	EMSL27	8/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-12	P2-00654	8/31/2008	Field Sample	7,160	2.0	14,320	EMSL27	9/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-12	P2-00665	9/14/2008	Field Sample	7,185	2.0	14,406	EMSL27	9/26/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	0	0	0	0
IIB	Ambient Air	A-12	P2-00676	9/28/2008	Field Sample	7,090	2.0	14,180	EMSL27	10/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-12	P2-00687	10/12/2008	Field Sample	7,175	1.8	12,876	EMSL27	10/22/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.8E-04	0	0	0	0
IIB	Ambient Air	A-4	P2-00608	7/7/2008	Field Sample	7,131	2.0	14,154	EMSL27	7/16/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-4	P2-00621	7/20/2008	Field Sample	7,105	2.0	14,227	EMSL27	7/29/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-4	P2-00632	8/5/2008	Field Sample	7,185	2.0	14,039	EMSL27	8/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.3E-04	0	0	0	0
IIB	Ambient Air	A-4	P2-00643	8/17/2008	Field Sample	7,115	2.0	14,230	EMSL27	8/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-4	P2-00653	8/31/2008	Field Sample	7,165	2.0	14,345	EMSL27	9/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-4	P2-00664	9/14/2008	Field Sample	7,190	2.0	14,416	EMSL27	9/26/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	0	0	0	0
IIB	Ambient Air	A-4	P2-00674	9/28/2008	Field Sample	7,090	2.0	14,214	EMSL27	10/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-4	P2-00686	10/12/2008	Field Sample	7,170	2.0	14,340	EMSL27	10/22/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-5	P2-00607	7/7/2008	Field Sample	7,133	2.0	14,231	EMSL27	7/16/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-5	P2-00620	7/20/2008	Field Sample	7,115	2.0	14,230	EMSL27	7/29/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	2	1.0E-03	2	1.0E-03
IIB	Ambient Air	A-5	P2-00634	8/6/2008	Field Sample	5,725	2.0	11,450	EMSL27	8/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	6.5E-04	1	6.5E-04	1	6.5E-04
IIB	Ambient Air	A-5	P2-00642	8/17/2008	Field Sample	7,115	2.0	14,230	EMSL27	8/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	9	4.7E-03	5	2.6E-03
IIB	Ambient Air	A-5	P2-00652	8/31/2008	Field Sample	4,355	1.3	8,184	EMSL27	9/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	9.0E-04	0	0	0	0
IIB	Ambient Air	A-5	P2-00656	9/3/2008	Field Sample	2,815	2.0	5,680	EMSL27	9/25/2008	TEM-ISO	Not QC	Direct	385	0.013	6	1	8.7E-04	0	0	0	0
IIB	Ambient Air	A-5	P2-00662	9/14/2008	Field Sample	7,190	2.0	14,489	EMSL27	9/26/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	1	5.1E-04	1	5.1E-04
IIB	Ambient Air	A-5	P2-00673	9/28/2008	Field Sample	7,100	2.0	14,171	EMSL27	10/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-5	P2-00685	10/17/2008	Field Sample	7,175	2.0	14,350	EMSL27	10/22/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-6	P2-00605	7/7/2008	Field Sample	7,138	2.0	14,240	EMSL27	7/16/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-6	P2-00618	7/20/2008	Field Sample	7,120	2.0	14,240	EMSL27	7/29/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-6	P2-00629	8/5/2008	Field Sample	7,195	2.0	14,396	EMSL27	8/13/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	1	5.1E-04	1	5.1E-04
IIB	Ambient Air	A-6	P2-00639	8/17/2008	Field Sample	7,115	1.8	12,781	EMSL27	8/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.8E-04	0	0	0	0
IIB	Ambient Air	A-6	P2-00649	8/31/2008	Field Sample	7,170	2.0	14,413	EMSL27	9/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	0	0	0	0
IIB	Ambient Air	A-6	P2-00660	9/14/2008	Field Sample	7,190	1.7	12,503	EMSL27	9/26/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.9E-04	0	0	0	0
IIB	Ambient Air	A-6	P2-00671	9/28/2008	Field Sample	7,120	2.0	14,226	EMSL27	10/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0

Table E-1k: Summary of LAA Results for Ambient Air
Libby Asbestos Superfund Site, OU3 Study Area

Phase*	Media	Sample Information							Analysis Information										Results			
																			Total LAA		PCME LAA	
		Station ID	Index ID	Sample Date	Field QC Type	Sample Duration (min)	Flow Rate (L/min)	Volume Collected (L)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(cc)^{-1}$	N Structures	Air Conc. (s/cc)	N Structures	Air Conc. (s/cc)
IIB	Ambient Air	A-6	P2-00683	10/12/2008	Field Sample	7,185	2.0	14,370	EMSL27	10/22/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-8	P2-00610	7/8/2008	Field Sample	5,730	2.0	11,436	EMSL27	7/16/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	6.5E-04	0	0	0	0
IIB	Ambient Air	A-8	P2-00614	7/20/2008	Field Sample	7,120	2.0	14,096	EMSL27	7/29/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.3E-04	0	0	0	0
IIB	Ambient Air	A-8	P2-00625	8/5/2008	Field Sample	7,205	1.8	12,650	EMSL27	8/12/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.9E-04	0	0	0	0
IIB	Ambient Air	A-8	P2-00636	8/17/2008	Field Sample	7,125	2.0	14,199	EMSL27	8/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-8	P2-00646	8/31/2008	Field Sample	7,180	2.0	14,360	EMSL27	9/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-8	P2-00657	9/14/2008	Field Sample	7,195	2.0	14,390	EMSL27	9/26/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	0	0	0	0
IIB	Ambient Air	A-8	P2-00668	9/28/2008	Field Sample	7,135	2.0	14,270	EMSL27	10/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-8	P2-00680	10/12/2008	Field Sample	7,185	2.0	14,391	EMSL27	10/22/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	0	0	0	0
IIB	Ambient Air	A-9	P2-00602	7/7/2008	Field Sample	7,147	2.0	14,350	EMSL27	7/16/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-9	P2-00615	7/20/2008	Field Sample	4,315	1.3	8,101	EMSL27	7/29/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	9.1E-04	1	9.1E-04	0	0
IIB	Ambient Air	A-9	P2-00626	8/5/2008	Field Sample	7,215	2.0	14,430	EMSL27	8/12/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	14	7.2E-03	11	5.6E-03
IIB	Ambient Air	A-9	P2-00637	8/17/2008	Field Sample	7,120	2.0	14,233	EMSL27	8/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	1	5.2E-04	1	5.2E-04
IIB	Ambient Air	A-9	P2-00647	8/31/2008	Field Sample	7,185	2.0	14,328	EMSL27	9/25/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0
IIB	Ambient Air	A-9	P2-00658	9/14/2008	Field Sample	7,190	2.0	14,523	EMSL27	9/26/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.1E-04	4	2.0E-03	3	1.5E-03
IIB	Ambient Air	A-9	P2-00669	9/28/2008	Field Sample	7,120	1.8	12,840	EMSL27	10/14/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.8E-04	0	0	0	0
IIB	Ambient Air	A-9	P2-00681	10/12/2008	Field Sample	7,185	2.0	14,370	EMSL27	10/22/2008	TEM-ISO	Not QC	Direct	385	0.013	4	1	5.2E-04	0	0	0	0

Notes:

* See Tables 4-1 and 4-2 for definitions of each Phase.

Conc. = concentration

cc^{-1} = per cubic centimeter

EFA = effective filter area

GO = grid opening

ID = identification

ISO = International Organization for Standardization

L = liter

LAA = Libby amphibole asbestos

min = minute

mm = millimeter

N = number of asbestos structures

PCME = phase contrast microscopy-equivalent

QC = quality control

s/cc = structures per cubic centimeter

TEM = transmission electron microscopy

Table E-1l: Summary of LAA Results for Tissue
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	Sample Information								Analysis Information										Results			
																				Total LAA		LAA > 10 µm in length	
		Index ID	Type of Tissue	Description	Length (inches)	Weight (grams)	Sample Date	Field QC Type	Mass (g, ww)	Laboratory	Analysis Date	Analysis Method	Lab QC Type	Preparation Method	EFA (mm^2)	GO Size (mm^2)	GOs Examined	F Factor	Sensitivity $(g)^{-1}$	N Structures	Tissue Burden (s/g, ww)	N Structures	Tissue Burden (s/g, ww)
TS	Tissue	TS-00001	Fish Tissue	Rainbow Trout	10	140	8/6/2012	Field Sample	3	EMSL27	1/12/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	4	0.2	1.2E+04	27	3.2E+05	3	3.5E+04
TS	Tissue	TS-00002	Fish Tissue	Cutbow Trout	11	280	8/6/2012	Field Sample	3	EMSL27	1/12/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.2	1.9E+03	5	9.4E+03	0	0.0E+00
TS	Tissue	TS-00003	Fish Tissue	Cutthroat Trout	15	540	8/6/2012	Field Sample	3	EMSL27	1/14/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	4	0.2	1.2E+04	72	8.4E+05	2	2.3E+04
TS	Tissue	TS-00004	Fish Tissue	Cutbow Trout	15	560	8/6/2012	Field Sample	3	EMSL27	1/14/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	4	0.2	1.2E+04	35	4.1E+05	3	3.5E+04
TS	Tissue	TS-00005	Fish Tissue	Rainbow Trout	14	550	8/6/2012	Field Sample	3	EMSL27	1/15/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	4	0.05	4.7E+04	136	6.4E+06	4	1.9E+05
TS	Tissue	TS-00006	Fish Tissue	Cutbow Trout	13	450	8/6/2012	Field Sample	3	EMSL27	1/14/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	8	0.2	5.8E+03	25	1.5E+05	2	1.2E+04
TS	Tissue	TS-00007	Fish Tissue	Cutbow Trout	15	595	8/6/2012	Field Sample	3	EMSL27	1/15/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.2	1.9E+03	18	3.4E+04	0	0.0E+00
TS	Tissue	TS-00010	Deer Tissue	Heart	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.04	9.4E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00012	Deer Tissue	Kidney, Sample #1	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.15	2.5E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00013	Deer Tissue	Kidney, Sample #2	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.04	9.4E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00015	Deer Tissue	Inside Shoulder Muscle	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.04	9.4E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00018	Deer Tissue	Diaphragm, Sample #2	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.04	9.4E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00019	Deer Tissue	Diaphragm, Sample #1	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.04	9.4E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00021	Deer Tissue	Backstrap Muscle, Sample #1	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.04	9.4E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00022	Deer Tissue	Backstrap Muscle, Sample #2	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.04	9.4E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00024	Deer Tissue	Lung, Sample #1	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.15	2.5E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00025	Deer Tissue	Lung, Sample #2	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.15	2.5E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00027	Deer Tissue	Liver, Sample #1	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.04	9.4E+03	0	0.0E+00	0	0.0E+00
TS	Tissue	TS-00028	Deer Tissue	Liver, Sample #2	--	--	10/22/2012	Field Sample	3	EMSL27	1/16/2013	TEM-ISO	NOT QC	Indirect - Ashed	365	0.013	25	0.02	1.9E+04	0	0.0E+00	0	0.0E+00

Notes:

* See Tables 4-1 and 4-2 for definitions of each Phase.
µm = micron
Conc. = concentration
EFA = effective filter area
GO = grid opening
ID = identification
ISO = International Organization for Standardization
L = liter
LAA = Libby amphibole asbestos
MFL = million fibers per liter
mL = milliliters
mm = millimeter
N = number of asbestos structures
s/g, ww - structures per gram, wet weight
TEM = transmission electron microscopy

Table E-2a: Summary of REJECTED LAA Results for Surface Water
Libby Asbestos Superfund Site, OU3 Study Area

Phase	Media	Station ID	Sample Date	Index ID	Field QC Type	Analysis Lab	Lab QC Type	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	EFA (mm^2)	GO Size (mm^2)	GOs Counted	Sensitivity (1/L)	Total LAA		LAA > 10 µm in length	
VA	Surface Water	KR-4	5/9/2012	P5-10015	Field Sample	EMSL27	NOT QC	6/4/2012	TEM-ISO	ISO 10312	20	360	0.013	6	2.3E+06	26	60	3	6.9
VA	Surface Water	KR-1	5/9/2012	P5-10017	Field Sample	EMSL27	NOT QC	6/5/2012	TEM-ISO	ISO 10312	20	360	0.013	6	2.3E+06	25	58	1	2.3
VA	Surface Water	UKR-0	5/9/2012	P5-10018	Field Sample	EMSL27	NOT QC	6/5/2012	TEM-ISO	ISO 10312	20	360	0.013	10	1.4E+06	25	35	0	0
VB	Surface Water	LRC-5	5/17/2012	P5-20027	Field Sample	EMSL04	NOT QC	6/27/2012	TEM-ISO	ISO 10312	30	1295	0.0132	49	6.7E+04	25	1.7	17	1.1
VB-2013	Pore Water (In)	LRC-2	5/16/2013	P5-20326	Field Sample	EMSL27	NOT QC	6/12/2013	TEM-ISO	ISO 10312	15	1295	0.013	85	7.8E+04	0	0	0	0
VB-2013	Surface Water	LRC-2	5/16/2013	P5-20325	Field Sample	EMSL27	NOT QC	6/12/2013	TEM-ISO	ISO 10312	15	1295	0.013	4	1.7E+06	26	43	4	6.6

Notes:

Analyses in this table were cancelled/rejected and are not suitable for use; each sample was subsequently reanalyzed.

µm - micrometer
Conc. - concentration
EFA - effective filter area
GO - grid opening
ID - identification
L - liter
LAA - Libby Amphibole Asbestos
MFL - million fibers per liter
mL - milliliters
mm^2 - square millimeter
N - number of asbestos structures
QC - quality control
TEM - transmission electron microscopy

Data Source:

CDM 2015, Libby Project Database for OU3 Study Area

Table E-2b: Summary of REJECTED LAA Results for Soil

Libby Asbestos Superfund Site, OU3 Study Area

Sample Information							Analysis Information					Results	
Phase	Media	Station ID	Sample Date	Index ID	Field QC Type	Sample Index	Analysis	Lab QC	Analysis	Analysis Type	Sample	LAA Conc.	LAA Bin*
GT	SOIL	GT-23	6/11/2014	GT-10003	Field Sample		EMSL27	Not QC	6/23/2014	PLM-VE	125	Tr	B1
GT	SOIL	GT-23	6/11/2014	GT-10004	Field Sample		EMSL27	Not QC	7/23/2014	PLM-VE	111.8	Tr	B1
GT	SOIL	GT-23	6/11/2014	GT-10006	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	123.9	Tr	B1
GT	SOIL	GT-23	6/11/2014	GT-10008	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	123.8	< 1	B2
GT	SOIL	GT-22	6/11/2014	GT-10009	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	129.2	Tr	B1
GT	SOIL	GT-22	6/11/2014	GT-10010	Field Duplicate	GT-10009	EMSL27	Not QC	7/24/2014	PLM-VE	111.4	Tr	B1
GT	SOIL	GT-22	6/11/2014	GT-10013	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	124.4	Tr	B1
GT	SOIL	GT-22	6/11/2014	GT-10014	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	127.9	Tr	B1
GT	SOIL	GT-21	6/11/2014	GT-10016	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	131.6	Tr	B1
GT	SOIL	GT-21	6/11/2014	GT-10019	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	131.3	Tr	B1
GT	SOIL	GT-21	6/11/2014	GT-10021	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	124.7	Tr	B1
GT	SOIL	GT-24	6/12/2014	GT-10031	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	123.3	Tr	B1
GT	SOIL	GT-24	6/12/2014	GT-10032	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	93.5	Tr	B1
GT	SOIL	GT-24	6/12/2014	GT-10033	Field Sample		EMSL27	Not QC	7/24/2014	PLM-VE	133	Tr	B1
GT	SOIL	GT-25	6/12/2014	GT-10035	Field Sample		EMSL27	Not QC	7/25/2014	PLM-VE	96.3	ND	A
GT	SOIL	GT-25	6/12/2014	GT-10036	Field Sample		EMSL27	Not QC	7/25/2014	PLM-VE	116.1	Tr	B1
GT	SOIL	GT-25	6/12/2014	GT-10038	Field Duplicate	GT-10036	EMSL27	Not QC	7/25/2014	PLM-VE	122.9	Tr	B1
GT	SOIL	GT-25	6/12/2014	GT-10040	Field Sample		EMSL27	Not QC	7/25/2014	PLM-VE	130.6	Tr	B1
GT	SOIL	RECON	6/14/2014	GT-10074	Field Sample		EMSL27	Not QC	6/26/2014	PLM-VE	85.8	Tr	B1
GT	SOIL	RECON	6/14/2014	GT-10075	Field Sample		EMSL27	Not QC	6/26/2014	PLM-VE	88.4	< 1	B2
GT	SOIL	RECON	6/14/2014	GT-10076	Field Sample		EMSL27	Not QC	6/27/2014	PLM-VE	81.7	< 1	B2
GT	SOIL	GT-03	6/15/2014	GT-10077	Field Sample		EMSL27	Not QC	6/27/2014	PLM-VE	88.3	ND	A
GT	SOIL	GT-03	6/15/2014	GT-10078	Field Sample		EMSL27	Not QC	6/27/2014	PLM-VE	92.8	Tr	B1
GT	SOIL	GT-03	6/15/2014	GT-10080	Field Sample		EMSL27	Not QC	6/27/2014	PLM-VE	127.3	Tr	B1
ct Databa	SOIL	GT-02	6/15/2014	GT-10082	Field Sample		EMSL27	Not QC	6/27/2014	PLM-VE	129	ND	A
GT	SOIL	GT-02	6/15/2014	GT-10083	Field Duplicate	GT-10082	EMSL27	Not QC	6/27/2014	PLM-VE	124.5	ND	A
GT	SOIL	GT-02	6/15/2014	GT-10085	Field Sample		EMSL27	Not QC	6/27/2014	PLM-VE	134.6	Tr	B1
GT	SOIL	GT-01	6/16/2014	GT-10086	Field Sample		EMSL27	Not QC	7/7/2014	PLM-VE	82.5	Tr	B1
GT	SOIL	GT-01	6/16/2014	GT-10087	Field Sample		EMSL27	Not QC	7/7/2014	PLM-VE	125.8	Tr	B1
GT	SOIL	GT-01	6/16/2014	GT-10088	Field Sample		EMSL27	Not QC	7/7/2014	PLM-VE	93.8	ND	A
GT	SOIL	GT-09	6/16/2014	GT-10091	Field Sample		EMSL27	Not QC	7/7/2014	PLM-VE	92.2	Tr	B1
GT	SOIL	GT-09	6/16/2014	GT-10092	Field Sample		EMSL27	Not QC	7/7/2014	PLM-VE	134	Tr	B1
GT	SOIL	GT-09	6/16/2014	GT-10093	Field Sample		EMSL27	Not QC	7/8/2014	PLM-VE	85.4	Tr	B1
GT	SOIL	GT-08	6/16/2014	GT-10095	Field Sample		EMSL27	Not QC	7/8/2014	PLM-VE	127.9	Tr	B1
GT	SOIL	GT-08	6/16/2014	GT-10096	Field Sample		EMSL27	Not QC	7/8/2014	PLM-VE	132.3	Tr	B1
GT	SOIL	GT-08	6/16/2014	GT-10097	Field Duplicate	GT-10096	EMSL27	Not QC	7/8/2014	PLM-VE	126.2	ND	A
GT	SOIL	GT-07	6/16/2014	GT-10099	Field Sample		EMSL27	Not QC	7/8/2014	PLM-VE	118.6	Tr	B1
GT	SOIL	GT-07	6/16/2014	GT-10100	Field Sample		EMSL27	Not QC	7/8/2014	PLM-VE	126	ND	A
GT	SOIL	GT-07	6/16/2014	GT-10101	Field Sample		EMSL27	Not QC	7/8/2014	PLM-VE	123	Tr	B1
GT	SOIL	GT-07	6/16/2014	GT-10102	Field Sample		EMSL27	Not QC	7/8/2014	PLM-VE	90.5	Tr	B1
GT	SOIL	GT-07	6/16/2014	GT-10103	Field Duplicate	GT-10101	EMSL27	Not QC	7/8/2014	PLM-VE	130.3	Tr	B1
GT	SOIL	GT-20	6/17/2014	GT-10116	Field Sample		EMSL27	Not QC	7/8/2014	PLM-VE	93.5	< 1	B2
GT	SOIL	GT-20	6/17/2014	GT-10117	Field Sample		EMSL27	NOT QC	7/1/2014	PLM-VE	96.4	< 1	B2
GT	SOIL	GT-20	6/17/2014	GT-10118	Field Sample		EMSL27	NOT QC	7/1/2014	PLM-VE	99.9	Tr	B1
GT	SOIL	GT-20	6/17/2014	GT-10120	Field Sample		EMSL27	NOT QC	7/1/2014	PLM-VE	128.5	Tr	B1
GT	SOIL	RECON	6/17/2014	GT-10121	Field Sample		EMSL27	NOT QC	7/1/2014	PLM-VE	118.6	Tr	B1
GT	SOIL	GT-19	6/18/2014	GT-10122	Field Sample		EMSL27	NOT QC	7/1/2014	PLM-VE	87.1	ND	A
GT	SOIL	GT-19	6/18/2014	GT-10123	Field Sample		EMSL27	NOT QC	7/2/2014	PLM-VE	97.6	< 1	B2
GT	SOIL	GT-19	6/18/2014	GT-10124	Field Duplicate	GT-10122	EMSL27	NOT QC	7/2/2014	PLM-VE	91.1	ND	A
GT	SOIL	GT-18	6/18/2014	GT-10126	Field Sample		EMSL27	NOT QC	7/2/2014	PLM-VE	124.5	Tr	B1
GT	SOIL	GT-18	6/18/2014	GT-10127	Field Sample		EMSL27	NOT QC	7/2/2014	PLM-VE	109.6	Tr	B1
GT	SOIL	GT-17	6/18/2014	GT-10128	Field Sample		EMSL27	NOT QC	7/2/2014	PLM-VE	116.1	Tr	B1
GT	SOIL	GT-17	6/18/2014	GT-10129	Field Sample		EMSL27	NOT QC	7/2/2014	PLM-VE	93.5	Tr	B1
GT	SOIL	GT-16	6/19/2014	GT-10130	Field Sample		EMSL27	Not QC	7/3/2014	PLM-VE	100.4	< 1	B2
GT	SOIL	GT-16	6/19/2014	GT-10132	Field Sample		EMSL27	Not QC	7/3/2014	PLM-VE	85.7	< 1	B2

Notes:

Analyses in this table were cancelled/rejected and are not suitable for use; each sample was subsequently reanalyzed.

**Applicable for PLM-VE results only*

% - percent

ND - not detected (Bin A)

Tr - Trace, between ND and 0.2% (Bin B1)

<1% - Less than 1% but >0.2% (Bin B2)

ID - identifictation

LAA - Libby Amphibole Asbestos

PLM-VE - polarized light microscopy, visual area estimation

Data Source:

CDM 2015, Libby Project Database for OU3 Study Area

Table E-3a: Summary List of Non-Asbestos Analytes by Sample Media
Libby Asbestos Superfund Site, OU3 Study Area

Analyte Group	Analyte	Groundwater	Surface Water	Sediment	Forest Soil	Soil
Metals (Total)	Aluminum	X	X			
	Antimony	X	X			
	Arsenic	X	X			
	Barium	X	X			
	Beryllium	X	X			
	Boron	X	X			
	Cadmium	X	X			
	Calcium	X	X			
	Chromium	X	X			
	Cobalt	X	X			
	Copper	X	X			
	Iron	X	X			
	Lead	X	X			
	Magnesium	X	X			
	Manganese	X	X			
	Mercury	X	X			
	Nickel	X	X			
	Potassium	X	X			
	Selenium	X	X			
	Silver	X	X			
	Sodium	X	X			
	Thallium	X	X			
	Vanadium	X	X			
	Zinc	X	X			
Metals (Dissolved)	Aluminum	X	X			
	Antimony	X	X			
	Arsenic	X	X			
	Barium	X	X			
	Beryllium	X	X			
	Boron	X	X			
	Cadmium	X	X			
	Calcium	X	X			
	Chromium	X	X			
	Cobalt	X	X			
	Copper	X	X			
	Iron	X	X			
	Lead	X	X			
	Magnesium	X	X			
	Manganese	X	X			
	Mercury	X	X			
	Nickel	X	X			
	Potassium	X	X			
	Selenium	X	X			
	Silver	X	X			
	Sodium	X	X			
	Thallium	X	X			
	Vanadium	X	X			
	Zinc	X	X			
Metals	Aluminum			X	X	X
	Antimony			X	X	X
	Arsenic			X	X	X
	Barium			X	X	X
	Beryllium			X	X	X
	Boron			X	X	X
	Cadmium			X	X	X
	Chromium			X	X	X
	Chromium, Hexavalent - Soluble			X		
	Cobalt			X	X	X
	Copper			X	X	X
	Iron			X	X	X
	Lead			X	X	X
	Magnesium			X		
	Manganese			X	X	X
	Mercury			X	X	X
	Nickel			X	X	X
	Selenium			X	X	X
	Silver			X	X	X
	Strontium			X		
	Thallium			X	X	X
	Tin			X		

Table E-3a: Summary List of Non-Asbestos Analytes by Sample Media
Libby Asbestos Superfund Site, OU3 Study Area

Analyte Group	Analyte	Groundwater	Surface Water	Sediment	Forest Soil	Soil
	Vanadium			X	X	X
	Zinc			X	X	X
Acid Volatile Sulfide	Acid Volatile Sulfide			X		
Anions	Cyanide, Total	X	X			
	Chloride	X	X			
	Fluoride	X	X	X		X
	Phosphorus, Orthophosphate as P		X			
	Phosphorus, Total			X		X
	Sulfate	X	X			
Cyanide	Cyanide, Total			X		X
Nitrogen compounds	Ammonia as N, KCL Extract			X		
	Nitrogen, Ammonia as N		X			
	Nitrogen, Kjeldahl, Total as N		X			
	Nitrogen, Nitrate as N	X	X			
	Nitrogen, Nitrate+Nitrite as N	X	X			
	Nitrogen, Nitrite as N	X	X			
Organophosphorus Pesticides	Azinphos-methyl (Guthion)		X	X		X
	Bolstar (Sulprofos)		X	X		X
	Chlorpyrifos		X	X		X
	Coumaphos		X	X		X
	Demeton-O,S		X	X		X
	Diazinon		X	X		X
	Dichlorvos		X	X		X
	Dimethoate		X	X		X
	Disulfoton		X	X		X
	EPN		X	X		X
	Ethoprop (Prophos)		X	X		X
	Ethyl Parathion		X	X		X
	Fensulfothion		X	X		X
	Fenthion		X	X		X
	Malathion		X	X		X
	Merphos		X	X		X
	Methyl Parathion		X	X		X
	Mevinphos		X	X		X
	Phorate		X	X		X
	Ronnel		X	X		X
	Stirophos (Tetrachlorovinphos)		X	X		X
	Sulfotep		X	X		X
	Tokuthion (Prothiofos)		X	X		X
	Trichloronate		X	X		X
PCBs	Aroclor 1016		X	X		X
	Aroclor 1221		X	X		X
	Aroclor 1232		X	X		X
	Aroclor 1242		X	X		X
	Aroclor 1248		X	X		X
	Aroclor 1254		X	X		X
	Aroclor 1260		X	X		X
	Aroclor 1262		X	X		X
	Aroclor 1268		X	X		X
	PCBs (Aroclor combined)		X			
Pesticides	4,4´-DDD		X	X		X
	4,4´-DDE		X	X		X
	4,4´-DDT		X	X		X
	Aldrin		X	X		X
	alpha-BHC		X	X		X
	alpha-Chlordane		X	X		X
	beta-BHC		X	X		X
	Chlordane		X	X		X
	delta-BHC		X	X		X
	Dieldrin		X	X		X
	Endosulfan I		X	X		X
	Endosulfan II		X	X		X
	Endosulfan sulfate		X	X		X
	Endrin		X	X		X
	Endrin aldehyde		X	X		X
	Endrin ketone		X	X		X
	gamma-BHC (Lindane)		X	X		X
	gamma-Chlordane		X	X		X
	Heptachlor		X	X		X
	Heptachlor epoxide		X	X		X
	Isodrin		X	X		X
	Methoxychlor		X	X		X
	Toxaphene		X	X		X
Radionuclides	Gross Alpha	X	X			
	Gross Beta	X	X			
	Radium 226		X			
	Radium 226 + Radium 228		X			
	Radium 228		X			

Table E-3a: Summary List of Non-Asbestos Analytes by Sample Media
Libby Asbestos Superfund Site, OU3 Study Area

Analyte Group	Analyte	Groundwater	Surface Water	Sediment	Forest Soil	Soil
SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene		X	X		X
	1,2,4-Trichlorobenzene			X		
	1,2-Dichlorobenzene			X		
	1,3-Dichlorobenzene			X		
	1,4-Dichlorobenzene			X		
	1-Methylnaphthalene			X		
	2,3,4,6-Tetrachlorophenol		X	X		X
	2,4,5-T		X	X		X
	2,4,5-TP (Silvex)		X	X		X
	2,4,5-Trichlorophenol		X	X		X
	2,4,6-Trichlorophenol		X	X		X
	2,4-D		X	X		X
	2,4-DB			X		
	2,4-Dichlorophenol		X	X		X
	2,4-Dimethylphenol		X	X		X
	2,4-Dinitrophenol		X	X		X
	2,4-Dinitrotoluene		X	X		X
	2,6-Dinitrotoluene		X	X		X
	2-Chloronaphthalene		X	X		X
	2-Chlorophenol		X	X		X
	2-Methylnaphthalene	X	X	X		X
	2-Nitroaniline		X	X		X
	2-Nitrophenol		X	X		X
	3,3´-Dichlorobenzidine		X	X		X
	3,5-Dichlorobenzoic Acid			X		
	3-Nitroaniline		X	X		X
	4,6-Dinitro-2-methylphenol		X	X		X
	4-Bromophenyl phenyl ether		X	X		X
	4-Chloro-3-methylphenol		X	X		X
	4-Chlorophenol			X		
	4-Chlorophenyl phenyl ether		X	X		X
	4-Nitroaniline		X	X		X
	4-Nitrophenol		X	X		X
	Acenaphthene	X	X	X		X
	Acenaphthylene	X	X	X		X
	Acetophenone		X	X		X
	Acifluorfen			X		
	Anthracene	X	X	X		X
	Atrazine		X	X		X
	Azobenzene			X		
	Bentazon			X		
	Benzaldehyde		X	X		X
	Benzidine			X		
	Benzo(a)anthracene	X	X	X		X
	Benzo(a)pyrene	X	X	X		X
	Benzo(b)fluoranthene	X	X	X		X
	Benzo(g,h,i)perylene	X	X	X		X
	Benzo(k)fluoranthene	X	X	X		X
	Biphenyl		X	X		X
	bis(-2-chloroethoxy)Methane		X	X		X
	bis(-2-chloroethyl)Ether		X	X		X
	bis(2-chloroisopropyl)Ether		X	X		X
	bis(2-ethylhexyl)Phthalate		X	X		X
	Butylbenzylphthalate		X	X		X
	Caprolactam		X	X		X
	Carbazole		X	X		X
	Chloramben			X		
	Chrysene	X	X	X		X
	Dacthal			X		
	Dalapon		X	X		X
	Dibenzo(a,h)anthracene	X	X	X		X
	Dibenzofuran		X	X		X
	Dicamba		X	X		X
	Dichlorprop		X	X		X
	Diethyl phthalate		X	X		X
	Dimethyl phthalate		X	X		X
	Di-n-butyl phthalate		X	X		X
	Di-n-octyl phthalate		X	X		X
	Dinoseb			X		
	Fluoranthene	X	X	X		X
	Fluorene	X	X	X		X
	Hexachlorobenzene		X	X		X
	Hexachlorobutadiene		X	X		X
	Hexachlorocyclopentadiene		X	X		X
	Hexachloroethane		X	X		X
	Indeno(1,2,3-cd)pyrene	X	X	X		X
	Isophorone		X	X		X
	m+p-Cresols		X	X		X
	MCPA		X	X		X
	MCPP		X	X		X
	Naphthalene	X	X	X		X
	Nitrobenzene		X	X		X
	n-Nitrosodimethylamine			X		
	n-Nitroso-di-n-propylamine		X	X		X
	n-Nitrosodiphenylamine		X	X		X
	o-Cresol		X	X		X
	p-Chloroaniline		X	X		X
	Pentachlorophenol		X	X		X
	Phenanthrene	X	X	X		X
	Phenol		X	X		X
	Picloram			X		
	Pyrene	X	X	X		X
	Pyridine			X		

Table E-3a: Summary List of Non-Asbestos Analytes by Sample Media
Libby Asbestos Superfund Site, OU3 Study Area

Analyte Group	Analyte	Groundwater	Surface Water	Sediment	Forest Soil	Soil
VOCs (Volatile Hydrocarbons)	1,1,1-Trichloroethane		X	X		X
	1,1,2,2-Tetrachloroethane		X	X		X
	1,1,2-Trichloro-1,2,2-trifluoroethane		X	X		X
	1,1,2-Trichloroethane		X	X		X
	1,1-Dichloroethane		X	X		X
	1,1-Dichloroethene		X	X		X
	1,2,3-Trichlorobenzene		X	X		X
	1,2,4-Trichlorobenzene		X	X		X
	1,2-Dibromo-3-chloropropane		X	X		X
	1,2-Dibromoethane		X	X		X
	1,2-Dichlorobenzene		X	X		X
	1,2-Dichloroethane		X	X		X
	1,2-Dichloropropane		X	X		X
	1,3-Dichlorobenzene		X	X		X
	1,4-Dichlorobenzene		X	X		X
	1,4-Dioxane		X	X		X
	2-Hexanone		X	X		X
	Acetone		X	X		X
	Benzene	X	X	X		X
	Bromochloromethane		X	X		X
	Bromodichloromethane		X	X		X
	Bromoform		X	X		X
	Bromomethane		X	X		X
	C11 to C22 Aromatics	X	X	X		X
	C19 to C36 Aliphatics	X	X	X		X
	C5 to C8 Aliphatics	X	X	X		X
	C9 to C10 Aromatics	X	X	X		X
	C9 to C12 Aliphatics	X	X	X		X
	C9 to C18 Aliphatics	X	X	X		X
	Carbon disulfide		X	X		X
	Carbon tetrachloride		X	X		X
	Chlorobenzene		X	X		X
	Chlorodibromomethane		X	X		X
	Chloroethane		X	X		X
	Chloroform		X	X		X
	Chloromethane		X	X		X
	cis-1,2-Dichloroethene		X	X		X
	cis-1,3-Dichloropropene		X	X		X
	Cyclohexane		X	X		X
	Dichlorodifluoromethane		X	X		X
	Diesel Range Organics (DRO)			X		
	Ethylbenzene	X	X	X		X
	Gasoline Range Organics (GRO)			X		
	Isopropylbenzene		X	X		X
	m+p-Xylenes	X	X	X		X
	Methyl acetate		X	X		X
	Methyl ethyl ketone		X	X		X
	Methyl isobutyl ketone		X	X		X
	Methyl tert-butyl ether (MTBE)	X	X	X		X
	Methylcyclohexane		X	X		X
	Methylene chloride		X	X		X
	Naphthalene	X	X	X		X
	o-Xylene	X	X	X		X
	Styrene		X	X		X
	Tetrachloroethene		X	X		X
	Toluene	X	X	X		X
	Total Extractable Hydrocarbons	X	X	X		X
	Total Purgeable Hydrocarbons	X	X	X		X
	trans-1,2-Dichloroethene		X	X		X
	trans-1,3-Dichloropropene		X	X		X
	Trichloroethene		X	X		X
	Trichlorofluoromethane		X	X		X
	Vinyl chloride		X	X		X
	Xylenes, Total	X	X	X		X
Water quality parameters	Alkalinity, Total as CaCO3	X	X			
	Bicarbonate as HCO3	X	X			
	Carbonate as CO3	X	X			
	Hardness as CaCO3	X	X			
	Organic Carbon, Dissolved (DOC)		X			
	Solids, Total Dissolved TDS @ 180 C	X	X			
	Solids, Total Suspended TSS @ 105 C	X	X			
Sediment/soil quality parameters	Moisture			X		X
	Organic Carbon, Total (TOC)			X		X
	pH			X		
	pH, sat. paste			X		X
	Solids, Total			X		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24458	SW6010B	O	Z	Metals	Aluminum	7429-90-5	7070		mg/kg	v		5		0.65	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.03	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Arsenic	7440-38-2	6		mg/kg	v		5		0.01	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Barium	7440-39-3	80		mg/kg	v		5		0.02	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.00299	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24459	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	U		5		0.63	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.02	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Chromium	7440-47-3	12		mg/kg	v		5		0.04	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg	v		5		0.00303	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Copper	7440-50-8	18		mg/kg	v		5		0.03	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Iron	7439-89-6	16500		mg/kg	v		5		0.12	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Lead	7439-92-1	25		mg/kg	v		5		0.00314	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24458	SW6010B	O	Z	Metals	Manganese	7439-96-5	308		mg/kg	v		5		0.03	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24461	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.01	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Nickel	7440-02-0	12		mg/kg	v		5		0.04	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.32	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.000552	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Vanadium	7440-62-2	11		mg/kg	v		1		0.07	
SL135-07	SL135-07	I	1	P1-00080	Forest Soil		Field Sample	10/4/2007	24460	SW6020	O	Z	Metals	Zinc	7440-66-6	71		mg/kg	v		5		0.08	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24486	SW6010B	O	Z	Metals	Aluminum	7429-90-5	5280		mg/kg	v		5		0.64	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.03	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg	U		5		0.01	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Barium	7440-39-3	56		mg/kg	v		5		0.02	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.00294	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24487	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	U		5		0.62	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.02	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Chromium	7440-47-3	8		mg/kg	v		5		0.03	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg	U		5		0.00299	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Copper	7440-50-8	11		mg/kg	v		5		0.03	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Iron	7439-89-6	12800		mg/kg	v		5		0.12	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Lead	7439-92-1	13		mg/kg	v		5		0.0031	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24486	SW6010B	O	Z	Metals	Manganese	7439-96-5	209		mg/kg	v		5		0.03	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24489	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.00862	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Nickel	7440-02-0	9		mg/kg	v		5		0.04	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.31	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.000544	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Vanadium	7440-62-2	7		mg/kg	v		1		0.07	
SL135-08	SL135-08	I	1	P1-00160	Forest Soil		Field Sample	10/6/2007	24488	SW6020	O	Z	Metals	Zinc	7440-66-6	48		mg/kg	v		5		0.08	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24454	SW6010B	O	Z	Metals	Aluminum	7429-90-5	7680		mg/kg	v		5		0.54	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.03	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Arsenic	7440-38-2	6		mg/kg	v		5		0.01	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Barium	7440-39-3	76		mg/kg	v		5		0.02	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.0025	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24455	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	U		5		0.52	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.01	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Chromium	7440-47-3	29		mg/kg	v		5		0.03	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg	v		5		0.00254	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Copper	7440-50-8	16		mg/kg	v		5		0.02	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24454	SW6010B	O	Z	Metals	Iron	7439-89-6	17000		mg/kg	v		8		8.28	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Lead	7439-92-1	20		mg/kg	v		5		0.00263	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24454	SW6010B	O	Z	Metals	Manganese	7439-96-5	258		mg/kg	v		5		0.03	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24457	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.00823	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Nickel	7440-02-0	17		mg/kg	v		5		0.04	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.26	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.000461	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Vanadium	7440-62-2	12		mg/kg	v		1		0.06	
SL15-15	SL15-15	I	1	P1-00062	Forest Soil		Field Sample	10/2/2007	24456	SW6020	O	Z	Metals	Zinc	7440-66-6	61		mg/kg	v		5		0.06	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24442	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6360		mg/kg	v		5		0.54	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.03	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg	U		5		0.01	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Barium	7440-39-3	50		mg/kg	v		5		0.02	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.0025	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24443	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	U		5		0.52	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.01	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Chromium	7440-47-3	9		mg/kg	v		5		0.03	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg	U		5		0.00254	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Copper	7440-50-8	13		mg/kg	v		5		0.02	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Iron	7439-89-6	14300		mg/kg	v		5		0.1	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Lead	7439-92-1	12		mg/kg	v		5		0.00263	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24442	SW6010B	O	Z	Metals	Manganese	7439-96-5	212		mg/kg	v		5		0.03	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24445	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.00786	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Nickel	7440-02-0	7		mg/kg	v		5		0.04	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.27	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.000463	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Vanadium	7440-62-2	9		mg/kg	v		1		0.06	
SL15-16	SL15-16	I	1	P1-00042	Forest Soil		Field Sample	10/2/2007	24444	SW6020	O	Z	Metals	Zinc	7440-66-6	50		mg/kg	v		5		0.06	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24466	SW6010B	O	Z	Metals	Aluminum	7429-90-5	17300		mg/kg	v		5		0.62	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.03	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg	U		5		0.01	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Barium	7440-39-3	203		mg/kg	v		5		0.02	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24466	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.03	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24467	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	U		5		0.6	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.02	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Chromium	7440-47-3	30		mg/kg	v		5		0.03	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Cobalt	7440-48-4	18		mg/kg	v		5		0.00291	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Copper	7440-50-8	45		mg/kg	v		5		0.03	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24466	SW6010B	O	Z	Metals	Iron	7439-89-6	24100		mg/kg	v		10		9.5	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Lead	7439-92-1	8		mg/kg	v		5		0.00301	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24466	SW6010B	O	Z	Metals	Manganese	7439-96-5	677		mg/kg	v		5		0.03	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24469	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.00897	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Nickel	7440-02-0	29		mg/kg	v		5		0.04	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.3	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.00053	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Vanadium	7440-62-2	99		mg/kg	v		1		0.07	
SL195-11	SL195-11	I	1	P1-00112	Forest Soil		Field Sample	10/7/2007	24468	SW6020	O	Z	Metals	Zinc	7440-66-6	47		mg/kg	v		5		0.07	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24478	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6570		mg/kg	v		5		0.53	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.02	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Arsenic	7440-38-2	7		mg/kg	v		5		0.01	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Barium	7440-39-3	70		mg/kg	v		5		0.02	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.00244	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24479	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	U		5		0.51	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.01	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Chromium	7440-47-3	43		mg/kg	v		5		0.03	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg	v		5		0.00247	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Copper	7440-50-8	15		mg/kg	v		5		0.02	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24478	SW6010B	O	Z	Metals	Iron	7439-89-6	14900		mg/kg	v		8		8.08	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Lead	7439-92-1	26		mg/kg	v		5		0.00256	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24478	SW6010B	O	Z	Metals	Manganese	7439-96-5	262		mg/kg	v		5		0.03	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24481	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.0085	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Nickel	7440-02-0	17		mg/kg	v		5		0.04	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.26	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.00045	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Vanadium	7440-62-2	12		mg/kg	v		1		0.06	
SL195-12	SL195-12	I	1	P1-00149	Forest Soil		Field Sample	10/7/2007	24480	SW6020	O	Z	Metals	Zinc	7440-66-6	61		mg/kg	v		5		0.06	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24474	SW6010B	O	Z	Metals	Aluminum	7429-90-5	7290		mg/kg	v		5		0.6	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.03	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Arsenic	7440-38-2	6		mg/kg	v		5		0.01	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Barium	7440-39-3	67		mg/kg	v		5		0.02	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.00278	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24475	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	v		5		0.58	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.02	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Chromium	7440-47-3	11		mg/kg	v		5		0.03	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Cobalt	7440-48-4	7		mg/kg	v		5		0.00282	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Copper	7440-50-8	14		mg/kg	v		5		0.03	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24474	SW6010B	O	Z	Metals	Iron	7439-89-6	15600		mg/kg	v		9		9.22	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Lead	7439-92-1	17		mg/kg	v		5		0.00293	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24474	SW6010B	O	Z	Metals	Manganese	7439-96-5	301		mg/kg	v		5		0.03	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24477	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.00734	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Nickel	7440-02-0	11		mg/kg	v		5		0.04	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.29	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.000514	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Vanadium	7440-62-2	10		mg/kg	v		1		0.07	
SL315-07	SL315-07	I	1	P1-00147	Forest Soil		Field Sample	10/6/2007	24476	SW6020	O	Z	Metals	Zinc	7440-66-6	52		mg/kg	v		5		0.07	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24482	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6300		mg/kg	v		5		0.63	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.03	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Arsenic	7440-38-2	6		mg/kg	v		5		0.01	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Barium	7440-39-3	156		mg/kg	v		5		0.02	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.00291	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24483	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	U		5		0.61	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	v		1		0.02	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Chromium	7440-47-3	24		mg/kg	v		5		0.03	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg	v		5		0.00296	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Copper	7440-50-8	16		mg/kg	v		5		0.03	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Iron	7439-89-6	15900		mg/kg	v		5		0.12	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Lead	7439-92-1	19		mg/kg	v		5		0.00306	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24482	SW6010B	O	Z	Metals	Manganese	7439-96-5	1250		mg/kg	v		5		0.03	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24485	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.00805	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Nickel	7440-02-0	11		mg/kg	v		5		0.04	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.31	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.000538	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Vanadium	7440-62-2	10		mg/kg	v		1		0.07	
SL315-08	SL315-08	I	1	P1-00158	Forest Soil		Field Sample	10/6/2007	24484	SW6020	O	Z	Metals	Zinc	7440-66-6	62		mg/kg	v		5		0.08	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24450	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6870		mg/kg	v		5		0.51	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.02	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Arsenic	7440-38-2	6		mg/kg	v		5		0.01	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Barium	7440-39-3	70		mg/kg	v		5		0.02	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.00237	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24451	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	U		5		0.5	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.01	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Chromium	7440-47-3	38		mg/kg	v		5		0.03	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg	v		5		0.00241	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Copper	7440-50-8	15		mg/kg	v		5		0.02	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24450	SW6010B	O	Z	Metals	Iron	7439-89-6	15600		mg/kg	v		8		7.87	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Lead	7439-92-1	27		mg/kg	v		5		0.0025	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24450	SW6010B	O	Z	Metals	Manganese	7439-96-5	277		mg/kg	v		5		0.03	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24453	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.00738	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Nickel	7440-02-0	26		mg/kg	v		5		0.03	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.25	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.000439	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Vanadium	7440-62-2	12		mg/kg	v		1		0.06	
SL45-15	SL45-15	I	1	P1-00054	Forest Soil		Field Sample	10/2/2007	24452	SW6020	O	Z	Metals	Zinc	7440-66-6	63		mg/kg	v		5		0.06	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24446	SW6010B	O	Z	Metals	Aluminum	7429-90-5	4560		mg/kg	v		5		0.49	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.02	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg	U		5		0.01	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Barium	7440-39-3	46		mg/kg	v		5		0.01	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.00227	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24447	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	U		5		0.47	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.01	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Chromium	7440-47-3	8		mg/kg	v		5		0.03	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg	U		5		0.0023	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Copper	7440-50-8	9		mg/kg	v		5		0.02	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Iron	7439-89-6	11100		mg/kg	v		5		0.09	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Lead	7439-92-1	9		mg/kg	v		5		0.00238	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24446	SW6010B	O	Z	Metals	Manganese	7439-96-5	185		mg/kg	v		5		0.02	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24449	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.00798	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Nickel	7440-02-0	7		mg/kg	v		5		0.03	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.24	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.000419	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Vanadium	7440-62-2	6		mg/kg	v		1		0.06	
SL45-16	SL45-16	I	1	P1-00052	Forest Soil		Field Sample	10/2/2007	24448	SW6020	O	Z	Metals	Zinc	7440-66-6	35		mg/kg	v		5		0.06	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24462	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6190		mg/kg	v		5		0.61	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.03	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg	U		5		0.01	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Barium	7440-39-3	99		mg/kg	v		5		0.02	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.00283	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24463	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	U		5		0.59	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.02	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Chromium	7440-47-3	10		mg/kg	v		5		0.03	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg	v		5		0.00287	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Copper	7440-50-8	13		mg/kg	v		5		0.03	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Iron	7439-89-6	14200		mg/kg	v		5		0.11	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Lead	7439-92-1	20		mg/kg	v		5		0.00298	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24462	SW6010B	O	Z	Metals	Manganese	7439-96-5	564		mg/kg	v		5		0.03	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24465	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.00824	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Nickel	7440-02-0	10		mg/kg	v		5		0.04	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.3	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.000523	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Vanadium	7440-62-2	9		mg/kg	v		1		0.07	
SL75-15	SL75-15	I	1	P1-00103	Forest Soil		Field Sample	10/5/2007	24464	SW6020	O	Z	Metals	Zinc	7440-66-6	62		mg/kg	v		5		0.07	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24470	SW6010B	O	Z	Metals	Aluminum	7429-90-5	26100		mg/kg	v		5		0.66	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Antimony	7440-36-0	5		mg/kg	U		5		0.03	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg	U		5		0.01	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Barium	7440-39-3	225		mg/kg	v		5		0.02	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24470	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg	U		5		0.03	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24471	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg	v		5		0.64	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg	U		1		0.02	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Chromium	7440-47-3	49		mg/kg	v		5		0.04	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Cobalt	7440-48-4	26		mg/kg	v		5		0.00312	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Copper	7440-50-8	48		mg/kg	v		5		0.03	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24470	SW6010B	O	Z	Metals	Iron	7439-89-6	30700		mg/kg	v		10		10.19	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Lead	7439-92-1	8		mg/kg	v		5		0.00323	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24470	SW6010B	O	Z	Metals	Manganese	7439-96-5	810		mg/kg	v		5		0.03	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24473	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg	U		1		0.00789	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Nickel	7440-02-0	42		mg/kg	v		5		0.05	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg	U		5		0.33	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Silver	7440-22-4	5		mg/kg	U		5		0.01	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Thallium	7440-28-0	5		mg/kg	U		5		0.000568	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Vanadium	7440-62-2	119		mg/kg	v		1		0.08	
SL75-16	SL75-16	I	1	P1-00130	Forest Soil		Field Sample	10/5/2007	24472	SW6020	O	Z	Metals	Zinc	7440-66-6	71		mg/kg	v		5		0.08	
BH-01A-1	BH-01A-1	WT-2015	3	WT-10074	Groundwater		Field Sample	4/17/2015	29475	300.0	O	Z	Anions	Chloride	7782-50-5	6.4		mg/L	v				0.5	mg/L
BH-01A-1	BH-01A-1	WT-2015	3	WT-10074	Groundwater		Field Sample	4/17/2015	29475	300.0	O	Z	Anions	Sulfate		11		mg/L	v				0.75	mg/L
BH-01A-1	BH-01A-1	WT-2015	3	WT-10074	Groundwater		Field Sample	4/17/2015	29478	6010B	O	TOT	Metals	Calcium	7440-70-2	85000		ug/L	v	J			5000	ug/L
BH-01A-1	BH-01A-1	WT-2015	3	WT-10074	Groundwater		Field Sample	4/17/2015	29477	6010B	O	TOT	Metals	Magnesium	7439-95-4	17000		ug/L	v				1000	ug/L
BH-01A-1	BH-01A-1	WT-2015	3	WT-10074	Groundwater		Field Sample	4/17/2015	29477	6010B	O	TOT	Metals	Potassium	7440-09-7	11000		ug/L	v				1000	ug/L
BH-01A-1	BH-01A-1	WT-2015	3	WT-10074	Groundwater		Field Sample	4/17/2015	29477	6010B	O	TOT	Metals	Sodium	7440-23-5	6300		ug/L	v				1000	ug/L
BH-01A-1	BH-01A-1	WT-2015	3	WT-10074	Groundwater		Field Sample	4/17/2015	29474	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	270		mg/L	v				2	mg/L
BH-01A-1	BH-01A-1	WT-2015	3	WT-10074	Groundwater		Field Sample	4/17/2015	29476	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	270		mg/L	v				2	mg/L
BH-01A-2	BH-01A-2	WT-2015	3	WT-10078	Groundwater		Field Sample	4/19/2015	29494	300.0	O	Z	Anions	Chloride	7782-50-5	2.1		mg/L	v				0.5	mg/L
BH-01A-2	BH-01A-2	WT-2015	3	WT-10078	Groundwater		Field Sample	4/19/2015	29494	300.0	O	Z	Anions	Sulfate		7.2		mg/L	v				0.75	mg/L
BH-01A-2	BH-01A-2	WT-2015	3	WT-10078	Groundwater		Field Sample	4/19/2015	29497	6010B	O	TOT	Metals	Calcium	7440-70-2	59000		ug/L	v	J			5000	ug/L
BH-01A-2	BH-01A-2	WT-2015	3	WT-10078	Groundwater		Field Sample	4/19/2015	29496	6010B	O	TOT	Metals	Magnesium	7439-95-4	13000		ug/L	v				1000	ug/L
BH-01A-2	BH-01A-2	WT-2015	3	WT-10078	Groundwater		Field Sample	4/19/2015	29496	6010B	O	TOT	Metals	Potassium	7440-09-7	5900		ug/L	v				1000	ug/L
BH-01A-2	BH-01A-2	WT-2015	3	WT-10078	Groundwater		Field Sample	4/19/2015	29496	6010B	O	TOT	Metals	Sodium	7440-23-5	3400		ug/L	v				1000	ug/L
BH-01A-2	BH-01A-2	WT-2015	3	WT-10078	Groundwater		Field Sample	4/19/2015	29493	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	200		mg/L	v				2	mg/L
BH-01A-2	BH-01A-2	WT-2015	3	WT-10078	Groundwater		Field Sample	4/19/2015	29495	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	200		mg/L	v				2	mg/L
BH-03A-1	BH-03A-1	WT-2015	3	WT-10076	Groundwater		Field Sample	4/19/2015	29484	300.0	O	Z	Anions	Chloride	7782-50-5	1.8		mg/L	v				0.5	mg/L
BH-03A-1	BH-03A-1	WT-2015	3	WT-10076	Groundwater		Field Sample	4/19/2015	29484	300.0	O	Z	Anions	Sulfate		6.7		mg/L	v				0.75	mg/L
BH-03A-1	BH-03A-1	WT-2015	3	WT-10076	Groundwater		Field Sample	4/19/2015	29487	6010B	O	TOT	Metals	Calcium	7440-70-2	53000		ug/L	v	J			5000	ug/L
BH-03A-1	BH-03A-1	WT-2015	3	WT-10076	Groundwater		Field Sample	4/19/2015	29486	6010B	O	TOT	Metals	Magnesium	7439-95-4	12000		ug/L	v				1000	ug/L
BH-03A-1	BH-03A-1	WT-2015	3	WT-10076	Groundwater		Field Sample	4/19/2015	29486	6010B	O	TOT	Metals	Potassium	7440-09-7	5500		ug/L	v				1000	ug/L
BH-03A-1	BH-03A-1	WT-2015	3	WT-10076	Groundwater		Field Sample	4/19/2015	29486	6010B	O	TOT	Metals	Sodium	7440-23-5	3000		ug/L	v				1000	ug/L
BH-03A-1	BH-03A-1	WT-2015	3	WT-10076	Groundwater		Field Sample	4/19/2015	29483	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	180		mg/L	v				2	mg/L
BH-03A-1	BH-03A-1	WT-2015	3	WT-10076	Groundwater		Field Sample	4/19/2015	29485	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	180		mg/L	v				2	mg/L
BH-05A-1	BH-05A-1	WT-2015	3	WT-10073	Groundwater		Field Sample	4/17/2015	29470	300.0	O	Z	Anions	Chloride	7782-50-5	4		mg/L	v				0.5	mg/L
BH-05A-1	BH-05A-1	WT-2015	3	WT-10073	Groundwater		Field Sample	4/17/2015	29470	300.0	O	Z	Anions	Sulfate		18		mg/L	v				0.75	mg/L
BH-05A-1	BH-05A-1	WT-2015	3	WT-10073	Groundwater		Field Sample	4/17/2015	29473	6010B	O	TOT	Metals	Calcium	7440-70-2	86000		ug/L	v	J			5000	ug/L
BH-05A-1	BH-05A-1	WT-2015	3	WT-10073	Groundwater		Field Sample	4/17/2015	29472	6010B	O	TOT	Metals	Magnesium	7439-95-4	19000		ug/L	v				1000	ug/L
BH-05A-1	BH-05A-1	WT-2015	3	WT-10073	Groundwater		Field Sample	4/17/2015	29472	6010B	O	TOT	Metals	Potassium	7440-09-7	10000		ug/L	v				1000	ug/L
BH-05A-1	BH-05A-1	WT-2015	3	WT-10073	Groundwater		Field Sample	4/17/2015	29472	6010B	O	TOT	Metals	Sodium	7440-23-5	22000		ug/L	v				1000	ug/L
BH-05A-1	BH-05A-1	WT-2015	3	WT-10073	Groundwater		Field Sample	4/17/2015	29469	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	320		mg/L	v				2	mg/L
BH-05A-1	BH-05A-1	WT-2015	3	WT-10073	Groundwater		Field Sample	4/17/2015	29471	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	320		mg/L	v				2	mg/L
BH-05A-2	BH-05A-2	WT-2015	3	WT-10077	Groundwater		Field Sample	4/19/2015	29489	300.0	O	Z	Anions	Chloride	7782-50-5	2.7		mg/L	v				0.5	mg/L
BH-05A-2	BH-05A-2	WT-2015	3	WT-10077	Groundwater		Field Sample	4/19/2015	29489	300.0	O	Z	Anions	Sulfate		6.4		mg/L	v				0.75	mg/L
BH-05A-2	BH-05A-2	WT-2015	3	WT-10077	Groundwater		Field Sample	4/19/2015	29492	6010B	O	TOT	Metals	Calcium	7440-70-2	73000		ug/L	v	J			5000	ug/L
BH-05A-2	BH-05A-2	WT-2015	3	WT-10077	Groundwater		Field Sample	4/19/2015	29491	6010B	O	TOT	Metals	Magnesium	7439-95-4	19000		ug/L	v				1000	ug/L
BH-05A-2	BH-05A-2	WT-2015	3	WT-10077	Groundwater		Field Sample	4/19/2015	29491	6010B	O	TOT	Metals	Potassium	7440-09-7	9100		ug/L	v				1000	ug/L
BH-05A-2	BH-05A-2	WT-2015	3	WT-10077	Groundwater		Field Sample	4/19/2015	29491	6010B	O	TOT	Metals	Sodium	7440-23-5	4700		ug/L	v				1000	ug/L
BH-05A-2	BH-05A-2	WT-2015	3	WT-10077	Groundwater		Field Sample	4/19/2015	29488	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	250		mg/L	v				2	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
BH-05A-2	BH-05A-2	WT-2015	3	WT-10077	Groundwater		Field Sample	4/19/2015	29490	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	250		mg/L	v				2	mg/L
BH-07A-1	BH-07A-1	WT-2015	3	WT-10064	Groundwater		Field Sample	4/15/2015	29437	300.0	O	Z	Anions	Chloride	7782-50-5	5.1		mg/L	v				0.5	mg/L
BH-07A-1	BH-07A-1	WT-2015	3	WT-10064	Groundwater		Field Sample	4/15/2015	29437	300.0	O	Z	Anions	Sulfate		23		mg/L	v	J+			0.75	mg/L
BH-07A-1	BH-07A-1	WT-2015	3	WT-10064	Groundwater		Field Sample	4/15/2015	29439	6010B	O	TOT	Metals	Calcium	7440-70-2	91000		ug/L	v	J			5000	ug/L
BH-07A-1	BH-07A-1	WT-2015	3	WT-10064	Groundwater		Field Sample	4/15/2015	29439	6010B	O	TOT	Metals	Magnesium	7439-95-4	19000		ug/L	v				1000	ug/L
BH-07A-1	BH-07A-1	WT-2015	3	WT-10064	Groundwater		Field Sample	4/15/2015	29439	6010B	O	TOT	Metals	Potassium	7440-09-7	12000		ug/L	v				1000	ug/L
BH-07A-1	BH-07A-1	WT-2015	3	WT-10064	Groundwater		Field Sample	4/15/2015	29439	6010B	O	TOT	Metals	Sodium	7440-23-5	20000		ug/L	v				1000	ug/L
BH-07A-1	BH-07A-1	WT-2015	3	WT-10064	Groundwater		Field Sample	4/15/2015	29436	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	300		mg/L	v				2	mg/L
BH-07A-1	BH-07A-1	WT-2015	3	WT-10064	Groundwater		Field Sample	4/15/2015	29438	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	290		mg/L	v				2	mg/L
BH-07A-2	BH-07A-2	WT-2015	3	WT-10065	Groundwater		Field Sample	4/15/2015	29441	300.0	O	Z	Anions	Chloride	7782-50-5	2.9		mg/L	v				0.5	mg/L
BH-07A-2	BH-07A-2	WT-2015	3	WT-10065	Groundwater		Field Sample	4/15/2015	29441	300.0	O	Z	Anions	Sulfate		7.6		mg/L	v	J+			0.75	mg/L
BH-07A-2	BH-07A-2	WT-2015	3	WT-10065	Groundwater		Field Sample	4/15/2015	29444	6010B	O	TOT	Metals	Calcium	7440-70-2	69000		ug/L	v	J			5000	ug/L
BH-07A-2	BH-07A-2	WT-2015	3	WT-10065	Groundwater		Field Sample	4/15/2015	29443	6010B	O	TOT	Metals	Magnesium	7439-95-4	15000		ug/L	v				1000	ug/L
BH-07A-2	BH-07A-2	WT-2015	3	WT-10065	Groundwater		Field Sample	4/15/2015	29443	6010B	O	TOT	Metals	Potassium	7440-09-7	11000		ug/L	v				1000	ug/L
BH-07A-2	BH-07A-2	WT-2015	3	WT-10065	Groundwater		Field Sample	4/15/2015	29443	6010B	O	TOT	Metals	Sodium	7440-23-5	7300		ug/L	v				1000	ug/L
BH-07A-2	BH-07A-2	WT-2015	3	WT-10065	Groundwater		Field Sample	4/15/2015	29440	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	240		mg/L	v				2	mg/L
BH-07A-2	BH-07A-2	WT-2015	3	WT-10065	Groundwater		Field Sample	4/15/2015	29442	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	240		mg/L	v				2	mg/L
BH-07B-1	BH-07B-1	WT-2015	3	WT-10067	Groundwater		Field Sample	4/15/2015	29451	300.0	O	Z	Anions	Chloride	7782-50-5	2.2		mg/L	v				0.5	mg/L
BH-07B-1	BH-07B-1	WT-2015	3	WT-10067	Groundwater		Field Sample	4/15/2015	29451	300.0	O	Z	Anions	Sulfate		6.4		mg/L	v	J+			0.75	mg/L
BH-07B-1	BH-07B-1	WT-2015	3	WT-10067	Groundwater		Field Sample	4/15/2015	29454	6010B	O	TOT	Metals	Calcium	7440-70-2	63000		ug/L	v	J			5000	ug/L
BH-07B-1	BH-07B-1	WT-2015	3	WT-10067	Groundwater		Field Sample	4/15/2015	29453	6010B	O	TOT	Metals	Magnesium	7439-95-4	14000		ug/L	v				1000	ug/L
BH-07B-1	BH-07B-1	WT-2015	3	WT-10067	Groundwater		Field Sample	4/15/2015	29453	6010B	O	TOT	Metals	Potassium	7440-09-7	6400		ug/L	v				1000	ug/L
BH-07B-1	BH-07B-1	WT-2015	3	WT-10067	Groundwater		Field Sample	4/15/2015	29453	6010B	O	TOT	Metals	Sodium	7440-23-5	3700		ug/L	v				1000	ug/L
BH-07B-1	BH-07B-1	WT-2015	3	WT-10067	Groundwater		Field Sample	4/15/2015	29450	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	210		mg/L	v				2	mg/L
BH-07B-1	BH-07B-1	WT-2015	3	WT-10067	Groundwater		Field Sample	4/15/2015	29452	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	210		mg/L	v				2	mg/L
BH-09-1	BH-09-1	WT-2015	3	WT-10062	Groundwater		Field Sample	4/14/2015	29429	300.0	O	Z	Anions	Chloride	7782-50-5	3.2		mg/L	v				0.5	mg/L
BH-09-1	BH-09-1	WT-2015	3	WT-10062	Groundwater		Field Sample	4/14/2015	29429	300.0	O	Z	Anions	Sulfate		7.8		mg/L	v	J+			0.75	mg/L
BH-09-1	BH-09-1	WT-2015	3	WT-10062	Groundwater		Field Sample	4/14/2015	29431	6010B	O	TOT	Metals	Calcium	7440-70-2	73000		ug/L	v	J			5000	ug/L
BH-09-1	BH-09-1	WT-2015	3	WT-10062	Groundwater		Field Sample	4/14/2015	29431	6010B	O	TOT	Metals	Magnesium	7439-95-4	16000		ug/L	v				1000	ug/L
BH-09-1	BH-09-1	WT-2015	3	WT-10062	Groundwater		Field Sample	4/14/2015	29431	6010B	O	TOT	Metals	Potassium	7440-09-7	7900		ug/L	v				1000	ug/L
BH-09-1	BH-09-1	WT-2015	3	WT-10062	Groundwater		Field Sample	4/14/2015	29431	6010B	O	TOT	Metals	Sodium	7440-23-5	4200		ug/L	v				1000	ug/L
BH-09-1	BH-09-1	WT-2015	3	WT-10062	Groundwater		Field Sample	4/14/2015	29428	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	230		mg/L	v				2	mg/L
BH-09-1	BH-09-1	WT-2015	3	WT-10062	Groundwater		Field Sample	4/14/2015	29430	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	230		mg/L	v				2	mg/L
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17656	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19327	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21686	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17651	E300.0	O	Z	Anions	Chloride	16887-00-6	2		mg/L	v		1		0.02	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19322	E300.0	O	Z	Anions	Chloride	16887-00-6	2		mg/L	v		1		0.02	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21681	E300.0	O	Z	Anions	Chloride	16887-00-6	2		mg/L	v		1		0.02	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17651	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1		0.01	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19322	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v	U	0.1		0.01	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21681	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17651	E300.0	O	Z	Anions	Sulfate	14808-79-8	5		mg/L	v		1		0.05	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19322	E300.0	O	Z	Anions	Sulfate	14808-79-8	22		mg/L	v		1		0.05	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21681	E300.0	O	Z	Anions	Sulfate	14808-79-8	1		mg/L	U		1		0.05	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19329	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		300		ug/L	U	UJ	300		130	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21688	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		300		ug/L	U		300		130	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19328	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		300		ug/L	U	UJ	300		34	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21687	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		300		ug/L	U		300		34	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19328	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		300		ug/L	U	UJ	300		120	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21687	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		300		ug/L	U		300		120	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17664	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19329	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	300		ug/L	U	UJ	300		130	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19339	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	667		ug/L	v	UJ	300		38	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21688	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	300		ug/L	U		300		130	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21698	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	926		ug/L	v		300		38	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.005	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.008332	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21693	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.000034	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21692	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000041	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.001	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.00021	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	U		0.1		0.0001399	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00008511	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.005	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21693	SW6020	O	DIS	Metals	Boron	7440-42-8	0.02		mg/L	U		0.02		0.001186	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19334	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0002		mg/L	v		0.0001		0.00000493	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21692	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0008		mg/L	v		0.0001		0.000011	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Calcium	7440-70-2	51		mg/L	v	J	1		0.01	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Calcium	7440-70-2	50		mg/L	v		1		0.21	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Calcium	7440-70-2	50		mg/L	v		1		0.009442	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.001	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0000136	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00187	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.001	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.0000903	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.001083	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0008568	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Iron	7439-89-6	1.34		mg/L	v		0.03		0.005	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Iron	7439-89-6	10.3		mg/L	v		0.03		0.00516	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Iron	7439-89-6	8.87		mg/L	v		0.03		0.00163	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21692	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00001	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	19		mg/L	v		1		0.01	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.13	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.01	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Manganese	7439-96-5	0.87		mg/L	v		0.02		0.0000248	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Manganese	7439-96-5	1.2		mg/L	v		0.02		0.00111	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.86		mg/L	v		0.02		0.0003044	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17662	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19337	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21696	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.001	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.002134	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Potassium	9/7/7440	2		mg/L	v		1		0.01	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Potassium	9/7/7440	1		mg/L	U		1		0.06	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Potassium	9/7/7440	1		mg/L	U		1		0.01	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21692	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000076	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21692	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.000036	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1		1	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.18	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.03	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17658	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19333	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002841	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17660	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.000317	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19331	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21690	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.001541	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	1.98		mg/L	v		0.09		0.01	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.52		mg/L	v		0.09		0.01	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.11		mg/L	v		0.09		0.01	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17661	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000041	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19335	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21695	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000041	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17661	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.00004	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19335	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.000258	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.000258	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	U		0.1		0.0001702	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17661	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000035	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0001154	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21695	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00039	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17661	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19335	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21695	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0007		mg/L	v		0.0002		0.0000028	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Calcium	7440-70-2	44		mg/L	v		1		0.03	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Calcium	7440-70-2	53		mg/L	v		1		0.03	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Calcium	7440-70-2	45		mg/L	v		1		0.08	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.003109	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002135	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17661	SW6020	O	TOT	Metals	Copper	7440-50-8	0.01		mg/L	v		0.002		0.000031	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19336	SW6020	O	TOT	Metals	Copper	7440-50-8	0.005		mg/L	v	U	0.002		0.000031	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21694	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Iron	7439-89-6	4.32		mg/L	v		0.03		0.00466	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Iron	7439-89-6	15.5		mg/L	v		0.03		0.00466	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Iron	7439-89-6	9.68		mg/L	v		0.03		0.005167	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17661	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0021		mg/L	v		0.0005		0.00000334	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19335	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0009		mg/L	v		0.0005		0.0000167	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21694	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	16		mg/L	v		1		0.03	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.03	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	15		mg/L	v		1		0.02	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17661	SW6020	O	TOT	Metals	Manganese	7439-96-5	0.97		mg/L	v		0.02		0.000006	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Manganese	7439-96-5	1.22		mg/L	v		0.02		0.000366	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.76		mg/L	v		0.02		0.0005906	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17663	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19338	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21697	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17661	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.006		mg/L	v		0.005		0.000027	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19335	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.003063	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Potassium	9/7/7440	2		mg/L	v		1		0.05	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Potassium	9/7/7440	1		mg/L	v		1		0.05	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Potassium	9/7/7440	1		mg/L	U		1		0.02	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17661	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00011	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19335	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21694	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17661	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000069	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19335	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21694	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Sodium	7440-23-5	11		mg/L	v		1		0.36	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.06	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.25	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002365	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17659	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19332	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21691	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.003385	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17654	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19325	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21684	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	u		0.01		0.01	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17653	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	v	U	0.01		0.0016	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19324	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21683	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	v		0.01		0.0016	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17652	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.04		mg/L	v		0.01		0.00651	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19323	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21682	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17655	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	5.3		pCi/L	v					
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19326	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	4.6		pCi/L	v	J				
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21685	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	4.2		pCi/L	v					
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17655	E900.0	O	Z	Radionuclides	Gross Alpha MDC		1.9		pCi/L	v		0			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19326	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.1		pCi/L	v		0			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21685	E900.0	O	Z	Radionuclides	Gross Alpha MDC		1.5		pCi/L	v		0			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17655	E900.0	O	Z	Radionuclides	Gross Beta	BETA	0.9		pCi/L	v					
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19326	E900.0	O	Z	Radionuclides	Gross Beta	BETA	3		pCi/L	v					
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21685	E900.0	O	Z	Radionuclides	Gross Beta	BETA	14.6		pCi/L	v					
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17655	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.7		pCi/L	v		0			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19326	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.8		pCi/L	v		0			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21685	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.8		pCi/L	v		0			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	10		ug/L	U	UJ	10		3.88	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	10		ug/L	U		10		3.88	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	10		ug/L	U	UJ	10		3.32	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	10		ug/L	U		10		3.32	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	10		ug/L	U	UJ	10		3.7	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	10		ug/L	U		10		3.7	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	10		ug/L	U	UJ	10		2.48	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	10		ug/L	U		10		2.48	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	10		ug/L	U	UJ	10		2.52	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	10		ug/L	U		10		2.52	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	10		ug/L	U	UJ	10		2.4	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	10		ug/L	U		10		2.4	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	10		ug/L	U	UJ	10		2.74	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	10		ug/L	U		10		2.74	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	10		ug/L	U	UJ	10		2.62	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	10		ug/L	U		10		2.62	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	10		ug/L	U	UJ	10		2.68	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	10		ug/L	U		10		2.68	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	10		ug/L	U	UJ	10		2.16	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	10		ug/L	U		10		2.16	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	10		ug/L	U	UJ	10		2.26	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	10		ug/L	U		10		2.26	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	10		ug/L	U	UJ	10		2.44	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	10		ug/L	U		10		2.44	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	10		ug/L	U	UJ	10		3.26	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	10		ug/L	U		10		3.26	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	10		ug/L	U	UJ	10		2.32	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	10		ug/L	U		10		2.32	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	10		ug/L	U	UJ	10		3.92	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	10		ug/L	U		10		3.92	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	10		ug/L	U	UJ	10		2.5	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	10		ug/L	U		10		2.5	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19340	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	10		ug/L	U	UJ	10		2.46	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21699	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	10		ug/L	U		10		2.46	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17657	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19330	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21689	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17647	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	204		mg/L	v		4		1	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19318	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	196		mg/L	v		4		1	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21677	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	199		mg/L	v		4		4	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17647	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	249		mg/L	v		4		1	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19318	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	239		mg/L	v		4		1	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21677	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	243		mg/L	v		4		4	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17647	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19318	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21677	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		4	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17648	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	207		mg/L	v		1			
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19319	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	193		mg/L	v		1			
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21678	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	198		mg/L	v		1			
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17649	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	205		mg/L	v		10		10	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19320	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	235		mg/L	v		10		10	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21679	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	198		mg/L	v		10		10	
Well A	Well A	IIB	3	P2-00795	Groundwater		Field Sample	7/24/2008	17650	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	56		mg/L	v		10		1	
Well A	Well A	IIB	3	P2-01047	Groundwater		Field Sample	9/30/2008	19321	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	42		mg/L	v		10		1	
Well A	Well A	IIB	3	P2-01138	Groundwater		Field Sample	6/10/2009	21680	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	24		mg/L	v		10		1	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19209	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21558	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19204	E300.0	O	Z	Anions	Chloride	16887-00-6	10		mg/L	v		1		0.02	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21553	E300.0	O	Z	Anions	Chloride	16887-00-6	6		mg/L	v		1		0.02	
Well C	Well C	WT-2015	3	WT-10061	Groundwater		Field Sample	4/14/2015	29425	300.0	O	Z	Anions	Chloride	7782-50-5	8.1		mg/L	v				0.5	mg/L
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19204	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.6		mg/L	v		0.1		0.01	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21553	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.4		mg/L	v		0.1		0.01	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19204	E300.0	O	Z	Anions	Sulfate	14808-79-8	14		mg/L	v		1		0.05	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21553	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1		0.05	
Well C	Well C	WT-2015	3	WT-10061	Groundwater		Field Sample	4/14/2015	29425	300.0	O	Z	Anions	Sulfate		11		mg/L	v	J+			0.75	mg/L
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19218	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21569	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	316		ug/L	U		316		39.99	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19213	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21564	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.000034	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19213	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21562	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000041	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.00021	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.0001399	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00008511	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21564	SW6020	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.001186	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19213	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21563	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0008		mg/L	v		0.0001		0.000011	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Calcium	7440-70-2	91		mg/L	v		1		0.21	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Calcium	7440-70-2	71		mg/L	v		1		0.009442	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00187	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.001083	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19213	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	v	U	0.002		0.0000211	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21562	SW6020	O	DIS	Metals	Copper	7440-50-8	0.004		mg/L	v		0.002		0.00004	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00163	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19213	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21563	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00001	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	22		mg/L	v		1		0.13	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.01	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.0003044	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19216	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21567	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19213	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.002134	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Potassium	9/7/7440	13		mg/L	v		1		0.06	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Potassium	9/7/7440	11		mg/L	v		1		0.01	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19213	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21563	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000076	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19213	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21563	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.000036	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.18	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.25	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19213	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002841	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19211	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21560	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.001541	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19214	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21566	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000041	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19214	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21565	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.000258	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.0001702	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0001154	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21565	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00195	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19215	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21565	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.001		mg/L	v		0.0001		0.000014	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Calcium	7440-70-2	101		mg/L	v		1		0.03	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Calcium	7440-70-2	65		mg/L	v		1		0.08	
Well C	Well C	WT-2015	3	WT-10061	Groundwater		Field Sample	4/14/2015	29427	6010B	O	TOT	Metals	Calcium	7440-70-2	87000		ug/L	v	J			5000	ug/L
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.003109	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002135	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19215	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	v		0.002		0.000031	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21565	SW6020	O	TOT	Metals	Copper	7440-50-8	0.005		mg/L	v		0.002		0.000155	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.12		mg/L	v		0.03		0.00466	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.24		mg/L	v		0.03		0.005167	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19214	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21565	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	23		mg/L	v		1		0.03	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	15		mg/L	v		1		0.02	
Well C	Well C	WT-2015	3	WT-10061	Groundwater		Field Sample	4/14/2015	29427	6010B	O	TOT	Metals	Magnesium	7439-95-4	21000		ug/L	v				1000	ug/L
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.0005906	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19217	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21568	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19214	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.003063	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Potassium	9/7/7440	14		mg/L	v		1		0.05	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Potassium	9/7/7440	11		mg/L	v		1		0.02	
Well C	Well C	WT-2015	3	WT-10061	Groundwater		Field Sample	4/14/2015	29427	6010B	O	TOT	Metals	Potassium	7440-09-7	12000		ug/L	v				1000	ug/L
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19214	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21565	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19214	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21565	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.06	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.25	
Well C	Well C	WT-2015	3	WT-10061	Groundwater		Field Sample	4/14/2015	29427	6010B	O	TOT	Metals	Sodium	7440-23-5	5300		ug/L	v				1000	ug/L
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002365	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19212	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21561	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.003385	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19207	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.07		mg/L	v		0.01		0.01	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21556	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.03		mg/L	v		0.01		0.01	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19206	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.07		mg/L	v		0.01		0.0016	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21555	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.03		mg/L	v		0.01		0.0016	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19205	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21554	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19208	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	2.8		pCi/L	v	UJ				
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21557	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	5.6		pCi/L	v					
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19208	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.9		pCi/L	v		0			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21557	E900.0	O	Z	Radionuclides	Gross Alpha MDC		1.8		pCi/L	v		0			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19208	E900.0	O	Z	Radionuclides	Gross Beta	BETA	5.9		pCi/L	v					
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21557	E900.0	O	Z	Radionuclides	Gross Beta	BETA	9.4		pCi/L	v					
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19208	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.9		pCi/L	v		0			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21557	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.9		pCi/L	v		0			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19210	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21559	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19200	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	328		mg/L	v		4		1	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21549	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	230		mg/L	v		4		4	
Well C	Well C	WT-2015	3	WT-10061	Groundwater		Field Sample	4/14/2015	29424	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	270		mg/L	v				2	mg/L
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19200	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	400		mg/L	v		4		1	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21549	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	281		mg/L	v		4		4	
Well C	Well C	WT-2015	3	WT-10061	Groundwater		Field Sample	4/14/2015	29426	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	270		mg/L	v				2	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19200	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21549	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		4	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19201	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	316		mg/L	v		1			
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21550	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	247		mg/L	v		1			
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19202	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	398		mg/L	v		10		10	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21551	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	274		mg/L	v		10		10	
Well C	Well C	IIB	3	P2-01041	Groundwater		Field Sample	9/29/2008	19203	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
Well C	Well C	IIB	3	P2-01130	Groundwater		Field Sample	6/9/2009	21552	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17574	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19390	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21664	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17569	E300.0	O	Z	Anions	Chloride	16887-00-6	19		mg/L	v		1		0.02	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19385	E300.0	O	Z	Anions	Chloride	16887-00-6	18		mg/L	v		1		0.02	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21659	E300.0	O	Z	Anions	Chloride	16887-00-6	19		mg/L	v		1		0.02	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17569	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	U		0.1		0.01	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19385	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v	U	0.1		0.01	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21659	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	U		0.1		0.01	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17569	E300.0	O	Z	Anions	Sulfate	14808-79-8	23		mg/L	v		1		0.05	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19385	E300.0	O	Z	Anions	Sulfate	14808-79-8	12		mg/L	v		1		0.05	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21659	E300.0	O	Z	Anions	Sulfate	14808-79-8	21		mg/L	v		1		0.05	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17583	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19399	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	348		ug/L	v	UJ	300		38	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21675	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17576	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.005	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.008332	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17579	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19394	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21670	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.000034	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17579	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19394	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21669	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000041	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17576	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.7		mg/L	v		0.1		0.001	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.9		mg/L	v		0.1		0.00021	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.7		mg/L	v		0.1		0.0001399	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17579	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00008511	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17576	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.005	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.009577	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17579	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19394	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21669	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0011		mg/L	v		0.0001		0.000011	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17577	SW6010B	O	DIS	Metals	Calcium	7440-70-2	46		mg/L	v		1		0.21	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Calcium	7440-70-2	35		mg/L	v		1		0.21	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Calcium	7440-70-2	43		mg/L	v		1		0.009442	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17576	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.001	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00187	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17576	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.001	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.001083	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17579	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19394	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0008568	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17576	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.17		mg/L	v		0.03		0.005	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.37		mg/L	v		0.03		0.00516	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Iron	7439-89-6	1.42		mg/L	v		0.03		0.00163	
Well D	Well D	**IIB**	3	**P2-00787**	**Groundwater**		**Field Sample**	**7/23/2008**	17579	**SW6020**	O	**DIS**	**Metals**	**Lead**	**7439-92-1**	**0.0005**		**mg/L**	**U**	**R**	**0.0005**		**0.0000221**	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19394	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21669	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00001	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17577	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	21		mg/L	v		1		0.13	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.13	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	22		mg/L	v		1		0.01	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17576	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.1		mg/L	v		0.02		0.001	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.07		mg/L	v		0.02		0.00111	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.14		mg/L	v		0.02		0.0003044	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17581	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19397	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21673	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17576	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.001	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19394	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.002134	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17577	SW6010B	O	DIS	Metals	Potassium	9/7/7440	13		mg/L	v		1		0.06	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Potassium	9/7/7440	12		mg/L	v		1		0.06	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Potassium	9/7/7440	14		mg/L	v		1		0.01	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17579	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19394	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21669	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000076	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17579	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001		0.0000178	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19394	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21669	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.000036	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17577	SW6010B	O	DIS	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.18	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.25	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17576	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19394	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17579	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U	UJ	0.01		0.0000079	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21666	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002841	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17576	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.35		mg/L	v		0.01		0.001	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19392	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21668	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	v		0.01		0.000115	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17580	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000414	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19395	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21672	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000041	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17580	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000404	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19395	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21671	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.00147	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.8		mg/L	v		0.1		0.000258	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.0001702	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17580	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000354	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0001154	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.1		mg/L	U		0.1		0.11	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21672	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00039	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17580	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0003		mg/L	v	U	0.0001		0.0000283	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19396	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21672	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0007		mg/L	v		0.0002		0.0000028	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Calcium	7440-70-2	47		mg/L	v		1		0.07	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Calcium	7440-70-2	38		mg/L	v		1		0.03	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Calcium	7440-70-2	39		mg/L	v		1		0.08	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.02		mg/L	v		0.01		0.00575	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.003109	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00275	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002135	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17580	SW6020	O	TOT	Metals	Copper	7440-50-8	0.01		mg/L	v		0.002		0.000313	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19396	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000031	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21671	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Iron	7439-89-6	17.8		mg/L	v		0.03		0.00942	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Iron	7439-89-6	4.16		mg/L	v		0.03		0.00466	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Iron	7439-89-6	4.8		mg/L	v		0.03		0.005167	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17580	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0067		mg/L	v		0.0005		0.0000337	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19395	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0023		mg/L	v		0.0005		0.0000167	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21671	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0013		mg/L	v		0.0005		0.0000167	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	21		mg/L	v		1		0.08	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	18		mg/L	v		1		0.03	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	19		mg/L	v		1		0.02	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.13		mg/L	v		0.02		0.000738	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.09		mg/L	v		0.02		0.000366	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.14		mg/L	v		0.02		0.0005906	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17582	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19398	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21674	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17580	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.009		mg/L	v		0.005		0.000273	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19395	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.003063	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Potassium	9/7/7440	14		mg/L	v		1		0.1	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Potassium	9/7/7440	12		mg/L	v		1		0.05	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Potassium	9/7/7440	14		mg/L	v		1		0.02	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17580	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00111	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19395	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21671	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.00146	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19395	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21671	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.12	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.06	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.25	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.04	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00287	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002365	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17578	SW6010B	O	TOT	Metals	Zinc	7440-66-6	1.13		mg/L	v		0.01		0.00433	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19393	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.17		mg/L	v		0.01		0.00215	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21667	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.13		mg/L	v		0.01		0.003385	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17572	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	4.59		mg/L	v		0.01		0.01	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19388	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21662	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.06		mg/L	v		0.01		0.01	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17571	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	5.03		mg/L	v		0.01		0.0096	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19387	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.03		mg/L	v		0.01		0.0016	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21661	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.07		mg/L	v		0.01		0.0016	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17570	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.44		mg/L	v		0.01		0.00651	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19386	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.03		mg/L	v		0.01		0.00651	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21660	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	v		0.01		0.00651	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17573	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	2.1		pCi/L	v					
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19389	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	1		pCi/L	v	UJ				
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21663	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	8		pCi/L	v					
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17573	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.1		pCi/L	v		0			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19389	E900.0	O	Z	Radionuclides	Gross Alpha MDC		1.8		pCi/L	v		0			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21663	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.6		pCi/L	v		0			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17573	E900.0	O	Z	Radionuclides	Gross Beta	BETA	10.1		pCi/L	v					
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19389	E900.0	O	Z	Radionuclides	Gross Beta	BETA	7.8		pCi/L	v					
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21663	E900.0	O	Z	Radionuclides	Gross Beta	BETA	12.3		pCi/L	v					
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17573	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.7		pCi/L	v		0			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19389	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.8		pCi/L	v		0			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21663	E900.0	O	Z	Radionuclides	Gross Beta MDC		6.9		pCi/L	v		0			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.86		ug/L	v		0.5			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17575	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19391	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21665	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17565	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	165		mg/L	v		4		1	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19381	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	155		mg/L	v		4		1	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21655	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	164		mg/L	v		4		4	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17565	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	202		mg/L	v		4		1	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19381	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	189		mg/L	v		4		1	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21655	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	200		mg/L	v		4		4	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17565	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19381	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21655	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		4	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17566	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	203		mg/L	v		1			
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19382	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	156		mg/L	v		1			
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21656	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	197		mg/L	v		1			
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17567	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	302		mg/L	v		10		10	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19383	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	195		mg/L	v		10		10	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21657	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	233		mg/L	v		10		10	
Well D	Well D	IIB	3	P2-00787	Groundwater		Field Sample	7/23/2008	17568	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	46		mg/L	v		10		1	
Well D	Well D	IIB	3	P2-01050	Groundwater		Field Sample	9/30/2008	19384	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
Well D	Well D	IIB	3	P2-01136	Groundwater		Field Sample	6/10/2009	21658	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17594	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19285	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21601	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17589	E300.0	O	Z	Anions	Chloride	16887-00-6	39		mg/L	v		1		0.02	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19280	E300.0	O	Z	Anions	Chloride	16887-00-6	36		mg/L	v		1		0.02	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21596	E300.0	O	Z	Anions	Chloride	16887-00-6	45		mg/L	v		1		0.02	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17589	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	U		0.1		0.01	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19280	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v	U	0.1		0.01	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21596	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	U		0.1		0.01	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17589	E300.0	O	Z	Anions	Sulfate	14808-79-8	143		mg/L	v		1		0.05	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19280	E300.0	O	Z	Anions	Sulfate	14808-79-8	137		mg/L	v		1		0.05	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21596	E300.0	O	Z	Anions	Sulfate	14808-79-8	146		mg/L	v		1		0.05	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19287	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		300		ug/L	U	UJ	300		130	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19286	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		300		ug/L	U	UJ	300		34	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19286	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		300		ug/L	U	UJ	300		120	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17603	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	391		ug/L	v		300		38	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19287	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	300		ug/L	U	UJ	300		130	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19296	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	1420		ug/L	v	UJ	300		38	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21612	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	414		ug/L	v		300		38	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17596	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.005	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.008332	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17599	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19291	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21607	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.000034	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17599	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19291	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21606	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000041	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17596	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	U		0.1		0.001	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	U		0.1		0.00021	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	U		0.1		0.0001399	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17599	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00008511	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17596	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.005	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21606	SW6020	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.001186	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17599	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19291	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21606	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0008		mg/L	v		0.0001		0.000011	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17597	SW6010B	O	DIS	Metals	Calcium	7440-70-2	80		mg/L	v		1		0.21	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Calcium	7440-70-2	72		mg/L	v		1		0.21	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Calcium	7440-70-2	85		mg/L	v		1		0.009442	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17596	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.001	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00187	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17596	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.001	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.001083	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17599	SW6020	O	DIS	Metals	Copper	7440-50-8	0.004		mg/L	v		0.002		0.0000211	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19291	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21605	SW6020	O	DIS	Metals	Copper	7440-50-8	0.003		mg/L	v		0.002		0.00004	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17596	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.005	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00163	
Well E	Well E	**IIB**	3	**P2-00789**	**Groundwater**		**Field Sample**	**7/23/2008**	17599	**SW6020**	O	**DIS**	**Metals**	**Lead**	**7439-92-1**	**0.0005**		**mg/L**	**U**	**R**	**0.0005**		**0.0000221**	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19291	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21606	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00001	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17597	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	45		mg/L	v		1		0.13	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	41		mg/L	v		1		0.13	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21607	SW6020	O	DIS	Metals	Magnesium	7439-95-4	45		mg/L	v		1		0.000807	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17596	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.001	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02		0.00111	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.0003044	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17601	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19294	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21610	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17596	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.001	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19291	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.002134	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17597	SW6010B	O	DIS	Metals	Potassium	9/7/7440	19		mg/L	v		1		0.06	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Potassium	9/7/7440	18		mg/L	v		1		0.06	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Potassium	9/7/7440	19		mg/L	v		1		0.01	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17599	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19291	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21606	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000076	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17599	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001		0.0000178	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19291	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21606	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.000036	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17597	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.18	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17596	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19291	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17599	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U	UJ	0.01		0.0000079	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002841	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17596	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.001	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19289	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21603	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.001541	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17600	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000041	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19292	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21609	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000041	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17600	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.00004	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19292	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21608	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	U		0.1		0.000258	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	U		0.1		0.000258	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	U		0.1		0.0001702	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17600	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000035	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0001154	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21609	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00039	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17600	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19293	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21609	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0008		mg/L	v		0.0002		0.0000056	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Calcium	7440-70-2	80		mg/L	v		1		0.03	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Calcium	7440-70-2	81		mg/L	v		1		0.03	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Calcium	7440-70-2	77		mg/L	v		1		0.08	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.003109	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002135	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17600	SW6020	O	TOT	Metals	Copper	7440-50-8	0.004		mg/L	v		0.002		0.000031	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19293	SW6020	O	TOT	Metals	Copper	7440-50-8	0.003		mg/L	v	U	0.002		0.000031	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21608	SW6020	O	TOT	Metals	Copper	7440-50-8	0.004		mg/L	v		0.002		0.000155	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.07		mg/L	v		0.03		0.00466	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.005167	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17600	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00000334	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19292	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21608	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	44		mg/L	v		1		0.03	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	44		mg/L	v		1		0.03	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21609	SW6020	O	TOT	Metals	Magnesium	7439-95-4	45		mg/L	v		1		0.003	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19293	SW6020	O	TOT	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02		0.000006	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.0005906	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17602	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.0001	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19295	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21611	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17600	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000027	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19292	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.003063	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Potassium	9/7/7440	20		mg/L	v		1		0.05	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Potassium	9/7/7440	18		mg/L	v		1		0.05	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Potassium	9/7/7440	19		mg/L	v		1		0.02	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17600	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00011	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19292	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21608	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.006		mg/L	v		0.005		0.00055	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17600	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000069	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19292	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21608	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Sodium	7440-23-5	7		mg/L	v		1		0.36	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.06	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.02	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002365	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17598	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19290	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21604	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.003385	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17592	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	2.21		mg/L	v		0.01		0.01	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19283	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	2.35		mg/L	v		0.01		0.01	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21599	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	2.35		mg/L	v		0.01		0.01	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17591	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	2.21		mg/L	v		0.01		0.0016	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19282	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	2.35		mg/L	v		0.01		0.0032	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21598	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	2.35		mg/L	v		0.01		0.0016	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17590	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19281	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21597	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17593	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	6.6		pCi/L	v					
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21600	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	15.7		pCi/L	v	J				
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17593	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.8		pCi/L	v		0			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19284	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.9		pCi/L	v		0			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21600	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.5		pCi/L	v		0			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17593	E900.0	O	Z	Radionuclides	Gross Beta	BETA	14.3		pCi/L	v					
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19284	E900.0	O	Z	Radionuclides	Gross Beta	BETA	12.5		pCi/L	v					
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21600	E900.0	O	Z	Radionuclides	Gross Beta	BETA	26.2		pCi/L	v					
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17593	E900.0	O	Z	Radionuclides	Gross Beta MDC		3.1		pCi/L	v		0			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19284	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.9		pCi/L	v		0			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21600	E900.0	O	Z	Radionuclides	Gross Beta MDC		4.4		pCi/L	v		0			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	10		ug/L	U	UJ	10		3.88	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	10		ug/L	U	UJ	10		3.32	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	10		ug/L	U	UJ	10		3.7	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	10		ug/L	U	UJ	10		2.48	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	10		ug/L	U	UJ	10		2.52	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	10		ug/L	U	UJ	10		2.4	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	10		ug/L	U	UJ	10		2.74	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	10		ug/L	U	UJ	10		2.62	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	10		ug/L	U	UJ	10		2.68	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	10		ug/L	U	UJ	10		2.16	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	10		ug/L	U	UJ	10		2.26	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	10		ug/L	U	UJ	10		2.44	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	10		ug/L	U	UJ	10		3.26	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	10		ug/L	U	UJ	10		2.32	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	10		ug/L	U	UJ	10		3.92	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	10		ug/L	U	UJ	10		2.5	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19297	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	10		ug/L	U	UJ	10		2.46	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.78		ug/L	v		0.5			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17595	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19288	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21602	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17585	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	213		mg/L	v		4		1	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19276	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	207		mg/L	v		4		1	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21592	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	230		mg/L	v		4		4	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17585	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	260		mg/L	v		4		1	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19276	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	252		mg/L	v		4		1	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21592	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	281		mg/L	v		4		4	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17585	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19276	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21592	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		4	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17586	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	380		mg/L	v		1			
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19277	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	349		mg/L	v		1			
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21593	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	414		mg/L	v		1			
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17587	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	521		mg/L	v		10		10	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19278	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	524		mg/L	v		10		10	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21594	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	511		mg/L	v		10		10	
Well E	Well E	IIB	3	P2-00789	Groundwater		Field Sample	7/23/2008	17588	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
Well E	Well E	IIB	3	P2-01045	Groundwater		Field Sample	9/30/2008	19279	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
Well E	Well E	IIB	3	P2-01133	Groundwater		Field Sample	6/9/2009	21595	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17633	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21709	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17628	E300.0	O	Z	Anions	Chloride	16887-00-6	10		mg/L	v		1		0.02	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21704	E300.0	O	Z	Anions	Chloride	16887-00-6	9		mg/L	v		1		0.02	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17628	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1		0.01	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21704	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17628	E300.0	O	Z	Anions	Sulfate	14808-79-8	22		mg/L	v		1		0.05	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21704	E300.0	O	Z	Anions	Sulfate	14808-79-8	22		mg/L	v		1		0.05	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17635	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		0.00031		mg/L	U	UJ	0.00031		132.65	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17634	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		0.00031		mg/L	U	UJ	0.00031		34.69	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17634	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		0.00031		mg/L	U	UJ	0.00031		122.44	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17635	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	0.31		ug/L	U	UJ	0.31		132.65	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21720	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	1130		ug/L	v		306		38.77	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21720	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17637	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.005	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.008332	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17640	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21715	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.000034	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17640	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21714	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000041	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17637	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.001	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.0001399	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17638	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00008511	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17637	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.005	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21715	SW6020	O	DIS	Metals	Boron	7440-42-8	0.02		mg/L	U		0.02		0.001186	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17640	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21714	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0014		mg/L	v		0.0001		0.000011	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17638	SW6010B	O	DIS	Metals	Calcium	7440-70-2	93		mg/L	v		1		0.21	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Calcium	7440-70-2	96		mg/L	v		1		0.009442	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17637	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.001	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00187	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17637	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.001	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.001083	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17640	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0008568	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17637	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.005	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00163	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17640	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21714	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00001	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17638	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	31		mg/L	v		1		0.13	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	32		mg/L	v		1		0.01	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17637	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.001	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.0003044	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17642	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21718	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17637	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.001	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.002134	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17638	SW6010B	O	DIS	Metals	Potassium	9/7/7440	4		mg/L	v		1		0.06	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Potassium	9/7/7440	4		mg/L	v		1		0.01	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17640	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21714	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000076	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17640	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21714	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.000036	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17638	SW6010B	O	DIS	Metals	Sodium	7440-23-5	12		mg/L	v		1		0.18	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Sodium	7440-23-5	11		mg/L	v		1		0.03	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17637	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17638	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21713	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01		0.000023	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17640	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.03		mg/L	v		0.01		0.000317	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21711	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.001541	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	4.5		mg/L	v		0.09		0.01	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	2.43		mg/L	v		0.09		0.01	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17641	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000041	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21717	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000041	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17641	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.00004	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21716	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.0001702	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17641	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000035	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0001154	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21717	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00039	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17641	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0002		mg/L	v	U	0.0002		0.0000028	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21717	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0008		mg/L	v		0.0002		0.0000028	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Calcium	7440-70-2	96		mg/L	v		1		0.03	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Calcium	7440-70-2	94		mg/L	v		1		0.08	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.03		mg/L	v		0.01		0.00285	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.003109	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002135	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17641	SW6020	O	TOT	Metals	Copper	7440-50-8	0.069		mg/L	v		0.002		0.000031	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21716	SW6020	O	TOT	Metals	Copper	7440-50-8	0.027		mg/L	v		0.002		0.000155	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Iron	7439-89-6	10.1		mg/L	v		0.03		0.00466	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Iron	7439-89-6	4.64		mg/L	v		0.03		0.005167	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17641	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0085		mg/L	v		0.0005		0.00000334	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21716	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0025		mg/L	v		0.0005		0.0000167	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	32		mg/L	v		1		0.03	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	30		mg/L	v		1		0.02	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.15		mg/L	v		0.02		0.000366	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.07		mg/L	v		0.02		0.0005906	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17643	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21719	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17641	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.021		mg/L	v		0.005		0.000027	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.003063	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Potassium	9/7/7440	5		mg/L	v		1		0.05	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Potassium	9/7/7440	4		mg/L	v		1		0.02	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17641	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00011	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21716	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17641	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000069	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21716	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Sodium	7440-23-5	14		mg/L	v		1		0.36	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Sodium	7440-23-5	11		mg/L	v		1		0.25	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17641	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.04		mg/L	v		0.01		0.000031	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.02		mg/L	v		0.01		0.002365	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17639	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.1		mg/L	v		0.01		0.00215	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21712	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.02		mg/L	v		0.01		0.003385	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17631	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	1.82		mg/L	v		0.01		0.01	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21707	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	2.05		mg/L	v		0.01		0.01	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17630	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	1.85		mg/L	v		0.01		0.0032	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21706	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	2.06		mg/L	v		0.01		0.0016	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17629	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.03		mg/L	v		0.01		0.00651	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21705	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	v		0.01		0.00651	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17632	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	4.2		pCi/L	v					
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21708	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	8.2		pCi/L	v					
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17632	E900.0	O	Z	Radionuclides	Gross Alpha MDC		3.7		pCi/L	v		0			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21708	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.6		pCi/L	v		0			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17632	E900.0	O	Z	Radionuclides	Gross Beta	BETA	2.6		pCi/L	v					
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21708	E900.0	O	Z	Radionuclides	Gross Beta	BETA	4.1		pCi/L	v					
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17632	E900.0	O	Z	Radionuclides	Gross Beta MDC		4.5		pCi/L	v		0			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21708	E900.0	O	Z	Radionuclides	Gross Beta MDC		3.6		pCi/L	v		0			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	10		ug/L	U		10		3.95	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	10		ug/L	U		10		3.38	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	10		ug/L	U		10		3.77	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	10		ug/L	U		10		2.53	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	10		ug/L	U		10		2.57	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	10		ug/L	U		10		2.44	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	10		ug/L	U		10		2.79	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	10		ug/L	U		10		2.67	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	10		ug/L	U		10		2.73	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	10		ug/L	U		10		2.2	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	10		ug/L	U		10		2.3	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	10		ug/L	U		10		2.48	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	10		ug/L	U		10		3.32	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	10		ug/L	U		10		2.36	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	10		ug/L	U		10		4	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	10		ug/L	U		10		2.55	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17645	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	10		ug/L	U		10		2.51	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17636	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21710	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17624	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	339		mg/L	v		4		1	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21700	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	336		mg/L	v		4		4	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17624	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	413		mg/L	v		4		1	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21700	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	410		mg/L	v		4		4	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17624	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21700	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		4	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17625	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	370		mg/L	v		1			
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21701	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	373		mg/L	v		1			
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17626	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	431		mg/L	v		10		10	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21702	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	439		mg/L	v		10		10	
Well H	Well H	IIB	3	P2-00793	Groundwater		Field Sample	7/24/2008	17627	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	326		mg/L	v		10		1	
Well H	Well H	IIB	3	P2-01139	Groundwater		Field Sample	6/10/2009	21703	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2145	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2146	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2570		mg/kg-dry	v		20	mg/kg-dry	21.27	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2149	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		24		mg/kg-dry	v		11	mg/kg-dry	1.77	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2148	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		47		mg/kg-dry	v		11	mg/kg-dry	0.88	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2148	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		11		mg/kg-dry	U		11	mg/kg-dry	1.58	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2149	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	107		mg/kg-dry	v		11	mg/kg-dry	3.53	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2155	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	129		mg/kg-dry	v		106	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10100		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2153	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001179787	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2153	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2	mg/kg-dry	0.009968085	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Barium	7440-39-3	235		mg/kg-dry	v		5	mg/kg-dry	1.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007446809	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.12	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.1	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Chromium	7440-47-3	42.9		mg/kg-dry	v		0.4	mg/kg-dry	0.31	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Cobalt	7440-48-4	9		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Copper	7440-50-8	26		mg/kg-dry	v	J	5	mg/kg-dry	0.21	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Iron	7439-89-6	16500		mg/kg-dry	v		10	mg/kg-dry	10.63	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Lead	7439-92-1	13		mg/kg-dry	v	J	5	mg/kg-dry	1.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Manganese	7439-96-5	246		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2154	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2153	SW6020	O	Z	Metals	Nickel	7440-02-0	16		mg/kg-dry	v		5	mg/kg-dry	0.002178191	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2153	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001360106	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2153	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.00104734	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Vanadium	7440-62-2	33		mg/kg-dry	v		1	mg/kg-dry	0.42	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2152	SW6010B	O	Z	Metals	Zinc	7440-66-6	32		mg/kg-dry	v	J	5	mg/kg-dry	0.21	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2156	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.018		mg/kg-dry	U		0.018	mg/kg-dry	0.006404255	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2156	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2156	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2156	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2156	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2156	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.018		mg/kg-dry	U		0.018	mg/kg-dry	0.007425532	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2156	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.018		mg/kg-dry	U		0.018	mg/kg-dry	0.005691489	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2156	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2156	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2147	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.97		wt%	v		0.01	wt%	0.01	wt%
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2151	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	6		wt%	v		0.2	wt%	0.01	wt%
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2144	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1	s.u.		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.04	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.1	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2157	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.071		mg/kg-dry	U		0.071	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.071		mg/kg-dry	U		0.071	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-1	MS-1	I	1	P1-00370	Mine Waste	Roadway	Field Sample	10/11/2007	2150	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2372	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2373	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3190		mg/kg-dry	v		20	mg/kg-dry	22.54	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2380	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	40		mg/kg-dry	v		11	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Aluminum	7429-90-5	16300		mg/kg-dry	v		5	mg/kg-dry	0.56	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2378	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001250282	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2378	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Barium	7440-39-3	744		mg/kg-dry	v		5	mg/kg-dry	1.12	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.00789177	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.25	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2378	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001435738	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Chromium	7440-47-3	143		mg/kg-dry	v	J	0.4	mg/kg-dry	0.33	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Cobalt	7440-48-4	22		mg/kg-dry	v		5	mg/kg-dry	0.33	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Copper	7440-50-8	21		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Iron	7439-89-6	21500		mg/kg-dry	v		10	mg/kg-dry	11.27	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Lead	7439-92-1	15		mg/kg-dry	v		5	mg/kg-dry	1.12	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Manganese	7439-96-5	298		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2379	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Nickel	7440-02-0	44		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2378	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001441375	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.11	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2378	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001109921	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Vanadium	7440-62-2	38		mg/kg-dry	v		1	mg/kg-dry	0.45	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2377	SW6010B	O	Z	Metals	Zinc	7440-66-6	27		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2374	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.2		wt%	v		0.01	wt%	0.01	wt%
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2376	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	11		wt%	v		0.2	wt%	0.01	wt%
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2371	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1	s.u.		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.066		mg/kg-dry	U		0.066	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.6		mg/kg-dry	U		2.6	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.6		mg/kg-dry	U		2.6	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.6		mg/kg-dry	U		2.6	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.066		mg/kg-dry	U		0.066	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.066		mg/kg-dry	U		0.066	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.13		mg/kg-dry	U		0.13	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.13		mg/kg-dry	U		0.13	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.066		mg/kg-dry	U		0.066	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.066		mg/kg-dry	U		0.066	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.6		mg/kg-dry	U		2.6	mg/kg-dry		
MS-10	MS-10	I	1	P1-00366	Mine Waste	Waste Rock	Field Sample	10/12/2007	2375	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.066		mg/kg-dry	U		0.066	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2382	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2383	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2810		mg/kg-dry	v		20	mg/kg-dry	21.83	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2390	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	13		mg/kg-dry	v		11	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Aluminum	7429-90-5	29400		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2388	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001210699	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2388	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Barium	7440-39-3	1130		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007641922	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.18	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2388	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001390284	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Chromium	7440-47-3	95.6		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Cobalt	7440-48-4	35		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Copper	7440-50-8	17		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Iron	7439-89-6	31000		mg/kg-dry	v		10	mg/kg-dry	10.91	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Lead	7439-92-1	10		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Manganese	7439-96-5	400		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2389	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Nickel	7440-02-0	63		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2388	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001395742	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2388	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001074782	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Vanadium	7440-62-2	48		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2387	SW6010B	O	Z	Metals	Zinc	7440-66-6	63		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2384	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.78		wt%	v		0.01	wt%	0.01	wt%
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2386	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	8.4		wt%	v		0.2	wt%	0.01	wt%
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2381	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.3		s.u.	v		0.1	s.u.		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.07		mg/kg-dry	U		0.07	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.07		mg/kg-dry	U		0.07	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-11	MS-11	I	1	P1-00367	Mine Waste	Waste Rock	Field Sample	10/12/2007	2385	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2402	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2403	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1860		mg/kg-dry	v		10	mg/kg-dry	10.9	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2410	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	34		mg/kg-dry	v		11	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Aluminum	7429-90-5	13200		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2408	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001209378	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2408	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Barium	7440-39-3	795		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007633588	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.18	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2408	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001388768	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Chromium	7440-47-3	204		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Cobalt	7440-48-4	25		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Copper	7440-50-8	27		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Iron	7439-89-6	20800		mg/kg-dry	v		10	mg/kg-dry	10.9	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Lead	7439-92-1	21		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Manganese	7439-96-5	326		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2409	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Nickel	7440-02-0	53		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2408	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.00139422	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2408	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.00107361	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Vanadium	7440-62-2	30		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2407	SW6010B	O	Z	Metals	Zinc	7440-66-6	21		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2404	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.42		wt%	v		0.01	wt%	0.01	wt%
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2406	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	8.3		wt%	v		0.2	wt%	0.01	wt%
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2401	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.5		s.u.	v		0.1	s.u.		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.03		mg/kg-dry	U		0.03	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.2		mg/kg-dry	U		1.2	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.2		mg/kg-dry	U		1.2	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.2		mg/kg-dry	U		1.2	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.03		mg/kg-dry	U		0.03	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.03		mg/kg-dry	U		0.03	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.061		mg/kg-dry	U		0.061	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.061		mg/kg-dry	U		0.061	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.03		mg/kg-dry	U		0.03	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.03		mg/kg-dry	U		0.03	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.2		mg/kg-dry	U		1.2	mg/kg-dry		
MS-12	MS-12	I	1	P1-00369	Mine Waste	Waste Rock	Field Sample	10/12/2007	2405	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.03		mg/kg-dry	U		0.03	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2362	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2363	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3140		mg/kg-dry	v		20	mg/kg-dry	22.34	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2370	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	36		mg/kg-dry	v		11	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Aluminum	7429-90-5	15200		mg/kg-dry	v		5	mg/kg-dry	0.55	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2368	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001239106	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2368	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Barium	7440-39-3	826		mg/kg-dry	v		5	mg/kg-dry	1.11	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007821229	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.23	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2368	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001422905	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Chromium	7440-47-3	146		mg/kg-dry	v	J	0.4	mg/kg-dry	0.33	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Cobalt	7440-48-4	25		mg/kg-dry	v		5	mg/kg-dry	0.33	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Copper	7440-50-8	42		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Iron	7439-89-6	26700		mg/kg-dry	v		10	mg/kg-dry	11.17	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Lead	7439-92-1	22		mg/kg-dry	v		5	mg/kg-dry	1.11	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Manganese	7439-96-5	331		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2369	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Nickel	7440-02-0	44		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2368	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001428492	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.11	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2368	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.0011	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Vanadium	7440-62-2	52		mg/kg-dry	v		1	mg/kg-dry	0.44	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2367	SW6010B	O	Z	Metals	Zinc	7440-66-6	33		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2364	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.73		wt%	v		0.01	wt%	0.01	wt%
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2366	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	10		wt%	v		0.2	wt%	0.01	wt%
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2361	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1	s.u.		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-13	MS-13	I	1	P1-00365	Mine Waste	Waste Rock	Field Sample	10/12/2007	2365	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2272	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2273	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2880		mg/kg-dry	v		20	mg/kg-dry	21.41	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2280	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	34		mg/kg-dry	v		11	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Aluminum	7429-90-5	13300		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2278	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001187366	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2278	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Barium	7440-39-3	756		mg/kg-dry	v	J	5	mg/kg-dry	1.07	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007494647	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.14	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2278	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001049251	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Chromium	7440-47-3	223		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Cobalt	7440-48-4	39		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Copper	7440-50-8	40		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Iron	7439-89-6	25000		mg/kg-dry	v	J	10	mg/kg-dry	10.7	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Lead	7439-92-1	29		mg/kg-dry	v		5	mg/kg-dry	1.07	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Manganese	7439-96-5	367		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2279	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Nickel	7440-02-0	80		mg/kg-dry	v		5	mg/kg-dry	1.07	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2278	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001368844	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2278	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001054069	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Vanadium	7440-62-2	29		mg/kg-dry	v		1	mg/kg-dry	0.42	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2277	SW6010B	O	Z	Metals	Zinc	7440-66-6	30		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2274	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.43		wt%	v		0.01	wt%	0.01	wt%
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2276	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	6.6		wt%	v		0.2	wt%	0.01	wt%
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2271	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.4		s.u.	v		0.1	s.u.		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.034		mg/kg-dry	U		0.034	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.4		mg/kg-dry	v		1.4	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		16		mg/kg-dry	v		1.4	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.034		mg/kg-dry	U		0.034	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.034		mg/kg-dry	U		0.034	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.068		mg/kg-dry	U		0.068	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.068		mg/kg-dry	U		0.068	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.034		mg/kg-dry	U		0.034	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.066		mg/kg-dry	v		0.034	mg/kg-dry		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	17		mg/kg-dry	v		1.4	mg/kg-dry		
MS-14	MS-14	I	1	P1-00345	Mine Waste	Waste Rock	Field Sample	10/13/2007	2275	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.034		mg/kg-dry	U		0.034	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2814	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2815	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	722		mg/kg-dry	v		10	mg/kg-dry	10.46	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2822	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	10		mg/kg-dry	U		10	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Aluminum	7429-90-5	24700		mg/kg-dry	v		5	mg/kg-dry	0.52	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2820	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U		0.3	mg/kg-dry	0.001160042	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2820	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009801255	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Barium	7440-39-3	1150		mg/kg-dry	v		5	mg/kg-dry	1.04	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007322176	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.09	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.2	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Chromium	7440-47-3	260		mg/kg-dry	v	J	0.4	mg/kg-dry	0.31	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Cobalt	7440-48-4	31		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Copper	7440-50-8	12		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Iron	7439-89-6	25600		mg/kg-dry	v		10	mg/kg-dry	10.46	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Lead	7439-92-1	23		mg/kg-dry	v		5	mg/kg-dry	1.04	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Manganese	7439-96-5	360		mg/kg-dry	v	J	5	mg/kg-dry	0.04	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2821	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Nickel	7440-02-0	84		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2820	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001337343	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2820	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001029812	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Vanadium	7440-62-2	42		mg/kg-dry	v		1	mg/kg-dry	0.41	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2819	SW6010B	O	Z	Metals	Zinc	7440-66-6	28		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2816	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.45		wt%	v		0.01	wt%	0.01	wt%
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2818	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	4.4		wt%	v		0.2	wt%	0.01	wt%
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2813	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.1		s.u.	v		0.1	s.u.		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.073		mg/kg-dry	U		0.073	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.073		mg/kg-dry	U		0.073	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-15	MS-15	I	1	P1-00206	Mine Waste	Waste Rock	Field Sample	10/17/2007	2817	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2804	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2805	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1030		mg/kg-dry	v		10	mg/kg-dry	10.91	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2812	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	14		mg/kg-dry	v		11	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2810	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U		0.3	mg/kg-dry	0.001210699	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2810	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Barium	7440-39-3	1070		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007641922	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.18	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.21	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Chromium	7440-47-3	353		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Cobalt	7440-48-4	27		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Copper	7440-50-8	49		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Iron	7439-89-6	22000		mg/kg-dry	v		10	mg/kg-dry	10.91	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Lead	7439-92-1	30		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Manganese	7439-96-5	399		mg/kg-dry	v	J	5	mg/kg-dry	0.04	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2811	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Nickel	7440-02-0	66		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2810	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001395742	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2810	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001074782	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Vanadium	7440-62-2	38		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2809	SW6010B	O	Z	Metals	Zinc	7440-66-6	25		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2806	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.51		wt%	v		0.01	wt%	0.01	wt%
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2808	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	8.4		wt%	v		0.2	wt%	0.01	wt%
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2803	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.9		s.u.	v		0.1	s.u.		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.071		mg/kg-dry	U		0.071	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.8		mg/kg-dry	U		2.8	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.8		mg/kg-dry	U		2.8	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.8		mg/kg-dry	U		2.8	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.071		mg/kg-dry	U		0.071	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.071		mg/kg-dry	U		0.071	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.14		mg/kg-dry	U		0.14	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.14		mg/kg-dry	U		0.14	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.071		mg/kg-dry	U		0.071	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.071		mg/kg-dry	U		0.071	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.8		mg/kg-dry	U		2.8	mg/kg-dry		
MS-16	MS-16	I	1	P1-00205	Mine Waste	Waste Rock	Field Sample	10/17/2007	2807	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.071		mg/kg-dry	U		0.071	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2254	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2255	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1280		mg/kg-dry	v		10	mg/kg-dry	10.85	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2262	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	11		mg/kg-dry	U		11	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10200		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2260	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001204126	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2260	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Barium	7440-39-3	611		mg/kg-dry	v	J	5	mg/kg-dry	1.08	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007600434	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.17	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2260	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001382736	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Chromium	7440-47-3	159		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Cobalt	7440-48-4	22		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Copper	7440-50-8	69		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Iron	7439-89-6	18100		mg/kg-dry	v	J	10	mg/kg-dry	10.85	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Lead	7439-92-1	47		mg/kg-dry	v		5	mg/kg-dry	1.08	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Manganese	7439-96-5	345		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2261	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Nickel	7440-02-0	43		mg/kg-dry	v		5	mg/kg-dry	1.08	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2260	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001388165	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2260	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001068947	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Vanadium	7440-62-2	28		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2259	SW6010B	O	Z	Metals	Zinc	7440-66-6	24		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2256	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.12		wt%	v		0.01	wt%	0.01	wt%
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2258	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	7.9		wt%	v		0.2	wt%	0.01	wt%
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2253	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.5		s.u.	v		0.1	s.u.		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-17	MS-17	I	1	P1-00343	Mine Waste	Waste Rock	Field Sample	10/13/2007	2257	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2318	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2319	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3370		mg/kg-dry	v		20	mg/kg-dry	21.55	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2326	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	20		mg/kg-dry	v		11	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12200		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2324	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001195043	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2324	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Barium	7440-39-3	636		mg/kg-dry	v	J	5	mg/kg-dry	1.07	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007543103	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.15	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2324	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001372306	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Chromium	7440-47-3	187		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Cobalt	7440-48-4	25		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Copper	7440-50-8	21		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Iron	7439-89-6	20400		mg/kg-dry	v	J	10	mg/kg-dry	10.77	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Lead	7439-92-1	15		mg/kg-dry	v		5	mg/kg-dry	1.07	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Manganese	7439-96-5	328		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2325	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Nickel	7440-02-0	62		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2324	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001377694	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2324	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001060884	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Vanadium	7440-62-2	24		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2323	SW6010B	O	Z	Metals	Zinc	7440-66-6	19		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2320	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.06		wt%	v		0.01	wt%	0.01	wt%
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2322	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	7.2		wt%	v		0.2	wt%	0.01	wt%
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2317	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.8		s.u.	v		0.1	s.u.		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.038		mg/kg-dry	U		0.038	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.038		mg/kg-dry	U		0.038	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.038		mg/kg-dry	U		0.038	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.077		mg/kg-dry	U		0.077	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.077		mg/kg-dry	U		0.077	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.038		mg/kg-dry	U		0.038	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.038		mg/kg-dry	U		0.038	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.1		mg/kg-dry	v		1.5	mg/kg-dry		
MS-18	MS-18	I	1	P1-00352	Mine Waste	Waste Rock	Field Sample	10/14/2007	2321	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.038		mg/kg-dry	U		0.038	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2234	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2235	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	5030		mg/kg-dry	v		40	mg/kg-dry	43.76	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2242	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	17		mg/kg-dry	v		11	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10600		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2240	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001213348	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2240	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Barium	7440-39-3	679		mg/kg-dry	v	J	5	mg/kg-dry	1.09	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007658643	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.18	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2240	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.00107221	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Chromium	7440-47-3	97.7		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Cobalt	7440-48-4	24		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Copper	7440-50-8	41		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Iron	7439-89-6	28700		mg/kg-dry	v	J	10	mg/kg-dry	10.94	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Lead	7439-92-1	21		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Manganese	7439-96-5	333		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2241	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Nickel	7440-02-0	28		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2240	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001398796	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2240	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001077133	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Vanadium	7440-62-2	48		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2239	SW6010B	O	Z	Metals	Zinc	7440-66-6	25		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2236	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.41		wt%	v		0.01	wt%	0.01	wt%
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2238	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	8.6		wt%	v		0.2	wt%	0.01	wt%
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2233	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.8		s.u.	v		0.1	s.u.		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.072		mg/kg-dry	U		0.072	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.072		mg/kg-dry	U		0.072	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-19	MS-19	I	1	P1-00341	Mine Waste	Waste Rock	Field Sample	10/13/2007	2237	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2159	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2160	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3970		mg/kg-dry	v		20	mg/kg-dry	24.96	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2163	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		40		mg/kg-dry	v		12	mg/kg-dry	2.08	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2162	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		82		mg/kg-dry	v		12	mg/kg-dry	1.03	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2162	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		12		mg/kg-dry	U		12	mg/kg-dry	1.86	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2163	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	156		mg/kg-dry	v		12	mg/kg-dry	4.14	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2169	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	291		mg/kg-dry	v		125	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Aluminum	7429-90-5	24400		mg/kg-dry	v		5	mg/kg-dry	0.62	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2167	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001384519	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2167	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2	mg/kg-dry	0.01	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Barium	7440-39-3	694		mg/kg-dry	v		5	mg/kg-dry	1.24	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.008739076	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.49	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.12	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Chromium	7440-47-3	107		mg/kg-dry	v		0.4	mg/kg-dry	0.37	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Cobalt	7440-48-4	28		mg/kg-dry	v		5	mg/kg-dry	0.37	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Copper	7440-50-8	109		mg/kg-dry	v	J	5	mg/kg-dry	0.24	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Iron	7439-89-6	32800		mg/kg-dry	v		10	mg/kg-dry	12.48	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Lead	7439-92-1	50		mg/kg-dry	v	J	5	mg/kg-dry	1.24	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Manganese	7439-96-5	542		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2168	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2167	SW6020	O	Z	Metals	Nickel	7440-02-0	51		mg/kg-dry	v		5	mg/kg-dry	0.00255618	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2167	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.00159613	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.12	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2167	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001229089	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Vanadium	7440-62-2	58		mg/kg-dry	v		1	mg/kg-dry	0.49	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2166	SW6010B	O	Z	Metals	Zinc	7440-66-6	70		mg/kg-dry	v	J	5	mg/kg-dry	0.24	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2170	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.007515606	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2170	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2170	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2170	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2170	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2170	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.008714108	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2170	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.006679151	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2170	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2170	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2161	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.32		wt%	v		0.01	wt%	0.01	wt%
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2158	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.4		s.u.	v		0.1	s.u.		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.07	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.09	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.07	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.07	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.04	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.09	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.07	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.07	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.09	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.07	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.09	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.09	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.07	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.12	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.09	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.07	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2171	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.42		mg/kg-dry	U		0.42	mg/kg-dry	0.07	mg/kg-dry
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.2		mg/kg-dry	U		2.2	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.2		mg/kg-dry	U		2.2	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.2		mg/kg-dry	U		2.2	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.2		mg/kg-dry	U		2.2	mg/kg-dry		
MS-2	MS-2	I	1	P1-00371	Mine Waste	Roadway	Field Sample	10/11/2007	2164	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2295	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2296	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3010		mg/kg-dry	v		20	mg/kg-dry	20.94	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2298	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		78		mg/kg-dry	v		10	mg/kg-dry	1.74	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2299	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		154		mg/kg-dry	v		10	mg/kg-dry	0.86	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2299	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		10		mg/kg-dry	U		10	mg/kg-dry	1.56	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2298	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	365		mg/kg-dry	v		10	mg/kg-dry	3.47	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2305	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	474		mg/kg-dry	v		10	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10900		mg/kg-dry	v		5	mg/kg-dry	0.52	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2303	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001161257	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2303	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009811518	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Barium	7440-39-3	672		mg/kg-dry	v	J	5	mg/kg-dry	1.04	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007329843	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.09	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2303	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001333508	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Chromium	7440-47-3	103		mg/kg-dry	v	J	0.4	mg/kg-dry	0.31	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Cobalt	7440-48-4	20		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Copper	7440-50-8	34		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Iron	7439-89-6	21300		mg/kg-dry	v	J	10	mg/kg-dry	10.47	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Lead	7439-92-1	43		mg/kg-dry	v		5	mg/kg-dry	1.04	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Manganese	7439-96-5	297		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2304	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Nickel	7440-02-0	38		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2303	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001338743	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2303	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.00103089	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Vanadium	7440-62-2	39		mg/kg-dry	v		1	mg/kg-dry	0.41	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2302	SW6010B	O	Z	Metals	Zinc	7440-66-6	25		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2297	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.98		wt%	v		0.01	wt%	0.01	wt%
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2301	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	4.5		wt%	v		0.2	wt%	0.01	wt%
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2294	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.1		s.u.	v		0.1	s.u.		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.04	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.1	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.08	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2306	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.35		mg/kg-dry	U		0.35	mg/kg-dry	0.06	mg/kg-dry
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.073		mg/kg-dry	U		0.073	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.073		mg/kg-dry	U		0.073	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-20	MS-20	I	1	P1-00350	Mine Waste	Waste Rock	Field Sample	10/14/2007	2300	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2436	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2437	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3170		mg/kg-dry	v		20	mg/kg-dry	21.62	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2444	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	16		mg/kg-dry	v		11	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Aluminum	7429-90-5	17900		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2442	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001198919	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2442	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Barium	7440-39-3	459		mg/kg-dry	v	J	5	mg/kg-dry	1.08	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007567568	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.16	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2442	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001376757	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Chromium	7440-47-3	141		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Cobalt	7440-48-4	23		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Copper	7440-50-8	27		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Iron	7439-89-6	25500		mg/kg-dry	v	J	10	mg/kg-dry	10.81	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Lead	7439-92-1	13		mg/kg-dry	v		5	mg/kg-dry	1.08	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Manganese	7439-96-5	326		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2443	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Nickel	7440-02-0	43		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2442	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001382162	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2442	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001064324	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Vanadium	7440-62-2	39		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2441	SW6010B	O	Z	Metals	Zinc	7440-66-6	25		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2438	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.28		wt%	v		0.01	wt%	0.01	wt%
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2440	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	7.5		wt%	v		0.2	wt%	0.01	wt%
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2435	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.7		s.u.	v		0.1	s.u.		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.1		mg/kg-dry	U		1.1	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.1		mg/kg-dry	U		1.1	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.1		mg/kg-dry	U		1.1	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.057		mg/kg-dry	U		0.057	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.057		mg/kg-dry	U		0.057	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.1		mg/kg-dry	U		1.1	mg/kg-dry		
MS-21	MS-21	I	1	P1-00378	Mine Waste	Waste Rock	Field Sample	10/13/2007	2439	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2446	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2447	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3890		mg/kg-dry	v		20	mg/kg-dry	22.02	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2454	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	37		mg/kg-dry	v		11	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Aluminum	7429-90-5	20300		mg/kg-dry	v		5	mg/kg-dry	0.55	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2452	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001221366	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2452	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Barium	7440-39-3	852		mg/kg-dry	v	J	5	mg/kg-dry	1.1	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007709251	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.2	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2452	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001079295	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Chromium	7440-47-3	130		mg/kg-dry	v	J	0.4	mg/kg-dry	0.33	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Cobalt	7440-48-4	27		mg/kg-dry	v		5	mg/kg-dry	0.33	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Copper	7440-50-8	14		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Iron	7439-89-6	27500		mg/kg-dry	v	J	10	mg/kg-dry	11.01	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Lead	7439-92-1	8		mg/kg-dry	v		5	mg/kg-dry	1.1	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Manganese	7439-96-5	303		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2453	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Nickel	7440-02-0	53		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2452	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.00140804	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.11	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2452	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001084251	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Vanadium	7440-62-2	40		mg/kg-dry	v		1	mg/kg-dry	0.44	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2451	SW6010B	O	Z	Metals	Zinc	7440-66-6	24		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2448	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.73		wt%	v		0.01	wt%	0.01	wt%
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2450	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	9.2		wt%	v		0.2	wt%	0.01	wt%
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2445	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.4		s.u.	v		0.1	s.u.		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.082		mg/kg-dry	U		0.082	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.082		mg/kg-dry	U		0.082	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-22	MS-22	I	1	P1-00379	Mine Waste	Waste Rock	Field Sample	10/13/2007	2449	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2224	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2225	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	11700		mg/kg-dry	v		10	mg/kg-dry	10.64	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2232	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	12		mg/kg-dry	v		11	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Aluminum	7429-90-5	5960		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2230	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001181044	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2230	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009978701	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Barium	7440-39-3	253		mg/kg-dry	v	J	5	mg/kg-dry	1.06	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007454739	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.12	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2230	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001043663	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Chromium	7440-47-3	10.3		mg/kg-dry	v	J	0.4	mg/kg-dry	0.31	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Cobalt	7440-48-4	22		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Copper	7440-50-8	82		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Iron	7439-89-6	36900		mg/kg-dry	v	J	10	mg/kg-dry	10.64	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Lead	7439-92-1	14		mg/kg-dry	v		5	mg/kg-dry	1.06	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Manganese	7439-96-5	328		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2231	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Nickel	7440-02-0	11		mg/kg-dry	v		5	mg/kg-dry	1.06	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2230	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001361555	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001048456	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Vanadium	7440-62-2	114		mg/kg-dry	v		1	mg/kg-dry	0.42	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2229	SW6010B	O	Z	Metals	Zinc	7440-66-6	33		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2226	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.38		wt%	v		0.01	wt%	0.01	wt%
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2228	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	6.1		wt%	v		0.2	wt%	0.01	wt%
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2223	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1	s.u.		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.066		mg/kg-dry	U		0.066	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.066		mg/kg-dry	U		0.066	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.3		mg/kg-dry	U		1.3	mg/kg-dry		
MS-23	MS-23	I	1	P1-00340	Mine Waste	Waste Rock	Field Sample	10/13/2007	2227	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2328	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2329	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	725		mg/kg-dry	v		10	mg/kg-dry	10.91	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2336	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	20		mg/kg-dry	v		11	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Aluminum	7429-90-5	15100		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2334	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	v	J	0.3	mg/kg-dry	0.001210699	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2334	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2	mg/kg-dry	0.01	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Barium	7440-39-3	800		mg/kg-dry	v	J	5	mg/kg-dry	1.09	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007641922	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.18	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2334	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001069869	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Chromium	7440-47-3	338		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Cobalt	7440-48-4	32		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Copper	7440-50-8	33		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Iron	7439-89-6	24600		mg/kg-dry	v	J	10	mg/kg-dry	10.91	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Lead	7439-92-1	22		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Manganese	7439-96-5	500		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2335	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Nickel	7440-02-0	85		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2334	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001395742	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2334	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001074782	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Vanadium	7440-62-2	31		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2333	SW6010B	O	Z	Metals	Zinc	7440-66-6	26		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2330	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.67		wt%	v		0.01	wt%	0.01	wt%
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2332	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	8.4		wt%	v		0.2	wt%	0.01	wt%
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2327	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.9		s.u.	v		0.1	s.u.		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.041		mg/kg-dry	U		0.041	mg/kg-dry		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.082		mg/kg-dry	U		0.082	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.082		mg/kg-dry	U		0.082	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-24	MS-24	I	1	P1-00353	Mine Waste	Waste Rock	Field Sample	10/14/2007	2331	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2338	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2339	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1020		mg/kg-dry	v		10	mg/kg-dry	11.17	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8560		mg/kg-dry	v		5	mg/kg-dry	0.55	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2343	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001239106	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2343	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Barium	7440-39-3	3200		mg/kg-dry	v		5	mg/kg-dry	1.11	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007821229	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.23	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2343	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001422905	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Chromium	7440-47-3	162		mg/kg-dry	v	J	0.4	mg/kg-dry	0.33	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Cobalt	7440-48-4	19		mg/kg-dry	v		5	mg/kg-dry	0.33	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Copper	7440-50-8	87		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Iron	7439-89-6	12700		mg/kg-dry	v		10	mg/kg-dry	11.17	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5	mg/kg-dry	1.11	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Manganese	7439-96-5	549		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2344	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.3		mg/kg-dry	v		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Nickel	7440-02-0	41		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2343	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001428492	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.11	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2343	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.0011	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Vanadium	7440-62-2	16		mg/kg-dry	v		1	mg/kg-dry	0.44	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2342	SW6010B	O	Z	Metals	Zinc	7440-66-6	14		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2340	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.12		wt%	v		0.01	wt%	0.01	wt%
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2341	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	10		wt%	v		0.2	wt%	0.01	wt%
MS-25	MS-25	I	1	P1-00362	Mine Waste	Waste Rock	Field Sample	10/12/2007	2337	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.9		s.u.	v		0.1	s.u.		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2648	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2649	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3060		mg/kg-dry	v		20	mg/kg-dry	21.92	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2656	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	37		mg/kg-dry	v		11	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Aluminum	7429-90-5	16400		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2654	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001216009	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2654	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Barium	7440-39-3	953		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007675439	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.19	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2654	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001396382	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Chromium	7440-47-3	229		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Cobalt	7440-48-4	27		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Copper	7440-50-8	46		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Lead	7439-92-1	24		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Manganese	7439-96-5	388		mg/kg-dry	v	J	5	mg/kg-dry	0.04	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2655	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Nickel	7440-02-0	55		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2654	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001401864	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2654	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001079496	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Vanadium	7440-62-2	40		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2653	SW6010B	O	Z	Metals	Zinc	7440-66-6	26		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2650	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.86		wt%	v		0.01	wt%	0.01	wt%
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2652	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	8.8		wt%	v		0.2	wt%	0.01	wt%
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2647	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1	s.u.		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.042		mg/kg-dry	U		0.042	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.7		mg/kg-dry	U		1.7	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.7		mg/kg-dry	U		1.7	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.7		mg/kg-dry	U		1.7	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.042		mg/kg-dry	U		0.042	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.042		mg/kg-dry	U		0.042	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.084		mg/kg-dry	U		0.084	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.084		mg/kg-dry	U		0.084	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.042		mg/kg-dry	U		0.042	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.042		mg/kg-dry	U		0.042	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.7		mg/kg-dry	U		1.7	mg/kg-dry		
MS-26	MS-26	I	1	P1-00292	Mine Waste	Waste Rock	Field Sample	10/15/2007	2651	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.042		mg/kg-dry	U		0.042	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2669	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2670	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3590		mg/kg-dry	v		20	mg/kg-dry	21.76	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2677	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	16		mg/kg-dry	v		11	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12800		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2675	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001206746	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2675	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Barium	7440-39-3	632		mg/kg-dry	v		5	mg/kg-dry	1.08	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007616975	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.17	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2675	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001066376	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Chromium	7440-47-3	206		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Cobalt	7440-48-4	28		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Copper	7440-50-8	45		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Iron	7439-89-6	23900		mg/kg-dry	v		10	mg/kg-dry	10.88	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Lead	7439-92-1	32		mg/kg-dry	v		5	mg/kg-dry	1.08	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Manganese	7439-96-5	396		mg/kg-dry	v	J	5	mg/kg-dry	0.04	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2676	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Nickel	7440-02-0	65		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2675	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001391186	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2675	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001071273	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Vanadium	7440-62-2	36		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2674	SW6010B	O	Z	Metals	Zinc	7440-66-6	22		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2671	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.52		wt%	v		0.01	wt%	0.01	wt%

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2673	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	8.1		wt%	v		0.2	wt%	0.01	wt%
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2668	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1	s.u.		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.074		mg/kg-dry	U		0.074	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.074		mg/kg-dry	U		0.074	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-27	MS-27	I	1	P1-00299	Mine Waste	Waste Rock	Field Sample	10/15/2007	2672	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2628	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2629	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1230		mg/kg-dry	v		10	mg/kg-dry	10.72	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2636	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	26		mg/kg-dry	v		11	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Aluminum	7429-90-5	13300		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2634	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001189914	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2634	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Barium	7440-39-3	698		mg/kg-dry	v		5	mg/kg-dry	1.07	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.00751073	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.14	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2634	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001051502	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Chromium	7440-47-3	212		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Cobalt	7440-48-4	25		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Copper	7440-50-8	21		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Iron	7439-89-6	18900		mg/kg-dry	v		10	mg/kg-dry	10.72	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5	mg/kg-dry	1.07	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Manganese	7439-96-5	289		mg/kg-dry	v	J	5	mg/kg-dry	0.04	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2635	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Nickel	7440-02-0	51		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2634	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001371781	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2634	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001056331	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Vanadium	7440-62-2	27		mg/kg-dry	v		1	mg/kg-dry	0.42	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2633	SW6010B	O	Z	Metals	Zinc	7440-66-6	19		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2630	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.41		wt%	v		0.01	wt%	0.01	wt%
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2632	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	6.8		wt%	v		0.2	wt%	0.01	wt%
MS-29	MS-29	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2627	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.7		s.u.	v		0.1	s.u.		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.081		mg/kg-dry	U		0.081	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.081		mg/kg-dry	U		0.081	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.2		mg/kg-dry	v		1.6	mg/kg-dry		
MS-28	MS-28	I	1	P1-00290	Mine Waste	Waste Rock	Field Sample	10/15/2007	2631	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.041		mg/kg-dry	U		0.041	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2659	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2660	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1800		mg/kg-dry	v		10	mg/kg-dry	10.63	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2667	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	11		mg/kg-dry	U		11	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Aluminum	7429-90-5	14800		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2665	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001179787	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2665	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009968085	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Barium	7440-39-3	1140		mg/kg-dry	v		5	mg/kg-dry	1.06	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007446809	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.12	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2665	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001354787	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Chromium	7440-47-3	233		mg/kg-dry	v	J	0.4	mg/kg-dry	0.31	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Cobalt	7440-48-4	28		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Copper	7440-50-8	30		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Iron	7439-89-6	24300		mg/kg-dry	v		10	mg/kg-dry	10.63	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Lead	7439-92-1	23		mg/kg-dry	v		5	mg/kg-dry	1.06	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Manganese	7439-96-5	447		mg/kg-dry	v	J	5	mg/kg-dry	0.04	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2666	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Nickel	7440-02-0	60		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2665	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001360106	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2665	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.00104734	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Vanadium	7440-62-2	42		mg/kg-dry	v		1	mg/kg-dry	0.42	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2664	SW6010B	O	Z	Metals	Zinc	7440-66-6	26		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2661	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.27		wt%	v		0.01	wt%	0.01	wt%
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2663	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	6		wt%	v		0.2	wt%	0.01	wt%
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2658	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1	s.u.		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.075		mg/kg-dry	U		0.075	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.075		mg/kg-dry	U		0.075	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.5		mg/kg-dry	U		1.5	mg/kg-dry		
MS-29	MS-29	I	1	P1-00298	Mine Waste	Waste Rock	Field Sample	10/15/2007	2662	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.037		mg/kg-dry	U		0.037	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2173	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2174	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1970		mg/kg-dry	v		10	mg/kg-dry	10.88	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2176	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		27		mg/kg-dry	v		11	mg/kg-dry	1.81	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2177	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		42		mg/kg-dry	v		11	mg/kg-dry	0.9	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2177	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		11		mg/kg-dry	U		11	mg/kg-dry	1.62	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2176	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	115		mg/kg-dry	v		11	mg/kg-dry	3.61	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2183	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	163		mg/kg-dry	v		109	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11200		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2181	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001206746	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2181	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2	mg/kg-dry	0.01	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Barium	7440-39-3	176		mg/kg-dry	v		5	mg/kg-dry	1.08	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007616975	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.17	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.1	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Chromium	7440-47-3	20		mg/kg-dry	v		0.4	mg/kg-dry	0.32	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Cobalt	7440-48-4	8		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Copper	7440-50-8	21		mg/kg-dry	v	J	5	mg/kg-dry	0.21	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Iron	7439-89-6	17300		mg/kg-dry	v		10	mg/kg-dry	10.88	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v	J	5	mg/kg-dry	1.08	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Manganese	7439-96-5	306		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2182	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2181	SW6020	O	Z	Metals	Nickel	7440-02-0	10		mg/kg-dry	v		5	mg/kg-dry	0.002227965	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2181	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001391186	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2181	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001071273	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Vanadium	7440-62-2	37		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2180	SW6010B	O	Z	Metals	Zinc	7440-66-6	25		mg/kg-dry	v	J	5	mg/kg-dry	0.21	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2184	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.018		mg/kg-dry	U		0.018	mg/kg-dry	0.006550598	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2184	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2184	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2184	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2184	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2184	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.018		mg/kg-dry	U		0.018	mg/kg-dry	0.007595212	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2184	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.018		mg/kg-dry	U		0.018	mg/kg-dry	0.005821545	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2184	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2184	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.018		mg/kg-dry	U		0.018	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2175	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.03		wt%	v		0.01	wt%	0.01	wt%
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2179	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	8.1		wt%	v		0.2	wt%	0.01	wt%
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2172	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.7		s.u.	v		0.1	s.u.		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.06	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.08	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.06	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.06	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.04	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.08	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.06	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.06	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.08	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.06	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.08	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.08	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.06	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.1	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.08	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.06	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2185	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.36		mg/kg-dry	U		0.36	mg/kg-dry	0.06	mg/kg-dry
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.072		mg/kg-dry	U		0.072	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.072		mg/kg-dry	U		0.072	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-3	MS-3	I	1	P1-00372	Mine Waste	Roadway	Field Sample	10/11/2007	2178	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2244	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2245	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3450		mg/kg-dry	v		20	mg/kg-dry	21.34	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2252	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	11		mg/kg-dry	U		11	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12300		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2250	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001183565	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2250	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Barium	7440-39-3	773		mg/kg-dry	v	J	5	mg/kg-dry	1.06	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007470651	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.13	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2250	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001045891	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Chromium	7440-47-3	114		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Cobalt	7440-48-4	22		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Copper	7440-50-8	27		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Iron	7439-89-6	25700		mg/kg-dry	v	J	10	mg/kg-dry	10.67	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Lead	7439-92-1	10		mg/kg-dry	v		5	mg/kg-dry	1.06	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Manganese	7439-96-5	265		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2251	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Nickel	7440-02-0	32		mg/kg-dry	v		5	mg/kg-dry	1.06	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2250	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001364461	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2250	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001050694	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Vanadium	7440-62-2	38		mg/kg-dry	v		1	mg/kg-dry	0.42	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2249	SW6010B	O	Z	Metals	Zinc	7440-66-6	18		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2246	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.45		wt%	v		0.01	wt%	0.01	wt%
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2248	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	6.3		wt%	v		0.2	wt%	0.01	wt%
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2243	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.2		s.u.	v		0.1	s.u.		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.072		mg/kg-dry	U		0.072	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.072		mg/kg-dry	U		0.072	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-30	MS-30	I	1	P1-00342	Mine Waste	Waste Rock	Field Sample	10/13/2007	2247	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.036		mg/kg-dry	U		0.036	mg/kg-dry		
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2456	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2457	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1120		mg/kg-dry	v		10	mg/kg-dry	10.58	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Aluminum	7429-90-5	18800		mg/kg-dry	v		5	mg/kg-dry	0.52	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2461	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001173545	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2461	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009915344	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Barium	7440-39-3	877		mg/kg-dry	v	J	5	mg/kg-dry	1.05	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007407407	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.11	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2461	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001037037	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Chromium	7440-47-3	250		mg/kg-dry	v	J	0.4	mg/kg-dry	0.31	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Cobalt	7440-48-4	24		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Copper	7440-50-8	7		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Iron	7439-89-6	20400		mg/kg-dry	v	J	10	mg/kg-dry	10.58	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5	mg/kg-dry	1.05	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Manganese	7439-96-5	227		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2462	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Nickel	7440-02-0	52		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2461	SW6020	O	Z	Metals	Selenium	7440-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.00135291	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2461	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001041799	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Vanadium	7440-62-2	30		mg/kg-dry	v		1	mg/kg-dry	0.42	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2460	SW6010B	O	Z	Metals	Zinc	7440-66-6	17		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2458	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.09		wt%	v		0.01	wt%	0.01	wt%
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2459	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	5.5		wt%	v		0.2	wt%	0.01	wt%
MS-31	MS-31	I	1	P1-00389	Mine Waste	Waste Rock	Field Sample	10/13/2007	2455	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8		s.u.	v		0.1	s.u.		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2308	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2309	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1570		mg/kg-dry	v		20	mg/kg-dry	21.52	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2316	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	34		mg/kg-dry	v		11	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Aluminum	7429-90-5	14400		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2314	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001193757	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2314	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Barium	7440-39-3	836		mg/kg-dry	v	J	5	mg/kg-dry	1.07	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007534984	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.15	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2314	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001370829	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Chromium	7440-47-3	228		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Cobalt	7440-48-4	26		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Copper	7440-50-8	27		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Iron	7439-89-6	22600		mg/kg-dry	v	J	10	mg/kg-dry	10.76	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Lead	7439-92-1	30		mg/kg-dry	v		5	mg/kg-dry	1.07	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Manganese	7439-96-5	369		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2315	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Nickel	7440-02-0	61		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2314	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001376211	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2314	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001059742	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Vanadium	7440-62-2	33		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2313	SW6010B	O	Z	Metals	Zinc	7440-66-6	23		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2310	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.76		wt%	v		0.01	wt%	0.01	wt%
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2312	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	7.1		wt%	v		0.2	wt%	0.01	wt%
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2307	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8		s.u.	v		0.1	s.u.		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.069		mg/kg-dry	U		0.069	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.069		mg/kg-dry	U		0.069	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.4		mg/kg-dry	U		1.4	mg/kg-dry		
MS-32	MS-32	I	1	P1-00351	Mine Waste	Waste Rock	Field Sample	10/14/2007	2311	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.035		mg/kg-dry	U		0.035	mg/kg-dry		
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2354	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2355	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1770		mg/kg-dry	v		10	mg/kg-dry	10.3	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Aluminum	7429-90-5	50900		mg/kg-dry	v		5	mg/kg-dry	0.51	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2359	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001143299	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2359	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009659794	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Barium	7440-39-3	2320		mg/kg-dry	v		5	mg/kg-dry	1.03	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007216495	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.06	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2359	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001312887	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Chromium	7440-47-3	167		mg/kg-dry	v	J	0.4	mg/kg-dry	0.3	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Cobalt	7440-48-4	58		mg/kg-dry	v		5	mg/kg-dry	0.3	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Copper	7440-50-8	11		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Iron	7439-89-6	47500		mg/kg-dry	v		10	mg/kg-dry	10.3	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Lead	7439-92-1	11		mg/kg-dry	v		5	mg/kg-dry	1.03	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Manganese	7439-96-5	469		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2360	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Nickel	7440-02-0	114		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2359	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001318041	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2359	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	v		0.6	mg/kg-dry	0.001014948	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Vanadium	7440-62-2	67		mg/kg-dry	v		1	mg/kg-dry	0.41	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2358	SW6010B	O	Z	Metals	Zinc	7440-66-6	35		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2356	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.07		wt%	v		0.01	wt%	0.01	wt%
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2357	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	3		wt%	v		0.2	wt%	0.01	wt%
MS-33	MS-33	I	1	P1-00364	Mine Waste	Waste Rock	Field Sample	10/12/2007	2353	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.8		s.u.	v		0.1	s.u.		
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2264	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2265	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	690		mg/kg-dry	v		10	mg/kg-dry	10.61	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Aluminum	7429-90-5	33500		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2269	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001177282	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2269	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009946922	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Barium	7440-39-3	1440		mg/kg-dry	v	J	5	mg/kg-dry	1.06	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007430998	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.12	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2269	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.00104034	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Chromium	7440-47-3	360		mg/kg-dry	v	J	0.4	mg/kg-dry	0.31	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Cobalt	7440-48-4	38		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Copper	7440-50-8	17		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Iron	7439-89-6	31400		mg/kg-dry	v	J	10	mg/kg-dry	10.61	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5	mg/kg-dry	1.06	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Manganese	7439-96-5	363		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2270	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Nickel	7440-02-0	92		mg/kg-dry	v		5	mg/kg-dry	1.06	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2269	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001357219	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2269	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001045117	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Vanadium	7440-62-2	46		mg/kg-dry	v		1	mg/kg-dry	0.42	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2268	SW6010B	O	Z	Metals	Zinc	7440-66-6	27		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2266	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.12		wt%	v		0.01	wt%	0.01	wt%
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2267	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	5.8		wt%	v		0.2	wt%	0.01	wt%
MS-34	MS-34	I	1	P1-00344	Mine Waste	Waste Rock	Field Sample	10/13/2007	2263	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.4		s.u.	v		0.1	s.u.		
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2346	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2347	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	198		mg/kg-dry	v		10	mg/kg-dry	10.94	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Aluminum	7429-90-5	18600		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2351	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001213348	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2351	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Barium	7440-39-3	601		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007658643	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.18	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2351	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001393326	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Chromium	7440-47-3	306		mg/kg-dry	v	J	0.4	mg/kg-dry	0.32	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Cobalt	7440-48-4	23		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Copper	7440-50-8	14		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Iron	7439-89-6	17300		mg/kg-dry	v		10	mg/kg-dry	10.94	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5	mg/kg-dry	1.09	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2352	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Nickel	7440-02-0	65		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2351	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001398796	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2351	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001077133	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Vanadium	7440-62-2	21		mg/kg-dry	v		1	mg/kg-dry	0.43	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2350	SW6010B	O	Z	Metals	Zinc	7440-66-6	25		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2348	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.05		wt%	v		0.01	wt%	0.01	wt%
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2349	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	8.6		wt%	v		0.2	wt%	0.01	wt%
MS-35	MS-35	I	1	P1-00363	Mine Waste	Waste Rock	Field Sample	10/12/2007	2345	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1	s.u.		
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2412	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2413	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	111		mg/kg-dry	v		10	mg/kg-dry	10.51	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9400		mg/kg-dry	v		5	mg/kg-dry	0.52	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2417	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001166141	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2417	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009852787	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Barium	7440-39-3	117		mg/kg-dry	v		5	mg/kg-dry	1.05	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007360673	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.1	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2417	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001339117	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Chromium	7440-47-3	209		mg/kg-dry	v	J	0.4	mg/kg-dry	0.31	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Cobalt	7440-48-4	18		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Copper	7440-50-8	5		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Iron	7439-89-6	12300		mg/kg-dry	v		10	mg/kg-dry	10.51	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Lead	7439-92-1	5		mg/kg-dry	U		5	mg/kg-dry	1.05	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Manganese	7439-96-5	203		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2418	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Nickel	7440-02-0	52		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2417	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001344374	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2417	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001035226	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Vanadium	7440-62-2	10		mg/kg-dry	v		1	mg/kg-dry	0.42	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2416	SW6010B	O	Z	Metals	Zinc	7440-66-6	10		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2414	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.07		wt%	v		0.01	wt%	0.01	wt%
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2415	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	4.9		wt%	v		0.2	wt%	0.01	wt%
MS-36	MS-36	I	1	P1-00375	Mine Waste	Waste Rock	Field Sample	10/12/2007	2411	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.2		s.u.	v		0.1	s.u.		
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2420	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2421	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	509		mg/kg-dry	v		10	mg/kg-dry	10.42	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10200		mg/kg-dry	v		5	mg/kg-dry	0.52	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2425	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001156413	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2425	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009770594	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Barium	7440-39-3	398		mg/kg-dry	v		5	mg/kg-dry	1.04	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.00729927	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.08	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2425	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001327946	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Chromium	7440-47-3	95.4		mg/kg-dry	v	J	0.4	mg/kg-dry	0.31	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Cobalt	7440-48-4	14		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Copper	7440-50-8	5		mg/kg-dry	U		5	mg/kg-dry	0.2	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Iron	7439-89-6	12200		mg/kg-dry	v		10	mg/kg-dry	10.42	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Lead	7439-92-1	5		mg/kg-dry	U		5	mg/kg-dry	1.04	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Manganese	7439-96-5	157		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2426	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Nickel	7440-02-0	27		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2425	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.00133316	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2425	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.00102659	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Vanadium	7440-62-2	15		mg/kg-dry	v		1	mg/kg-dry	0.41	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2424	SW6010B	O	Z	Metals	Zinc	7440-66-6	11		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2422	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.05		wt%	v		0.01	wt%	0.01	wt%
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2423	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	4.1		wt%	v		0.2	wt%	0.01	wt%
MS-37	MS-37	I	1	P1-00376	Mine Waste	Waste Rock	Field Sample	10/12/2007	2419	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.2		s.u.	v		0.1	s.u.		
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2428	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2429	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1960		mg/kg-dry	v		10	mg/kg-dry	10.47	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Aluminum	7429-90-5	36100		mg/kg-dry	v		5	mg/kg-dry	0.52	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2433	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001161257	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2433	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009811518	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Barium	7440-39-3	1650		mg/kg-dry	v		5	mg/kg-dry	1.04	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007329843	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.09	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2433	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001333508	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Chromium	7440-47-3	881		mg/kg-dry	v	J	0.4	mg/kg-dry	0.31	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Cobalt	7440-48-4	42		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Copper	7440-50-8	12		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Iron	7439-89-6	37100		mg/kg-dry	v		10	mg/kg-dry	10.47	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Lead	7439-92-1	10		mg/kg-dry	v		5	mg/kg-dry	1.04	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Manganese	7439-96-5	424		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2434	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Nickel	7440-02-0	115		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2433	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001338743	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2433	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.00103089	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Vanadium	7440-62-2	50		mg/kg-dry	v		1	mg/kg-dry	0.41	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2432	SW6010B	O	Z	Metals	Zinc	7440-66-6	31		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2430	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.03		wt%	v		0.01	wt%	0.01	wt%
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2431	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	4.5		wt%	v		0.2	wt%	0.01	wt%
MS-38	MS-38	I	1	P1-00377	Mine Waste	Waste Rock	Field Sample	10/12/2007	2427	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.3		s.u.	v		0.1	s.u.		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2893	E300.0	O	Z	Anions	Fluoride, 1:2		5.3		mg/kg-dry	v		1	mg/kg-dry	0.01	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2894	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	5020		mg/kg-dry	v		40	mg/kg-dry	38.41	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2911	SW9012	O	Z	Cyanide	Cyanide, Total	57-12-5	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.17	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2896	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		13		mg/kg-dry	u		13	mg/kg-dry	2.13	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2897	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		89		mg/kg-dry	v		13	mg/kg-dry	1.06	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2897	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		28		mg/kg-dry	v		13	mg/kg-dry	1.9	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2896	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	144		mg/kg-dry	v		13	mg/kg-dry	4.25	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2903	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	162		mg/kg-dry	v		13	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Aluminum	7429-90-5	45500		mg/kg-dry	v		5	mg/kg-dry	0.64	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2901	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001419974	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2901	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Barium	7440-39-3	2210		mg/kg-dry	v		5	mg/kg-dry	1.28	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.008962868	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.56	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2901	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001630602	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Chromium	7440-47-3	673		mg/kg-dry	v		0.4	mg/kg-dry	0.38	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Cobalt	7440-48-4	62		mg/kg-dry	v		5	mg/kg-dry	0.38	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Copper	7440-50-8	44		mg/kg-dry	v		5	mg/kg-dry	0.25	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Iron	7439-89-6	51900		mg/kg-dry	v		10	mg/kg-dry	12.8	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Lead	7439-92-1	37		mg/kg-dry	v		5	mg/kg-dry	1.28	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Manganese	7439-96-5	743		mg/kg-dry	v		5	mg/kg-dry	0.05	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2902	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Nickel	7440-02-0	135		mg/kg-dry	v		5	mg/kg-dry	0.25	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2901	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001637004	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.12	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2901	SW6020	O	Z	Metals	Thallium	7440-28-0	0.9		mg/kg-dry	v		0.6	mg/kg-dry	0.001260563	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Vanadium	7440-62-2	71		mg/kg-dry	v		1	mg/kg-dry	0.51	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2900	SW6010B	O	Z	Metals	Zinc	7440-66-6	53		mg/kg-dry	v		5	mg/kg-dry	0.25	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Azinphos-methyl (Guthion)		0.063		mg/kg	U			mg/kg	0.00059	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Bolstar (Sulprofos)		0.063		mg/kg	U	UJ		mg/kg	0.0006	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Chlorpyrifos		0.063		mg/kg	U			mg/kg	0.00078	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Coumaphos		0.13		mg/kg	U			mg/kg	0.00092	mg/kg
MS-4	MS-4	**I**	1	**P1-00332**	**Mine Waste**	**Tailings**	**Field Sample**	**10/18/2007**	3117	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Demeton-O,S**		**0.13**		**mg/kg**	**U**	**R**		**mg/kg**	**0.016**	**mg/kg**
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Diazinon		0.063		mg/kg	U			mg/kg	0.00093	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Dichlorvos		0.063		mg/kg	U			mg/kg	0.00057	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Dimethoate		0.063		mg/kg	U			mg/kg	0.0013	mg/kg
MS-4	MS-4	**I**	1	**P1-00332**	**Mine Waste**	**Tailings**	**Field Sample**	**10/18/2007**	3117	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Disulfoton**		**0.063**		**mg/kg**	**U**	**R**		**mg/kg**	**0.0013**	**mg/kg**
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	EPN		0.063		mg/kg	U			mg/kg	0.00084	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Ethoprop (Prophos)		0.063		mg/kg	U			mg/kg	0.00044	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Ethyl Parathion		0.063		mg/kg	U			mg/kg	0.00067	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Fensulfothion		0.063		mg/kg	U			mg/kg	0.0014	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Fenthion		0.063		mg/kg	U	UJ		mg/kg	0.00072	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Malathion		0.063		mg/kg	U			mg/kg	0.00035	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Merphos		0.063		mg/kg	U			mg/kg	0.00064	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Methyl Parathion		0.063		mg/kg	U			mg/kg	0.00059	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Mevinphos		0.063		mg/kg	U			mg/kg	0.00075	mg/kg
MS-4	MS-4	**I**	1	**P1-00332**	**Mine Waste**	**Tailings**	**Field Sample**	**10/18/2007**	3117	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Phorate**		**0.063**		**mg/kg**	**U**	**R**		**mg/kg**	**0.001**	**mg/kg**
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Ronnel		0.063		mg/kg	U			mg/kg	0.0007	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Stirophos (Tetrachlorovinphos)		0.063		mg/kg	U			mg/kg	0.00054	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Sulfotep		0.063		mg/kg	U			mg/kg	0.0005	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Tokuthion (Prothiofos)		0.063		mg/kg	U			mg/kg	0.00084	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	3117	SW8141A	O	Z	Organophosphorus Pesticides	Trichloronate		0.063		mg/kg	U			mg/kg	0.00075	mg/kg
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2905	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.022		mg/kg-dry	U		0.022	mg/kg-dry	0.007682459	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2905	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2905	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2905	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.022		mg/kg-dry	U		0.022	mg/kg-dry		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2905	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2905	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.022		mg/kg-dry	U		0.022	mg/kg-dry	0.008962868	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2905	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.022		mg/kg-dry	U		0.022	mg/kg-dry	0.006914213	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2905	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2905	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2906	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0051		mg/kg-dry	U		0.0051	mg/kg-dry	0.000460948	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2906	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0051		mg/kg-dry	U		0.0051	mg/kg-dry	0.001459667	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2906	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.026		mg/kg-dry	U		0.026	mg/kg-dry	0.001126761	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000332907	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000268886	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.007		mg/kg-dry	U		0.007	mg/kg-dry	0.000345711	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000268886	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000128041	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000320102	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000192061	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.022		mg/kg-dry	U		0.022	mg/kg-dry	0.01	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2906	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.064		mg/kg-dry	U		0.064	mg/kg-dry	0.03	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000345711	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2906	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0064		mg/kg-dry	U		0.0064	mg/kg-dry	0.000550576	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2906	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.026		mg/kg-dry	U		0.026	mg/kg-dry	0.009551857	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000192061	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000243278	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000140845	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000204866	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000166453	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.00028169	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000192061	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000153649	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000179257	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000243278	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000140845	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.0026		mg/kg-dry	U		0.0026	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2906	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.1		mg/kg-dry	U		5.1	mg/kg-dry	0.52	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2906	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	5.1		mg/kg-dry	U		5.1	mg/kg-dry	0.74	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000358515	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2906	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0026		mg/kg-dry	U		0.0026	mg/kg-dry	0.001395647	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2904	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2895	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.41		wt%	v		0.01	wt%	0.01	wt%
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2899	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	22		wt%	v		0.2	wt%	0.01	wt%
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2892	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8		s.u.	v		0.1	s.u.		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.06	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2910	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.1	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.07	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.05	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	0.43		mg/kg-dry	U		0.43	mg/kg-dry	0.04	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.0043		mg/kg-dry	U		0.0043	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	0.43		mg/kg-dry	U		0.43	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.09	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	0.85		mg/kg-dry	U		0.85	mg/kg-dry	0.19	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	0.43		mg/kg-dry	U		0.43	mg/kg-dry	0.12	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	0.43		mg/kg-dry	U		0.43	mg/kg-dry	0.05	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.06	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.06	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	0.43		mg/kg-dry	U		0.43	mg/kg-dry	0.11	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.43		mg/kg-dry	U		0.43	mg/kg-dry	0.07	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.0043		mg/kg-dry	U		0.0043	mg/kg-dry	0.002432779	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.0043		mg/kg-dry	U		0.0043	mg/kg-dry	0.002291933	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.0043		mg/kg-dry	U		0.0043	mg/kg-dry	0.00134443	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.021		mg/kg-dry	v		0.0043	mg/kg-dry	0.002266325	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.019		mg/kg-dry	v		0.0043	mg/kg-dry	0.001587708	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.03		mg/kg-dry	v		0.0043	mg/kg-dry	0.001459667	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.016		mg/kg-dry	v		0.0043	mg/kg-dry	0.001690141	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.0096		mg/kg-dry	v		0.0043	mg/kg-dry	0.002381562	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.09	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.11	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.0061		mg/kg-dry	v		0.0043	mg/kg-dry	0.000681178	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.0043		mg/kg-dry	U		0.0043	mg/kg-dry	0.000932138	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.06	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.09	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.26	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.06	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.0043		mg/kg-dry	U		0.0043	mg/kg-dry	0.000810499	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.0043		mg/kg-dry	U		0.0043	mg/kg-dry	0.002266325	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.06	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.43		mg/kg-dry	U		0.43	mg/kg-dry	0.06	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.038		mg/kg-dry	v		0.0043	mg/kg-dry	0.001600512	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.07	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.06	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.0043		mg/kg-dry	U		0.0043	mg/kg-dry	0.002496799	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.09	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.09	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.08	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.14	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	0.43		mg/kg-dry	U		0.43	mg/kg-dry	0.12	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.0043		mg/kg-dry	U		0.0043	mg/kg-dry	0.001856594	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2909	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.09	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2908	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.021		mg/kg-dry	v		0.0043	mg/kg-dry	0.001035851	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	1,4-Dioxane	123-91-1	1.7		mg/kg-dry	U		1.7	mg/kg-dry	0.33	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	0.33		mg/kg-dry	U		0.33	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Acetone	67-64-1	0.33		mg/kg-dry	U		0.33	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.033		mg/kg-dry	U	UJ	0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.56		mg/kg-dry	v		0.17	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	0.33		mg/kg-dry	U		0.33	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	0.33		mg/kg-dry	U		0.33	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2907	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.006608566	mg/kg-dry
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-4	MS-4	I	1	P1-00332	Mine Waste	Tailings	Field Sample	10/18/2007	2898	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2942	E300.0	O	Z	Anions	Fluoride, 1:2		4.4		mg/kg-dry	v		1	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2943	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	6370		mg/kg-dry	v		100	mg/kg-dry	148.8	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2960	SW9012	O	Z	Cyanide	Cyanide, Total	57-12-5	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.2	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2945	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		21		mg/kg-dry	v		15	mg/kg-dry	2.48	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2946	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		66		mg/kg-dry	v		15	mg/kg-dry	1.23	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2946	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		53		mg/kg-dry	v		15	mg/kg-dry	2.21	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2945	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	151		mg/kg-dry	v		15	mg/kg-dry	4.94	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2952	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	170		mg/kg-dry	v		15	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Aluminum	7429-90-5	40100		mg/kg-dry	v		5	mg/kg-dry	0.74	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2950	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001650298	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2950	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Barium	7440-39-3	2190		mg/kg-dry	v		5	mg/kg-dry	1.48	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.97	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2950	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001458333	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Chromium	7440-47-3	476		mg/kg-dry	v		0.4	mg/kg-dry	0.44	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Cobalt	7440-48-4	63		mg/kg-dry	v		5	mg/kg-dry	0.44	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Copper	7440-50-8	57		mg/kg-dry	v		5	mg/kg-dry	0.29	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Iron	7439-89-6	51500		mg/kg-dry	v		10	mg/kg-dry	14.88	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Lead	7439-92-1	48		mg/kg-dry	v		5	mg/kg-dry	1.48	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Manganese	7439-96-5	808		mg/kg-dry	v		5	mg/kg-dry	0.05	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2951	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Nickel	7440-02-0	118		mg/kg-dry	v		5	mg/kg-dry	0.29	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2950	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.00190253	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.14	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2950	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6	mg/kg-dry	0.00146503	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Vanadium	7440-62-2	72		mg/kg-dry	v		1	mg/kg-dry	0.59	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2949	SW6010B	O	Z	Metals	Zinc	7440-66-6	55		mg/kg-dry	v		5	mg/kg-dry	0.29	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Azinphos-methyl (Guthion)		0.072		mg/kg	U			mg/kg	0.00068	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Bolstar (Sulprofos)		0.072		mg/kg	U	UJ		mg/kg	0.00069	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Chlorpyrifos		0.072		mg/kg	U			mg/kg	0.00089	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Coumaphos		0.15		mg/kg	U			mg/kg	0.0011	mg/kg
MS-5	MS-5	**I**	1	**P1-00357**	**Mine Waste**	**Tailings**	**Field Sample**	**10/17/2007**	3119	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Demeton-O,S**		**0.14**		**mg/kg**	**U**	**R**		**mg/kg**	**0.019**	**mg/kg**
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Diazinon		0.072		mg/kg	U			mg/kg	0.0011	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Dichlorvos		0.072		mg/kg	U			mg/kg	0.00065	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Dimethoate		0.072		mg/kg	U			mg/kg	0.0015	mg/kg
MS-5	MS-5	**I**	1	**P1-00357**	**Mine Waste**	**Tailings**	**Field Sample**	**10/17/2007**	3119	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Disulfoton**		**0.072**		**mg/kg**	**U**	**R**		**mg/kg**	**0.0015**	**mg/kg**
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	EPN		0.072		mg/kg	U			mg/kg	0.00096	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Ethoprop (Prophos)		0.072		mg/kg	U			mg/kg	0.0005	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Ethyl Parathion		0.072		mg/kg	U			mg/kg	0.00076	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Fensulfothion		0.072		mg/kg	U			mg/kg	0.0016	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Fenthion		0.072		mg/kg	U	UJ		mg/kg	0.00082	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Malathion		0.072		mg/kg	U			mg/kg	0.0004	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Merphos		0.072		mg/kg	U			mg/kg	0.00073	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Methyl Parathion		0.072		mg/kg	U			mg/kg	0.00068	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Mevinphos		0.072		mg/kg	U			mg/kg	0.00086	mg/kg
MS-5	MS-5	**I**	1	**P1-00357**	**Mine Waste**	**Tailings**	**Field Sample**	**10/17/2007**	3119	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Phorate**		**0.072**		**mg/kg**	**U**	**R**		**mg/kg**	**0.0012**	**mg/kg**
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Ronnel		0.072		mg/kg	U			mg/kg	0.0008	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Stirophos (Tetrachlorovinphos)		0.072		mg/kg	U			mg/kg	0.00062	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Sulfotep		0.072		mg/kg	U			mg/kg	0.00058	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Tokuthion (Prothiofos)		0.072		mg/kg	U			mg/kg	0.00096	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	3119	SW8141A	O	Z	Organophosphorus Pesticides	Trichloronate		0.072		mg/kg	U			mg/kg	0.00086	mg/kg
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2954	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.025		mg/kg-dry	U		0.025	mg/kg-dry	0.008928572	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2954	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.025		mg/kg-dry	U		0.025	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2954	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.025		mg/kg-dry	U		0.025	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2954	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.025		mg/kg-dry	U		0.025	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2954	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.025		mg/kg-dry	U		0.025	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2954	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.025		mg/kg-dry	U		0.025	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2954	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.025		mg/kg-dry	U		0.025	mg/kg-dry	0.008035715	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2954	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.025		mg/kg-dry	U		0.025	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2954	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.025		mg/kg-dry	U		0.025	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2955	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.006		mg/kg-dry	U		0.006	mg/kg-dry	0.000535714	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2955	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.006		mg/kg-dry	U		0.006	mg/kg-dry	0.001696429	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2955	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.001309524	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000386905	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.0003125	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.007		mg/kg-dry	U		0.007	mg/kg-dry	0.000401786	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.0003125	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.00014881	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000372024	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000223214	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.025		mg/kg-dry	U		0.025	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2955	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.074		mg/kg-dry	U		0.074	mg/kg-dry	0.04	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000401786	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2955	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0074		mg/kg-dry	U		0.0074	mg/kg-dry	0.000639881	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2955	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000223214	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000282738	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.00016369	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000238095	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000193452	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000327381	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000223214	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000178571	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000208333	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000282738	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.00016369	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.003		mg/kg-dry	U		0.003	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2955	SW8151A	O	Z	Pesticides	MCPA	94-74-6	6		mg/kg-dry	U		6	mg/kg-dry	0.6	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2955	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	6		mg/kg-dry	U		6	mg/kg-dry	0.86	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000416667	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2955	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.039		mg/kg-dry	v		0.003	mg/kg-dry	0.00162202 4	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2953	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.03	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2944	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.37		wt%	v		0.01	wt%	0.01	wt%
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2948	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	33		wt%	v		0.2	wt%	0.01	wt%
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2941	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.8		s.u.	v		0.1	s.u.		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.07	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2959	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.09	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.12	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.08	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.06	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.05	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.09	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.005		mg/kg-dry	U		0.005	mg/kg-dry		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	0.99		mg/kg-dry	U		0.99	mg/kg-dry	0.22	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.14	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.06	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.07	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.07	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.12	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.09	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.002827381	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.002663691	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.0015625	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	0.25		mg/kg-dry	U		0.25	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	0.25		mg/kg-dry	U		0.25	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.0069		mg/kg-dry	v		0.005	mg/kg-dry	0.002633929	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.001845238	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.001696429	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.001964286	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.002767857	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.09	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.09	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.09	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.11	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.13	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.0074		mg/kg-dry	v		0.005	mg/kg-dry	0.000791667	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.001083333	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.07	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.31	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.07	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.000941964	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.002633929	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.09	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.07	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.08	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.09	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.001860119	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.08	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.07	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.002901786	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.09	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.1	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.11	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.09	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.16	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.14	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.002157738	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2958	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.25		mg/kg-dry	U		0.25	mg/kg-dry	0.11	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2957	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.029		mg/kg-dry	v		0.005	mg/kg-dry	0.001203869	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	1,4-Dioxane	123-91-1	2.6		mg/kg-dry	U		2.6	mg/kg-dry	0.52	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	0.53		mg/kg-dry	U		0.53	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Acetone	67-64-1	0.53		mg/kg-dry	U		0.53	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.053		mg/kg-dry	U	UJ	0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	1.7		mg/kg-dry	v		0.26	mg/kg-dry	0.01	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	0.53		mg/kg-dry	U		0.53	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	0.53		mg/kg-dry	U		0.53	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2956	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.053		mg/kg-dry	U		0.053	mg/kg-dry	0.01	mg/kg-dry
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.6		mg/kg-dry	U		2.6	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.6		mg/kg-dry	U		2.6	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.6		mg/kg-dry	U		2.6	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.13		mg/kg-dry	U		0.13	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.13		mg/kg-dry	U		0.13	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.6		mg/kg-dry	U		2.6	mg/kg-dry		
MS-5	MS-5	I	1	P1-00357	Mine Waste	Tailings	Field Sample	10/17/2007	2947	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2793	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2794	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3010		mg/kg-dry	v		20	mg/kg-dry	20.89	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2801	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	10		mg/kg-dry	U		10	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10000		mg/kg-dry	v		5	mg/kg-dry	0.52	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2799	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.00115883	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2799	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009791014	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Barium	7440-39-3	508		mg/kg-dry	v		5	mg/kg-dry	1.04	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007314525	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.08	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2799	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001024033	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Chromium	7440-47-3	180		mg/kg-dry	v	J	0.4	mg/kg-dry	0.31	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Cobalt	7440-48-4	18		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Copper	7440-50-8	13		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Iron	7439-89-6	16400		mg/kg-dry	v		10	mg/kg-dry	10.44	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Lead	7439-92-1	8		mg/kg-dry	v		5	mg/kg-dry	1.04	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Manganese	7439-96-5	268		mg/kg-dry	v	J	5	mg/kg-dry	0.04	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2800	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Nickel	7440-02-0	43		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001335946	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2799	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001028736	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Vanadium	7440-62-2	25		mg/kg-dry	v		1	mg/kg-dry	0.41	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2798	SW6010B	O	Z	Metals	Zinc	7440-66-6	13		mg/kg-dry	v		5	mg/kg-dry	0.2	mg/kg-dry
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2795	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.04		wt%	v		0.01	wt%	0.01	wt%
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2797	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	4.3		wt%	v		0.2	wt%	0.01	wt%
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2792	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.4		s.u.	v		0.1	s.u.		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.1		mg/kg-dry	U		0.1	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.1		mg/kg-dry	U		0.1	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-6	MS-6	I	1	P1-00355	Mine Waste	Tailings	Field Sample	10/16/2007	2796	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2874	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2875	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3720		mg/kg-dry	v		20	mg/kg-dry	22.9	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2881	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	11		mg/kg-dry	U		11	mg/kg-dry		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11700		mg/kg-dry	v		5	mg/kg-dry	0.57	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2879	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001270332	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2879	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Barium	7440-39-3	577		mg/kg-dry	v		5	mg/kg-dry	1.14	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.008018327	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.29	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2879	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001122566	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Chromium	7440-47-3	170		mg/kg-dry	v		0.4	mg/kg-dry	0.34	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Cobalt	7440-48-4	18		mg/kg-dry	v		5	mg/kg-dry	0.34	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Copper	7440-50-8	17		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Iron	7439-89-6	20000		mg/kg-dry	v		10	mg/kg-dry	11.45	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Lead	7439-92-1	8		mg/kg-dry	v		5	mg/kg-dry	1.14	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Manganese	7439-96-5	226		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2880	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Nickel	7440-02-0	39		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2879	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.00146449	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.11	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2879	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.00112772	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Vanadium	7440-62-2	39		mg/kg-dry	v		1	mg/kg-dry	0.45	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2878	SW6010B	O	Z	Metals	Zinc	7440-66-6	15		mg/kg-dry	v		5	mg/kg-dry	0.22	mg/kg-dry
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2876	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.11		wt%	v		0.01	wt%	0.01	wt%
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2877	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	13		wt%	v		0.2	wt%	0.01	wt%
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2873	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.9		s.u.	v		0.1	s.u.		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.034		mg/kg	U		0.034	mg/kg		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.4		mg/kg	U		1.4	mg/kg		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.4		mg/kg	U		1.4	mg/kg		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.4		mg/kg	U		1.4	mg/kg		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.034		mg/kg	U		0.034	mg/kg		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.034		mg/kg	U		0.034	mg/kg		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.068		mg/kg	U		0.068	mg/kg		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.068		mg/kg	U		0.068	mg/kg		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.034		mg/kg	U		0.034	mg/kg		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.034		mg/kg	U		0.034	mg/kg		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.4		mg/kg	U		1.4	mg/kg		
MS-7	MS-7	I	1	P1-00294	Mine Waste	Tailings	Field Sample	10/16/2007	2732	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.034		mg/kg	U		0.034	mg/kg		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2883	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2884	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2970		mg/kg-dry	v		20	mg/kg-dry	21.09	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2891	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	11		mg/kg-dry	U		11	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11500		mg/kg-dry	v		5	mg/kg-dry	0.52	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2889	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001169831	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2889	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.009883966	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Barium	7440-39-3	591		mg/kg-dry	v		5	mg/kg-dry	1.05	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.007383966	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.1	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2889	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001033755	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Chromium	7440-47-3	191		mg/kg-dry	v		0.4	mg/kg-dry	0.31	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Cobalt	7440-48-4	17		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Copper	7440-50-8	11		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Iron	7439-89-6	15700		mg/kg-dry	v		10	mg/kg-dry	10.54	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5	mg/kg-dry	1.05	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Manganese	7439-96-5	190		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2890	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Nickel	7440-02-0	38		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2889	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001348629	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.1	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2889	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001038502	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Vanadium	7440-62-2	25		mg/kg-dry	v		1	mg/kg-dry	0.42	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2888	SW6010B	O	Z	Metals	Zinc	7440-66-6	14		mg/kg-dry	v		5	mg/kg-dry	0.21	mg/kg-dry
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2885	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.13		wt%	v		0.01	wt%	0.01	wt%
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2887	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	5.2		wt%	v		0.2	wt%	0.01	wt%
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2882	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8		s.u.	v		0.1	s.u.		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.1		mg/kg-dry	U		2.1	mg/kg-dry		
MS-8	MS-8	I	1	P1-00330	Mine Waste	Tailings	Field Sample	10/16/2007	2886	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2933	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2934	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	4360		mg/kg-dry	v		20	mg/kg-dry	23.01	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2940	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	8.4		mg/kg-dry	u		12	mg/kg-dry		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12000		mg/kg-dry	v		5	mg/kg-dry	0.57	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2938	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001276179	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2938	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Barium	7440-39-3	605		mg/kg-dry	v		5	mg/kg-dry	1.15	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.008055236	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.3	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2938	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001127733	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Chromium	7440-47-3	169		mg/kg-dry	v		0.4	mg/kg-dry	0.34	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Cobalt	7440-48-4	17		mg/kg-dry	v		5	mg/kg-dry	0.34	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Copper	7440-50-8	11		mg/kg-dry	v		5	mg/kg-dry	0.23	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Iron	7439-89-6	16600		mg/kg-dry	v		10	mg/kg-dry	11.5	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Lead	7439-92-1	8		mg/kg-dry	v		5	mg/kg-dry	1.15	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Manganese	7439-96-5	187		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2939	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Nickel	7440-02-0	38		mg/kg-dry	v		5	mg/kg-dry	0.23	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2938	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001471231	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.11	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2938	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001132911	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Vanadium	7440-62-2	27		mg/kg-dry	v		1	mg/kg-dry	0.46	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2937	SW6010B	O	Z	Metals	Zinc	7440-66-6	14		mg/kg-dry	v		5	mg/kg-dry	0.23	mg/kg-dry
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2935	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.09		wt%	v		0.01	wt%	0.01	wt%
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2936	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	13		wt%	v		0.2	wt%	0.01	wt%
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2932	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8		s.u.	v		0.1	s.u.		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.038		mg/kg	U		0.038	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.5		mg/kg	U		1.5	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.5		mg/kg	U		1.5	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.5		mg/kg	U		1.5	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.038		mg/kg	U		0.038	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.038		mg/kg	U		0.038	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.075		mg/kg	U		0.075	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.075		mg/kg	U		0.075	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.038		mg/kg	U		0.038	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.038		mg/kg	U		0.038	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.5		mg/kg	U		1.5	mg/kg		
MS-9	MS-9	I	1	P1-00356	Mine Waste	Tailings	Field Sample	10/16/2007	2802	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.038		mg/kg	U		0.038	mg/kg		
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24619	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		26.5		mg/kg-dry	U		26.5		26.51	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24625	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	372		mg/kg-dry	v		27		3.04	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Aluminum	7429-90-5	27100		mg/kg-dry	v		7		5.36	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24622	SW6020	O	Z	Metals	Antimony	7440-36-0	1		mg/kg-dry	U		1		0.07	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24622	SW6020	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg-dry	v		1		0.03	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Barium	7440-39-3	864		mg/kg-dry	v		1		0.05	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.01	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.02	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Chromium	7440-47-3	223		mg/kg-dry	v		1		0.12	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Cobalt	7440-48-4	26		mg/kg-dry	v		1		0.24	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Copper	7440-50-8	87		mg/kg-dry	v		1		0.54	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Iron	7439-89-6	40700		mg/kg-dry	v		5		2.18	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Lead	7439-92-1	36		mg/kg-dry	v		1		1.32	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Magnesium	7439-95-4	32000		mg/kg-dry	v		5		1.39	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Manganese	7439-96-5	800		mg/kg-dry	v		1		0.08	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24623	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.02	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Nickel	7440-02-0	50		mg/kg-dry	v		1		0.29	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24622	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	U		1		0.67	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.61	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Strontium	7440-24-6	270		mg/kg-dry	v		1		0.01	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	U		2		0.69	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Vanadium	7440-62-2	79		mg/kg-dry	v		1		0.36	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24621	SW6010B	O	Z	Metals	Zinc	7440-66-6	450		mg/kg-dry	v		1		0.47	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24618	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	6		mg/kg-dry	v		1		0.26	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24627	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.045		mg/kg-dry	U		0.045		0.01	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24627	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.045		mg/kg-dry	U		0.045			
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24627	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.045		mg/kg-dry	U		0.045			
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24627	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.045		mg/kg-dry	U		0.045			
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24627	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.045		mg/kg-dry	U		0.045			
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24627	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.045		mg/kg-dry	U		0.045		0.01	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24627	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.045		mg/kg-dry	U		0.045		0.01	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24627	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.045		mg/kg-dry	U		0.045			
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24627	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.045		mg/kg-dry	U		0.045			
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.011		mg/kg-dry	U		0.011		0.003845134	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.011		mg/kg-dry	U		0.011		0.000771679	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.053		mg/kg-dry	U		0.053		0.004587643	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.13		mg/kg-dry	U		0.13		0.006709096	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.027		mg/kg-dry	U		0.027		0.001280827	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0045		mg/kg-dry	U		0.0045		0.000689472	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0045		mg/kg-dry	U		0.0045		0.000556881	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0045		mg/kg-dry	U		0.0045		0.00071599	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.027		mg/kg-dry	U		0.027		0.001728984	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0045		mg/kg-dry	U		0.0045		0.000556881	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0045		mg/kg-dry	U		0.0045		0.000265182	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0045		mg/kg-dry	U		0.0045		0.000662954	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.13		mg/kg-dry	U		0.13		0.00448157	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0045		mg/kg-dry	U		0.0045		0.000397772	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.027		mg/kg-dry	U		0.027		0.002094935	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.045		mg/kg-dry	U		0.045		0.02	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.053		mg/kg-dry	U		0.053		0.001243702	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.13		mg/kg-dry	U		0.13		0.02	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0045		mg/kg-dry	U		0.0045		0.00071599	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.013		mg/kg-dry	U		0.013		0.005833996	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.053		mg/kg-dry	U		0.053		0.004746752	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0045		mg/kg-dry	U		0.0045		0.000397772	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.053		mg/kg-dry	U		0.053		0.01	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0045		mg/kg-dry	U		0.0045		0.000503845	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0045		mg/kg-dry	U		0.0045		0.0002917	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0045		mg/kg-dry	U		0.0045		0.000424291	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0045		mg/kg-dry	U		0.0045		0.000344736	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0045		mg/kg-dry	U		0.0045		0.0005834	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0045		mg/kg-dry	U		0.0045		0.000397772	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0045		mg/kg-dry	U		0.0045		0.000318218	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0045		mg/kg-dry	U		0.0045		0.000371254	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0045		mg/kg-dry	U		0.0045		0.000503845	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0045		mg/kg-dry	U		0.0045		0.0002917	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	MCPA	94-74-6	11		mg/kg-dry	U		11		1.27	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	MCPP	93-65-2	11		mg/kg-dry	U		11		1.27	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0045		mg/kg-dry	U		0.0045		0.000742509	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0053		mg/kg-dry	U		0.0053		0.000737205	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.027		mg/kg-dry	U		0.027		0.004375497	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24626	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.22		mg/kg-dry	U		0.22		0.07	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24625	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	99		mg/kg-dry	v		27		2.83	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24624	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	8.6		mg/kg-dry	U		8.6		2.02	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24620	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	62		wt%	v		0.2		0.01	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24617	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	4		%-as rcvd	v		0.1		0.009	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24616	ASA10-3	O	Z	Sediment/soil quality parameters	pH		6		s.u.	v		0.1		0.1	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.44		mg/kg-dry	U		0.44		0.33	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.44		mg/kg-dry	U		0.44		0.16	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.44		mg/kg-dry	U		0.44		0.17	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.44		mg/kg-dry	U		0.44		0.1	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	4.4		mg/kg-dry	U		4.4		0.13	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.44		mg/kg-dry	U		0.44		0.16	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.44		mg/kg-dry	U		0.44		0.16	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.44		mg/kg-dry	U		0.44		0.18	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.44		mg/kg-dry	U		0.44		0.1	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.44		mg/kg-dry	U		0.44		0.19	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.44		mg/kg-dry	U		0.44		0.38	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	0.44		mg/kg-dry	U		0.44		0.11	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	4.4		mg/kg-dry	U		4.4		0.15	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.44		mg/kg-dry	U		0.44		0.17	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.44		mg/kg-dry	U		0.44		0.13	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.44		mg/kg-dry	U		0.44		0.18	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24628	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.027		mg/kg-dry	U		0.027		0.002238133	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	4.4		mg/kg-dry	U		4.4		0.09	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.44		mg/kg-dry	U		0.44		0.16	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.44		mg/kg-dry	U		0.44		0.16	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.44		mg/kg-dry	U		0.44		0.12	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.44		mg/kg-dry	U		0.44		0.13	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.44		mg/kg-dry	U		0.44		0.18	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.44		mg/kg-dry	U		0.44		0.18	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.44		mg/kg-dry	U		0.44		0.31	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.44		mg/kg-dry	U		0.44		0.3	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.44		mg/kg-dry	U		0.44		0.11	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.44		mg/kg-dry	U		0.44		0.25	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.44		mg/kg-dry	U		0.44		0.21	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.44		mg/kg-dry	U		0.44		0.21	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.44		mg/kg-dry	U		0.44		0.12	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.44		mg/kg-dry	U		0.44		0.12	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.44		mg/kg-dry	U		0.44		0.26	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.44		mg/kg-dry	U		0.44		0.1	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.44		mg/kg-dry	U		0.44		0.15	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.44		mg/kg-dry	U		0.44		0.12	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.44		mg/kg-dry	U		0.44		0.09	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.44		mg/kg-dry	U		0.44		0.12	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.44		mg/kg-dry	U		0.44		0.12	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.44		mg/kg-dry	U		0.44		0.2	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.44		mg/kg-dry	U		0.44		0.12	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.44		mg/kg-dry	U		0.44		0.1	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.44		mg/kg-dry	U		0.44		0.13	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.44		mg/kg-dry	U		0.44		0.15	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.44		mg/kg-dry	U		0.44		0.11	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.44		mg/kg-dry	U		0.44		0.23	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.44		mg/kg-dry	U		0.44		0.13	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.44		mg/kg-dry	U		0.44		0.18	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.44		mg/kg-dry	U		0.44		0.1	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.44		mg/kg-dry	U		0.44		0.3	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.44		mg/kg-dry	U		0.44		0.21	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	4.4		mg/kg-dry	U		4.4		0.23	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.44		mg/kg-dry	U		0.44		0.14	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.44		mg/kg-dry	U		0.44		0.07	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.44		mg/kg-dry	U		0.44		0.1	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.44		mg/kg-dry	U		0.44		0.19	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.44		mg/kg-dry	U		0.44		0.12	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.44		mg/kg-dry	U		0.44		0.11	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.44		mg/kg-dry	U		0.44		0.15	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.44		mg/kg-dry	U		0.44		0.16	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.44		mg/kg-dry	U		0.44		0.25	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.44		mg/kg-dry	U		0.44		0.14	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.44		mg/kg-dry	U		0.44		0.13	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.44		mg/kg-dry	U		0.44		0.17	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24629	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.44		mg/kg-dry	U		0.44		0.27	
Banana Lake	Banana Lake	VB	5	REF4	Sediment		Field Sample	4/28/2012	24624	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	8.6		mg/kg-dry	U		8.6		1.94	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24633	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		21.7		mg/kg-dry	U		21.7		21.72	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24639	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	310		mg/kg-dry	v		22		2.49	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Aluminum	7429-90-5	7870		mg/kg-dry	v		8		5.88	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24636	SW6020	O	Z	Metals	Antimony	7440-36-0	1		mg/kg-dry	U		1		0.08	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24636	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		1		0.04	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Barium	7440-39-3	102		mg/kg-dry	v		1		0.06	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.01	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.02	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Chromium	7440-47-3	7		mg/kg-dry	v		1		0.13	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Cobalt	7440-48-4	4		mg/kg-dry	v		1		0.27	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Copper	7440-50-8	12		mg/kg-dry	v		1		0.59	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Iron	7439-89-6	11600		mg/kg-dry	v		5		2.23	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Lead	7439-92-1	8		mg/kg-dry	v		2		1.44	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Magnesium	7439-95-4	4080		mg/kg-dry	v		5		1.52	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Manganese	7439-96-5	80		mg/kg-dry	v		1		0.08	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24637	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.02	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Nickel	7440-02-0	7		mg/kg-dry	v		1		0.32	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24636	SW6020	O	Z	Metals	Selenium	7782-49-2	2		mg/kg-dry	v		1		0.73	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.67	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Strontium	7440-24-6	18		mg/kg-dry	v		1		0.02	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Tin	7440-31-5	5		mg/kg-dry	v		3		0.75	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Vanadium	7440-62-2	8		mg/kg-dry	v		1		0.4	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24635	SW6010B	O	Z	Metals	Zinc	7440-66-6	36		mg/kg-dry	v		1		0.52	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24632	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	17		mg/kg-dry	v		1		0.21	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24641	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.037		mg/kg-dry	U		0.037		0.01	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24641	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.037		mg/kg-dry	U		0.037			
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24641	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.037		mg/kg-dry	U		0.037			
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24641	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.037		mg/kg-dry	U		0.037			
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24641	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.037		mg/kg-dry	U		0.037			
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24641	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.037		mg/kg-dry	U		0.037		0.01	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24641	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.037		mg/kg-dry	U		0.037		0.01	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24641	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.037		mg/kg-dry	U		0.037			
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24641	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.037		mg/kg-dry	U		0.037			
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0087		mg/kg-dry	U		0.0087		0.00315012	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0087		mg/kg-dry	U		0.0087		0.000632196	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.043		mg/kg-dry	U		0.043		0.003758419	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.11		mg/kg-dry	U		0.11		0.005496416	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.022		mg/kg-dry	U		0.022		0.001049316	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0037		mg/kg-dry	U		0.0037		0.000564849	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0037		mg/kg-dry	U		0.0037		0.000456224	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0037		mg/kg-dry	U		0.0037		0.000586574	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.022		mg/kg-dry	U		0.022		0.001416468	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0037		mg/kg-dry	U		0.0037		0.000456224	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0037		mg/kg-dry	U		0.0037		0.00021725	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0037		mg/kg-dry	U		0.0037		0.000543124	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.11		mg/kg-dry	U		0.11		0.003671519	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0037		mg/kg-dry	U		0.0037		0.000325874	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.022		mg/kg-dry	U		0.022		0.001716272	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.037		mg/kg-dry	U		0.037		0.02	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.043		mg/kg-dry	U		0.043		0.001018901	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.11		mg/kg-dry	U		0.11		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0037		mg/kg-dry	U		0.0037		0.000586574	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.011		mg/kg-dry	U		0.011		0.004779492	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.043		mg/kg-dry	U		0.043		0.003888768	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0037		mg/kg-dry	U		0.0037		0.000325874	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.043		mg/kg-dry	U		0.043		0.008559635	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0037		mg/kg-dry	U		0.0037		0.000412774	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0037		mg/kg-dry	U		0.0037		0.000238975	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0037		mg/kg-dry	U		0.0037		0.000347599	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0037		mg/kg-dry	U		0.0037		0.000282425	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0037		mg/kg-dry	U		0.0037		0.000477949	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0037		mg/kg-dry	U		0.0037		0.000325874	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0037		mg/kg-dry	U		0.0037		0.0002607	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0037		mg/kg-dry	U		0.0037		0.000304149	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0037		mg/kg-dry	U		0.0037		0.000412774	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0037		mg/kg-dry	U		0.0037		0.000238975	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	MCPA	94-74-6	8.7		mg/kg-dry	U		8.7		1.04	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	MCPP	93-65-2	8.7		mg/kg-dry	U		8.7		1.04	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0037		mg/kg-dry	U		0.0037		0.000608299	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0043		mg/kg-dry	U		0.0043		0.000603954	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.022		mg/kg-dry	U		0.022		0.003584619	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24640	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.18		mg/kg-dry	U		0.18		0.05	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24639	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	115		mg/kg-dry	v		22		2.32	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24638	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	6.7		mg/kg-dry	U		6.7		1.57	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24634	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	54		wt%	v		0.2		0.01	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24631	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	1.8		%-as rcvd	v		0.1		0.009	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24630	ASA10-3	O	Z	Sediment/soil quality parameters	pH		6.9		s.u.	v		0.1		0.1	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.36		mg/kg-dry	U		0.36		0.27	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.36		mg/kg-dry	U		0.36		0.13	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.36		mg/kg-dry	U		0.36		0.14	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.36		mg/kg-dry	U		0.36		0.08	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	3.6		mg/kg-dry	U		3.6		0.11	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.36		mg/kg-dry	U		0.36		0.13	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.36		mg/kg-dry	U		0.36		0.13	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.36		mg/kg-dry	U		0.36		0.14	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.36		mg/kg-dry	U		0.36		0.08	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.36		mg/kg-dry	U		0.36		0.16	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.36		mg/kg-dry	U		0.36		0.31	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	0.36		mg/kg-dry	U		0.36		0.09	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	3.6		mg/kg-dry	U		3.6		0.12	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.36		mg/kg-dry	U		0.36		0.14	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.36		mg/kg-dry	U		0.36		0.1	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.36		mg/kg-dry	U		0.36		0.15	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24642	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.022		mg/kg-dry	U		0.022		0.001833587	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	3.6		mg/kg-dry	U		3.6		0.07	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.36		mg/kg-dry	U		0.36		0.13	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.36		mg/kg-dry	U		0.36		0.13	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.36		mg/kg-dry	U		0.36		0.1	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.36		mg/kg-dry	U		0.36		0.11	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.36		mg/kg-dry	U		0.36		0.15	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.36		mg/kg-dry	U		0.36		0.15	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.36		mg/kg-dry	U		0.36		0.26	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.36		mg/kg-dry	U		0.36		0.24	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.36		mg/kg-dry	U		0.36		0.09	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.36		mg/kg-dry	U		0.36		0.21	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.36		mg/kg-dry	U		0.36		0.17	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.36		mg/kg-dry	U		0.36		0.17	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.36		mg/kg-dry	U		0.36		0.09	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.36		mg/kg-dry	U		0.36		0.1	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.36		mg/kg-dry	U		0.36		0.21	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.36		mg/kg-dry	U		0.36		0.08	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.36		mg/kg-dry	U		0.36		0.12	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.36		mg/kg-dry	U		0.36		0.1	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.36		mg/kg-dry	U		0.36		0.08	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.36		mg/kg-dry	U		0.36		0.1	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.36		mg/kg-dry	U		0.36		0.1	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.36		mg/kg-dry	U		0.36		0.16	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.36		mg/kg-dry	U		0.36		0.1	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.36		mg/kg-dry	U		0.36		0.08	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.36		mg/kg-dry	U		0.36		0.11	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.36		mg/kg-dry	U		0.36		0.12	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.36		mg/kg-dry	U		0.36		0.09	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.36		mg/kg-dry	U		0.36		0.19	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.36		mg/kg-dry	U		0.36		0.1	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.36		mg/kg-dry	U		0.36		0.15	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.36		mg/kg-dry	U		0.36		0.08	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.36		mg/kg-dry	U		0.36		0.24	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.36		mg/kg-dry	U		0.36		0.17	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	3.6		mg/kg-dry	U		3.6		0.19	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.36		mg/kg-dry	U		0.36		0.11	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.36		mg/kg-dry	U		0.36		0.05	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.36		mg/kg-dry	U		0.36		0.08	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.36		mg/kg-dry	U		0.36		0.16	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.36		mg/kg-dry	U		0.36		0.09	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.36		mg/kg-dry	U		0.36		0.09	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.36		mg/kg-dry	U		0.36		0.12	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.36		mg/kg-dry	U		0.36		0.13	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.36		mg/kg-dry	U		0.36		0.2	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.36		mg/kg-dry	U		0.36		0.11	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.36		mg/kg-dry	U		0.36		0.1	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.36		mg/kg-dry	U		0.36		0.14	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24643	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.36		mg/kg-dry	U		0.36		0.22	
Bobtail Pond 1	Bobtail Pond 1	VB	5	REF5	Sediment		Field Sample	4/28/2012	24638	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	6.7		mg/kg-dry	U		6.7		1.5	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24647	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		524		mg/kg-dry	v		32.7		32.72	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24653	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	650		mg/kg-dry	v		33		3.76	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10400		mg/kg-dry	v		7		5.39	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24650	SW6020	O	Z	Metals	Antimony	7440-36-0	1		mg/kg-dry	U		1		0.07	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24650	SW6020	O	Z	Metals	Arsenic	7440-38-2	4		mg/kg-dry	v		1		0.03	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Barium	7440-39-3	231		mg/kg-dry	v		1		0.05	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.01	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.02	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Chromium	7440-47-3	8		mg/kg-dry	v		1		0.12	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Cobalt	7440-48-4	9		mg/kg-dry	v		1		0.24	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Copper	7440-50-8	17		mg/kg-dry	v		1		0.54	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Iron	7439-89-6	14500		mg/kg-dry	v		5		2.05	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Lead	7439-92-1	15		mg/kg-dry	v		1		1.32	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Magnesium	7439-95-4	3540		mg/kg-dry	v		5		1.4	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Manganese	7439-96-5	211		mg/kg-dry	v		1		0.08	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24651	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.03	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Nickel	7440-02-0	10		mg/kg-dry	v		1		0.29	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24650	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	U		1		0.67	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.62	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Strontium	7440-24-6	26		mg/kg-dry	v		1		0.02	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	U		2		0.69	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Vanadium	7440-62-2	11		mg/kg-dry	v		1		0.37	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24649	SW6010B	O	Z	Metals	Zinc	7440-66-6	50		mg/kg-dry	v		1		0.47	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24646	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	57		mg/kg-dry	v		1		0.32	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24655	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.056		mg/kg-dry	U		0.056		0.01	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24655	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.056		mg/kg-dry	U		0.056			
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24655	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.056		mg/kg-dry	U		0.056			
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24655	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.056		mg/kg-dry	U		0.056			
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24655	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.056		mg/kg-dry	U		0.056			
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24655	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.056		mg/kg-dry	U		0.056		0.01	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24655	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.056		mg/kg-dry	U		0.056		0.01	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24655	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.056		mg/kg-dry	U		0.056			
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24655	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.056		mg/kg-dry	U		0.056			
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.013		mg/kg-dry	U		0.013		0.004744765	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.013		mg/kg-dry	U		0.013		0.000952225	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.065		mg/kg-dry	U		0.065		0.005660995	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.16		mg/kg-dry	U		0.16		0.008278796	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.033		mg/kg-dry	U		0.033		0.001580498	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.056		mg/kg-dry	U		0.056		0.008507854	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.056		mg/kg-dry	U		0.056		0.006871728	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.056		mg/kg-dry	U		0.056		0.008835079	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.033		mg/kg-dry	U		0.033		0.002133508	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.056		mg/kg-dry	U		0.056		0.006871728	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.056		mg/kg-dry	U		0.056		0.003272252	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.056		mg/kg-dry	U		0.056		0.008180629	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.16		mg/kg-dry	U		0.16		0.005530105	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.056		mg/kg-dry	U		0.056		0.004908377	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.033		mg/kg-dry	U		0.033		0.002585079	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.56		mg/kg-dry	U		0.56		0.31	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.065		mg/kg-dry	U		0.065		0.001534686	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.16		mg/kg-dry	U		0.16		0.02	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.056		mg/kg-dry	U		0.056		0.008835079	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.016		mg/kg-dry	U		0.016		0.007198953	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.065		mg/kg-dry	U		0.065		0.00585733	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.056		mg/kg-dry	U		0.056		0.004908377	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.065		mg/kg-dry	U		0.065		0.01	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.056		mg/kg-dry	U		0.056		0.006217278	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.056		mg/kg-dry	U		0.056		0.003599477	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.056		mg/kg-dry	U		0.056		0.005235603	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.056		mg/kg-dry	U		0.056		0.004253927	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.056		mg/kg-dry	U		0.056		0.007198953	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.056		mg/kg-dry	U		0.056		0.004908377	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.056		mg/kg-dry	U		0.056		0.003926702	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.056		mg/kg-dry	U		0.056		0.004581152	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.056		mg/kg-dry	U		0.056		0.006217278	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.056		mg/kg-dry	U		0.056		0.003599477	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	MCPA	94-74-6	13		mg/kg-dry	U		13		1.57	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	MCPP	93-65-2	13		mg/kg-dry	U		13		1.57	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.056		mg/kg-dry	U		0.056		0.009162304	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0065		mg/kg-dry	U		0.0065		0.000909686	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.033		mg/kg-dry	U		0.033		0.005399215	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24654	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	2.7		mg/kg-dry	U		2.7		0.86	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24653	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	160		mg/kg-dry	v		33		3.5	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24652	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	11		mg/kg-dry	U		11		2.6	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24648	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	69		wt%	v		0.2		0.01	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24645	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	3.3		%-as rcvd	v		0.1		0.009	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24644	ASA10-3	O	Z	Sediment/soil quality parameters	pH		6.8		s.u.	v		0.1		0.1	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.55		mg/kg-dry	U		0.55		0.41	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.55		mg/kg-dry	U		0.55		0.2	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.55		mg/kg-dry	U		0.55		0.21	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.55		mg/kg-dry	U		0.55		0.13	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	5.5		mg/kg-dry	U		5.5		0.16	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.55		mg/kg-dry	U		0.55		0.2	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.55		mg/kg-dry	U		0.55		0.2	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.55		mg/kg-dry	U		0.55		0.22	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.55		mg/kg-dry	U		0.55		0.13	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.55		mg/kg-dry	U		0.55		0.24	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.55		mg/kg-dry	U		0.55		0.47	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	0.55		mg/kg-dry	U		0.55		0.14	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	5.5		mg/kg-dry	U		5.5		0.19	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.55		mg/kg-dry	U		0.55		0.21	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.55		mg/kg-dry	U		0.55		0.16	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.55		mg/kg-dry	U		0.55		0.23	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24656	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.033		mg/kg-dry	U		0.033		0.00276178	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	5.5		mg/kg-dry	U		5.5		0.11	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.55		mg/kg-dry	U		0.55		0.19	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.55		mg/kg-dry	U		0.55		0.19	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.55		mg/kg-dry	U		0.55		0.15	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.55		mg/kg-dry	U		0.55		0.17	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.55		mg/kg-dry	U		0.55		0.23	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.55		mg/kg-dry	U		0.55		0.23	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.55		mg/kg-dry	U		0.55		0.39	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.55		mg/kg-dry	U		0.55		0.37	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.55		mg/kg-dry	U		0.55		0.13	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.55		mg/kg-dry	U		0.55		0.31	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.55		mg/kg-dry	U		0.55		0.27	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.55		mg/kg-dry	U		0.55		0.26	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.55		mg/kg-dry	U		0.55		0.14	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.55		mg/kg-dry	U		0.55		0.15	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.55		mg/kg-dry	U		0.55		0.32	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.55		mg/kg-dry	U		0.55		0.13	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.55		mg/kg-dry	U		0.55		0.18	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.55		mg/kg-dry	U		0.55		0.15	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.55		mg/kg-dry	U		0.55		0.12	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.55		mg/kg-dry	U		0.55		0.15	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.55		mg/kg-dry	U		0.55		0.15	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.55		mg/kg-dry	U		0.55		0.25	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.55		mg/kg-dry	U		0.55		0.15	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.55		mg/kg-dry	U		0.55		0.12	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.55		mg/kg-dry	U		0.55		0.17	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.55		mg/kg-dry	U		0.55		0.19	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.55		mg/kg-dry	U		0.55		0.14	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.55		mg/kg-dry	U		0.55		0.28	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.55		mg/kg-dry	U		0.55		0.16	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.55		mg/kg-dry	U		0.55		0.23	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.55		mg/kg-dry	U		0.55		0.13	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.55		mg/kg-dry	U		0.55		0.37	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.55		mg/kg-dry	U		0.55		0.26	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	5.5		mg/kg-dry	U		5.5		0.29	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.55		mg/kg-dry	U		0.55		0.17	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.55		mg/kg-dry	U		0.55		0.08	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.55		mg/kg-dry	U		0.55		0.12	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.55		mg/kg-dry	U		0.55		0.24	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.55		mg/kg-dry	U		0.55		0.14	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.55		mg/kg-dry	U		0.55		0.14	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.55		mg/kg-dry	U		0.55		0.18	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.55		mg/kg-dry	U		0.55		0.2	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.55		mg/kg-dry	U		0.55		0.31	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.55		mg/kg-dry	U		0.55		0.17	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.55		mg/kg-dry	U		0.55		0.16	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.55		mg/kg-dry	U		0.55		0.21	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24657	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.55		mg/kg-dry	U		0.55		0.33	
Bobtail Pond 2	Bobtail Pond 2	VB	5	REF6	Sediment		Field Sample	4/28/2012	24652	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	11		mg/kg-dry	U		11		2.49	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8540		mg/kg-dry	v	J	5		0.7	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19470	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000943	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19470	SW6020	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg-dry	v		2		0.00796	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Barium	7440-39-3	263		mg/kg-dry	v		5		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.63	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.11	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Chromium	7440-47-3	8		mg/kg-dry	v	J	5		0.15	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Cobalt	7440-48-4	8		mg/kg-dry	v		5		0.28	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Copper	7440-50-8	14		mg/kg-dry	v		5		0.13	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Iron	7439-89-6	18900		mg/kg-dry	v		9		8.51	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5		0.93	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Manganese	7439-96-5	1810		mg/kg-dry	v	J	5		0.04	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19471	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Nickel	7440-02-0	11		mg/kg-dry	v		5		0.32	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		2.51	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.23	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19470	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000837	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Vanadium	7440-62-2	9		mg/kg-dry	v		1		0.2	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19469	SW6010B	O	Z	Metals	Zinc	7440-66-6	42		mg/kg-dry	v		5		0.21	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19473	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0068		mg/kg-dry	U		0.0068		0.000612	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19473	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0068		mg/kg-dry	U		0.0068		0.00194	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19473	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.034		mg/kg-dry	U		0.034		0.0015	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.029		mg/kg-dry	U		0.029		0.00442	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.029		mg/kg-dry	U		0.029		0.00357	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.029		mg/kg-dry	U		0.029		0.00459	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.029		mg/kg-dry	U		0.029		0.00357	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.029		mg/kg-dry	U		0.029		0.0017	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.029		mg/kg-dry	U		0.029		0.00425	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.029		mg/kg-dry	U		0.029		0.00255	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.29		mg/kg-dry	U		0.29		0.16	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19473	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.085		mg/kg-dry	U		0.085		0.04	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.029		mg/kg-dry	U		0.029		0.00459	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19473	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0085		mg/kg-dry	U		0.0085		0.000731	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19473	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.034		mg/kg-dry	U		0.034		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.029		mg/kg-dry	U		0.029		0.00255	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.029		mg/kg-dry	U		0.029		0.00323	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.029		mg/kg-dry	U		0.029		0.00187	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.029		mg/kg-dry	U		0.029		0.00272	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.029		mg/kg-dry	U		0.029		0.00221	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.029		mg/kg-dry	U		0.029		0.00374	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.029		mg/kg-dry	U		0.029		0.00255	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.029		mg/kg-dry	U		0.029		0.00204	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.029		mg/kg-dry	U		0.029		0.00238	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.029		mg/kg-dry	U		0.029		0.00323	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.029		mg/kg-dry	U		0.029		0.00187	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.034		mg/kg-dry	U		0.034			
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19473	SW8151A	O	Z	Pesticides	MCPA	94-74-6	6.8		mg/kg-dry	U		6.8		0.69	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19473	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	6.8		mg/kg-dry	U		6.8		0.98	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.029		mg/kg-dry	U		0.029		0.00476	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19473	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0034		mg/kg-dry	U		0.0034		0.00185	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19472	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	2.8		mg/kg-dry	U		2.8		0.45	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19468	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.35		wt%	v		0.01		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19466	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	41.2		wt%	v		0.2		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19467	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.8		s.u.	v		0.1			
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19466	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	58.8		wt%	v		0.01		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	0.28		mg/kg-dry	U		0.28		0.08	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	0.28		mg/kg-dry	U		0.28			
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.28		mg/kg-dry	U		0.28		0.07	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.28		mg/kg-dry	U		0.28		0.05	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.28		mg/kg-dry	U		0.28		0.08	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.28		mg/kg-dry	U		0.28		0.07	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	0.57		mg/kg-dry	U		0.57		0.06	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.28		mg/kg-dry	U		0.28		0.04	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.28		mg/kg-dry	U		0.28		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.28		mg/kg-dry	U		0.28		0.09	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.28		mg/kg-dry	U		0.28		0.06	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	0.57		mg/kg-dry	U		0.57		0.05	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.28		mg/kg-dry	U		0.28		0.06	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	3,3`-Dichlorobenzidine	91-94-1	1.1		mg/kg-dry	U		1.1		0.21	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	0.57		mg/kg-dry	U		0.57		0.15	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	0.57		mg/kg-dry	U		0.57		0.11	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.28		mg/kg-dry	U		0.28		0.06	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.28		mg/kg-dry	U		0.28		0.09	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.28		mg/kg-dry	U		0.28		0.06	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	0.57		mg/kg-dry	U		0.57		0.05	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.57		mg/kg-dry	U		0.57		0.04	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	0.28		mg/kg-dry	U		0.28		0.05	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	0.28		mg/kg-dry	U		0.28			
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	0.28		mg/kg-dry	U	UJ	0.28			
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.28		mg/kg-dry	U		0.28		0.06	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.28		mg/kg-dry	U		0.28		0.08	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.28		mg/kg-dry	U		0.28		0.08	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.28		mg/kg-dry	U		0.28		0.12	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.28		mg/kg-dry	U		0.28		0.05	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	0.28		mg/kg-dry	U	UJ	0.28			
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	0.28		mg/kg-dry	U		0.28		0.07	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	0.28		mg/kg-dry	U		0.28		0.05	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.28		mg/kg-dry	U		0.28		0.06	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.28		mg/kg-dry	U		0.28		0.04	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.28		mg/kg-dry	U		0.28		0.44	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.28		mg/kg-dry	U		0.28		0.09	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.28		mg/kg-dry	U		0.28		0.05	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.28		mg/kg-dry	U		0.28		0.08	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.57		mg/kg-dry	U		0.57		0.04	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.28		mg/kg-dry	U		0.28		0.08	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.28		mg/kg-dry	U		0.28		0.07	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.28		mg/kg-dry	U		0.28		0.07	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.28		mg/kg-dry	U		0.28		0.09	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.28		mg/kg-dry	U		0.28		0.21	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.28		mg/kg-dry	U		0.28		0.06	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.28		mg/kg-dry	U		0.28		0.06	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	0.57		mg/kg-dry	U		0.57		0.05	
BTT-R1	BTT-R1	IIC	4	P2-01078	Sediment		Field Sample	10/3/2008	19474	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.28		mg/kg-dry	U		0.28		0.09	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24493	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		20		mg/kg-dry	U		20		13.96	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18907	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17061	E300.0	O	Z	Anions	Fluoride, 1:2		1.3		mg/kg-dry	v		1		0.01	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17062	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1140		mg/kg-dry	v	J	5		0.14	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18908	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2970		mg/kg-dry	v	J	5		0.14	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17069	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	22		mg/kg-dry	v		15			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18914	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	30		mg/kg-dry	v		14			
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24499	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	31		mg/kg-dry	v		14		1.6	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9970		mg/kg-dry	v		5		0.3	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10400		mg/kg-dry	v		5		0.58	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19522	SW6010B	O	Z	Metals	Aluminum	7429-90-5	7990		mg/kg-dry	v		5		0.56	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10700		mg/kg-dry	v	J	5		0.56	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Aluminum	7429-90-5	7300		mg/kg-dry	v		5		2.96	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.81	
CC-1	CC-1	**IIA**	**2**	**P2-00987**	**Sediment**		**Field Sample**	**9/14/2008**	18911	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**1.57**	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19523	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000758	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19479	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000758	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24496	SW6020	O	Z	Metals	Antimony	7440-36-0	1		mg/kg-dry	U		1		0.04	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.99	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.91	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19523	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.0064	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19479	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.0064	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24496	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		1		0.02	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Barium	7440-39-3	335		mg/kg-dry	v		5		0.01	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Barium	7440-39-3	304		mg/kg-dry	v		5		0.02	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19522	SW6010B	O	Z	Metals	Barium	7440-39-3	317		mg/kg-dry	v		5		0.02	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Barium	7440-39-3	430		mg/kg-dry	v		5		0.02	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Barium	7440-39-3	528		mg/kg-dry	v		1		0.03	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00482	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00927	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19521	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00898	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00898	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.006156119	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.56	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.01	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19521	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.92	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.92	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.04	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.09	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19521	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.09	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.09	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.01	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Chromium	7440-47-3	39		mg/kg-dry	v		5		0.06	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Chromium	7440-47-3	67		mg/kg-dry	v		5		0.12	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19522	SW6010B	O	Z	Metals	Chromium	7440-47-3	90		mg/kg-dry	v		5		0.12	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Chromium	7440-47-3	91		mg/kg-dry	v	J	5		0.12	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Chromium	7440-47-3	96		mg/kg-dry	v		1		0.06	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17067	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.14	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Cobalt	7440-48-4	11		mg/kg-dry	v		5		0.12	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5		0.23	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19522	SW6010B	O	Z	Metals	Cobalt	7440-48-4	14		mg/kg-dry	v		5		0.22	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Cobalt	7440-48-4	16		mg/kg-dry	v		5		0.22	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Cobalt	7440-48-4	12		mg/kg-dry	v		1		0.13	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Copper	7440-50-8	38		mg/kg-dry	v	J	5		0.06	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Copper	7440-50-8	30		mg/kg-dry	v		5		0.11	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19521	SW6010B	O	Z	Metals	Copper	7440-50-8	20		mg/kg-dry	v		5		0.11	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Copper	7440-50-8	22		mg/kg-dry	v		5		0.11	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Copper	7440-50-8	36		mg/kg-dry	v		1		0.3	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Iron	7439-89-6	22500		mg/kg-dry	v		5		3.67	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Iron	7439-89-6	19800		mg/kg-dry	v		7		7.06	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19522	SW6010B	O	Z	Metals	Iron	7439-89-6	18900		mg/kg-dry	v		7		6.84	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Iron	7439-89-6	22000		mg/kg-dry	v		7		6.84	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Iron	7439-89-6	27800		mg/kg-dry	v		5		1.2	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5		0.4	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Lead	7439-92-1	10		mg/kg-dry	v		5		0.77	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19521	SW6010B	O	Z	Metals	Lead	7439-92-1	6		mg/kg-dry	v		5		0.75	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Lead	7439-92-1	7		mg/kg-dry	v		5		0.75	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Lead	7439-92-1	15		mg/kg-dry	v		1		0.73	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Magnesium	7439-95-4	10200		mg/kg-dry	v		5		0.77	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Manganese	7439-96-5	775		mg/kg-dry	v		5		0.01	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Manganese	7439-96-5	541		mg/kg-dry	v		5		0.03	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19522	SW6010B	O	Z	Metals	Manganese	7439-96-5	605		mg/kg-dry	v		5		0.03	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Manganese	7439-96-5	687		mg/kg-dry	v	J	5		0.03	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Manganese	7439-96-5	1580		mg/kg-dry	v		1		0.04	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17068	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18913	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24497	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.01	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Nickel	7440-02-0	17		mg/kg-dry	v		5		0.14	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Nickel	7440-02-0	25		mg/kg-dry	v		5		0.26	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19521	SW6010B	O	Z	Metals	Nickel	7440-02-0	24		mg/kg-dry	v		5		0.26	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Nickel	7440-02-0	31		mg/kg-dry	v		5		0.26	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Nickel	7440-02-0	19		mg/kg-dry	v		1		0.16	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		1.08	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		2.08	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19521	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		2.02	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		2.02	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24496	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	U		1		0.37	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.1	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.19	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19521	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.18	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.18	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.34	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Strontium	7440-24-6	316		mg/kg-dry	v		1		0.01	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17066	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000722	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18912	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00139	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19523	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000672	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19479	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000673	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	U		2		0.38	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17066	SW6020	O	Z	Metals	Vanadium	7440-62-2	58		mg/kg-dry	v		1		0.03	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Vanadium	7440-62-2	37		mg/kg-dry	v		1		0.16	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19522	SW6010B	O	Z	Metals	Vanadium	7440-62-2	36		mg/kg-dry	v		1		0.16	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Vanadium	7440-62-2	39		mg/kg-dry	v		1		0.16	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Vanadium	7440-62-2	78		mg/kg-dry	v		1		0.2	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17065	SW6010B	O	Z	Metals	Zinc	7440-66-6	21		mg/kg-dry	v		5		0.09	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18911	SW6010B	O	Z	Metals	Zinc	7440-66-6	21		mg/kg-dry	v		5		0.17	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19522	SW6010B	O	Z	Metals	Zinc	7440-66-6	17		mg/kg-dry	v		5		0.16	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19478	SW6010B	O	Z	Metals	Zinc	7440-66-6	18		mg/kg-dry	v		5		0.16	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24495	SW6010B	O	Z	Metals	Zinc	7440-66-6	22		mg/kg-dry	v		1		0.26	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24492	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	5		mg/kg-dry	v		1		0.13	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24501	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.024		mg/kg-dry	U		0.024		0.008378718	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24501	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.024		mg/kg-dry	U		0.024			
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24501	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.024		mg/kg-dry	U		0.024			
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24501	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.024		mg/kg-dry	U		0.024			
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24501	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.024		mg/kg-dry	U		0.024			
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24501	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.024		mg/kg-dry	U		0.024		0.007875995	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24501	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.024		mg/kg-dry	U		0.024		0.007540846	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24501	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.024		mg/kg-dry	U		0.024			
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24501	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.024		mg/kg-dry	U		0.024			
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0056		mg/kg-dry	U		0.0056		0.002024857	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0056		mg/kg-dry	U		0.0056		0.000406368	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.028		mg/kg-dry	U		0.028		0.002415864	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.07		mg/kg-dry	U		0.07		0.003533026	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.014		mg/kg-dry	U		0.014		0.000674487	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0024		mg/kg-dry	U		0.0024		0.000363078	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0024		mg/kg-dry	U		0.0024		0.000293255	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0024		mg/kg-dry	U		0.0024		0.000377042	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.014		mg/kg-dry	U		0.014		0.000910487	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0024		mg/kg-dry	U		0.0024		0.000293255	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0024		mg/kg-dry	U		0.0024		0.000139645	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0024		mg/kg-dry	U		0.0024		0.000349113	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.07		mg/kg-dry	U		0.07		0.002360006	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0024		mg/kg-dry	U		0.0024		0.000209468	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.014		mg/kg-dry	U		0.014		0.001103198	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.024		mg/kg-dry	U		0.024		0.01	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.028		mg/kg-dry	U		0.028		0.000654936	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.07		mg/kg-dry	U		0.07		0.01	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0024		mg/kg-dry	U		0.0024		0.000377042	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.007		mg/kg-dry	U		0.007		0.003072197	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.028		mg/kg-dry	U		0.028		0.002499651	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0024		mg/kg-dry	U		0.0024		0.000209468	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.028		mg/kg-dry	U		0.028		0.005502025	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0024		mg/kg-dry	U		0.0024		0.000265326	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0024		mg/kg-dry	U		0.0024		0.00015361	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0024		mg/kg-dry	U		0.0024		0.000223432	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0024		mg/kg-dry	U		0.0024		0.000181539	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0024		mg/kg-dry	U		0.0024		0.00030722	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0024		mg/kg-dry	U		0.0024		0.000209468	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0024		mg/kg-dry	U		0.0024		0.000167574	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0024		mg/kg-dry	U		0.0024		0.000195503	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0024		mg/kg-dry	U		0.0024		0.000265326	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0024		mg/kg-dry	U		0.0024		0.00015361	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.6		mg/kg-dry	U		5.6		0.67	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	MCPP	93-65-2	5.6		mg/kg-dry	U		5.6		0.67	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0024		mg/kg-dry	U		0.0024		0.000391007	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0028		mg/kg-dry	U		0.0028		0.000388214	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.014		mg/kg-dry	U		0.014		0.002304147	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24500	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.17		mg/kg-dry	U		0.17		0.03	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24499	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	14		mg/kg-dry	U		14		1.49	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24498	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	3.6		mg/kg-dry	U		3.6		0.84	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17063	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.94		wt%	v		0.01		0.01	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18909	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.91		wt%	v		0.01		0.01	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19520	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.71		wt%	v		0.01		0.01	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19477	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.36		wt%	v		0.01		0.01	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17059	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	31.8		wt%	v		0.2		0.01	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18905	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	29.1		wt%	v		0.2		0.01	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19518	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	26.8		wt%	v		0.2		0.01	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19475	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	26.8		wt%	v		0.2		0.01	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24494	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	28		wt%	v		0.2		0.01	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24491	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	0.5		%-as rcvd	v		0.1		0.009	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17060	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.4		s.u.	v		0.1			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18906	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1			
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19519	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.9		s.u.	v		0.1			
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19476	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.5		s.u.	v		0.1			
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17059	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	68.2		wt%	v		0.01		0.01	
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18905	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	70.9		wt%	v		0.01		0.01	
CC-1	CC-1	IIC	4	P2-01073	Sediment		Field Sample	10/2/2008	19518	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	73.2		wt%	v		0.01		0.01	
CC-1	CC-1	IIC	4	P2-01079	Sediment		Field Sample	10/7/2008	19475	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	73.2		wt%	v		0.01		0.01	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.33		mg/kg-dry	U		0.33		0.17	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.33		mg/kg-dry	U		0.33		0.08	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.33		mg/kg-dry	U		0.33		0.09	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.33		mg/kg-dry	U		0.33		0.05	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	2.3		mg/kg-dry	U		2.3		0.07	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.33		mg/kg-dry	U		0.33		0.08	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.33		mg/kg-dry	U		0.33		0.08	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.33		mg/kg-dry	U		0.33		0.09	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.33		mg/kg-dry	U		0.33		0.05	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.33		mg/kg-dry	U		0.33		0.1	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.33		mg/kg-dry	U		0.33		0.2	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	0.33		mg/kg-dry	U		0.33		0.06	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	2.3		mg/kg-dry	U		2.3		0.08	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.33		mg/kg-dry	U		0.33		0.09	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.33		mg/kg-dry	U		0.33		0.07	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.33		mg/kg-dry	U		0.33		0.09	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24502	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.014		mg/kg-dry	U		0.014		0.001178606	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	2.3		mg/kg-dry	U		2.3		0.04	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.33		mg/kg-dry	U		0.33		0.08	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.33		mg/kg-dry	U		0.33		0.08	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.33		mg/kg-dry	U		0.33		0.06	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.33		mg/kg-dry	U		0.33		0.07	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.33		mg/kg-dry	U		0.33		0.09	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.33		mg/kg-dry	U		0.33		0.09	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.33		mg/kg-dry	U		0.33		0.16	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.33		mg/kg-dry	U		0.33		0.16	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.33		mg/kg-dry	U		0.33		0.05	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.33		mg/kg-dry	U		0.33		0.13	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.33		mg/kg-dry	U		0.33		0.11	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.33		mg/kg-dry	U		0.33		0.11	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.33		mg/kg-dry	U		0.33		0.06	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.33		mg/kg-dry	U		0.33		0.06	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.33		mg/kg-dry	U		0.33		0.13	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.33		mg/kg-dry	U		0.33		0.05	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.33		mg/kg-dry	U		0.33		0.08	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.33		mg/kg-dry	U		0.33		0.06	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.33		mg/kg-dry	U		0.33		0.05	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.33		mg/kg-dry	U		0.33		0.06	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.33		mg/kg-dry	U		0.33		0.06	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.33		mg/kg-dry	U		0.33		0.1	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.33		mg/kg-dry	U		0.33		0.06	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.33		mg/kg-dry	U		0.33		0.05	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.33		mg/kg-dry	U		0.33		0.07	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.33		mg/kg-dry	U		0.33		0.08	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.33		mg/kg-dry	U		0.33		0.06	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.33		mg/kg-dry	U		0.33		0.12	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.33		mg/kg-dry	U		0.33		0.07	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.33		mg/kg-dry	U		0.33		0.09	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.33		mg/kg-dry	U		0.33		0.05	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.33		mg/kg-dry	U		0.33		0.16	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.33		mg/kg-dry	U		0.33		0.11	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	2.3		mg/kg-dry	U		2.3		0.12	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.33		mg/kg-dry	U		0.33		0.07	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.33		mg/kg-dry	U		0.33		0.03	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.33		mg/kg-dry	U		0.33		0.05	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.33		mg/kg-dry	U		0.33		0.1	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.33		mg/kg-dry	U		0.33		0.06	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.33		mg/kg-dry	U		0.33		0.06	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.33		mg/kg-dry	U		0.33		0.07	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.33		mg/kg-dry	U		0.33		0.08	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.33		mg/kg-dry	U		0.33		0.13	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.33		mg/kg-dry	U		0.33		0.07	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.33		mg/kg-dry	U		0.33		0.07	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.33		mg/kg-dry	U		0.33		0.09	
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24503	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.33		mg/kg-dry	U		0.33		0.14	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.063		mg/kg-dry	U	UJ	0.063			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.067		mg/kg-dry	U	UJ	0.067			
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.5		mg/kg-dry	U	UJ	2.5			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.7		mg/kg-dry	U	UJ	2.7			
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.5		mg/kg-dry	U	UJ	2.5			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.7		mg/kg-dry	U	UJ	2.7			
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.5		mg/kg-dry	U	UJ	2.5			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.7		mg/kg-dry	U	UJ	2.7			
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.063		mg/kg-dry	U	UJ	0.063			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.067		mg/kg-dry	U	UJ	0.067			
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.063		mg/kg-dry	U	UJ	0.063			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.067		mg/kg-dry	U	UJ	0.067			
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.13		mg/kg-dry	U	UJ	0.13			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.13		mg/kg-dry	U	UJ	0.13			
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.13		mg/kg-dry	U	UJ	0.13			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.13		mg/kg-dry	U	UJ	0.13			
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.063		mg/kg-dry	U	UJ	0.063			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.067		mg/kg-dry	U	UJ	0.067			
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.063		mg/kg-dry	U	UJ	0.063			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.067		mg/kg-dry	U	UJ	0.067			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.5		mg/kg-dry	U	UJ	2.5			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.7		mg/kg-dry	U	UJ	2.7			
CC-1	CC-1	VB	5	CC1-LT1	Sediment		Field Sample	4/25/2012	24498	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	3.6		mg/kg-dry	U		3.6		0.8	
CC-1	CC-1	IIA	2	P2-00490	Sediment		Field Sample	6/29/2008	17064	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.063		mg/kg-dry	U	UJ	0.063			
CC-1	CC-1	IIA	2	P2-00987	Sediment		Field Sample	9/14/2008	18910	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.067		mg/kg-dry	U	UJ	0.067			
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2201	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2202	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2480		mg/kg-dry	v		10	mg/kg-dry	12.21	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2204	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		12		mg/kg-dry	U		12	mg/kg-dry	2.03	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2205	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		12		mg/kg-dry	U		12	mg/kg-dry	1.01	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2205	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		12		mg/kg-dry	U		12	mg/kg-dry	1.81	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2204	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	12		mg/kg-dry	U		12	mg/kg-dry	4.05	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2211	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	56		mg/kg-dry	v		12	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6630		mg/kg-dry	v		5	mg/kg-dry	0.61	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2209	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.00135409	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2209	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Barium	7440-39-3	199		mg/kg-dry	v		5	mg/kg-dry	1.22	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.008547008	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.44	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.12	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Chromium	7440-47-3	77.2		mg/kg-dry	v		0.4	mg/kg-dry	0.36	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5	mg/kg-dry	0.36	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Copper	7440-50-8	18		mg/kg-dry	v	J	5	mg/kg-dry	0.24	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Iron	7439-89-6	20600		mg/kg-dry	v		10	mg/kg-dry	12.21	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Lead	7439-92-1	7		mg/kg-dry	v	J	5	mg/kg-dry	1.22	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Manganese	7439-96-5	263		mg/kg-dry	v		5	mg/kg-dry	0.04	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2210	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2209	SW6020	O	Z	Metals	Nickel	7440-02-0	26		mg/kg-dry	v		5	mg/kg-dry	0.0025	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2209	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.00156105	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.12	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2209	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001202076	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Vanadium	7440-62-2	50		mg/kg-dry	v		1	mg/kg-dry	0.48	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2208	SW6010B	O	Z	Metals	Zinc	7440-66-6	48		mg/kg-dry	v	J	5	mg/kg-dry	0.24	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2203	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.38		wt%	v		0.01	wt%	0.01	wt%
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2207	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	18		wt%	v		0.2	wt%	0.01	wt%
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2200	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1	s.u.		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.07	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.09	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.07	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.07	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.04	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.09	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.07	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.07	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.09	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.07	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.09	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.09	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.07	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.12	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.09	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.07	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2212	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.07	mg/kg-dry
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.056		mg/kg-dry	U		0.056	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.2		mg/kg-dry	U		2.2	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.2		mg/kg-dry	U		2.2	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.2		mg/kg-dry	U		2.2	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.056		mg/kg-dry	U		0.056	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.056		mg/kg-dry	U		0.056	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.056		mg/kg-dry	U		0.056	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.056		mg/kg-dry	U		0.056	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.2		mg/kg-dry	U		2.2	mg/kg-dry		
CC-1_SED	CC-1	I	1	P1-00395	Sediment		Field Sample	10/11/2007	2206	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.056		mg/kg-dry	U		0.056	mg/kg-dry		
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18063	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16301	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16302	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1730		mg/kg-dry	v	J	5		0.16	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18064	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2980		mg/kg-dry	v		5		0.16	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16309	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	79		mg/kg-dry	v		16			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18070	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	46		mg/kg-dry	v		16			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8280		mg/kg-dry	v		5		0.33	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8500		mg/kg-dry	v	J	5		0.67	
CC-2	CC-2	**IIA**	2	**P2-00534**	**Sediment**		**Field Sample**	**6/25/2008**	16305	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.89**	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.81	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U	UJ	2		1.09	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		2.2	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Barium	7440-39-3	689		mg/kg-dry	v		5		0.01	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Barium	7440-39-3	886		mg/kg-dry	v	J	5		0.02	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00528	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.71	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.47	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U	UJ	1		0.05	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18068	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00207	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Chromium	7440-47-3	114		mg/kg-dry	v		5		0.07	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Chromium	7440-47-3	93		mg/kg-dry	v	J	5		0.14	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16307	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.16	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Cobalt	7440-48-4	11		mg/kg-dry	v		5		0.13	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5		0.26	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Copper	7440-50-8	43		mg/kg-dry	v		5		0.06	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Copper	7440-50-8	63		mg/kg-dry	v		5		0.13	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Iron	7439-89-6	13300		mg/kg-dry	v		5		4.02	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Iron	7439-89-6	18300		mg/kg-dry	v	J	8		8.13	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Lead	7439-92-1	45		mg/kg-dry	v	J	5		0.44	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Lead	7439-92-1	22		mg/kg-dry	v		5		0.89	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Manganese	7439-96-5	2580		mg/kg-dry	v		5		0.02	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Manganese	7439-96-5	3370		mg/kg-dry	v	J	5		0.04	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16308	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18069	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Nickel	7440-02-0	22		mg/kg-dry	v		5		0.15	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Nickel	7440-02-0	22		mg/kg-dry	v		5		0.31	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.19	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18068	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00208	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.11	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.22	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16306	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000791	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18068	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U	UJ	0.6		0.0016	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Vanadium	7440-62-2	37		mg/kg-dry	v		1		0.09	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Vanadium	7440-62-2	52		mg/kg-dry	v	J	1		0.19	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16305	SW6010B	O	Z	Metals	Zinc	7440-66-6	20		mg/kg-dry	v		5		0.09	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18067	SW6010B	O	Z	Metals	Zinc	7440-66-6	27		mg/kg-dry	v		5		0.2	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16303	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.84		wt%	v		0.01		0.01	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18065	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.15		wt%	v		0.01		0.01	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16299	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	37.8		wt%	v		0.2		0.01	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18061	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	38.4		wt%	v		0.2		0.01	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16300	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.3		s.u.	v		0.1			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18062	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16299	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	62.2		wt%	v		0.01		0.01	
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18061	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	61.6		wt%	v		0.01		0.01	
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.15		mg/kg-dry	U	UJ	0.15			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.073		mg/kg-dry	U		0.073			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		5.8		mg/kg-dry	U	UJ	5.8			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.9		mg/kg-dry	U		2.9			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		5.8		mg/kg-dry	U	UJ	5.8			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.9		mg/kg-dry	U		2.9			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		5.8		mg/kg-dry	U	UJ	5.8			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.9		mg/kg-dry	U		2.9			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.15		mg/kg-dry	U	UJ	0.15			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.073		mg/kg-dry	U		0.073			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.15		mg/kg-dry	U	UJ	0.15			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.073		mg/kg-dry	U		0.073			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.29		mg/kg-dry	U	UJ	0.29			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.15		mg/kg-dry	U		0.15			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.29		mg/kg-dry	U	UJ	0.29			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.15		mg/kg-dry	U		0.15			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.15		mg/kg-dry	U	UJ	0.15			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.073		mg/kg-dry	U		0.073			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.15		mg/kg-dry	U	UJ	0.15			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.073		mg/kg-dry	U		0.073			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	5.8		mg/kg-dry	U	UJ	5.8			
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.9		mg/kg-dry	U		2.9			
CC-2	CC-2	IIA	2	P2-00534	Sediment		Field Sample	6/25/2008	16304	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.15		mg/kg-dry	U	UJ	0.15			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-2	CC-2	IIA	2	P2-00954	Sediment		Field Sample	9/10/2008	18066	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.073		mg/kg-dry	U		0.073			
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2497	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2498	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2190		mg/kg-dry	v		10	mg/kg-dry	14.7	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2505	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	34		mg/kg-dry	v		15	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Aluminum	7429-90-5	4670		mg/kg-dry	v		5	mg/kg-dry	0.73	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2503	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001630882	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2503	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Barium	7440-39-3	685		mg/kg-dry	v		5	mg/kg-dry	1.47	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.01	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.94	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2503	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001441176	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Chromium	7440-47-3	43.3		mg/kg-dry	v	J	0.4	mg/kg-dry	0.44	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Cobalt	7440-48-4	7		mg/kg-dry	v		5	mg/kg-dry	0.44	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Copper	7440-50-8	37		mg/kg-dry	v		5	mg/kg-dry	0.29	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Iron	7439-89-6	10600		mg/kg-dry	v		5	mg/kg-dry	1.02	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5	mg/kg-dry	1.47	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Manganese	7439-96-5	2920		mg/kg-dry	v		5	mg/kg-dry	0.05	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2504	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Nickel	7440-02-0	11		mg/kg-dry	v		5	mg/kg-dry	0.29	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2503	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001880147	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.14	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2503	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001447794	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Vanadium	7440-62-2	35		mg/kg-dry	v		1	mg/kg-dry	0.58	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2502	SW6010B	O	Z	Metals	Zinc	7440-66-6	15		mg/kg-dry	v		5	mg/kg-dry	0.29	mg/kg-dry
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2499	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.98		wt%	v		0.01	wt%	0.01	wt%
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2501	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	32		wt%	v		0.2	wt%	0.01	wt%
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2496	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.5		s.u.	v		0.1	s.u.		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.1		mg/kg-dry	U		2.1	mg/kg-dry		
CC-2_SED	CC-2	I	1	P1-00399	Sediment		Field Sample	10/12/2007	2500	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24521	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		203		mg/kg-dry	v		20		14.51	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24527	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	57		mg/kg-dry	v		15		1.66	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Aluminum	7429-90-5	16700		mg/kg-dry	v		5		2.93	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Antimony	7440-36-0	4		mg/kg-dry	v		1		0.56	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24524	SW6020	O	Z	Metals	Arsenic	7440-38-2	1		mg/kg-dry	U		1		0.02	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Barium	7440-39-3	1020		mg/kg-dry	v		1		0.03	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.006084034	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.01	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Chromium	7440-47-3	406		mg/kg-dry	v		1		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Cobalt	7440-48-4	28		mg/kg-dry	v		1		0.13	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Copper	7440-50-8	31		mg/kg-dry	v		1		0.29	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Iron	7439-89-6	24800		mg/kg-dry	v		5		1.19	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Lead	7439-92-1	15		mg/kg-dry	v		1		0.72	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Magnesium	7439-95-4	39900		mg/kg-dry	v		5		0.76	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Manganese	7439-96-5	504		mg/kg-dry	v		1		0.04	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24525	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.01	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Nickel	7440-02-0	77		mg/kg-dry	v		1		0.16	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24524	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	U		1		0.36	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.33	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Strontium	7440-24-6	125		mg/kg-dry	v		1		0.01	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	U		2		0.37	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Vanadium	7440-62-2	44		mg/kg-dry	v		1		0.2	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24523	SW6010B	O	Z	Metals	Zinc	7440-66-6	32		mg/kg-dry	v		1		0.25	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24520	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	6		mg/kg-dry	v		1		0.14	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24529	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.025		mg/kg-dry	U		0.025		0.008709537	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24529	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.025		mg/kg-dry	U		0.025			
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24529	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.025		mg/kg-dry	U		0.025			
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24529	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.025		mg/kg-dry	U		0.025			
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24529	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.025		mg/kg-dry	U		0.025			
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24529	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.025		mg/kg-dry	U		0.025		0.008186965	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24529	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.025		mg/kg-dry	U		0.025		0.007838583	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24529	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.025		mg/kg-dry	U		0.025			
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24529	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.025		mg/kg-dry	U		0.025			
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0058		mg/kg-dry	U		0.0058		0.002104805	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0058		mg/kg-dry	U		0.0058		0.000422413	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.029		mg/kg-dry	U		0.029		0.00251125	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.073		mg/kg-dry	U		0.073		0.003672521	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.015		mg/kg-dry	U		0.015		0.000701118	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0025		mg/kg-dry	U		0.0025		0.000377413	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0025		mg/kg-dry	U		0.0025		0.000304834	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0025		mg/kg-dry	U		0.0025		0.000391929	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.015		mg/kg-dry	U		0.015		0.000946436	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0025		mg/kg-dry	U		0.0025		0.000304834	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0025		mg/kg-dry	U		0.0025		0.000145159	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0025		mg/kg-dry	U		0.0025		0.000362897	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.073		mg/kg-dry	U		0.073		0.002453186	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0025		mg/kg-dry	U		0.0025		0.000217738	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.015		mg/kg-dry	U		0.015		0.001146756	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.025		mg/kg-dry	U		0.025		0.01	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.029		mg/kg-dry	U		0.029		0.000680795	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.073		mg/kg-dry	U		0.073		0.01	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0025		mg/kg-dry	U		0.0025		0.000391929	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0073		mg/kg-dry	U		0.0073		0.003193497	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.029		mg/kg-dry	U		0.029		0.002598345	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0025		mg/kg-dry	U		0.0025		0.000217738	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.029		mg/kg-dry	U		0.029		0.005719263	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0025		mg/kg-dry	U		0.0025		0.000275802	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0025		mg/kg-dry	U		0.0025		0.000159675	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0025		mg/kg-dry	U		0.0025		0.000232254	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0025		mg/kg-dry	U		0.0025		0.000188707	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0025		mg/kg-dry	U		0.0025		0.00031935	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0025		mg/kg-dry	U		0.0025		0.000217738	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0025		mg/kg-dry	U		0.0025		0.000174191	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0025		mg/kg-dry	U		0.0025		0.000203223	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0025		mg/kg-dry	U		0.0025		0.000275802	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0025		mg/kg-dry	U		0.0025		0.000159675	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.8		mg/kg-dry	U		5.8		0.69	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	MCPP	93-65-2	5.8		mg/kg-dry	U		5.8		0.69	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0025		mg/kg-dry	U		0.0025		0.000406445	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0029		mg/kg-dry	U		0.0029		0.000403542	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.015		mg/kg-dry	U		0.015		0.002395123	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24528	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.17		mg/kg-dry	U		0.17		0.03	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24527	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	15		mg/kg-dry	U		15		1.55	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24526	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	3.8		mg/kg-dry	U		3.8		0.89	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24522	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	31		wt%	v		0.2		0.01	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24519	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	0.3		%-as rcvd	v		0.1		0.009	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24518	ASA10-3	O	Z	Sediment/soil quality parameters	pH		7		s.u.	v		0.1		0.1	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.33		mg/kg-dry	U		0.33		0.18	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.33		mg/kg-dry	U		0.33		0.09	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.33		mg/kg-dry	U		0.33		0.09	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.33		mg/kg-dry	U		0.33		0.05	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	2.4		mg/kg-dry	U		2.4		0.07	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.33		mg/kg-dry	U		0.33		0.09	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.33		mg/kg-dry	U		0.33		0.08	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.33		mg/kg-dry	U		0.33		0.09	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.33		mg/kg-dry	U		0.33		0.05	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.33		mg/kg-dry	U		0.33		0.1	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.33		mg/kg-dry	U		0.33		0.21	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	0.33		mg/kg-dry	U		0.33		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	2.4		mg/kg-dry	U		2.4		0.08	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.33		mg/kg-dry	U		0.33		0.09	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.33		mg/kg-dry	U		0.33		0.07	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.33		mg/kg-dry	U		0.33		0.1	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24530	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.015		mg/kg-dry	U		0.015		0.001225142	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	2.4		mg/kg-dry	U		2.4		0.04	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.33		mg/kg-dry	U		0.33		0.08	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.33		mg/kg-dry	U		0.33		0.08	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.33		mg/kg-dry	U		0.33		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.33		mg/kg-dry	U		0.33		0.07	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.33		mg/kg-dry	U		0.33		0.1	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.33		mg/kg-dry	U		0.33		0.1	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.33		mg/kg-dry	U		0.33		0.17	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.33		mg/kg-dry	U		0.33		0.16	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.33		mg/kg-dry	U		0.33		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.33		mg/kg-dry	U		0.33		0.14	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.33		mg/kg-dry	U		0.33		0.12	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.33		mg/kg-dry	U		0.33		0.11	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.33		mg/kg-dry	U		0.33		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.33		mg/kg-dry	U		0.33		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.33		mg/kg-dry	U		0.33		0.14	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.33		mg/kg-dry	U		0.33		0.05	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.33		mg/kg-dry	U		0.33		0.08	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.33		mg/kg-dry	U		0.33		0.07	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.33		mg/kg-dry	U		0.33		0.05	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.33		mg/kg-dry	U		0.33		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.33		mg/kg-dry	U		0.33		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.33		mg/kg-dry	U		0.33		0.11	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.33		mg/kg-dry	U		0.33		0.07	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.33		mg/kg-dry	U		0.33		0.05	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.33		mg/kg-dry	U		0.33		0.07	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.33		mg/kg-dry	U		0.33		0.08	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.33		mg/kg-dry	U		0.33		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.33		mg/kg-dry	U		0.33		0.12	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.33		mg/kg-dry	U		0.33		0.07	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.33		mg/kg-dry	U		0.33		0.1	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.33		mg/kg-dry	U		0.33		0.05	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.33		mg/kg-dry	U		0.33		0.16	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.33		mg/kg-dry	U		0.33		0.11	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	2.4		mg/kg-dry	U		2.4		0.12	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.33		mg/kg-dry	U		0.33		0.07	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.33		mg/kg-dry	U		0.33		0.03	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.33		mg/kg-dry	U		0.33		0.05	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.33		mg/kg-dry	U		0.33		0.1	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.33		mg/kg-dry	U		0.33		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.33		mg/kg-dry	U		0.33		0.06	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.33		mg/kg-dry	U		0.33		0.08	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.33		mg/kg-dry	U		0.33		0.09	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.33		mg/kg-dry	U		0.33		0.13	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.33		mg/kg-dry	U		0.33		0.07	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.33		mg/kg-dry	U		0.33		0.07	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.33		mg/kg-dry	U		0.33		0.09	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24531	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.33		mg/kg-dry	U		0.33		0.14	
CC-POND	CC-POND	VB	5	CCP	Sediment		Field Sample	4/27/2012	24526	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	3.8		mg/kg-dry	U		3.8		0.85	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19142	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21317	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21318	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1970		mg/kg-dry	v		5		0.18	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19143	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1500		mg/kg-dry	v		5		0.17	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21326	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	32		mg/kg-dry	v		18			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19149	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	54		mg/kg-dry	v		18			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Aluminum	7429-90-5	28400		mg/kg-dry	v	J	5		1.87	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19146	SW6010B	O	Z	Metals	Aluminum	7429-90-5	22100		mg/kg-dry	v	J	5		0.72	
CC-POND-1	CC-POND-1	**IIA**	2	**P2-00512**	**Sediment**		**Field Sample**	**7/1/2008**	21323	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.00100362**	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00194	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21323	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.008479638	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Barium	7440-39-3	1430		mg/kg-dry	v	J	5		0.06	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Barium	7440-39-3	1380		mg/kg-dry	v		5		0.02	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21321	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.005945701	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.000423	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21321	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		1.93	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.27	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21323	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001152489	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00172	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Chromium	7440-47-3	410		mg/kg-dry	v	J	5		0.41	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Chromium	7440-47-3	357		mg/kg-dry	v		5		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21324	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.18	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Cobalt	7440-48-4	52		mg/kg-dry	v	J	5		0.74	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Cobalt	7440-48-4	46		mg/kg-dry	v		5		0.00268	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Copper	7440-50-8	86		mg/kg-dry	v	J	5		0.37	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Copper	7440-50-8	70		mg/kg-dry	v		5		0.0055	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Iron	7439-89-6	41700		mg/kg-dry	v	J	20		22.66	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19146	SW6010B	O	Z	Metals	Iron	7439-89-6	32900		mg/kg-dry	v		9		8.77	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Lead	7439-92-1	64		mg/kg-dry	v	J	5		2.48	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Lead	7439-92-1	53		mg/kg-dry	v		5		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Manganese	7439-96-5	921		mg/kg-dry	v	J	5		0.12	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Manganese	7439-96-5	725		mg/kg-dry	v		5		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21325	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19148	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Nickel	7440-02-0	116		mg/kg-dry	v	J	5		0.86	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Nickel	7440-02-0	101		mg/kg-dry	v		5		0.00359	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21323	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001157014	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00224	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21321	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.12	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.00203	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21323	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00089095	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00172	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Vanadium	7440-62-2	64		mg/kg-dry	v	J	1		0.54	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Vanadium	7440-62-2	51		mg/kg-dry	v		1		0.07	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21322	SW6010B	O	Z	Metals	Zinc	7440-66-6	57		mg/kg-dry	v	J	5		0.56	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19147	SW6020	O	Z	Metals	Zinc	7440-66-6	42		mg/kg-dry	v		5		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21319	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.62		wt%	v		0.01		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	9/15/2008	19315	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	44.8		wt%	v		0.2		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19140	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	42.9		wt%	v		0.2		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21316	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19141	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21315	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	55.2		wt%	v		0.01		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19140	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	57.1		wt%	v		0.01		0.01	
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.11		mg/kg-dry	U	UJ	0.11			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.1		mg/kg-dry	U		0.1			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		4.3		mg/kg-dry	U	UJ	4.3			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		4		mg/kg-dry	U		4			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		4.3		mg/kg-dry	U	UJ	4.3			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		4		mg/kg-dry	U		4			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		4.3		mg/kg-dry	U	UJ	4.3			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		4		mg/kg-dry	U		4			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.11		mg/kg-dry	U	UJ	0.11			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.1		mg/kg-dry	U		0.1			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.11		mg/kg-dry	U	UJ	0.11			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.1		mg/kg-dry	U		0.1			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.22		mg/kg-dry	U	UJ	0.22			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.2		mg/kg-dry	U		0.2			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.22		mg/kg-dry	U	UJ	0.22			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.2		mg/kg-dry	U		0.2			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.11		mg/kg-dry	U	UJ	0.11			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.1		mg/kg-dry	U		0.1			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.11		mg/kg-dry	U	UJ	0.11			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.1		mg/kg-dry	U		0.1			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	4.3		mg/kg-dry	U	UJ	4.3			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	4		mg/kg-dry	U		4			
CC-POND-1	CC-POND-1	IIA	2	P2-00512	Sediment		Field Sample	7/1/2008	21320	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.11		mg/kg-dry	U	UJ	0.11			
CC-POND-1	CC-POND-1	IIA	2	P2-01013	Sediment		Field Sample	9/15/2008	19145	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.1		mg/kg-dry	U		0.1			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19152	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21305	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21306	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1200		mg/kg-dry	v		5		0.18	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19153	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	553		mg/kg-dry	v		5		0.14	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21314	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	56		mg/kg-dry	v		19			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19159	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	80		mg/kg-dry	v		15			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9160		mg/kg-dry	v	J	5		1.96	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19156	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6560		mg/kg-dry	v	J	5		0.61	
CC-POND-2	CC-POND-2	**IIA**	2	**P2-00511**	**Sediment**		**Field Sample**	**7/1/2008**	21311	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001049196**	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00164	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21311	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.008864712	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Barium	7440-39-3	336		mg/kg-dry	v	J	5		0.07	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Barium	7440-39-3	376		mg/kg-dry	v		5		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21309	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.006215705	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.000357	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21309	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.02	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19156	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.16	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21311	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001204825	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00145	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Chromium	7440-47-3	45		mg/kg-dry	v	J	5		0.43	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Chromium	7440-47-3	31		mg/kg-dry	v		5		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21312	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.18	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Cobalt	7440-48-4	9		mg/kg-dry	v	J	5		0.78	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Cobalt	7440-48-4	8		mg/kg-dry	v		5		0.00226	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Copper	7440-50-8	143		mg/kg-dry	v	J	5		0.38	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Copper	7440-50-8	63		mg/kg-dry	v		5		0.00464	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Iron	7439-89-6	18800		mg/kg-dry	v	J	20		23.69	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19156	SW6010B	O	Z	Metals	Iron	7439-89-6	11900		mg/kg-dry	v		7		7.4	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Lead	7439-92-1	56		mg/kg-dry	v	J	5		2.6	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Lead	7439-92-1	40		mg/kg-dry	v		5		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Manganese	7439-96-5	538		mg/kg-dry	v	J	5		0.12	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Manganese	7439-96-5	626		mg/kg-dry	v		5		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21313	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19158	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Nickel	7440-02-0	15		mg/kg-dry	v	J	5		0.9	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Nickel	7440-02-0	10		mg/kg-dry	v		5		0.00303	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21311	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001209555	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00189	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21309	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.12	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.00171	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21311	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00093141	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00146	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Vanadium	7440-62-2	39		mg/kg-dry	v	J	1		0.56	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Vanadium	7440-62-2	25		mg/kg-dry	v		1		0.06	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21310	SW6010B	O	Z	Metals	Zinc	7440-66-6	52		mg/kg-dry	v	J	5		0.58	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19157	SW6020	O	Z	Metals	Zinc	7440-66-6	29		mg/kg-dry	v		5		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21307	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.08		wt%	v		0.01		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19154	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.86		wt%	v		0.01		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21303	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	47.2		wt%	v		0.2		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19150	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	32.4		wt%	v		0.2		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21304	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19151	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21303	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	52.8		wt%	v		0.01		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19150	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	67.6		wt%	v		0.01		0.01	
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.093		mg/kg-dry	U	UJ	0.093			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.089		mg/kg-dry	U		0.089			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.7		mg/kg-dry	U	UJ	3.7			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.6		mg/kg-dry	U		3.6			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.7		mg/kg-dry	U	UJ	3.7			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.6		mg/kg-dry	U		3.6			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.7		mg/kg-dry	U	UJ	3.7			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.6		mg/kg-dry	U		3.6			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.093		mg/kg-dry	U	UJ	0.093			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.089		mg/kg-dry	U		0.089			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.093		mg/kg-dry	U	UJ	0.093			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.089		mg/kg-dry	U		0.089			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.19		mg/kg-dry	U	UJ	0.19			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.18		mg/kg-dry	U		0.18			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.19		mg/kg-dry	U	UJ	0.19			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.18		mg/kg-dry	U		0.18			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.093		mg/kg-dry	U	UJ	0.093			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.089		mg/kg-dry	U		0.089			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.093		mg/kg-dry	U	UJ	0.093			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.089		mg/kg-dry	U		0.089			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.7		mg/kg-dry	U	UJ	3.7			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.6		mg/kg-dry	U		3.6			
CC-POND-2	CC-POND-2	IIA	2	P2-00511	Sediment		Field Sample	7/1/2008	21308	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.093		mg/kg-dry	U	UJ	0.093			
CC-POND-2	CC-POND-2	IIA	2	P2-01014	Sediment		Field Sample	9/15/2008	19155	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.089		mg/kg-dry	U		0.089			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19162	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.02	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21329	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.02	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21330	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2260		mg/kg-dry	v		5		0.22	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19163	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2140		mg/kg-dry	v		5		0.21	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19166	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		52		mg/kg-dry	v	J	22		3.61	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19165	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		112		mg/kg-dry	v	J	22		1.79	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19165	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		22		mg/kg-dry	U	UJ	22		3.22	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21338	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	166		mg/kg-dry	v		22			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19166	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	198		mg/kg-dry	v	J	22		7.18	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19171	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	354		mg/kg-dry	v		22			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Aluminum	7429-90-5	20900		mg/kg-dry	v	J	5		2.3	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19168	SW6010B	O	Z	Metals	Aluminum	7429-90-5	23800		mg/kg-dry	v	J	5		0.89	
CC-POND-3	CC-POND-3	**IIA**	2	**P2-00513**	**Sediment**		**Field Sample**	**7/1/2008**	21335	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001231949**	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.0024	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21335	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.02	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Barium	7440-39-3	901		mg/kg-dry	v	J	5		0.08	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Barium	7440-39-3	1330		mg/kg-dry	v		5		0.02	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21333	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.007298378	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.000523	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21333	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.37	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19168	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		4.63	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21335	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001414686	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19168	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.14	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Chromium	7440-47-3	127		mg/kg-dry	v	J	5		0.51	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Chromium	7440-47-3	263		mg/kg-dry	v		5		0.02	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21336	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.22	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Cobalt	7440-48-4	26		mg/kg-dry	v	J	5		0.91	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Cobalt	7440-48-4	49		mg/kg-dry	v		5		0.00331	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Copper	7440-50-8	71		mg/kg-dry	v	J	5		0.45	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Copper	7440-50-8	131		mg/kg-dry	v		5		0.0068	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Iron	7439-89-6	29500		mg/kg-dry	v	J	30		27.82	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19168	SW6010B	O	Z	Metals	Iron	7439-89-6	42000		mg/kg-dry	v		10		10.84	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Lead	7439-92-1	37		mg/kg-dry	v	J	5		3.05	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Lead	7439-92-1	71		mg/kg-dry	v		5		0.01	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Manganese	7439-96-5	978		mg/kg-dry	v	J	5		0.14	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Manganese	7439-96-5	1180		mg/kg-dry	v		5		0.01	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21337	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19170	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Nickel	7440-02-0	49		mg/kg-dry	v	J	5		1.06	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Nickel	7440-02-0	102		mg/kg-dry	v		5		0.00443	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21335	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00142024	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00277	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21333	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.15	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.0025	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21335	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.001093646	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	v		0.6		0.00213	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Vanadium	7440-62-2	48		mg/kg-dry	v	J	1		0.66	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Vanadium	7440-62-2	68		mg/kg-dry	v		1		0.08	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21334	SW6010B	O	Z	Metals	Zinc	7440-66-6	56		mg/kg-dry	v	J	5		0.68	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19169	SW6020	O	Z	Metals	Zinc	7440-66-6	61		mg/kg-dry	v		5		0.01	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21331	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.57		wt%	v		0.01		0.01	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19164	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.56		wt%	v		0.01		0.01	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21327	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	55		wt%	v		0.2		0.01	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19160	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	53.8		wt%	v		0.2		0.01	
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21328	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.7		s.u.	v		0.1			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19161	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.7		s.u.	v		0.1			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21327	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	45		wt%	v		0.01		0.01	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19160	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	46.2		wt%	v		0.01		0.01	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.72		mg/kg-dry	U		0.72		0.12	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.72		mg/kg-dry	U		0.72		0.17	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.72		mg/kg-dry	U		0.72		0.12	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.72		mg/kg-dry	U		0.72		0.12	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.72		mg/kg-dry	U		0.72		0.08	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.72		mg/kg-dry	U		0.72		0.17	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.72		mg/kg-dry	U		0.72		0.12	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.72		mg/kg-dry	U		0.72		0.12	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.72		mg/kg-dry	U		0.72		0.17	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.72		mg/kg-dry	U		0.72		0.12	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.72		mg/kg-dry	U		0.72		0.17	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.72		mg/kg-dry	U		0.72		0.17	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.72		mg/kg-dry	U		0.72		0.12	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.72		mg/kg-dry	U		0.72		0.21	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.72		mg/kg-dry	U		0.72		0.17	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.72		mg/kg-dry	U		0.72		0.12	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19172	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.72		mg/kg-dry	U		0.72		0.12	
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.16		mg/kg-dry	U	UJ	0.16			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		6.4		mg/kg-dry	U	UJ	6.4			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		6.4		mg/kg-dry	U		6.4			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		6.4		mg/kg-dry	U	UJ	6.4			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		6.4		mg/kg-dry	U		6.4			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		6.4		mg/kg-dry	U	UJ	6.4			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		6.4		mg/kg-dry	U		6.4			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.16		mg/kg-dry	U	UJ	0.16			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.16		mg/kg-dry	U		0.16			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.16		mg/kg-dry	U	UJ	0.16			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.16		mg/kg-dry	U		0.16			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.32		mg/kg-dry	U	UJ	0.32			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.32		mg/kg-dry	U		0.32			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.32		mg/kg-dry	U	UJ	0.32			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.32		mg/kg-dry	U		0.32			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.16		mg/kg-dry	U	UJ	0.16			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.16		mg/kg-dry	U		0.16			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.16		mg/kg-dry	U	UJ	0.16			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.16		mg/kg-dry	U		0.16			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	6.4		mg/kg-dry	U	UJ	6.4			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	6.4		mg/kg-dry	U		6.4			
CC-POND-3	CC-POND-3	IIA	2	P2-00513	Sediment		Field Sample	7/1/2008	21332	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.16		mg/kg-dry	U	UJ	0.16			
CC-POND-3	CC-POND-3	IIA	2	P2-01015	Sediment		Field Sample	9/15/2008	19167	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.16		mg/kg-dry	U		0.16			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19175	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.9		mg/kg-dry	v		1		0.04	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21513	E300.0	O	Z	Anions	Fluoride, 1:2		2.2		mg/kg-dry	v		1		0.04	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21514	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1250		mg/kg-dry	v		5		0.43	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19176	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	843		mg/kg-dry	v		5		0.41	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19179	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		47		mg/kg-dry	v	J	41		6.91	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19178	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		56		mg/kg-dry	v	J	41		3.43	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19178	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		41		mg/kg-dry	U	UJ	41		6.16	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21522	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	251		mg/kg-dry	v		43			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19179	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	139		mg/kg-dry	v	J	41		13.74	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19184	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	741		mg/kg-dry	v		41			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Aluminum	7429-90-5	29000		mg/kg-dry	v	J	5		4.48	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19181	SW6010B	O	Z	Metals	Aluminum	7429-90-5	24800		mg/kg-dry	v	J	5		1.71	
CC-POND-4	CC-POND-4	**IIA**	2	**P2-00536**	**Sediment**		**Field Sample**	**7/2/2008**	21519	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.002402513**	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00459	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21519	SW6020	O	Z	Metals	Arsenic	7440-38-2	4		mg/kg-dry	v		2		0.02	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Arsenic	7440-38-2	4		mg/kg-dry	v		2		0.03	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Barium	7440-39-3	1100		mg/kg-dry	v	J	5		0.16	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Barium	7440-39-3	1160		mg/kg-dry	v		5		0.04	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21517	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.01	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.001	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21517	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		4.63	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19181	SW6010B	O	Z	Metals	Boron	7440-42-8	9		mg/kg-dry	U		9		8.85	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21519	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.002758882	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00406	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Chromium	7440-47-3	194		mg/kg-dry	v	J	5		0.99	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Chromium	7440-47-3	224		mg/kg-dry	v		5		0.04	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21520	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.43	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Cobalt	7440-48-4	29		mg/kg-dry	v	J	5		1.79	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Cobalt	7440-48-4	33		mg/kg-dry	v		5		0.00634	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Copper	7440-50-8	160		mg/kg-dry	v	J	5		0.88	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Copper	7440-50-8	146		mg/kg-dry	v		5		0.01	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Iron	7439-89-6	37700		mg/kg-dry	v	J	50		54.26	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19181	SW6010B	O	Z	Metals	Iron	7439-89-6	34400		mg/kg-dry	v		10		13.82	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Lead	7439-92-1	63		mg/kg-dry	v	J	6		5.95	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Lead	7439-92-1	61		mg/kg-dry	v		5		0.03	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Manganese	7439-96-5	1120		mg/kg-dry	v	J	5		0.29	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Manganese	7439-96-5	1070		mg/kg-dry	v		5		0.03	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21521	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.04	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19183	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.04	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Nickel	7440-02-0	65		mg/kg-dry	v	J	5		2.06	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Nickel	7440-02-0	73		mg/kg-dry	v		5		0.00847	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21519	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.002769714	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00529	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21517	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.29	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.00479	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21519	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.002132799	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00407	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Vanadium	7440-62-2	73		mg/kg-dry	v	J	1		1.29	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Vanadium	7440-62-2	68		mg/kg-dry	v		1		0.17	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21518	SW6010B	O	Z	Metals	Zinc	7440-66-6	60		mg/kg-dry	v	J	5		1.34	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19182	SW6020	O	Z	Metals	Zinc	7440-66-6	61		mg/kg-dry	v		5		0.03	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21515	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.32		wt%	v		0.01		0.01	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19177	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.56		wt%	v		0.01		0.01	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21511	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	76.9		wt%	v		0.2		0.01	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19173	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	75.8		wt%	v		0.2		0.01	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21512	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19174	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.7		s.u.	v		0.1			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21511	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	23.1		wt%	v		0.01		0.01	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19173	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	24.2		wt%	v		0.01		0.01	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.4		mg/kg-dry	U		1.4		0.24	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.4		mg/kg-dry	U		1.4		0.33	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.4		mg/kg-dry	U		1.4		0.24	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.4		mg/kg-dry	U		1.4		0.24	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.4		mg/kg-dry	U		1.4		0.16	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.4		mg/kg-dry	U		1.4		0.33	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.4		mg/kg-dry	U		1.4		0.24	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.4		mg/kg-dry	U		1.4		0.24	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.4		mg/kg-dry	U		1.4		0.33	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.4		mg/kg-dry	U		1.4		0.24	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.4		mg/kg-dry	U		1.4		0.33	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.4		mg/kg-dry	U		1.4		0.33	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.4		mg/kg-dry	U		1.4		0.24	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.4		mg/kg-dry	U		1.4		0.41	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.4		mg/kg-dry	U		1.4		0.33	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.4		mg/kg-dry	U		1.4		0.24	
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19185	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.4		mg/kg-dry	U		1.4		0.24	
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.38		mg/kg-dry	U	UJ	0.38			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.3		mg/kg-dry	U		0.3			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		15		mg/kg-dry	U	UJ	15			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		12		mg/kg-dry	U		12			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		15		mg/kg-dry	U	UJ	15			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		12		mg/kg-dry	U		12			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		15		mg/kg-dry	U	UJ	15			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		12		mg/kg-dry	U		12			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.38		mg/kg-dry	U	UJ	0.38			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.3		mg/kg-dry	U		0.3			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.38		mg/kg-dry	U	UJ	0.38			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.3		mg/kg-dry	U		0.3			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.75		mg/kg-dry	U	UJ	0.75			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.6		mg/kg-dry	U		0.6			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.75		mg/kg-dry	U	UJ	0.75			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.6		mg/kg-dry	U		0.6			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.38		mg/kg-dry	U	UJ	0.38			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.3		mg/kg-dry	U		0.3			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.38		mg/kg-dry	U	UJ	0.38			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.3		mg/kg-dry	U		0.3			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	15		mg/kg-dry	U	UJ	15			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	12		mg/kg-dry	U		12			
CC-POND-4	CC-POND-4	IIA	2	P2-00536	Sediment		Field Sample	7/2/2008	21516	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.38		mg/kg-dry	U	UJ	0.38			
CC-POND-4	CC-POND-4	IIA	2	P2-01016	Sediment		Field Sample	9/15/2008	19180	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.3		mg/kg-dry	U		0.3			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19188	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.3		mg/kg-dry	v		1		0.03	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21525	E300.0	O	Z	Anions	Fluoride, 1:2		1.3		mg/kg-dry	v		1		0.03	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21526	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1930		mg/kg-dry	v		5		0.32	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19189	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	996		mg/kg-dry	v		5		0.3	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19192	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		52		mg/kg-dry	v	J	31		5.12	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19191	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		121		mg/kg-dry	v	J	31		2.54	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19191	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		31		mg/kg-dry	U	UJ	31		4.57	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21534	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	33		mg/kg-dry	U		33			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19192	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	220		mg/kg-dry	v	J	31		10.19	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19197	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	382		mg/kg-dry	v		31			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Aluminum	7429-90-5	36700		mg/kg-dry	v	J	5		3.4	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19194	SW6010B	O	Z	Metals	Aluminum	7429-90-5	25800		mg/kg-dry	v	J	5		1.27	
CC-POND-5	CC-POND-5	**IIA**	2	**P2-00537**	**Sediment**		**Field Sample**	**7/2/2008**	21531	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001824613**	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.0034	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21531	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.01	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.02	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Barium	7440-39-3	1360		mg/kg-dry	v	J	5		0.12	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Barium	7440-39-3	1390		mg/kg-dry	v		5		0.03	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21529	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.01	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.000742	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21529	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		3.51	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19194	SW6010B	O	Z	Metals	Boron	7440-42-8	7		mg/kg-dry	U		7		6.56	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21531	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.002095262	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00391	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Chromium	7440-47-3	299		mg/kg-dry	v	J	5		0.75	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Chromium	7440-47-3	299		mg/kg-dry	v		5		0.03	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21532	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.32	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Cobalt	7440-48-4	64		mg/kg-dry	v	J	5		1.36	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Cobalt	7440-48-4	51		mg/kg-dry	v		5		0.0047	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Copper	7440-50-8	175		mg/kg-dry	v	J	5		0.67	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Copper	7440-50-8	141		mg/kg-dry	v		5		0.00964	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Iron	7439-89-6	58800		mg/kg-dry	v	J	40		41.21	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19194	SW6010B	O	Z	Metals	Iron	7439-89-6	45100		mg/kg-dry	v		20		15.38	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Lead	7439-92-1	88		mg/kg-dry	v	J	5		4.52	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Lead	7439-92-1	84		mg/kg-dry	v		5		0.02	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Manganese	7439-96-5	1530		mg/kg-dry	v	J	5		0.22	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Manganese	7439-96-5	1080		mg/kg-dry	v		5		0.02	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21533	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19196	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Nickel	7440-02-0	112		mg/kg-dry	v	J	5		1.57	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Nickel	7440-02-0	109		mg/kg-dry	v		5		0.00629	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21531	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.002103488	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00393	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21529	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.22	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.00355	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21531	SW6020	O	Z	Metals	Thallium	7440-28-0	0.7		mg/kg-dry	v		0.6		0.001619776	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	v		0.6		0.00302	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Vanadium	7440-62-2	84		mg/kg-dry	v	J	1		0.98	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Vanadium	7440-62-2	69		mg/kg-dry	v		1		0.12	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21530	SW6010B	O	Z	Metals	Zinc	7440-66-6	89		mg/kg-dry	v	J	5		1.02	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19195	SW6020	O	Z	Metals	Zinc	7440-66-6	67		mg/kg-dry	v		5		0.02	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21527	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.44		wt%	v		0.01		0.01	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19190	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.41		wt%	v		0.01		0.01	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21523	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	69.6		wt%	v		0.2		0.01	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19186	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	67.4		wt%	v		0.2		0.01	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21524	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19187	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.7		s.u.	v		0.1			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21523	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	30.4		wt%	v		0.01		0.01	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19186	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	32.6		wt%	v		0.01		0.01	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1		mg/kg-dry	U		1		0.18	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1		mg/kg-dry	U		1		0.24	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1		mg/kg-dry	U		1		0.18	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1		mg/kg-dry	U		1		0.18	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1		mg/kg-dry	U		1		0.12	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1		mg/kg-dry	U		1		0.24	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1		mg/kg-dry	U		1		0.18	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1		mg/kg-dry	U		1		0.18	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1		mg/kg-dry	U		1		0.24	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1		mg/kg-dry	U		1		0.18	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1		mg/kg-dry	U		1		0.24	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1		mg/kg-dry	U		1		0.24	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1		mg/kg-dry	U		1		0.18	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1		mg/kg-dry	U		1		0.3	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1		mg/kg-dry	U		1		0.24	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1		mg/kg-dry	U		1		0.18	
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19198	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1		mg/kg-dry	U		1		0.18	
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.25		mg/kg-dry	U	UJ	0.25			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.28		mg/kg-dry	U		0.28			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		10		mg/kg-dry	U	UJ	10			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		11		mg/kg-dry	U		11			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		10		mg/kg-dry	U	UJ	10			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		11		mg/kg-dry	U		11			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		10		mg/kg-dry	U	UJ	10			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		11		mg/kg-dry	U		11			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.25		mg/kg-dry	U	UJ	0.25			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.28		mg/kg-dry	U		0.28			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.25		mg/kg-dry	U	UJ	0.25			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.28		mg/kg-dry	U		0.28			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.5		mg/kg-dry	U	UJ	0.5			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.55		mg/kg-dry	U		0.55			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.5		mg/kg-dry	U	UJ	0.5			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.55		mg/kg-dry	U		0.55			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.25		mg/kg-dry	U	UJ	0.25			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.28		mg/kg-dry	U		0.28			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.25		mg/kg-dry	U	UJ	0.25			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.28		mg/kg-dry	U		0.28			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	10		mg/kg-dry	U	UJ	10			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	11		mg/kg-dry	U		11			
CC-POND-5	CC-POND-5	IIA	2	P2-00537	Sediment		Field Sample	7/2/2008	21528	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.25		mg/kg-dry	U	UJ	0.25			
CC-POND-5	CC-POND-5	IIA	2	P2-01017	Sediment		Field Sample	9/15/2008	19193	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.28		mg/kg-dry	U		0.28			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18950	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17039	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17040	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	786		mg/kg-dry	v	J	5		0.16	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18951	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	915		mg/kg-dry	v	J	5		0.14	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17047	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	29		mg/kg-dry	v		17			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18958	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	118		mg/kg-dry	v		15			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12800		mg/kg-dry	v		5		0.34	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18954	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8920		mg/kg-dry	v	J	5		0.6	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17044	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000934	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18954	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.63	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17044	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.0079	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18954	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.99	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Barium	7440-39-3	440		mg/kg-dry	v		5		0.01	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18956	SW6020	O	Z	Metals	Barium	7440-39-3	419		mg/kg-dry	v		5		0.01	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00554	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18954	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00966	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.8	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18954	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.14	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17044	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00107	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18954	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.09	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Chromium	7440-47-3	205		mg/kg-dry	v		5		0.07	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18956	SW6020	O	Z	Metals	Chromium	7440-47-3	211		mg/kg-dry	v		5		0.01	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17045	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.16	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Cobalt	7440-48-4	19		mg/kg-dry	v		5		0.13	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18956	SW6020	O	Z	Metals	Cobalt	7440-48-4	18		mg/kg-dry	v		5		0.00225	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Copper	7440-50-8	34		mg/kg-dry	v	J	5		0.06	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18956	SW6020	O	Z	Metals	Copper	7440-50-8	32		mg/kg-dry	v		5		0.00461	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Iron	7439-89-6	17500		mg/kg-dry	v		5		4.22	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18954	SW6010B	O	Z	Metals	Iron	7439-89-6	15300		mg/kg-dry	v		7		7.36	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Lead	7439-92-1	42		mg/kg-dry	v		5		0.46	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18954	SW6010B	O	Z	Metals	Lead	7439-92-1	39		mg/kg-dry	v		5		0.8	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Manganese	7439-96-5	362		mg/kg-dry	v		5		0.02	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18956	SW6020	O	Z	Metals	Manganese	7439-96-5	409		mg/kg-dry	v	J	5		0.01	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17046	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18957	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Nickel	7440-02-0	44		mg/kg-dry	v		5		0.16	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18955	SW6020	O	Z	Metals	Nickel	7440-02-0	39		mg/kg-dry	v		5		0.00301	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17044	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00108	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18954	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		2.17	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.11	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18954	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.2	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17044	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00083	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18955	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00145	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Vanadium	7440-62-2	39		mg/kg-dry	v		1		0.1	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18955	SW6020	O	Z	Metals	Vanadium	7440-62-2	45		mg/kg-dry	v	J	1		0.06	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17043	SW6010B	O	Z	Metals	Zinc	7440-66-6	22		mg/kg-dry	v		5		0.1	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18955	SW6020	O	Z	Metals	Zinc	7440-66-6	28		mg/kg-dry	v		5		0.01	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17041	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.17		wt%	v		0.01		0.01	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18952	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.22		wt%	v		0.01		0.01	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17037	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	40.7		wt%	v		0.2		0.01	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18948	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	32		wt%	v		0.2		0.01	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17038	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18949	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17037	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	59.3		wt%	v		0.01		0.01	
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18948	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	68		wt%	v		0.01		0.01	
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.047		mg/kg	U	UJ	0.047			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.096		mg/kg-dry	U	UJ	0.096			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.9		mg/kg	U	UJ	1.9			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.8		mg/kg-dry	U	UJ	3.8			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.9		mg/kg	U	UJ	1.9			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.8		mg/kg-dry	U	UJ	3.8			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.9		mg/kg	U	UJ	1.9			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.8		mg/kg-dry	U	UJ	3.8			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.047		mg/kg	U	UJ	0.047			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.096		mg/kg-dry	U	UJ	0.096			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.047		mg/kg	U	UJ	0.047			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.096		mg/kg-dry	U	UJ	0.096			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.094		mg/kg	U	UJ	0.094			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.19		mg/kg-dry	U	UJ	0.19			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.094		mg/kg	U	UJ	0.094			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.19		mg/kg-dry	U	UJ	0.19			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.047		mg/kg	U	UJ	0.047			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.096		mg/kg-dry	U	UJ	0.096			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.047		mg/kg	U	UJ	0.047			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.1		mg/kg-dry	v	J	0.096			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.9		mg/kg	U	UJ	1.9			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.8		mg/kg-dry	U	UJ	3.8			
CCS-1	CCS-1	IIA	2	P2-00487	Sediment		Field Sample	6/28/2008	17042	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.047		mg/kg	U	UJ	0.047			
CCS-1	CCS-1	IIA	2	P2-00991	Sediment		Field Sample	9/14/2008	18953	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.096		mg/kg-dry	U	UJ	0.096			
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2464	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2465	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1140		mg/kg-dry	v		10	mg/kg-dry	13.98	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2472	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	36		mg/kg-dry	v		14	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9290		mg/kg-dry	v		5	mg/kg-dry	0.69	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2470	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001551049	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2470	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Barium	7440-39-3	322		mg/kg-dry	v		5	mg/kg-dry	1.39	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.00979021	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.79	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2470	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001370629	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Chromium	7440-47-3	165		mg/kg-dry	v	J	0.4	mg/kg-dry	0.41	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Cobalt	7440-48-4	17		mg/kg-dry	v		5	mg/kg-dry	0.41	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Copper	7440-50-8	35		mg/kg-dry	v		5	mg/kg-dry	0.27	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Iron	7439-89-6	19000		mg/kg-dry	v		10	mg/kg-dry	13.98	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Lead	7439-92-1	33		mg/kg-dry	v		5	mg/kg-dry	1.39	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Manganese	7439-96-5	162		mg/kg-dry	v		5	mg/kg-dry	0.05	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2471	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Nickel	7440-02-0	37		mg/kg-dry	v		5	mg/kg-dry	0.27	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2470	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001788112	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.13	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2470	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001376923	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Vanadium	7440-62-2	35		mg/kg-dry	v		1	mg/kg-dry	0.55	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2469	SW6010B	O	Z	Metals	Zinc	7440-66-6	17		mg/kg-dry	v		5	mg/kg-dry	0.27	mg/kg-dry
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2466	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.22		wt%	v		0.01	wt%	0.01	wt%
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2468	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	28		wt%	v		0.2	wt%	0.01	wt%

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2463	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1	s.u.		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.075		mg/kg-dry	U		0.075	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3		mg/kg-dry	U		3	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3		mg/kg-dry	U		3	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3		mg/kg-dry	U		3	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.075		mg/kg-dry	U		0.075	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.075		mg/kg-dry	U		0.075	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.15		mg/kg-dry	U		0.15	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.15		mg/kg-dry	U		0.15	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.075		mg/kg-dry	U		0.075	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.075		mg/kg-dry	U		0.075	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3		mg/kg-dry	U		3	mg/kg-dry		
CCS-1_SED	CCS-1	I	1	P1-00396	Sediment		Field Sample	10/12/2007	2467	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.075		mg/kg-dry	U		0.075	mg/kg-dry		
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19060	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.6		mg/kg-dry	v		1		0.04	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17094	E300.0	O	Z	Anions	Fluoride, 1:2		1.7		mg/kg-dry	v	U	1		0.03	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17095	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1230		mg/kg-dry	v	J	5		0.33	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19061	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1080		mg/kg-dry	v	J	5		0.42	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17098	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		51		mg/kg-dry	v	J	34		5.65	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19064	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		62		mg/kg-dry	v	J	42		7.04	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17097	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		33		mg/kg-dry	J	J	34		2.8	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19063	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		42		mg/kg-dry	U	UJ	42		3.5	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17097	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		34		mg/kg-dry	U	UJ	34		5.04	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19063	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		42		mg/kg-dry	U	UJ	42		6.28	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17098	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	164		mg/kg-dry	v	J	34		11.23	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17104	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	584		mg/kg-dry	v		34			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19064	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	154		mg/kg-dry	v	J	42		14	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19069	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	842		mg/kg-dry	v		42			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12100		mg/kg-dry	v		5		0.7	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Aluminum	7429-90-5	13900		mg/kg-dry	v		5		1.74	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17101	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00188	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19067	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00468	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17101	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.01	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19067	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.03	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Barium	7440-39-3	360		mg/kg-dry	v		5		0.02	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Barium	7440-39-3	439		mg/kg-dry	v		5		0.06	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Boron	7440-42-8	10		mg/kg-dry	v		5		3.61	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Boron	7440-42-8	9		mg/kg-dry	U		9		9.02	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17101	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00215	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.27	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Chromium	7440-47-3	162		mg/kg-dry	v		5		0.15	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Chromium	7440-47-3	221		mg/kg-dry	v		5		0.38	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17102	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.33	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5		0.28	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5		0.69	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Copper	7440-50-8	16		mg/kg-dry	v	J	5		0.13	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Copper	7440-50-8	19		mg/kg-dry	v		5		0.34	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Iron	7439-89-6	17800		mg/kg-dry	v		8		8.47	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Iron	7439-89-6	17300		mg/kg-dry	v		10		14.09	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5		0.93	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Lead	7439-92-1	14		mg/kg-dry	v		5		2.32	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Manganese	7439-96-5	116		mg/kg-dry	v		5		0.04	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Manganese	7439-96-5	124		mg/kg-dry	v		5		0.11	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17103	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19068	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.04	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Nickel	7440-02-0	25		mg/kg-dry	v		5		0.32	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Nickel	7440-02-0	28		mg/kg-dry	v		5		0.8	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17101	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00216	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19067	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00539	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.23	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.57	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17101	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.00167	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19067	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.00415	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Vanadium	7440-62-2	64		mg/kg-dry	v		1		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Vanadium	7440-62-2	72		mg/kg-dry	v		1		0.5	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17100	SW6010B	O	Z	Metals	Zinc	7440-66-6	34		mg/kg-dry	v		5		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19066	SW6010B	O	Z	Metals	Zinc	7440-66-6	44		mg/kg-dry	v		5		0.52	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17096	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.97		wt%	v		0.01		0.01	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19062	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.73		wt%	v		0.01		0.01	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17092	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	70.4		wt%	v		0.2		0.01	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19058	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	76.3		wt%	v		0.2		0.01	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17093	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19059	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17092	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	29.6		wt%	v		0.01		0.01	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19058	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	23.7		wt%	v		0.01		0.01	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.1		mg/kg-dry	U		1.1		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.4		mg/kg-dry	U		1.4		0.25	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.1		mg/kg-dry	U		1.1		0.27	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.4		mg/kg-dry	U		1.4		0.33	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.1		mg/kg-dry	U		1.1		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.4		mg/kg-dry	U		1.4		0.25	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.1		mg/kg-dry	U		1.1		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.4		mg/kg-dry	U		1.4		0.25	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.1		mg/kg-dry	U		1.1		0.13	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.4		mg/kg-dry	U		1.4		0.16	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.1		mg/kg-dry	U		1.1		0.27	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.4		mg/kg-dry	U		1.4		0.33	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.1		mg/kg-dry	U		1.1		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.4		mg/kg-dry	U		1.4		0.25	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.1		mg/kg-dry	U		1.1		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.4		mg/kg-dry	U		1.4		0.25	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.1		mg/kg-dry	U		1.1		0.27	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.4		mg/kg-dry	U		1.4		0.33	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.1		mg/kg-dry	U		1.1		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.4		mg/kg-dry	U		1.4		0.25	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.1		mg/kg-dry	U		1.1		0.27	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.4		mg/kg-dry	U		1.4		0.33	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.1		mg/kg-dry	U		1.1		0.27	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.4		mg/kg-dry	U		1.4		0.33	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.1		mg/kg-dry	U		1.1		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.4		mg/kg-dry	U		1.4		0.25	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.1		mg/kg-dry	U		1.1		0.33	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.4		mg/kg-dry	U		1.4		0.42	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.1		mg/kg-dry	U		1.1		0.27	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.4		mg/kg-dry	U	UJ	1.4		0.33	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.1		mg/kg-dry	U		1.1		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.4		mg/kg-dry	U		1.4		0.25	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17105	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.1		mg/kg-dry	U		1.1		0.2	
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19070	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.4		mg/kg-dry	U		1.4		0.25	
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.26		mg/kg-dry	U	UJ	0.26			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.29		mg/kg-dry	U	UJ	0.29			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		10		mg/kg-dry	U	UJ	10			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		11		mg/kg-dry	U	UJ	11			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		15		mg/kg-dry	v	J	10			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		11		mg/kg-dry	U	UJ	11			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		18		mg/kg-dry	v	J	10			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		16		mg/kg-dry	v	J	11			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.26		mg/kg-dry	U	UJ	0.26			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.29		mg/kg-dry	U	UJ	0.29			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.26		mg/kg-dry	U	UJ	0.26			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.29		mg/kg-dry	U	UJ	0.29			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.52		mg/kg-dry	U	UJ	0.52			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.57		mg/kg-dry	U	UJ	0.57			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.52		mg/kg-dry	U	UJ	0.52			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.57		mg/kg-dry	U	UJ	0.57			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.26		mg/kg-dry	U	UJ	0.26			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.29		mg/kg-dry	U	UJ	0.29			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.26		mg/kg-dry	U	UJ	0.26			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.29		mg/kg-dry	U	UJ	0.29			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	22		mg/kg-dry	v	J	10			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	15		mg/kg-dry	v	J	11			
CCS-11	CCS-11	IIA	2	P2-00493	Sediment		Field Sample	6/29/2008	17099	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.26		mg/kg-dry	U	UJ	0.26			
CCS-11	CCS-11	IIA	2	P2-01002	Sediment		Field Sample	9/15/2008	19065	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.29		mg/kg-dry	U	UJ	0.29			
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2517	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2518	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1680		mg/kg-dry	v		20	mg/kg-dry	16.39	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2520	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		16		mg/kg-dry	U		16	mg/kg-dry	2.73	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2521	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		16		mg/kg-dry	U		16	mg/kg-dry	1.36	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2521	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		16		mg/kg-dry	U		16	mg/kg-dry	2.44	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2520	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	16		mg/kg-dry	U		16	mg/kg-dry	5.44	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2527	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	92		mg/kg-dry	v		16	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Aluminum	7429-90-5	16100		mg/kg-dry	v		5	mg/kg-dry	0.81	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2525	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001818033	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2525	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Barium	7440-39-3	322		mg/kg-dry	v	J	5	mg/kg-dry	1.63	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.01	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	3.27	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2525	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.002087705	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Chromium	7440-47-3	109		mg/kg-dry	v	J	0.5	mg/kg-dry	0.49	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Cobalt	7440-48-4	16		mg/kg-dry	v		5	mg/kg-dry	0.49	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Copper	7440-50-8	16		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Iron	7439-89-6	25100		mg/kg-dry	v	J	20	mg/kg-dry	16.39	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Lead	7439-92-1	14		mg/kg-dry	v		5	mg/kg-dry	1.63	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Manganese	7439-96-5	146		mg/kg-dry	v		5	mg/kg-dry	0.06	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2526	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Nickel	7440-02-0	28		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2525	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.002095902	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.16	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2525	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001613934	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Vanadium	7440-62-2	45		mg/kg-dry	v		1	mg/kg-dry	0.65	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2524	SW6010B	O	Z	Metals	Zinc	7440-66-6	31		mg/kg-dry	v		5	mg/kg-dry	0.32	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2519	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.81		wt%	v		0.01	wt%	0.01	wt%
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2523	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	39		wt%	v		0.2	wt%	0.01	wt%
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2516	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.4		s.u.	v		0.1	s.u.		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.06	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.16	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2528	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.045		mg/kg-dry	U		0.045	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.8		mg/kg-dry	U		1.8	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.8		mg/kg-dry	U		1.8	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.2		mg/kg-dry	v		1.8	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.045		mg/kg-dry	U		0.045	mg/kg-dry		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.045		mg/kg-dry	U		0.045	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.09		mg/kg-dry	U		0.09	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.09		mg/kg-dry	U		0.09	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.045		mg/kg-dry	U		0.045	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.045		mg/kg-dry	U		0.045	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.2		mg/kg-dry	v		1.8	mg/kg-dry		
CCS-11_SED	CCS-11	I	1	P1-00402	Sediment		Field Sample	10/13/2007	2522	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.045		mg/kg-dry	U		0.045	mg/kg-dry		
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19073	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.3		mg/kg-dry	v		1		0.03	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17108	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17109	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2780		mg/kg-dry	v	J	5		0.17	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19074	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2450		mg/kg-dry	v	J	5		0.33	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19077	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		33		mg/kg-dry	J	J	33		5.54	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19076	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		33		mg/kg-dry	U	UJ	33		2.75	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19076	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		33		mg/kg-dry	U	UJ	33		4.94	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17116	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	30		mg/kg-dry	v		18			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19077	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	80		mg/kg-dry	v	J	33		11.02	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19082	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	335		mg/kg-dry	v		33			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Aluminum	7429-90-5	16600		mg/kg-dry	v		5		0.36	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Aluminum	7429-90-5	14800		mg/kg-dry	v		5		1.37	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17113	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000985	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19080	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00368	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17113	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.00832	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19080	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.03	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Barium	7440-39-3	602		mg/kg-dry	v		5		0.01	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Barium	7440-39-3	707		mg/kg-dry	v		5		0.04	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00584	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.9	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19080	SW6020	O	Z	Metals	Boron	7440-42-8	7		mg/kg-dry	v		5		0.52	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17113	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00113	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.21	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Chromium	7440-47-3	171		mg/kg-dry	v		5		0.08	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Chromium	7440-47-3	162		mg/kg-dry	v		5		0.3	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17114	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.17	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Cobalt	7440-48-4	23		mg/kg-dry	v		5		0.14	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Cobalt	7440-48-4	22		mg/kg-dry	v		5		0.54	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Copper	7440-50-8	16		mg/kg-dry	v	J	5		0.07	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Copper	7440-50-8	15		mg/kg-dry	v		5		0.27	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Iron	7439-89-6	22500		mg/kg-dry	v		5		4.45	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Iron	7439-89-6	22400		mg/kg-dry	v		20		16.63	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5		0.48	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v	U	5		1.82	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Manganese	7439-96-5	180		mg/kg-dry	v		5		0.02	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Manganese	7439-96-5	272		mg/kg-dry	v		5		0.08	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17115	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19081	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Nickel	7440-02-0	47		mg/kg-dry	v		5		0.16	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Nickel	7440-02-0	49		mg/kg-dry	v		5		0.63	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17113	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00114	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19080	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00424	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.12	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.45	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17113	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000875	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19080	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00327	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Vanadium	7440-62-2	38		mg/kg-dry	v		1		0.1	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Vanadium	7440-62-2	34		mg/kg-dry	v		1		0.39	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17112	SW6010B	O	Z	Metals	Zinc	7440-66-6	20		mg/kg-dry	v		5		0.11	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19079	SW6010B	O	Z	Metals	Zinc	7440-66-6	19		mg/kg-dry	v		5		0.41	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17110	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.58		wt%	v		0.01		0.01	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19075	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.15		wt%	v		0.01		0.01	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17106	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	43.7		wt%	v		0.2		0.01	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19071	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	69.9		wt%	v		0.2		0.01	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17107	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19072	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17106	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	56.3		wt%	v		0.01		0.01	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19071	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	30.1		wt%	v		0.01		0.01	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.1		mg/kg-dry	U		1.1		0.19	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.1		mg/kg-dry	U		1.1		0.26	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.1		mg/kg-dry	U		1.1		0.19	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.1		mg/kg-dry	U		1.1		0.19	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.1		mg/kg-dry	U		1.1		0.13	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.1		mg/kg-dry	U		1.1		0.26	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.1		mg/kg-dry	U		1.1		0.19	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.1		mg/kg-dry	U		1.1		0.19	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.1		mg/kg-dry	U		1.1		0.26	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.1		mg/kg-dry	U		1.1		0.19	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.1		mg/kg-dry	U		1.1		0.26	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.1		mg/kg-dry	U		1.1		0.26	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.1		mg/kg-dry	U		1.1		0.19	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.1		mg/kg-dry	U		1.1		0.33	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.1		mg/kg-dry	U	UJ	1.1		0.26	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.1		mg/kg-dry	U		1.1		0.19	
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19083	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.1		mg/kg-dry	U		1.1		0.19	
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.1		mg/kg-dry	U	UJ	0.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.22		mg/kg-dry	U	UJ	0.22			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		4.1		mg/kg-dry	U	UJ	4.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		8.7		mg/kg-dry	U	UJ	8.7			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		4.1		mg/kg-dry	U	UJ	4.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		8.7		mg/kg-dry	U	UJ	8.7			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		4.1		mg/kg-dry	U	UJ	4.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		8.7		mg/kg-dry	U	UJ	8.7			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.1		mg/kg-dry	U	UJ	0.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.22		mg/kg-dry	U	UJ	0.22			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.1		mg/kg-dry	U	UJ	0.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.22		mg/kg-dry	U	UJ	0.22			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.2		mg/kg-dry	U	UJ	0.2			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.44		mg/kg-dry	U	UJ	0.44			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.2		mg/kg-dry	U	UJ	0.2			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.44		mg/kg-dry	U	UJ	0.44			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.1		mg/kg-dry	U	UJ	0.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.22		mg/kg-dry	U	UJ	0.22			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.1		mg/kg-dry	U	UJ	0.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.22		mg/kg-dry	U	UJ	0.22			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	4.1		mg/kg-dry	U	UJ	4.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	8.7		mg/kg-dry	U	UJ	8.7			
CCS-14	CCS-14	IIA	2	P2-00494	Sediment		Field Sample	6/29/2008	17111	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.1		mg/kg-dry	U	UJ	0.1			
CCS-14	CCS-14	IIA	2	P2-01003	Sediment		Field Sample	9/15/2008	19078	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.22		mg/kg-dry	U	UJ	0.22			
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2530	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2531	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3010		mg/kg-dry	v		20	mg/kg-dry	19.26	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2538	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	46		mg/kg-dry	v		19	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12200		mg/kg-dry	v		5	mg/kg-dry	0.96	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2536	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.002136801	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2536	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Barium	7440-39-3	583		mg/kg-dry	v	J	5	mg/kg-dry	1.92	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.01	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	3.85	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2536	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001888247	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Chromium	7440-47-3	123		mg/kg-dry	v	J	0.6	mg/kg-dry	0.57	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Cobalt	7440-48-4	17		mg/kg-dry	v		5	mg/kg-dry	0.57	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Copper	7440-50-8	14		mg/kg-dry	v		5	mg/kg-dry	0.38	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Iron	7439-89-6	15500		mg/kg-dry	v	J	5	mg/kg-dry	1.34	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5	mg/kg-dry	1.92	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Manganese	7439-96-5	168		mg/kg-dry	v		5	mg/kg-dry	0.07	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2537	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Nickel	7440-02-0	34		mg/kg-dry	v		5	mg/kg-dry	0.38	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2536	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.002463391	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.19	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2536	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001896917	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Vanadium	7440-62-2	33		mg/kg-dry	v		1	mg/kg-dry	0.77	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2535	SW6010B	O	Z	Metals	Zinc	7440-66-6	15		mg/kg-dry	v		5	mg/kg-dry	0.38	mg/kg-dry
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2532	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		5.41		wt%	v		0.01	wt%	0.01	wt%
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2534	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	48		wt%	v		0.2	wt%	0.01	wt%
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2529	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1	s.u.		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.076		mg/kg-dry	U		0.076	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3		mg/kg-dry	U		3	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3		mg/kg-dry	U		3	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3		mg/kg-dry	U		3	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.076		mg/kg-dry	U		0.076	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.076		mg/kg-dry	U		0.076	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.15		mg/kg-dry	U		0.15	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.15		mg/kg-dry	U		0.15	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.076		mg/kg-dry	U		0.076	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.076		mg/kg-dry	U		0.076	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.7		mg/kg-dry	u		3	mg/kg-dry		
CCS-14_SED	CCS-14	I	1	P1-00403	Sediment		Field Sample	10/13/2007	2533	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.076		mg/kg-dry	U		0.076	mg/kg-dry		
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18927	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17050	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17051	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3440		mg/kg-dry	v	J	5		0.16	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18928	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2790		mg/kg-dry	v	J	5		0.15	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17058	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	44		mg/kg-dry	v		16			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18934	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	65		mg/kg-dry	v		16			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8180		mg/kg-dry	v		5		0.33	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8750		mg/kg-dry	v		5		0.66	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17055	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000896	
CCS-16	CCS-16	**IIA**	2	**P2-00989**	**Sediment**		**Field Sample**	**9/14/2008**	18931	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**1.77**	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17055	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.00757	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		2.16	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Barium	7440-39-3	1260		mg/kg-dry	v		5		0.02	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Barium	7440-39-3	1310		mg/kg-dry	v		5		0.02	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00531	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.72	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.4	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17055	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00103	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.1	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Chromium	7440-47-3	70		mg/kg-dry	v		5		0.07	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Chromium	7440-47-3	75		mg/kg-dry	v		5		0.14	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17056	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.16	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Cobalt	7440-48-4	17		mg/kg-dry	v		5		0.13	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Cobalt	7440-48-4	19		mg/kg-dry	v		5		0.26	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Copper	7440-50-8	32		mg/kg-dry	v	J	5		0.06	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Copper	7440-50-8	28		mg/kg-dry	v		5		0.13	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Iron	7439-89-6	27200		mg/kg-dry	v		5		4.04	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Iron	7439-89-6	31200		mg/kg-dry	v		8		7.98	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Lead	7439-92-1	8		mg/kg-dry	v		5		0.44	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Lead	7439-92-1	5		mg/kg-dry	U		5		0.87	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Manganese	7439-96-5	2710		mg/kg-dry	v		5		0.02	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Manganese	7439-96-5	3000		mg/kg-dry	v		5		0.04	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17057	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18933	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Nickel	7440-02-0	24		mg/kg-dry	v		5		0.15	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Nickel	7440-02-0	25		mg/kg-dry	v		5		0.3	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17055	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00103	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		2.36	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.11	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.21	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17055	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000796	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18932	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00157	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Vanadium	7440-62-2	37		mg/kg-dry	v		1		0.09	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Vanadium	7440-62-2	42		mg/kg-dry	v		1		0.19	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17054	SW6010B	O	Z	Metals	Zinc	7440-66-6	15		mg/kg-dry	v		5		0.1	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18931	SW6010B	O	Z	Metals	Zinc	7440-66-6	17		mg/kg-dry	v		5		0.19	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17052	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.61		wt%	v		0.01		0.01	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18929	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.94		wt%	v		0.01		0.01	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17048	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	38.1		wt%	v		0.2		0.01	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18925	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	37.2		wt%	v		0.2		0.01	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17049	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.9		s.u.	v		0.1			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18926	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.7		s.u.	v		0.1			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17048	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	61.9		wt%	v		0.01		0.01	
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18925	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	62.8		wt%	v		0.01		0.01	
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.061		mg/kg	U	UJ	0.061			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.082		mg/kg-dry	U	UJ	0.082			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.4		mg/kg	U	UJ	2.4			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.3		mg/kg-dry	U	UJ	3.3			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.4		mg/kg	U	UJ	2.4			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.3		mg/kg-dry	U	UJ	3.3			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.4		mg/kg	U	UJ	2.4			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.3		mg/kg-dry	U	UJ	3.3			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.061		mg/kg	U	UJ	0.061			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.082		mg/kg-dry	U	UJ	0.082			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.061		mg/kg	U	UJ	0.061			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.082		mg/kg-dry	U	UJ	0.082			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.12		mg/kg	U	UJ	0.12			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.16		mg/kg-dry	U	UJ	0.16			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.12		mg/kg	U	UJ	0.12			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.16		mg/kg-dry	U	UJ	0.16			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.061		mg/kg	U	UJ	0.061			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.082		mg/kg-dry	U	UJ	0.082			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.061		mg/kg	U	UJ	0.061			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.082		mg/kg-dry	U	UJ	0.082			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.4		mg/kg	U	UJ	2.4			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.3		mg/kg-dry	U	UJ	3.3			
CCS-16	CCS-16	IIA	2	P2-00489	Sediment		Field Sample	6/28/2008	17053	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.061		mg/kg	U	UJ	0.061			
CCS-16	CCS-16	IIA	2	P2-00989	Sediment		Field Sample	9/14/2008	18930	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.082		mg/kg-dry	U	UJ	0.082			
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2615	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2616	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	10200		mg/kg-dry	v		100	mg/kg-dry	107.91	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2618	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		18		mg/kg-dry	U		18	mg/kg-dry	3	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2619	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		18		mg/kg-dry	U		18	mg/kg-dry	1.49	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2619	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		18		mg/kg-dry	U		18	mg/kg-dry	2.67	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2618	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	18		mg/kg-dry	U		18	mg/kg-dry	5.97	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	127		mg/kg-dry	v		18	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9180		mg/kg-dry	v		5	mg/kg-dry	0.89	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2623	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001994604	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2623	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2	mg/kg-dry	0.01	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Barium	7440-39-3	2680		mg/kg-dry	v		5	mg/kg-dry	1.79	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.01	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	3.59	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2623	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.002290468	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Chromium	7440-47-3	93.9		mg/kg-dry	v	J	0.5	mg/kg-dry	0.53	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Cobalt	7440-48-4	27		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Copper	7440-50-8	29		mg/kg-dry	v		5	mg/kg-dry	0.35	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Iron	7439-89-6	54600		mg/kg-dry	v		20	mg/kg-dry	17.98	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Lead	7439-92-1	7		mg/kg-dry	v		5	mg/kg-dry	1.79	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Manganese	7439-96-5	2860		mg/kg-dry	v	J	5	mg/kg-dry	0.07	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2624	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Nickel	7440-02-0	39		mg/kg-dry	v		5	mg/kg-dry	0.35	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2623	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.00229946	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.17	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2623	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001770684	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Vanadium	7440-62-2	57		mg/kg-dry	v		1	mg/kg-dry	0.71	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2622	SW6010B	O	Z	Metals	Zinc	7440-66-6	19		mg/kg-dry	v		5	mg/kg-dry	0.35	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2617	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.97		wt%	v		0.01	wt%	0.01	wt%
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2621	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	44		wt%	v		0.2	wt%	0.01	wt%
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2614	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1	s.u.		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.07	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.17	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2626	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.069		mg/kg-dry	U		0.069	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.7		mg/kg-dry	U		2.7	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.7		mg/kg-dry	U		2.7	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.7		mg/kg-dry	U		2.7	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.069		mg/kg-dry	U		0.069	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.069		mg/kg-dry	U		0.069	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.14		mg/kg-dry	U		0.14	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.14		mg/kg-dry	U		0.14	mg/kg-dry		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.069		mg/kg-dry	U		0.069	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.069		mg/kg-dry	U		0.069	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.7		mg/kg-dry	U		2.7	mg/kg-dry		
CCS-16_SED	CCS-16	I	1	P1-00289	Sediment		Field Sample	10/15/2007	2620	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.069		mg/kg-dry	U		0.069	mg/kg-dry		
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18937	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.02	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17014	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.02	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17015	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1680		mg/kg-dry	v	J	5		0.2	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18938	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2190		mg/kg-dry	v	J	5		0.29	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18941	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		30		mg/kg-dry	v	J	30		4.98	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18940	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		37		mg/kg-dry	v	J	30		2.47	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18940	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		30		mg/kg-dry	U	UJ	30		4.44	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17022	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	83		mg/kg-dry	v		20			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18941	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	91		mg/kg-dry	v	J	30		9.9	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18946	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	473		mg/kg-dry	v		30			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Aluminum	7429-90-5	14200		mg/kg-dry	v		5		0.41	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Aluminum	7429-90-5	16100		mg/kg-dry	v		5		1.23	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17019	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00112	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18944	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00331	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17019	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.00945	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18944	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Barium	7440-39-3	698		mg/kg-dry	v		5		0.01	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Barium	7440-39-3	937		mg/kg-dry	v		5		0.04	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00662	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.15	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18944	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.47	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17019	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00128	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.19	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Chromium	7440-47-3	223		mg/kg-dry	v		5		0.09	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Chromium	7440-47-3	297		mg/kg-dry	v		5		0.27	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17020	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.2	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Cobalt	7440-48-4	24		mg/kg-dry	v		5		0.16	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Cobalt	7440-48-4	28		mg/kg-dry	v		5		0.49	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Copper	7440-50-8	37		mg/kg-dry	v	J	5		0.08	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Copper	7440-50-8	46		mg/kg-dry	v		5		0.24	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Iron	7439-89-6	21700		mg/kg-dry	v		5		5.05	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Iron	7439-89-6	30100		mg/kg-dry	v		10		14.95	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Lead	7439-92-1	46		mg/kg-dry	v		5		0.55	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Lead	7439-92-1	56		mg/kg-dry	v		5		1.64	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Manganese	7439-96-5	781		mg/kg-dry	v		5		0.02	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Manganese	7439-96-5	1570		mg/kg-dry	v		5		0.07	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17021	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18945	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Nickel	7440-02-0	55		mg/kg-dry	v		5		0.19	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Nickel	7440-02-0	73		mg/kg-dry	v		5		0.57	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17019	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00129	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		4.42	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.13	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.4	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17019	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000992	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18944	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00294	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Vanadium	7440-62-2	34		mg/kg-dry	v		1		0.12	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Vanadium	7440-62-2	42		mg/kg-dry	v		1		0.35	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17018	SW6010B	O	Z	Metals	Zinc	7440-66-6	26		mg/kg-dry	v		5		0.12	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18943	SW6010B	O	Z	Metals	Zinc	7440-66-6	42		mg/kg-dry	v		5		0.37	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17016	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.68		wt%	v		0.01		0.01	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18939	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.58		wt%	v		0.01		0.01	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17012	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	50.4		wt%	v		0.2		0.01	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18935	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	66.5		wt%	v		0.2		0.01	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17013	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.5		s.u.	v		0.1			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18936	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17012	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	49.6		wt%	v		0.01		0.01	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18935	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	33.5		wt%	v		0.01		0.01	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.99		mg/kg-dry	U		0.99		0.17	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.99		mg/kg-dry	U		0.99		0.23	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.99		mg/kg-dry	U		0.99		0.17	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.99		mg/kg-dry	U		0.99		0.17	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.99		mg/kg-dry	U		0.99		0.11	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.99		mg/kg-dry	U		0.99		0.23	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.99		mg/kg-dry	U		0.99		0.17	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.99		mg/kg-dry	U		0.99		0.17	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.99		mg/kg-dry	U		0.99		0.23	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.99		mg/kg-dry	U		0.99		0.17	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.99		mg/kg-dry	U		0.99		0.23	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.99		mg/kg-dry	U		0.99		0.23	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.99		mg/kg-dry	U		0.99		0.17	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.99		mg/kg-dry	U		0.99		0.29	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.99		mg/kg-dry	U	UJ	0.99		0.23	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.99		mg/kg-dry	U		0.99		0.17	
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18947	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.99		mg/kg-dry	U		0.99		0.17	
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.06		mg/kg	U	UJ	0.06			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.34		mg/kg-dry	U	UJ	0.34			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.4		mg/kg	U	UJ	2.4			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		14		mg/kg-dry	U	UJ	14			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.4		mg/kg	U	UJ	2.4			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		14		mg/kg-dry	U	UJ	14			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.4		mg/kg	U	UJ	2.4			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		14		mg/kg-dry	U	UJ	14			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.06		mg/kg	U	UJ	0.06			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.34		mg/kg-dry	U	UJ	0.34			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.06		mg/kg	U	UJ	0.06			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.34		mg/kg-dry	U	UJ	0.34			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.12		mg/kg	U	UJ	0.12			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.69		mg/kg-dry	U	UJ	0.69			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.12		mg/kg	U	UJ	0.12			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.69		mg/kg-dry	U	UJ	0.69			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.06		mg/kg	U	UJ	0.06			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.34		mg/kg-dry	U	UJ	0.34			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.06		mg/kg	U	UJ	0.06			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.34		mg/kg-dry	U	UJ	0.34			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.4		mg/kg	U	UJ	2.4			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	14		mg/kg-dry	U	UJ	14			
CCS-6	CCS-6	IIA	2	P2-00485	Sediment		Field Sample	6/28/2008	17017	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.06		mg/kg	U	UJ	0.06			
CCS-6	CCS-6	IIA	2	P2-00990	Sediment		Field Sample	9/14/2008	18942	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.34		mg/kg-dry	U	UJ	0.34			
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2474	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2475	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	600		mg/kg-dry	v		10	mg/kg-dry	14.53	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2482	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	32		mg/kg-dry	v		15	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Aluminum	7429-90-5	13600		mg/kg-dry	v		5	mg/kg-dry	0.72	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2480	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001611919	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2480	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Barium	7440-39-3	391		mg/kg-dry	v		5	mg/kg-dry	1.45	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.01	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.9	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2480	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001424419	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Chromium	7440-47-3	180		mg/kg-dry	v	J	0.4	mg/kg-dry	0.43	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Cobalt	7440-48-4	21		mg/kg-dry	v		5	mg/kg-dry	0.43	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Copper	7440-50-8	36		mg/kg-dry	v		5	mg/kg-dry	0.29	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Iron	7439-89-6	18100		mg/kg-dry	v		10	mg/kg-dry	14.53	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Lead	7439-92-1	89		mg/kg-dry	v		5	mg/kg-dry	1.45	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Manganese	7439-96-5	419		mg/kg-dry	v		5	mg/kg-dry	0.05	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2481	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Nickel	7440-02-0	43		mg/kg-dry	v		5	mg/kg-dry	0.29	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2480	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001858285	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.14	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2480	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001430959	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Vanadium	7440-62-2	41		mg/kg-dry	v		1	mg/kg-dry	0.58	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2479	SW6010B	O	Z	Metals	Zinc	7440-66-6	24		mg/kg-dry	v		5	mg/kg-dry	0.29	mg/kg-dry
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2476	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.7		wt%	v		0.01	wt%	0.01	wt%
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2478	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	31		wt%	v		0.2	wt%	0.01	wt%
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2473	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.1		s.u.	v		0.1	s.u.		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.073		mg/kg-dry	U		0.073	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.9		mg/kg-dry	U		2.9	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.9		mg/kg-dry	U		2.9	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.9		mg/kg-dry	U		2.9	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.073		mg/kg-dry	U		0.073	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.073		mg/kg-dry	U		0.073	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.15		mg/kg-dry	U		0.15	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.15		mg/kg-dry	U		0.15	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.073		mg/kg-dry	U		0.073	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.073		mg/kg-dry	U		0.073	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.9		mg/kg-dry	U		2.9	mg/kg-dry		
CCS-6_SED	CCS-6	I	1	P1-00397	Sediment		Field Sample	10/12/2007	2477	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.073		mg/kg-dry	U		0.073	mg/kg-dry		
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18961	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.02	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17025	E300.0	O	Z	Anions	Fluoride, 1:2		3.1		mg/kg-dry	v		1		0.05	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17026	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	549		mg/kg-dry	v	J	5		0.58	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18962	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	337		mg/kg-dry	v	J	5		0.24	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17029	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		59		mg/kg-dry	U	UJ	59		9.81	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18965	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		18		mg/kg-dry	J	J	25		4.12	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17028	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		59		mg/kg-dry	U	UJ	59		4.87	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18964	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		25		mg/kg-dry	U	UJ	25		2.05	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17028	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		59		mg/kg-dry	U	UJ	59		8.75	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18964	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		25		mg/kg-dry	U	UJ	25		3.68	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17029	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	136		mg/kg-dry	v	J	59		19.51	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17035	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	267		mg/kg-dry	v		59			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18965	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	45		mg/kg-dry	v	J	25		8.2	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18970	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	268		mg/kg-dry	v		25			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Aluminum	7429-90-5	2000		mg/kg-dry	v		5		1.21	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Aluminum	7429-90-5	1120		mg/kg-dry	v	J	5		1.02	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17032	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00326	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18968	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00274	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17032	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.02	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18968	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Barium	7440-39-3	1580		mg/kg-dry	v		5		0.04	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Barium	7440-39-3	765		mg/kg-dry	v		5		0.03	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Boron	7440-42-8	6		mg/kg-dry	U		6		6.28	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		5.28	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17032	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00374	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.16	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Chromium	7440-47-3	97		mg/kg-dry	v		5		0.26	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Chromium	7440-47-3	56		mg/kg-dry	v		5		0.22	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17033	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.58	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg-dry	v		5		0.48	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Cobalt	7440-48-4	7		mg/kg-dry	v		5		0.4	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Copper	7440-50-8	46		mg/kg-dry	v	J	5		0.24	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Copper	7440-50-8	28		mg/kg-dry	v		5		0.2	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Iron	7439-89-6	4790		mg/kg-dry	v		10		9.81	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Iron	7439-89-6	5290		mg/kg-dry	v		8		8.25	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Lead	7439-92-1	15		mg/kg-dry	v		5		1.61	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18968	SW6020	O	Z	Metals	Lead	7439-92-1	11		mg/kg-dry	v		5		0.01	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Manganese	7439-96-5	164		mg/kg-dry	v		5		0.07	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18968	SW6020	O	Z	Metals	Manganese	7439-96-5	137		mg/kg-dry	v	J	5		0.01	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17034	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.05	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18969	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Nickel	7440-02-0	22		mg/kg-dry	v		5		0.56	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Nickel	7440-02-0	27		mg/kg-dry	v		5		0.47	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17032	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00376	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		3.66	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.4	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.33	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17032	SW6020	O	Z	Metals	Thallium	7440-28-0	1.1		mg/kg-dry	v		0.6		0.00289	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18968	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00243	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Vanadium	7440-62-2	49		mg/kg-dry	v		1		0.35	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18967	SW6010B	O	Z	Metals	Vanadium	7440-62-2	16		mg/kg-dry	v		1		0.29	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17031	SW6010B	O	Z	Metals	Zinc	7440-66-6	10		mg/kg-dry	v	U	5		0.36	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18968	SW6020	O	Z	Metals	Zinc	7440-66-6	8		mg/kg-dry	v		5		0.02	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17027	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.35		wt%	v		0.01		0.01	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18963	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.47		wt%	v		0.01		0.01	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17023	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	83		wt%	v		0.2		0.01	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18959	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	59.5		wt%	v		0.2		0.01	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17024	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18960	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17023	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	17		wt%	v		0.01		0.01	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18959	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	40.5		wt%	v		0.01		0.01	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	2		mg/kg-dry	U		2		0.35	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.82		mg/kg-dry	U		0.82		0.14	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	2		mg/kg-dry	U		2		0.47	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.82		mg/kg-dry	U		0.82		0.19	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	2		mg/kg-dry	U		2		0.35	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.82		mg/kg-dry	U		0.82		0.14	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	2		mg/kg-dry	U		2		0.35	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.82		mg/kg-dry	U		0.82		0.14	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	2		mg/kg-dry	U		2		0.23	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.82		mg/kg-dry	U		0.82		0.09	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	2		mg/kg-dry	U		2		0.47	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.82		mg/kg-dry	U		0.82		0.19	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	2		mg/kg-dry	U		2		0.35	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.82		mg/kg-dry	U		0.82		0.14	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	2		mg/kg-dry	U		2		0.35	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.82		mg/kg-dry	U		0.82		0.14	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	2		mg/kg-dry	U		2		0.47	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.82		mg/kg-dry	U		0.82		0.19	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	2		mg/kg-dry	U		2		0.35	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.82		mg/kg-dry	U		0.82		0.14	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	2		mg/kg-dry	U		2		0.47	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.82		mg/kg-dry	U		0.82		0.19	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	2		mg/kg-dry	U		2		0.47	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.82		mg/kg-dry	U		0.82		0.19	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	2		mg/kg-dry	U		2		0.35	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.82		mg/kg-dry	U		0.82		0.14	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	2		mg/kg-dry	U		2		0.58	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.82		mg/kg-dry	U		0.82		0.24	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	2		mg/kg-dry	U		2		0.47	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.82		mg/kg-dry	U	UJ	0.82		0.19	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	2		mg/kg-dry	U		2		0.35	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.82		mg/kg-dry	U		0.82		0.14	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17036	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	2		mg/kg-dry	U		2		0.35	
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18971	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.82		mg/kg-dry	U		0.82		0.14	
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.094		mg/kg	U	UJ	0.094			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.2		mg/kg-dry	U	UJ	0.2			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.8		mg/kg	U	UJ	3.8			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		8.1		mg/kg-dry	U	UJ	8.1			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.8		mg/kg	U	UJ	3.8			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		8.1		mg/kg-dry	U	UJ	8.1			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.8		mg/kg	U	UJ	3.8			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		8.1		mg/kg-dry	U	UJ	8.1			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.094		mg/kg	U	UJ	0.094			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.2		mg/kg-dry	U	UJ	0.2			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.094		mg/kg	U	UJ	0.094			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.2		mg/kg-dry	U	UJ	0.2			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.19		mg/kg	U	UJ	0.19			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.41		mg/kg-dry	U	UJ	0.41			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.19		mg/kg	U	UJ	0.19			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.41		mg/kg-dry	U	UJ	0.41			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.094		mg/kg	U	UJ	0.094			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.2		mg/kg-dry	U	UJ	0.2			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.094		mg/kg	U	UJ	0.094			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.2		mg/kg-dry	U	UJ	0.2			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.8		mg/kg	U	UJ	3.8			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	8.1		mg/kg-dry	U	UJ	8.1			
CCS-8	CCS-8	IIA	2	P2-00486	Sediment		Field Sample	6/28/2008	17030	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.094		mg/kg	U	UJ	0.094			
CCS-8	CCS-8	IIA	2	P2-00992	Sediment		Field Sample	9/14/2008	18966	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.2		mg/kg-dry	U	UJ	0.2			
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2484	E300.0	O	Z	Anions	Fluoride, 1:2		2.9		mg/kg-dry	v		1	mg/kg-dry	0.06	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2485	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	361		mg/kg-dry	v		70	mg/kg-dry	69.93	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2487	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		70		mg/kg-dry	U		70	mg/kg-dry	11.67	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2488	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		70		mg/kg-dry	U		70	mg/kg-dry	5.8	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2488	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		70		mg/kg-dry	U		70	mg/kg-dry	10.41	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2487	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	70		mg/kg-dry	U		70	mg/kg-dry	23.21	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2494	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	271		mg/kg-dry	v		70	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Aluminum	7429-90-5	33800		mg/kg-dry	v		5	mg/kg-dry	3.49	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2492	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.007755243	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2492	SW6020	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg-dry	v		2	mg/kg-dry	0.06	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Barium	7440-39-3	4930		mg/kg-dry	v		7	mg/kg-dry	6.99	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.04	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Boron	7440-42-8	10		mg/kg-dry	U		10	mg/kg-dry	13.98	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2492	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.006853145	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Chromium	7440-47-3	988		mg/kg-dry	v	J	2	mg/kg-dry	2.09	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Cobalt	7440-48-4	75		mg/kg-dry	v		5	mg/kg-dry	2.09	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Copper	7440-50-8	57		mg/kg-dry	v		5	mg/kg-dry	1.39	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Iron	7439-89-6	46400		mg/kg-dry	v		5	mg/kg-dry	4.89	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Lead	7439-92-1	56		mg/kg-dry	v		7	mg/kg-dry	6.99	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Manganese	7439-96-5	1120		mg/kg-dry	v		5	mg/kg-dry	0.27	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2493	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.06	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Nickel	7440-02-0	226		mg/kg-dry	v		5	mg/kg-dry	1.39	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2492	SW6020	O	Z	Metals	Selenium	7782-49-2	1.4		mg/kg-dry	v		0.5	mg/kg-dry	0.008940558	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.69	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2492	SW6020	O	Z	Metals	Thallium	7440-28-0	4.3		mg/kg-dry	v		0.6	mg/kg-dry	0.006884614	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Vanadium	7440-62-2	105		mg/kg-dry	v		3	mg/kg-dry	2.79	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2491	SW6010B	O	Z	Metals	Zinc	7440-66-6	54		mg/kg-dry	v		5	mg/kg-dry	1.39	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2486	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		3.67		wt%	v		0.01	wt%	0.01	wt%
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2490	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	86		wt%	v		0.2	wt%	0.01	wt%
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2483	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1	s.u.		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.41	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.55	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.41	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.41	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.27	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.55	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.41	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.41	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.55	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.41	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.55	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.55	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.41	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.69	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.55	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.41	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2495	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	2.3		mg/kg-dry	U		2.3	mg/kg-dry	0.41	mg/kg-dry
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.49		mg/kg-dry	U		0.49	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		19		mg/kg-dry	U		19	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		19		mg/kg-dry	U		19	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		19		mg/kg-dry	U		19	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.49		mg/kg-dry	U		0.49	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.49		mg/kg-dry	U		0.49	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.97		mg/kg-dry	U		0.97	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.97		mg/kg-dry	U		0.97	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.49		mg/kg-dry	U		0.49	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.49		mg/kg-dry	U		0.49	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	19		mg/kg-dry	U		19	mg/kg-dry		
CCS-8_SED	CCS-8	I	1	P1-00398	Sediment		Field Sample	10/12/2007	2489	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.49		mg/kg-dry	U		0.49	mg/kg-dry		
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19050	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17083	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17084	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1170		mg/kg-dry	v	J	5		0.13	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19051	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	871		mg/kg-dry	v	J	5		0.12	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17091	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	39		mg/kg-dry	v		14			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19057	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	13		mg/kg-dry	U		13			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11900		mg/kg-dry	v		5		0.28	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9990		mg/kg-dry	v		5		0.53	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17088	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000753	
CCS-9	CCS-9	**IIA**	2	**P2-01001**	**Sediment**		**Field Sample**	**9/15/2008**	19054	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**1.44**	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17088	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.00637	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.75	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Barium	7440-39-3	745		mg/kg-dry	v		5		0.02	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Barium	7440-39-3	656		mg/kg-dry	v		5		0.01	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00446	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00851	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.45	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.77	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17088	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.000865	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.08	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Chromium	7440-47-3	214		mg/kg-dry	v		5		0.06	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Chromium	7440-47-3	156		mg/kg-dry	v		5		0.11	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17089	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.13	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Cobalt	7440-48-4	17		mg/kg-dry	v		5		0.11	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5		0.21	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Copper	7440-50-8	47		mg/kg-dry	v	J	5		0.05	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Copper	7440-50-8	35		mg/kg-dry	v		5		0.1	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Iron	7439-89-6	18800		mg/kg-dry	v		5		3.4	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Iron	7439-89-6	14300		mg/kg-dry	v		6		6.49	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Lead	7439-92-1	37		mg/kg-dry	v		5		0.37	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Lead	7439-92-1	21		mg/kg-dry	v		5		0.71	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Manganese	7439-96-5	1720		mg/kg-dry	v		5		0.01	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Manganese	7439-96-5	389		mg/kg-dry	v		5		0.03	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17090	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19056	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Nickel	7440-02-0	43		mg/kg-dry	v		5		0.12	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Nickel	7440-02-0	31		mg/kg-dry	v		5		0.24	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17088	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.000869	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.91	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.09	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.17	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17088	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000669	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19055	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00128	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Vanadium	7440-62-2	60		mg/kg-dry	v		1		0.08	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Vanadium	7440-62-2	37		mg/kg-dry	v		1		0.15	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17087	SW6010B	O	Z	Metals	Zinc	7440-66-6	29		mg/kg-dry	v		5		0.08	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19054	SW6010B	O	Z	Metals	Zinc	7440-66-6	17		mg/kg-dry	v		5		0.16	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17085	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.71		wt%	v		0.01		0.01	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19052	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.66		wt%	v		0.01		0.01	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17081	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	26.4		wt%	v		0.2		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19048	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	22.8		wt%	v		0.2		0.01	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17082	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19049	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17081	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	73.6		wt%	v		0.01		0.01	
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19048	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	77.2		wt%	v		0.01		0.01	
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.069		mg/kg-dry	U	UJ	0.069			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.056		mg/kg-dry	U	UJ	0.056			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.8		mg/kg-dry	U	UJ	2.8			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.3		mg/kg-dry	U	UJ	2.3			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.8		mg/kg-dry	U	UJ	2.8			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.3		mg/kg-dry	U	UJ	2.3			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.8		mg/kg-dry	U	UJ	2.8			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.3		mg/kg-dry	U	UJ	2.3			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.069		mg/kg-dry	U	UJ	0.069			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.056		mg/kg-dry	U	UJ	0.056			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.069		mg/kg-dry	U	UJ	0.069			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.056		mg/kg-dry	U	UJ	0.056			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.14		mg/kg-dry	U	UJ	0.14			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.11		mg/kg-dry	U	UJ	0.11			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.14		mg/kg-dry	U	UJ	0.14			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.11		mg/kg-dry	U	UJ	0.11			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.069		mg/kg-dry	U	UJ	0.069			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.056		mg/kg-dry	U	UJ	0.056			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.069		mg/kg-dry	U	UJ	0.069			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.056		mg/kg-dry	U	UJ	0.056			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.8		mg/kg-dry	U	UJ	2.8			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.3		mg/kg-dry	U	UJ	2.3			
CCS-9	CCS-9	IIA	2	P2-00492	Sediment		Field Sample	6/29/2008	17086	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.069		mg/kg-dry	U	UJ	0.069			
CCS-9	CCS-9	IIA	2	P2-01001	Sediment		Field Sample	9/15/2008	19053	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.056		mg/kg-dry	U	UJ	0.056			
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2507	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2508	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1470		mg/kg-dry	v		10	mg/kg-dry	12.88	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2515	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	9.8		mg/kg-dry	u		13	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10400		mg/kg-dry	v		5	mg/kg-dry	0.64	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2513	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001429124	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2513	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2	mg/kg-dry	0.01	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Barium	7440-39-3	516		mg/kg-dry	v		5	mg/kg-dry	1.28	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.009020619	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.57	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2513	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001262887	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Chromium	7440-47-3	216		mg/kg-dry	v	J	0.4	mg/kg-dry	0.38	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Cobalt	7440-48-4	16		mg/kg-dry	v		5	mg/kg-dry	0.38	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Copper	7440-50-8	64		mg/kg-dry	v		5	mg/kg-dry	0.25	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Iron	7439-89-6	16900		mg/kg-dry	v		10	mg/kg-dry	12.88	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Lead	7439-92-1	96		mg/kg-dry	v		5	mg/kg-dry	1.28	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Manganese	7439-96-5	332		mg/kg-dry	v		5	mg/kg-dry	0.05	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2514	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Nickel	7440-02-0	40		mg/kg-dry	v		5	mg/kg-dry	0.25	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2513	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001647552	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.12	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2513	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001268686	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Vanadium	7440-62-2	62		mg/kg-dry	v		1	mg/kg-dry	0.51	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2512	SW6010B	O	Z	Metals	Zinc	7440-66-6	23		mg/kg-dry	v		5	mg/kg-dry	0.25	mg/kg-dry
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2509	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.45		wt%	v		0.01	wt%	0.01	wt%
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2511	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	22		wt%	v		0.2	wt%	0.01	wt%
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2506	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1	s.u.		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.1		mg/kg-dry	U		0.1	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.1		mg/kg-dry	U		0.1	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.1		mg/kg-dry	U		2.1	mg/kg-dry		
CCS-9_SED	CCS-9	I	1	P1-00400	Sediment		Field Sample	10/12/2007	2510	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.052		mg/kg-dry	U		0.052	mg/kg-dry		
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19010	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.9		mg/kg-dry	v		1		0.05	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16957	E300.0	O	Z	Anions	Fluoride, 1:2		1.3		mg/kg-dry	v	U	1		0.02	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16958	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1440		mg/kg-dry	v	J	5		0.29	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19011	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2610		mg/kg-dry	v	J	5		0.54	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16961	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		50		mg/kg-dry	v	J	30		4.99	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19014	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		65		mg/kg-dry	v	J	54		9.1	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16960	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		43		mg/kg-dry	v	J	30		2.48	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19013	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		54		mg/kg-dry	U	UJ	54		4.52	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16960	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		30		mg/kg-dry	U	UJ	30		4.45	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19013	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		54		mg/kg-dry	U	UJ	54		8.11	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16961	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	165		mg/kg-dry	v	J	30		9.93	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16967	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	709		mg/kg-dry	v		30			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19014	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	145		mg/kg-dry	v	J	54		18.09	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19019	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	1290		mg/kg-dry	v		54			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10700		mg/kg-dry	v		5		0.62	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Aluminum	7429-90-5	15100		mg/kg-dry	v	J	5		2.25	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16964	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00166	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19017	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00604	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16964	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19017	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.05	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Barium	7440-39-3	351		mg/kg-dry	v		5		0.02	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Barium	7440-39-3	603		mg/kg-dry	v	J	5		0.08	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00983	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.03	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Boron	7440-42-8	6		mg/kg-dry	v		5		3.2	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19017	SW6020	O	Z	Metals	Boron	7440-42-8	6		mg/kg-dry	v		5		0.86	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16964	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00147	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.35	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Chromium	7440-47-3	32		mg/kg-dry	v		5		0.13	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Chromium	7440-47-3	47		mg/kg-dry	v	J	5		0.5	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16965	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.29	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Cobalt	7440-48-4	9		mg/kg-dry	v		5		0.24	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Cobalt	7440-48-4	11		mg/kg-dry	v		5		0.9	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Copper	7440-50-8	48		mg/kg-dry	v	J	5		0.12	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Copper	7440-50-8	76		mg/kg-dry	v		5		0.44	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Iron	7439-89-6	17600		mg/kg-dry	v		7		7.49	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Iron	7439-89-6	20800		mg/kg-dry	v		20		18.19	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5		0.82	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Lead	7439-92-1	13		mg/kg-dry	v		5		2.99	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Manganese	7439-96-5	257		mg/kg-dry	v		5		0.04	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Manganese	7439-96-5	435		mg/kg-dry	v	J	5		0.14	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16966	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19018	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.05	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Nickel	7440-02-0	13		mg/kg-dry	v		5		0.28	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Nickel	7440-02-0	21		mg/kg-dry	v		5		1.04	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16964	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00191	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19017	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00697	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.2	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.74	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16964	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00147	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19017	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00537	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Vanadium	7440-62-2	42		mg/kg-dry	v		1		0.17	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Vanadium	7440-62-2	52		mg/kg-dry	v		1		0.65	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16963	SW6010B	O	Z	Metals	Zinc	7440-66-6	29		mg/kg-dry	v		5		0.18	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19016	SW6010B	O	Z	Metals	Zinc	7440-66-6	47		mg/kg-dry	v		5		0.67	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16959	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.75		wt%	v		0.01		0.01	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19012	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.91		wt%	v		0.01		0.01	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16955	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	66.6		wt%	v		0.2		0.01	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19008	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	81.6		wt%	v		0.2		0.01	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16956	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19009	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16955	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	33.4		wt%	v		0.01		0.01	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19008	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	18.4		wt%	v		0.01		0.01	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1		mg/kg-dry	U		1		0.17	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.8		mg/kg-dry	U	UJ	1.8		0.32	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1		mg/kg-dry	U		1		0.23	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.8		mg/kg-dry	U	UJ	1.8		0.43	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1		mg/kg-dry	U		1		0.17	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.8		mg/kg-dry	U	UJ	1.8		0.32	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1		mg/kg-dry	U		1		0.17	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.8		mg/kg-dry	U	UJ	1.8		0.32	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1		mg/kg-dry	U		1		0.11	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.8		mg/kg-dry	U	UJ	1.8		0.21	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1		mg/kg-dry	U		1		0.23	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.8		mg/kg-dry	U	UJ	1.8		0.43	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1		mg/kg-dry	U		1		0.17	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.8		mg/kg-dry	U	UJ	1.8		0.32	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1		mg/kg-dry	U		1		0.17	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.8		mg/kg-dry	U	UJ	1.8		0.32	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1		mg/kg-dry	U		1		0.23	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.8		mg/kg-dry	U	UJ	1.8		0.43	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1		mg/kg-dry	U		1		0.17	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.8		mg/kg-dry	U	UJ	1.8		0.32	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1		mg/kg-dry	U		1		0.23	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.8		mg/kg-dry	U	UJ	1.8		0.43	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1		mg/kg-dry	U		1		0.23	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.8		mg/kg-dry	U	UJ	1.8		0.43	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1		mg/kg-dry	U		1		0.17	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.8		mg/kg-dry	U	UJ	1.8		0.32	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1		mg/kg-dry	U		1		0.29	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.8		mg/kg-dry	U	UJ	1.8		0.54	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1		mg/kg-dry	U		1		0.23	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.8		mg/kg-dry	U	UJ	1.8		0.43	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1		mg/kg-dry	U		1		0.17	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.8		mg/kg-dry	U	UJ	1.8		0.32	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16968	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1		mg/kg-dry	U		1		0.17	
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19020	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.8		mg/kg-dry	U	UJ	1.8		0.32	
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.18		mg/kg-dry	U	UJ	0.18			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.28		mg/kg-dry	U	UJ	0.28			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7.4		mg/kg-dry	U	UJ	7.4			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		11		mg/kg-dry	U	UJ	11			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		7.4		mg/kg-dry	U	UJ	7.4			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		11		mg/kg-dry	U	UJ	11			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		7.4		mg/kg-dry	U	UJ	7.4			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		11		mg/kg-dry	U	UJ	11			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.18		mg/kg-dry	U	UJ	0.18			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.28		mg/kg-dry	U	UJ	0.28			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.18		mg/kg-dry	U	UJ	0.18			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.28		mg/kg-dry	U	UJ	0.28			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.37		mg/kg-dry	U	UJ	0.37			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.55		mg/kg-dry	U	UJ	0.55			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.37		mg/kg-dry	U	UJ	0.37			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.55		mg/kg-dry	U	UJ	0.55			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.18		mg/kg-dry	U	UJ	0.18			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.28		mg/kg-dry	U	UJ	0.28			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.18		mg/kg-dry	U	UJ	0.18			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.28		mg/kg-dry	U	UJ	0.28			
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	7.4		mg/kg-dry	U	UJ	7.4			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	11		mg/kg-dry	U	UJ	11			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-1	FC-1	IIA	2	P2-00481	Sediment		Field Sample	6/28/2008	16962	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.18		mg/kg-dry	U	UJ	0.18			
FC-1	FC-1	IIA	2	P2-00997	Sediment		Field Sample	9/14/2008	19015	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.28		mg/kg-dry	U	UJ	0.28			
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2540	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2541	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2150		mg/kg-dry	v		20	mg/kg-dry	15.74	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2548	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	47		mg/kg-dry	v		16	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Aluminum	7429-90-5	27500		mg/kg-dry	v		5	mg/kg-dry	0.78	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2546	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001746457	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2546	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2	mg/kg-dry	0.01	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Barium	7440-39-3	431		mg/kg-dry	v	J	5	mg/kg-dry	1.57	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.01	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	3.14	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2546	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.002005512	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Chromium	7440-47-3	14.6		mg/kg-dry	v	J	0.5	mg/kg-dry	0.47	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Cobalt	7440-48-4	7		mg/kg-dry	v		5	mg/kg-dry	0.47	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Copper	7440-50-8	27		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Iron	7439-89-6	18300		mg/kg-dry	v	J	20	mg/kg-dry	15.74	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Lead	7439-92-1	18		mg/kg-dry	v		5	mg/kg-dry	1.57	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Manganese	7439-96-5	302		mg/kg-dry	v		5	mg/kg-dry	0.06	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2547	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Nickel	7440-02-0	12		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2546	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.002013386	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.15	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2546	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001550394	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Vanadium	7440-62-2	23		mg/kg-dry	v		1	mg/kg-dry	0.62	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2545	SW6010B	O	Z	Metals	Zinc	7440-66-6	42		mg/kg-dry	v		5	mg/kg-dry	0.31	mg/kg-dry
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2542	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.21		wt%	v		0.01	wt%	0.01	wt%
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2544	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	36		wt%	v		0.2	wt%	0.01	wt%
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2539	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1	s.u.		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.085		mg/kg-dry	U		0.085	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.4		mg/kg-dry	U		3.4	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.4		mg/kg-dry	U		3.4	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.4		mg/kg-dry	U		3.4	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.085		mg/kg-dry	U		0.085	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.085		mg/kg-dry	U		0.085	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.17		mg/kg-dry	U		0.17	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.17		mg/kg-dry	U		0.17	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.085		mg/kg-dry	U		0.085	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.085		mg/kg-dry	U		0.085	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.4		mg/kg-dry	U		3.4	mg/kg-dry		
FC-1_SED	FC-1	I	1	P1-00404	Sediment		Field Sample	10/13/2007	2543	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.085		mg/kg-dry	U		0.085	mg/kg-dry		
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18984	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.04	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16905	E300.0	O	Z	Anions	Fluoride, 1:2		2.3		mg/kg-dry	v	U	1		0.06	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16906	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2690		mg/kg-dry	v	J	5		0.64	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18985	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1220		mg/kg-dry	v	J	5		0.22	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16909	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		70		mg/kg-dry	v	J	65		10.81	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18988	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		22		mg/kg-dry	U	UJ	22		3.73	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16908	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		112		mg/kg-dry	v	J	65		5.37	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18987	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		22		mg/kg-dry	U	UJ	22		1.85	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16908	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		65		mg/kg-dry	U	UJ	65		9.65	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18987	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		22		mg/kg-dry	U	UJ	22		3.33	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16909	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	325		mg/kg-dry	v	J	65		21.5	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16915	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	1340		mg/kg-dry	v		65			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18988	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	22		mg/kg-dry	U	UJ	22		7.43	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18993	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	312		mg/kg-dry	v		22			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Aluminum	7429-90-5	17700		mg/kg-dry	v		5		1.34	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6770		mg/kg-dry	v		5		0.92	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19547	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12500		mg/kg-dry	v		5		1.76	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16912	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00359	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18991	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00248	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19548	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00236	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16912	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.03	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18991	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19548	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.01	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Barium	7440-39-3	501		mg/kg-dry	v		5		0.04	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Barium	7440-39-3	166		mg/kg-dry	v		5		0.03	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19547	SW6010B	O	Z	Metals	Barium	7440-39-3	358		mg/kg-dry	v		5		0.06	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19546	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Boron	7440-42-8	11		mg/kg-dry	v		7		6.92	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		4.78	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19548	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	v		5		0.33	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16912	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00412	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.14	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19546	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.28	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Chromium	7440-47-3	43		mg/kg-dry	v		5		0.29	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Chromium	7440-47-3	15		mg/kg-dry	v		5		0.2	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19547	SW6010B	O	Z	Metals	Chromium	7440-47-3	29		mg/kg-dry	v		5		0.39	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16913	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.64	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5		0.53	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg-dry	U		5		0.37	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19547	SW6010B	O	Z	Metals	Cobalt	7440-48-4	8		mg/kg-dry	v		5		0.7	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Copper	7440-50-8	60		mg/kg-dry	v	J	5		0.26	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Copper	7440-50-8	18		mg/kg-dry	v		5		0.18	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19547	SW6010B	O	Z	Metals	Copper	7440-50-8	39		mg/kg-dry	v		5		0.34	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Iron	7439-89-6	27600		mg/kg-dry	v		10		10.81	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Iron	7439-89-6	12300		mg/kg-dry	v		10		11.21	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19547	SW6010B	O	Z	Metals	Iron	7439-89-6	20500		mg/kg-dry	v		20		21.32	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Lead	7439-92-1	15		mg/kg-dry	v		5		1.78	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Lead	7439-92-1	7		mg/kg-dry	v	U	5		1.23	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19547	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5		2.34	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Manganese	7439-96-5	373		mg/kg-dry	v		5		0.08	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Manganese	7439-96-5	135		mg/kg-dry	v		5		0.05	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19547	SW6010B	O	Z	Metals	Manganese	7439-96-5	283		mg/kg-dry	v		5		0.11	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16914	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.06	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18992	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Nickel	7440-02-0	20		mg/kg-dry	v		5		0.61	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Nickel	7440-02-0	8		mg/kg-dry	v		5		0.42	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19546	SW6010B	O	Z	Metals	Nickel	7440-02-0	14		mg/kg-dry	v		5		0.81	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16912	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00414	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		3.31	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19548	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00272	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.44	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.3	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19546	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.58	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16912	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00319	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18991	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.0022	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19548	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.0021	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Vanadium	7440-62-2	94		mg/kg-dry	v		1		0.38	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Vanadium	7440-62-2	31		mg/kg-dry	v		1		0.26	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19547	SW6010B	O	Z	Metals	Vanadium	7440-62-2	62		mg/kg-dry	v		1		0.5	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16911	SW6010B	O	Z	Metals	Zinc	7440-66-6	52		mg/kg-dry	v		5		0.4	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18990	SW6010B	O	Z	Metals	Zinc	7440-66-6	18		mg/kg-dry	v		5		0.27	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19547	SW6010B	O	Z	Metals	Zinc	7440-66-6	35		mg/kg-dry	v		5		0.52	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16907	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.37		wt%	v		0.01		0.01	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18986	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.35		wt%	v		0.01		0.01	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19545	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.14		wt%	v		0.01		0.01	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16903	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	84.6		wt%	v		0.2		0.01	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18982	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	55.3		wt%	v		0.2		0.01	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19543	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	76.5		wt%	v		0.2		0.01	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16904	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18983	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19544	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16903	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	15.4		wt%	v		0.01		0.01	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18982	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	44.7		wt%	v		0.01		0.01	
FC-2	FC-2	IIC	4	P2-01077	Sediment		Field Sample	10/2/2008	19543	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	23.5		wt%	v		0.01		0.01	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	2.2		mg/kg-dry	U		2.2		0.38	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.75		mg/kg-dry	U		0.75		0.13	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	2.2		mg/kg-dry	U		2.2		0.51	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.75		mg/kg-dry	U		0.75		0.17	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	2.2		mg/kg-dry	U		2.2		0.38	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.75		mg/kg-dry	U		0.75		0.13	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	2.2		mg/kg-dry	U		2.2		0.38	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.75		mg/kg-dry	U		0.75		0.13	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	2.2		mg/kg-dry	U		2.2		0.25	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.75		mg/kg-dry	U		0.75		0.08	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	2.2		mg/kg-dry	U		2.2		0.51	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.75		mg/kg-dry	U		0.75		0.17	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	2.2		mg/kg-dry	U		2.2		0.38	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.75		mg/kg-dry	U		0.75		0.13	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	2.2		mg/kg-dry	U		2.2		0.38	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.75		mg/kg-dry	U		0.75		0.13	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	2.2		mg/kg-dry	U		2.2		0.51	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.75		mg/kg-dry	U		0.75		0.17	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	2.2		mg/kg-dry	U		2.2		0.38	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.75		mg/kg-dry	U		0.75		0.13	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	2.2		mg/kg-dry	U		2.2		0.51	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.75		mg/kg-dry	U		0.75		0.17	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	2.2		mg/kg-dry	U		2.2		0.51	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.75		mg/kg-dry	U		0.75		0.17	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	2.2		mg/kg-dry	U		2.2		0.38	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.75		mg/kg-dry	U		0.75		0.13	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	2.2		mg/kg-dry	U		2.2		0.64	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.75		mg/kg-dry	U		0.75		0.22	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	2.2		mg/kg-dry	U		2.2		0.51	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.75		mg/kg-dry	U	UJ	0.75		0.17	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	2.2		mg/kg-dry	U		2.2		0.38	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.75		mg/kg-dry	U		0.75		0.13	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16916	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	2.2		mg/kg-dry	U		2.2		0.38	
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18994	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.75		mg/kg-dry	U		0.75		0.13	
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.32		mg/kg-dry	U	UJ	0.32			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.11		mg/kg-dry	U	UJ	0.11			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		13		mg/kg-dry	U	UJ	13			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		4.5		mg/kg-dry	U	UJ	4.5			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		13		mg/kg-dry	U	UJ	13			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		4.5		mg/kg-dry	U	UJ	4.5			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		13		mg/kg-dry	U	UJ	13			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		4.5		mg/kg-dry	U	UJ	4.5			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.32		mg/kg-dry	U	UJ	0.32			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.11		mg/kg-dry	U	UJ	0.11			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.32		mg/kg-dry	U	UJ	0.32			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.11		mg/kg-dry	U	UJ	0.11			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.63		mg/kg-dry	U	UJ	0.63			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.23		mg/kg-dry	U	UJ	0.23			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.63		mg/kg-dry	U	UJ	0.63			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.23		mg/kg-dry	U	UJ	0.23			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.32		mg/kg-dry	U	UJ	0.32			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.11		mg/kg-dry	U	UJ	0.11			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.32		mg/kg-dry	U	UJ	0.32			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.11		mg/kg-dry	U	UJ	0.11			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	13		mg/kg-dry	U	UJ	13			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	4.5		mg/kg-dry	U	UJ	4.5			
FC-2	FC-2	IIA	2	P2-00475	Sediment		Field Sample	6/27/2008	16910	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.32		mg/kg-dry	U	UJ	0.32			
FC-2	FC-2	IIA	2	P2-00995	Sediment		Field Sample	9/14/2008	18989	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.11		mg/kg-dry	U	UJ	0.11			
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2563	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2564	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3140		mg/kg-dry	v		20	mg/kg-dry	17.85	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2566	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		18		mg/kg-dry	U		18	mg/kg-dry	2.98	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2567	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		18		mg/kg-dry	U		18	mg/kg-dry	1.48	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2567	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		18		mg/kg-dry	U		18	mg/kg-dry	2.66	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2566	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	18		mg/kg-dry	U		18	mg/kg-dry	5.92	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2573	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	141		mg/kg-dry	v		18	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9240		mg/kg-dry	v		5	mg/kg-dry	0.89	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2571	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001980357	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2571	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Barium	7440-39-3	219		mg/kg-dry	v	J	5	mg/kg-dry	1.78	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.01	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	3.57	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2571	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.002274107	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Chromium	7440-47-3	21		mg/kg-dry	v	J	0.5	mg/kg-dry	0.53	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Cobalt	7440-48-4	9		mg/kg-dry	v		5	mg/kg-dry	0.53	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Copper	7440-50-8	25		mg/kg-dry	v		5	mg/kg-dry	0.35	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Iron	7439-89-6	22300		mg/kg-dry	v	J	20	mg/kg-dry	17.85	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5	mg/kg-dry	1.78	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Manganese	7439-96-5	151		mg/kg-dry	v		5	mg/kg-dry	0.07	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2572	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Nickel	7440-02-0	11		mg/kg-dry	v		5	mg/kg-dry	0.35	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2571	SW6020	O	Z	Metals	Selenium	7782-49-2	0.7		mg/kg-dry	v		0.5	mg/kg-dry	0.002283036	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.17	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2571	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001758036	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Vanadium	7440-62-2	45		mg/kg-dry	v		1	mg/kg-dry	0.71	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2570	SW6010B	O	Z	Metals	Zinc	7440-66-6	23		mg/kg-dry	v		5	mg/kg-dry	0.35	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2565	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.82		wt%	v		0.01	wt%	0.01	wt%
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2569	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	44		wt%	v		0.2	wt%	0.01	wt%
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2562	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.1		s.u.	v		0.1	s.u.		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.07	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.17	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2574	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.6		mg/kg-dry	U		2.6	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.6		mg/kg-dry	U		2.6	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.6		mg/kg-dry	U		2.6	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.13		mg/kg-dry	U		0.13	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.13		mg/kg-dry	U		0.13	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.6		mg/kg-dry	U		2.6	mg/kg-dry		
FC-2_SED	FC-2	I	1	P1-00406	Sediment		Field Sample	10/13/2007	2568	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.065		mg/kg-dry	U		0.065	mg/kg-dry		
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24535	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		20		mg/kg-dry	U		20		14.02	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24541	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	91		mg/kg-dry	v		14		1.61	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11800		mg/kg-dry	v		5		2.78	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	v		1		0.53	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24538	SW6020	O	Z	Metals	Arsenic	7440-38-2	1		mg/kg-dry	U		1		0.02	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Barium	7440-39-3	510		mg/kg-dry	v		1		0.03	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.005783275	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.01	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Chromium	7440-47-3	101		mg/kg-dry	v		1		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Cobalt	7440-48-4	14		mg/kg-dry	v		1		0.12	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Copper	7440-50-8	12		mg/kg-dry	v		1		0.28	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Iron	7439-89-6	15700		mg/kg-dry	v		5		1.13	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Lead	7439-92-1	13		mg/kg-dry	v		1		0.68	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Magnesium	7439-95-4	19200		mg/kg-dry	v		5		0.72	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Manganese	7439-96-5	173		mg/kg-dry	v		1		0.04	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24539	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.01	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Nickel	7440-02-0	27		mg/kg-dry	v		1		0.15	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24538	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	U		1		0.35	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.32	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Strontium	7440-24-6	178		mg/kg-dry	v		1		0.01	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	U		2		0.35	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Vanadium	7440-62-2	25		mg/kg-dry	v		1		0.19	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24537	SW6010B	O	Z	Metals	Zinc	7440-66-6	19		mg/kg-dry	v		1		0.24	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24534	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	8		mg/kg-dry	v		1		0.14	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24543	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.024		mg/kg-dry	U		0.024		0.008416328	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24543	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.024		mg/kg-dry	U		0.024			
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24543	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.024		mg/kg-dry	U		0.024			
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24543	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.024		mg/kg-dry	U		0.024			
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24543	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.024		mg/kg-dry	U		0.024			
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24543	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.024		mg/kg-dry	U		0.024		0.007911348	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24543	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.024		mg/kg-dry	U		0.024		0.007574695	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24543	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.024		mg/kg-dry	U		0.024			
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24543	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.024		mg/kg-dry	U		0.024			
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0056		mg/kg-dry	U		0.0056		0.002033946	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0056		mg/kg-dry	U		0.0056		0.000408192	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.028		mg/kg-dry	U		0.028		0.002426708	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.07		mg/kg-dry	U		0.07		0.003548885	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.014		mg/kg-dry	U		0.014		0.000677514	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0024		mg/kg-dry	U		0.0024		0.000364708	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0024		mg/kg-dry	U		0.0024		0.000294571	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0024		mg/kg-dry	U		0.0024		0.000378735	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.014		mg/kg-dry	U		0.014		0.000914574	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0024		mg/kg-dry	U		0.0024		0.000294571	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0024		mg/kg-dry	U		0.0024		0.000140272	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0024		mg/kg-dry	U		0.0024		0.00035068	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.07		mg/kg-dry	U		0.07		0.002370599	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0024		mg/kg-dry	U		0.0024		0.000210408	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.014		mg/kg-dry	U		0.014		0.00110815	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.024		mg/kg-dry	U		0.024		0.01	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.028		mg/kg-dry	U		0.028		0.000657876	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.07		mg/kg-dry	U		0.07		0.01	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0024		mg/kg-dry	U		0.0024		0.000378735	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.007		mg/kg-dry	U		0.007		0.003085987	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.028		mg/kg-dry	U		0.028		0.002510871	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0024		mg/kg-dry	U		0.0024		0.000210408	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.028		mg/kg-dry	U		0.028		0.005526722	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0024		mg/kg-dry	U		0.0024		0.000266517	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0024		mg/kg-dry	U		0.0024		0.00154299	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0024		mg/kg-dry	U		0.0024		0.000224435	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0024		mg/kg-dry	U		0.0024		0.000182354	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0024		mg/kg-dry	U		0.0024		0.000308599	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0024		mg/kg-dry	U		0.0024		0.000210408	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0024		mg/kg-dry	U		0.0024		0.000168327	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0024		mg/kg-dry	U		0.0024		0.000196381	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0024		mg/kg-dry	U		0.0024		0.000266517	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0024		mg/kg-dry	U		0.0024		0.00154299	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.6		mg/kg-dry	U		5.6		0.67	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	MCPP	93-65-2	5.6		mg/kg-dry	U		5.6		0.67	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0024		mg/kg-dry	U		0.0024		0.000392762	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0028		mg/kg-dry	U		0.0028		0.000389957	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.014		mg/kg-dry	U		0.014		0.00231449	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24542	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.17		mg/kg-dry	U		0.17		0.03	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24541	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	15		mg/kg-dry	v		14		1.5	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24540	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	3.6		mg/kg-dry	U		3.6		0.84	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24536	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	29		wt%	v		0.2		0.01	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24533	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	1.1		%-as rcvd	v		0.1		0.009	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24532	ASA10-3	O	Z	Sediment/soil quality parameters	pH		6.8		s.u.	v		0.1		0.1	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.33		mg/kg-dry	U		0.33		0.17	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.33		mg/kg-dry	U		0.33		0.08	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.33		mg/kg-dry	U		0.33		0.09	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.33		mg/kg-dry	U		0.33		0.05	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	2.3		mg/kg-dry	U		2.3		0.07	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.33		mg/kg-dry	U		0.33		0.08	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.33		mg/kg-dry	U		0.33		0.08	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.33		mg/kg-dry	U		0.33		0.09	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.33		mg/kg-dry	U		0.33		0.05	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.33		mg/kg-dry	U		0.33		0.1	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.33		mg/kg-dry	U		0.33		0.2	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	2.3		mg/kg-dry	U		2.3		0.08	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.33		mg/kg-dry	U		0.33		0.09	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.33		mg/kg-dry	U		0.33		0.07	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.33		mg/kg-dry	U		0.33		0.1	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24544	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.014		mg/kg-dry	U		0.014		0.001183897	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	2.3		mg/kg-dry	U		2.3		0.04	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.33		mg/kg-dry	U		0.33		0.08	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.33		mg/kg-dry	U		0.33		0.08	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.33		mg/kg-dry	U		0.33		0.07	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.33		mg/kg-dry	U		0.33		0.09	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.33		mg/kg-dry	U		0.33		0.09	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.33		mg/kg-dry	U		0.33		0.16	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.33		mg/kg-dry	U		0.33		0.16	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.33		mg/kg-dry	U		0.33		0.05	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.33		mg/kg-dry	U		0.33		0.13	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.33		mg/kg-dry	U		0.33		0.11	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.33		mg/kg-dry	U		0.33		0.11	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.33		mg/kg-dry	U		0.33		0.13	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.33		mg/kg-dry	U		0.33		0.05	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.33		mg/kg-dry	U		0.33		0.08	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.33		mg/kg-dry	U		0.33		0.05	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.33		mg/kg-dry	U		0.33		0.1	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.33		mg/kg-dry	U		0.33		0.05	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.33		mg/kg-dry	U		0.33		0.07	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.33		mg/kg-dry	U		0.33		0.08	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.33		mg/kg-dry	U		0.33		0.12	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.33		mg/kg-dry	U		0.33		0.07	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.33		mg/kg-dry	U		0.33		0.09	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.33		mg/kg-dry	U		0.33		0.05	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.33		mg/kg-dry	U		0.33		0.16	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.33		mg/kg-dry	U		0.33		0.11	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	2.3		mg/kg-dry	U		2.3		0.12	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.33		mg/kg-dry	U		0.33		0.07	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.33		mg/kg-dry	U		0.33		0.03	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.33		mg/kg-dry	U		0.33		0.05	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.33		mg/kg-dry	U		0.33		0.1	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.33		mg/kg-dry	U		0.33		0.06	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.33		mg/kg-dry	U		0.33		0.07	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.33		mg/kg-dry	U		0.33		0.08	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.33		mg/kg-dry	U		0.33		0.13	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.33		mg/kg-dry	U		0.33		0.07	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.33		mg/kg-dry	U		0.33		0.07	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.33		mg/kg-dry	U		0.33		0.09	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24545	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.33		mg/kg-dry	U		0.33		0.14	
FC-POND	FC-POND	VB	5	FCP	Sediment		Field Sample	4/27/2012	24540	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	3.6		mg/kg-dry	U		3.6		0.81	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19114	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	v		1		0.02	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17128	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17129	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3150		mg/kg-dry	v		5		0.14	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19115	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	4340		mg/kg-dry	v	J	5		0.2	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19118	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		23		mg/kg-dry	v	J	21		3.43	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19117	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		50		mg/kg-dry	v	J	21		1.7	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19117	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		21		mg/kg-dry	U	UJ	21		3.06	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17136	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	45		mg/kg-dry	v		14			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19118	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	105		mg/kg-dry	v	J	21		6.82	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19124	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	221		mg/kg-dry	v		21			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11000		mg/kg-dry	v		5		0.29	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19120	SW6010B	O	Z	Metals	Aluminum	7429-90-5	21600		mg/kg-dry	v		5		0.85	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.79	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19122	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00228	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.96	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19122	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Barium	7440-39-3	512		mg/kg-dry	v	J	5		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19121	SW6010B	O	Z	Metals	Barium	7440-39-3	1220		mg/kg-dry	v		5		0.06	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00466	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19120	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.51	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19120	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		4.39	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.04	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19120	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.13	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Chromium	7440-47-3	112		mg/kg-dry	v		5		0.06	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19121	SW6010B	O	Z	Metals	Chromium	7440-47-3	247		mg/kg-dry	v		5		0.37	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17134	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.14	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Cobalt	7440-48-4	16		mg/kg-dry	v		5		0.11	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19121	SW6010B	O	Z	Metals	Cobalt	7440-48-4	38		mg/kg-dry	v		5		0.68	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Copper	7440-50-8	12		mg/kg-dry	v		5		0.05	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19121	SW6010B	O	Z	Metals	Copper	7440-50-8	36		mg/kg-dry	v		5		0.33	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Iron	7439-89-6	14000		mg/kg-dry	v	J	5		3.55	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19121	SW6010B	O	Z	Metals	Iron	7439-89-6	35300		mg/kg-dry	v		20		20.6	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Lead	7439-92-1	7		mg/kg-dry	v		5		0.39	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19120	SW6010B	O	Z	Metals	Lead	7439-92-1	24		mg/kg-dry	v		5		1.13	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Manganese	7439-96-5	204		mg/kg-dry	v		5		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19121	SW6010B	O	Z	Metals	Manganese	7439-96-5	501		mg/kg-dry	v		5		0.11	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17135	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19123	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Nickel	7440-02-0	33		mg/kg-dry	v		5		0.13	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19121	SW6010B	O	Z	Metals	Nickel	7440-02-0	75		mg/kg-dry	v		5		0.78	
FC-POND-1	FC-POND-1	**IIA**	2	**P2-00496**	**Sediment**		**Field Sample**	**6/30/2008**	17132	**SW6010B**	O	**Z**	**Metals**	**Selenium**	**7782-49-2**	**5**		**mg/kg-dry**	**U**	**R**	**5**		**1.05**	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19120	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		3.04	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.09	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19120	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.28	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17133	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000699	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19122	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00202	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Vanadium	7440-62-2	20		mg/kg-dry	v		1		0.08	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19121	SW6010B	O	Z	Metals	Vanadium	7440-62-2	45		mg/kg-dry	v		1		0.49	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17132	SW6010B	O	Z	Metals	Zinc	7440-66-6	14		mg/kg-dry	v		5		0.08	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19121	SW6010B	O	Z	Metals	Zinc	7440-66-6	39		mg/kg-dry	v		5		0.51	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17130	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.61		wt%	v		0.01		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19116	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.29		wt%	v		0.01		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17126	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	29.5		wt%	v		0.2		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19112	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	51.4		wt%	v		0.2		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17127	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19113	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17126	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	70.5		wt%	v		0.01		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19112	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	48.6		wt%	v		0.01		0.01	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.69		mg/kg-dry	U	UJ	0.69		0.12	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.69		mg/kg-dry	U	UJ	0.69		0.16	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.69		mg/kg-dry	U	UJ	0.69		0.12	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.69		mg/kg-dry	U	UJ	0.69		0.12	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.69		mg/kg-dry	U	UJ	0.69		0.08	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.69		mg/kg-dry	U	UJ	0.69		0.16	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.69		mg/kg-dry	U	UJ	0.69		0.12	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.69		mg/kg-dry	U	UJ	0.69		0.12	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.69		mg/kg-dry	U	UJ	0.69		0.16	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.69		mg/kg-dry	U	UJ	0.69		0.12	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.69		mg/kg-dry	U	UJ	0.69		0.16	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.69		mg/kg-dry	U	UJ	0.69		0.16	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.69		mg/kg-dry	U	UJ	0.69		0.12	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.69		mg/kg-dry	U	UJ	0.69		0.2	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.69		mg/kg-dry	U	UJ	0.69		0.16	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.69		mg/kg-dry	U	UJ	0.69		0.12	
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19125	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.69		mg/kg-dry	U	UJ	0.69		0.12	
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.059		mg/kg-dry	U	UJ	0.059			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.14		mg/kg-dry	U	UJ	0.14			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.3		mg/kg-dry	U	UJ	2.3			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		5.6		mg/kg-dry	U	UJ	5.6			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.3		mg/kg-dry	U	UJ	2.3			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		5.6		mg/kg-dry	U	UJ	5.6			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.3		mg/kg-dry	U	UJ	2.3			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		5.6		mg/kg-dry	U	UJ	5.6			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.059		mg/kg-dry	U	UJ	0.059			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.14		mg/kg-dry	U	UJ	0.14			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.059		mg/kg-dry	U	UJ	0.059			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.14		mg/kg-dry	U	UJ	0.14			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.12		mg/kg-dry	U	UJ	0.12			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.28		mg/kg-dry	U	UJ	0.28			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.12		mg/kg-dry	U	UJ	0.12			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.28		mg/kg-dry	U	UJ	0.28			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.059		mg/kg-dry	U	UJ	0.059			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.14		mg/kg-dry	U	UJ	0.14			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.059		mg/kg-dry	U	UJ	0.059			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.14		mg/kg-dry	U	UJ	0.14			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.3		mg/kg-dry	U	UJ	2.3			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	5.6		mg/kg-dry	U	UJ	5.6			
FC-POND-1	FC-POND-1	IIA	2	P2-00496	Sediment		Field Sample	6/30/2008	17131	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.059		mg/kg-dry	U	UJ	0.059			
FC-POND-1	FC-POND-1	IIA	2	P2-01009	Sediment		Field Sample	9/14/2008	19119	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.14		mg/kg-dry	U	UJ	0.14			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19023	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.5		mg/kg-dry	v		1		0.02	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17139	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17140	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1770		mg/kg-dry	v		5		0.11	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19024	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1780		mg/kg-dry	v	J	5		0.29	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19027	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		65		mg/kg-dry	v	J	29		4.84	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19026	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		115		mg/kg-dry	v	J	29		2.4	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19026	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		25		mg/kg-dry	J	J	29		4.32	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17147	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	26		mg/kg-dry	v		12			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19027	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	256		mg/kg-dry	v	J	29		9.63	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19032	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	562		mg/kg-dry	v		29			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9750		mg/kg-dry	v		5		0.24	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Aluminum	7429-90-5	22100		mg/kg-dry	v		5		1.2	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.66	
FC-POND-2	FC-POND-2	**IIA**	2	**P2-00998**	**Sediment**		**Field Sample**	**9/14/2008**	19029	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**3**		**mg/kg-dry**	**U**	**R**	**3**		**3.23**	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.81	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19030	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Barium	7440-39-3	348		mg/kg-dry	v	J	5		0.0089	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Barium	7440-39-3	1340		mg/kg-dry	v		5		0.04	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00394	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.28	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Boron	7440-42-8	6		mg/kg-dry	U		6		6.2	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.03	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.19	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Chromium	7440-47-3	165		mg/kg-dry	v		5		0.05	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Chromium	7440-47-3	269		mg/kg-dry	v		5		0.26	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17145	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.11	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Cobalt	7440-48-4	12		mg/kg-dry	v		5		0.09	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Cobalt	7440-48-4	35		mg/kg-dry	v		5		0.48	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Copper	7440-50-8	6		mg/kg-dry	v		5		0.04	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Copper	7440-50-8	47		mg/kg-dry	v		5		0.23	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Iron	7439-89-6	10700		mg/kg-dry	v	J	5		3	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Iron	7439-89-6	33200		mg/kg-dry	v		10		14.53	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Lead	7439-92-1	5		mg/kg-dry	U		5		0.32	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Lead	7439-92-1	37		mg/kg-dry	v		5		1.59	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Manganese	7439-96-5	150		mg/kg-dry	v		5		0.01	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Manganese	7439-96-5	528		mg/kg-dry	v		5		0.07	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17146	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19031	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Nickel	7440-02-0	31		mg/kg-dry	v		5		0.11	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Nickel	7440-02-0	73		mg/kg-dry	v		5		0.55	
FC-POND-2	FC-POND-2	**IIA**	2	**P2-00497**	**Sediment**		**Field Sample**	**6/30/2008**	17143	**SW6010B**	O	**Z**	**Metals**	**Selenium**	**7782-49-2**	**5**		**mg/kg-dry**	**U**	**R**	**5**		**0.88**	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		4.29	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.08	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.39	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17144	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00059	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19030	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00286	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Vanadium	7440-62-2	16		mg/kg-dry	v		1		0.07	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Vanadium	7440-62-2	45		mg/kg-dry	v		1		0.34	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17143	SW6010B	O	Z	Metals	Zinc	7440-66-6	9		mg/kg-dry	v		5		0.07	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19029	SW6010B	O	Z	Metals	Zinc	7440-66-6	45		mg/kg-dry	v		5		0.36	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17141	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.36		wt%	v		0.01		0.01	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19025	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.11		wt%	v		0.01		0.01	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17137	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	16.6		wt%	v		0.2		0.01	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19021	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	65.5		wt%	v		0.2		0.01	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17138	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19022	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17137	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	83.4		wt%	v		0.01		0.01	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19021	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	34.5		wt%	v		0.01		0.01	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.97		mg/kg-dry	U	UJ	0.97		0.17	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.97		mg/kg-dry	U	UJ	0.97		0.23	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.97		mg/kg-dry	U	UJ	0.97		0.17	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.97		mg/kg-dry	U	UJ	0.97		0.17	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.97		mg/kg-dry	U	UJ	0.97		0.11	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.97		mg/kg-dry	U	UJ	0.97		0.23	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.97		mg/kg-dry	U	UJ	0.97		0.17	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.97		mg/kg-dry	U	UJ	0.97		0.17	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.97		mg/kg-dry	U	UJ	0.97		0.23	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.97		mg/kg-dry	U	UJ	0.97		0.17	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.97		mg/kg-dry	U	UJ	0.97		0.23	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.97		mg/kg-dry	U	UJ	0.97		0.23	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.97		mg/kg-dry	U	UJ	0.97		0.17	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.97		mg/kg-dry	U	UJ	0.97		0.29	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.97		mg/kg-dry	U	UJ	0.97		0.23	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.97		mg/kg-dry	U	UJ	0.97		0.17	
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19033	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.97		mg/kg-dry	U	UJ	0.97		0.17	
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.053		mg/kg-dry	U	UJ	0.053			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.1		mg/kg-dry	U	UJ	2.1			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		8.7		mg/kg-dry	U	UJ	8.7			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.1		mg/kg-dry	U	UJ	2.1			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		8.7		mg/kg-dry	U	UJ	8.7			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.1		mg/kg-dry	U	UJ	2.1			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		8.7		mg/kg-dry	U	UJ	8.7			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.053		mg/kg-dry	U	UJ	0.053			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.053		mg/kg-dry	U	UJ	0.053			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.11		mg/kg-dry	U	UJ	0.11			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.43		mg/kg-dry	U	UJ	0.43			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.11		mg/kg-dry	U	UJ	0.11			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.43		mg/kg-dry	U	UJ	0.43			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.053		mg/kg-dry	U	UJ	0.053			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.053		mg/kg-dry	U	UJ	0.053			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.1		mg/kg-dry	U	UJ	2.1			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	8.7		mg/kg-dry	U	UJ	8.7			
FC-POND-2	FC-POND-2	IIA	2	P2-00497	Sediment		Field Sample	6/30/2008	17142	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.053		mg/kg-dry	U	UJ	0.053			
FC-POND-2	FC-POND-2	IIA	2	P2-00998	Sediment		Field Sample	9/14/2008	19028	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19128	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.2		mg/kg-dry	v		1		0.02	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17150	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	v		1		0.02	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17151	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2400		mg/kg-dry	v		5		0.22	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19129	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2240		mg/kg-dry	v	J	5		0.25	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17154	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		116		mg/kg-dry	v	J	22		3.74	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19132	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		68		mg/kg-dry	v	J	26		4.33	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17153	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		289		mg/kg-dry	v	J	22		1.86	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19131	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		111		mg/kg-dry	v	J	26		2.15	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17153	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		168		mg/kg-dry	v	J	22		3.34	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19131	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		53		mg/kg-dry	v	J	26		3.86	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17154	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	630		mg/kg-dry	v	J	22		7.44	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17160	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	921		mg/kg-dry	v		22			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19132	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	268		mg/kg-dry	v	J	26		8.61	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19137	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	569		mg/kg-dry	v		26			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Aluminum	7429-90-5	17200		mg/kg-dry	v		5		1.07	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		1.25	
FC-POND-3	FC-POND-3	**IIA**	2	**P2-01011**	**Sediment**		**Field Sample**	**9/14/2008**	19134	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**3**		**mg/kg-dry**	**U**	**R**	**3**		**2.89**	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U	J	2		1.52	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19135	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Barium	7440-39-3	1060		mg/kg-dry	v	J	5		0.01	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Barium	7440-39-3	1010		mg/kg-dry	v		5		0.03	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00737	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.39	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Boron	7440-42-8	6		mg/kg-dry	U		6		5.54	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.07	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.17	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Chromium	7440-47-3	182		mg/kg-dry	v		5		0.1	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Chromium	7440-47-3	158		mg/kg-dry	v		5		0.23	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17158	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.22	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Cobalt	7440-48-4	28		mg/kg-dry	v		5		0.18	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Cobalt	7440-48-4	27		mg/kg-dry	v		5		0.42	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Copper	7440-50-8	47		mg/kg-dry	v		5		0.09	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Copper	7440-50-8	45		mg/kg-dry	v		5		0.21	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Iron	7439-89-6	26100		mg/kg-dry	v	J	6		5.61	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Iron	7439-89-6	29100		mg/kg-dry	v		10		12.99	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Lead	7439-92-1	31		mg/kg-dry	v		5		0.61	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Lead	7439-92-1	31		mg/kg-dry	v		5		1.42	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Manganese	7439-96-5	440		mg/kg-dry	v		5		0.03	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Manganese	7439-96-5	443		mg/kg-dry	v		5		0.06	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17159	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19136	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Nickel	7440-02-0	55		mg/kg-dry	v		5		0.21	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Nickel	7440-02-0	51		mg/kg-dry	v		5		0.49	
FC-POND-3	FC-POND-3	**IIA**	2	**P2-00498**	**Sediment**		**Field Sample**	**6/30/2008**	17156	**SW6010B**	O	**Z**	**Metals**	**Selenium**	**7782-49-2**	**5**		**mg/kg-dry**	**U**	**R**	**5**		**1.66**	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		3.84	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.15	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.35	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17157	SW6020	O	Z	Metals	Thallium	7440-28-0	0.7		mg/kg-dry	v		0.6		0.0011	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19135	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00255	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Vanadium	7440-62-2	37		mg/kg-dry	v		1		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Vanadium	7440-62-2	45		mg/kg-dry	v		1		0.31	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17156	SW6010B	O	Z	Metals	Zinc	7440-66-6	34		mg/kg-dry	v		5		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19134	SW6010B	O	Z	Metals	Zinc	7440-66-6	39		mg/kg-dry	v		5		0.32	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17152	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.61		wt%	v		0.01		0.01	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19130	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.22		wt%	v		0.01		0.01	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17148	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	55.4		wt%	v		0.2		0.01	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19126	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	61.4		wt%	v		0.2		0.01	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17149	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19127	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17148	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	44.6		wt%	v		0.01		0.01	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19126	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	38.6		wt%	v		0.01		0.01	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.75		mg/kg-dry	U		0.75		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.86		mg/kg-dry	U	UJ	0.86		0.15	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.75		mg/kg-dry	U		0.75		0.17	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.86		mg/kg-dry	U	UJ	0.86		0.2	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.75		mg/kg-dry	U		0.75		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.86		mg/kg-dry	U	UJ	0.86		0.15	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.75		mg/kg-dry	U		0.75		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.86		mg/kg-dry	U	UJ	0.86		0.15	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.75		mg/kg-dry	U		0.75		0.08	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.86		mg/kg-dry	U	UJ	0.86		0.1	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.75		mg/kg-dry	U		0.75		0.17	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.86		mg/kg-dry	U	UJ	0.86		0.2	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.75		mg/kg-dry	U		0.75		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.86		mg/kg-dry	U	UJ	0.86		0.15	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.75		mg/kg-dry	U		0.75		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.86		mg/kg-dry	U	UJ	0.86		0.15	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.75		mg/kg-dry	U		0.75		0.17	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.86		mg/kg-dry	U	UJ	0.86		0.2	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.75		mg/kg-dry	U		0.75		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.86		mg/kg-dry	U	UJ	0.86		0.15	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.75		mg/kg-dry	U		0.75		0.17	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.86		mg/kg-dry	U	UJ	0.86		0.2	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.75		mg/kg-dry	U		0.75		0.17	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.86		mg/kg-dry	U	UJ	0.86		0.2	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.75		mg/kg-dry	U		0.75		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.86		mg/kg-dry	U	UJ	0.86		0.15	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.75		mg/kg-dry	U		0.75		0.22	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.86		mg/kg-dry	U	UJ	0.86		0.25	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.75		mg/kg-dry	U		0.75		0.17	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.86		mg/kg-dry	U	UJ	0.86		0.2	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.75		mg/kg-dry	U		0.75		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.86		mg/kg-dry	U	UJ	0.86		0.15	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17161	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.75		mg/kg-dry	U		0.75		0.13	
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19138	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.86		mg/kg-dry	U	UJ	0.86		0.15	
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.17		mg/kg-dry	U	UJ	0.17			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.18		mg/kg-dry	U	UJ	0.18			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7		mg/kg-dry	U	UJ	7			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7.3		mg/kg-dry	U	UJ	7.3			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		7		mg/kg-dry	U	UJ	7			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		7.3		mg/kg-dry	U	UJ	7.3			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		7		mg/kg-dry	U	UJ	7			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		7.3		mg/kg-dry	U	UJ	7.3			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.17		mg/kg-dry	U	UJ	0.17			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.18		mg/kg-dry	U	UJ	0.18			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.17		mg/kg-dry	U	UJ	0.17			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.18		mg/kg-dry	U	UJ	0.18			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.35		mg/kg-dry	U	UJ	0.35			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.36		mg/kg-dry	U	UJ	0.36			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.35		mg/kg-dry	U	UJ	0.35			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.36		mg/kg-dry	U	UJ	0.36			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.17		mg/kg-dry	U	UJ	0.17			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.18		mg/kg-dry	U	UJ	0.18			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.17		mg/kg-dry	U	UJ	0.17			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.18		mg/kg-dry	U	UJ	0.18			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	6.9		mg/kg-dry	J	J	7			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	11		mg/kg-dry	v	J	7.3			
FC-POND-3	FC-POND-3	IIA	2	P2-00498	Sediment		Field Sample	6/30/2008	17155	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.17		mg/kg-dry	U	UJ	0.17			
FC-POND-3	FC-POND-3	IIA	2	P2-01011	Sediment		Field Sample	9/14/2008	19133	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.18		mg/kg-dry	U	UJ	0.18			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19036	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.2		mg/kg-dry	v		1		0.02	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17164	E300.0	O	Z	Anions	Fluoride, 1:2		1.2		mg/kg-dry	v		1		0.02	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17165	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2630		mg/kg-dry	v		5		0.21	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19037	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1600		mg/kg-dry	v	J	5		0.25	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17168	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		39		mg/kg-dry	v	J	22		3.6	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19040	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		48		mg/kg-dry	v	J	26		4.33	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17167	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		128		mg/kg-dry	v	J	22		1.79	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19039	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		81		mg/kg-dry	v	J	26		2.15	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17167	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		28		mg/kg-dry	v	J	22		3.21	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19039	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		18		mg/kg-dry	J	J	26		3.86	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17168	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	223		mg/kg-dry	v	J	22		7.16	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17174	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	454		mg/kg-dry	v		22			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19040	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	193		mg/kg-dry	v	J	26		8.62	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19045	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	413		mg/kg-dry	v		26			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Aluminum	7429-90-5	20000		mg/kg-dry	v		5		0.44	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Aluminum	7429-90-5	25000		mg/kg-dry	v		5		1.07	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		1.2	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19043	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00288	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.46	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19043	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Barium	7440-39-3	993		mg/kg-dry	v	J	5		0.01	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Barium	7440-39-3	1420		mg/kg-dry	v		5		0.03	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00709	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.3	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Boron	7440-42-8	6		mg/kg-dry	U		6		5.55	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.07	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	v		1		0.17	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Chromium	7440-47-3	252		mg/kg-dry	v		5		0.09	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Chromium	7440-47-3	303		mg/kg-dry	v		5		0.23	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17172	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.21	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Cobalt	7440-48-4	29		mg/kg-dry	v		5		0.17	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Cobalt	7440-48-4	43		mg/kg-dry	v		5		0.42	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Copper	7440-50-8	34		mg/kg-dry	v		5		0.08	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Copper	7440-50-8	53		mg/kg-dry	v		5		0.21	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Iron	7439-89-6	25300		mg/kg-dry	v	J	5		5.4	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Iron	7439-89-6	39000		mg/kg-dry	v		10		13	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Lead	7439-92-1	24		mg/kg-dry	v		5		0.59	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Lead	7439-92-1	43		mg/kg-dry	v		5		1.42	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Manganese	7439-96-5	414		mg/kg-dry	v		5		0.02	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Manganese	7439-96-5	616		mg/kg-dry	v		5		0.06	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17173	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19044	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Nickel	7440-02-0	60		mg/kg-dry	v		5		0.2	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Nickel	7440-02-0	86		mg/kg-dry	v		5		0.49	
FC-POND-4	FC-POND-4	**IIA**	**2**	**P2-00499**	**Sediment**		**Field Sample**	**6/30/2008**	17170	**SW6010B**	O	**Z**	**Metals**	**Selenium**	**7782-49-2**	**5**		**mg/kg-dry**	**U**	**R**	**5**		**1.59**	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		3.84	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.14	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.35	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17171	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	v		0.6		0.00106	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19043	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00256	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Vanadium	7440-62-2	36		mg/kg-dry	v		1		0.12	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Vanadium	7440-62-2	53		mg/kg-dry	v		1		0.31	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17170	SW6010B	O	Z	Metals	Zinc	7440-66-6	31		mg/kg-dry	v		5		0.13	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19042	SW6010B	O	Z	Metals	Zinc	7440-66-6	51		mg/kg-dry	v		5		0.32	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17166	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.73		wt%	v		0.01		0.01	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19038	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.96		wt%	v		0.01		0.01	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17162	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	53.6		wt%	v		0.2		0.01	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19034	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	61.5		wt%	v		0.2		0.01	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17163	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19035	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.7		s.u.	v		0.1			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17162	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	46.4		wt%	v		0.01		0.01	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19034	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	38.5		wt%	v		0.01		0.01	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.72		mg/kg-dry	U		0.72		0.12	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.87		mg/kg-dry	U		0.87		0.15	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.72		mg/kg-dry	U		0.72		0.17	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.87		mg/kg-dry	U		0.87		0.2	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.72		mg/kg-dry	U		0.72		0.12	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.87		mg/kg-dry	U		0.87		0.15	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.72		mg/kg-dry	U		0.72		0.12	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.87		mg/kg-dry	U		0.87		0.15	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.72		mg/kg-dry	U		0.72		0.08	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.87		mg/kg-dry	U		0.87		0.1	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.72		mg/kg-dry	U		0.72		0.17	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.87		mg/kg-dry	U		0.87		0.2	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.72		mg/kg-dry	U		0.72		0.12	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.87		mg/kg-dry	U		0.87		0.15	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.72		mg/kg-dry	U		0.72		0.12	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.87		mg/kg-dry	U		0.87		0.15	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.72		mg/kg-dry	U		0.72		0.17	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.87		mg/kg-dry	U		0.87		0.2	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.72		mg/kg-dry	U		0.72		0.12	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.87		mg/kg-dry	U		0.87		0.15	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.72		mg/kg-dry	U		0.72		0.17	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.87		mg/kg-dry	U		0.87		0.2	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.72		mg/kg-dry	U		0.72		0.17	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.87		mg/kg-dry	U		0.87		0.2	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.72		mg/kg-dry	U		0.72		0.12	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.87		mg/kg-dry	U		0.87		0.15	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.72		mg/kg-dry	U		0.72		0.21	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.87		mg/kg-dry	U		0.87		0.25	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.72		mg/kg-dry	U		0.72		0.17	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.87		mg/kg-dry	U	UJ	0.87		0.2	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.72		mg/kg-dry	U		0.72		0.12	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.87		mg/kg-dry	U		0.87		0.15	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17175	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.72		mg/kg-dry	U		0.72		0.12	
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19046	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.87		mg/kg-dry	U		0.87		0.15	
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.13		mg/kg-dry	U	UJ	0.13			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.19		mg/kg-dry	U	UJ	0.19			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		5.3		mg/kg-dry	U	UJ	5.3			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7.5		mg/kg-dry	U	UJ	7.5			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		5.3		mg/kg-dry	U	UJ	5.3			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		7.5		mg/kg-dry	U	UJ	7.5			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		5.3		mg/kg-dry	U	UJ	5.3			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		7.5		mg/kg-dry	U	UJ	7.5			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.13		mg/kg-dry	U	UJ	0.13			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.19		mg/kg-dry	U	UJ	0.19			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.13		mg/kg-dry	U	UJ	0.13			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.19		mg/kg-dry	U	UJ	0.19			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.26		mg/kg-dry	U	UJ	0.26			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.38		mg/kg-dry	U	UJ	0.38			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.26		mg/kg-dry	U	UJ	0.26			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.38		mg/kg-dry	U	UJ	0.38			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.13		mg/kg-dry	U	UJ	0.13			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.19		mg/kg-dry	U	UJ	0.19			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.13		mg/kg-dry	U	UJ	0.13			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.19		mg/kg-dry	U	UJ	0.19			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	5.3		mg/kg-dry	U	UJ	5.3			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	7.5		mg/kg-dry	U	UJ	7.5			
FC-POND-4	FC-POND-4	IIA	2	P2-00499	Sediment		Field Sample	6/30/2008	17169	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.13		mg/kg-dry	U	UJ	0.13			
FC-POND-4	FC-POND-4	IIA	2	P2-00999	Sediment		Field Sample	9/14/2008	19041	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.19		mg/kg-dry	U	UJ	0.19			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19099	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.6		mg/kg-dry	v		1		0.06	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17192	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17193	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2750		mg/kg-dry	v		5		0.17	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19100	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2950		mg/kg-dry	v	J	5		0.31	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17196	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		47		mg/kg-dry	v	J	17		2.81	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19103	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		93		mg/kg-dry	v	J	31		5.22	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17195	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		141		mg/kg-dry	v	J	17		1.39	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19102	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		255		mg/kg-dry	v	J	31		2.59	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17195	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		75		mg/kg-dry	v	J	17		2.51	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19102	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		46		mg/kg-dry	v	J	31		4.65	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17196	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	299		mg/kg-dry	v	J	17		5.59	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17202	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	479		mg/kg-dry	v		17			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19103	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	464		mg/kg-dry	v	J	31		10.37	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19110	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	821		mg/kg-dry	v		31			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Aluminum	7429-90-5	18200		mg/kg-dry	v		5		0.34	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19105	SW6010B	O	Z	Metals	Aluminum	7429-90-5	28500		mg/kg-dry	v		5		1.29	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.94	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19108	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00347	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.14	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19107	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Barium	7440-39-3	811		mg/kg-dry	v	J	5		0.01	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19106	SW6010B	O	Z	Metals	Barium	7440-39-3	1730		mg/kg-dry	v		5		0.09	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00554	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19105	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.8	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19107	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.49	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.05	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19105	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	v		1		0.2	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Chromium	7440-47-3	223		mg/kg-dry	v		5		0.07	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19106	SW6010B	O	Z	Metals	Chromium	7440-47-3	379		mg/kg-dry	v		5		0.57	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17200	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.16	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Cobalt	7440-48-4	26		mg/kg-dry	v		5		0.13	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19106	SW6010B	O	Z	Metals	Cobalt	7440-48-4	51		mg/kg-dry	v		5		1.03	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Copper	7440-50-8	22		mg/kg-dry	v		5		0.06	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19106	SW6010B	O	Z	Metals	Copper	7440-50-8	80		mg/kg-dry	v		5		0.51	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Iron	7439-89-6	22000		mg/kg-dry	v	J	5		4.22	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19106	SW6010B	O	Z	Metals	Iron	7439-89-6	52800		mg/kg-dry	v		30		31.32	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Lead	7439-92-1	16		mg/kg-dry	v		5		0.46	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19106	SW6010B	O	Z	Metals	Lead	7439-92-1	63		mg/kg-dry	v		5		3.43	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Manganese	7439-96-5	339		mg/kg-dry	v		5		0.02	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19106	SW6010B	O	Z	Metals	Manganese	7439-96-5	627		mg/kg-dry	v		5		0.16	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17201	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19109	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Nickel	7440-02-0	53		mg/kg-dry	v		5		0.16	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19106	SW6010B	O	Z	Metals	Nickel	7440-02-0	107		mg/kg-dry	v		5		1.19	
FC-POND-5	FC-POND-5	**IIA**	2	**P2-00502**	**Sediment**		**Field Sample**	**6/30/2008**	17198	**SW6010B**	O	**Z**	**Metals**	**Selenium**	**7782-49-2**	**5**		**mg/kg-dry**	**U**	**R**	**5**		**1.24**	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19105	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		4.63	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.11	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19105	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.42	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17199	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00083	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19107	SW6020	O	Z	Metals	Thallium	7440-28-0	0.7		mg/kg-dry	v		0.6		0.00308	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Vanadium	7440-62-2	31		mg/kg-dry	v		1		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19106	SW6010B	O	Z	Metals	Vanadium	7440-62-2	74		mg/kg-dry	v		1		0.74	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17198	SW6010B	O	Z	Metals	Zinc	7440-66-6	24		mg/kg-dry	v		5		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19106	SW6010B	O	Z	Metals	Zinc	7440-66-6	70		mg/kg-dry	v		5		0.77	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17194	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.59		wt%	v		0.01		0.01	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19101	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.94		wt%	v		0.01		0.01	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17190	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	40.7		wt%	v		0.2		0.01	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19097	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	68		wt%	v		0.2		0.01	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17191	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19098	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17190	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	59.3		wt%	v		0.01		0.01	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19097	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	32		wt%	v		0.01		0.01	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.56		mg/kg-dry	U		0.56		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1		mg/kg-dry	U	UJ	1		0.18	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.56		mg/kg-dry	U		0.56		0.13	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1		mg/kg-dry	U	UJ	1		0.25	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.56		mg/kg-dry	U		0.56		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1		mg/kg-dry	U	UJ	1		0.18	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.56		mg/kg-dry	U		0.56		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1		mg/kg-dry	U	UJ	1		0.18	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.56		mg/kg-dry	U		0.56		0.06	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1		mg/kg-dry	U	UJ	1		0.12	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.56		mg/kg-dry	U		0.56		0.13	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1		mg/kg-dry	U	UJ	1		0.25	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.56		mg/kg-dry	U		0.56		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1		mg/kg-dry	U	UJ	1		0.18	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.56		mg/kg-dry	U		0.56		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1		mg/kg-dry	U	UJ	1		0.18	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.56		mg/kg-dry	U		0.56		0.13	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1		mg/kg-dry	U	UJ	1		0.25	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.56		mg/kg-dry	U		0.56		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1		mg/kg-dry	U	UJ	1		0.18	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.56		mg/kg-dry	U		0.56		0.13	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1		mg/kg-dry	U	UJ	1		0.25	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.56		mg/kg-dry	U		0.56		0.13	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1		mg/kg-dry	U	UJ	1		0.25	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.56		mg/kg-dry	U		0.56		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1		mg/kg-dry	U	UJ	1		0.18	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.56		mg/kg-dry	U		0.56		0.16	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1		mg/kg-dry	U	UJ	1		0.31	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.56		mg/kg-dry	U		0.56		0.13	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1		mg/kg-dry	U	UJ	1		0.25	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.56		mg/kg-dry	U		0.56		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1		mg/kg-dry	U	UJ	1		0.18	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17203	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.56		mg/kg-dry	U		0.56		0.1	
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19111	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1		mg/kg-dry	U	UJ	1		0.18	
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.089		mg/kg-dry	U	UJ	0.089			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.6		mg/kg-dry	U	UJ	3.6			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		8.7		mg/kg-dry	U	UJ	8.7			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.6		mg/kg-dry	U	UJ	3.6			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		8.7		mg/kg-dry	U	UJ	8.7			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.6		mg/kg-dry	U	UJ	3.6			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		8.7		mg/kg-dry	U	UJ	8.7			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.089		mg/kg-dry	U	UJ	0.089			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.089		mg/kg-dry	U	UJ	0.089			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.18		mg/kg-dry	U	UJ	0.18			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.44		mg/kg-dry	U	UJ	0.44			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.18		mg/kg-dry	U	UJ	0.18			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.44		mg/kg-dry	U	UJ	0.44			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.089		mg/kg-dry	U	UJ	0.089			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.089		mg/kg-dry	U	UJ	0.089			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.22		mg/kg-dry	U	UJ	0.22			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.1		mg/kg-dry	J	J	3.6			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	8.7		mg/kg-dry	U	UJ	8.7			
FC-POND-5	FC-POND-5	IIA	2	P2-00502	Sediment		Field Sample	6/30/2008	17197	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.089		mg/kg-dry	U	UJ	0.089			
FC-POND-5	FC-POND-5	IIA	2	P2-01008	Sediment		Field Sample	9/14/2008	19104	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.22		mg/kg-dry	U	UJ	0.22			
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2550	E300.0	O	Z	Anions	Fluoride, 1:2		1.3		mg/kg-dry	v		1	mg/kg-dry	0.03	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2551	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3220		mg/kg-dry	v		30	mg/kg-dry	33.67	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2553	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		72		mg/kg-dry	v		34	mg/kg-dry	5.62	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2554	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		201		mg/kg-dry	v		34	mg/kg-dry	2.79	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2554	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		36		mg/kg-dry	v		34	mg/kg-dry	5.01	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2553	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	405		mg/kg-dry	v		34	mg/kg-dry	11.17	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2560	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	508		mg/kg-dry	v		34	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Aluminum	7429-90-5	26100		mg/kg-dry	v		5	mg/kg-dry	1.68	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2558	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.003734007	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2558	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2	mg/kg-dry	0.03	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Barium	7440-39-3	1520		mg/kg-dry	v	J	5	mg/kg-dry	3.36	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.02	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Boron	7440-42-8	7		mg/kg-dry	U		7	mg/kg-dry	6.73	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2558	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.004287879	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Chromium	7440-47-3	289		mg/kg-dry	v	J	1	mg/kg-dry	1.01	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Cobalt	7440-48-4	42		mg/kg-dry	v		5	mg/kg-dry	1.01	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Copper	7440-50-8	66		mg/kg-dry	v		5	mg/kg-dry	0.67	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Iron	7439-89-6	39600		mg/kg-dry	v	J	30	mg/kg-dry	33.67	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Lead	7439-92-1	48		mg/kg-dry	v		5	mg/kg-dry	3.36	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Manganese	7439-96-5	573		mg/kg-dry	v		5	mg/kg-dry	0.13	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2559	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	v		0.1	mg/kg-dry	0.03	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Nickel	7440-02-0	82		mg/kg-dry	v		5	mg/kg-dry	0.67	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2558	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.004304714	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.33	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2558	SW6020	O	Z	Metals	Thallium	7440-28-0	0.9		mg/kg-dry	v		0.6	mg/kg-dry	0.003314815	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Vanadium	7440-62-2	58		mg/kg-dry	v		1	mg/kg-dry	1.34	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2557	SW6010B	O	Z	Metals	Zinc	7440-66-6	50		mg/kg-dry	v		5	mg/kg-dry	0.67	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2552	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.28		wt%	v		0.01	wt%	0.01	wt%
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2556	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	70		wt%	v		0.2	wt%	0.01	wt%
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2549	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1	s.u.		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.2	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.26	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.2	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.2	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.13	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.26	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.2	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.2	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.26	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.2	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.26	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.26	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.2	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.33	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.26	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.2	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2561	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.1		mg/kg-dry	U		1.1	mg/kg-dry	0.2	mg/kg-dry
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.16		mg/kg-dry	U		0.16	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		6.5		mg/kg-dry	U		6.5	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		6.5		mg/kg-dry	U		6.5	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		6.5		mg/kg-dry	U		6.5	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.16		mg/kg-dry	U		0.16	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.16		mg/kg-dry	U		0.16	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.33		mg/kg-dry	U		0.33	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.33		mg/kg-dry	U		0.33	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.16		mg/kg-dry	U		0.16	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.16		mg/kg-dry	U		0.16	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	6.5		mg/kg-dry	U		6.5	mg/kg-dry		
FC-Upper Pond_SED	FC-POND	I	1	P1-00405	Sediment		Field Sample	10/13/2007	2555	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.16		mg/kg-dry	U		0.16	mg/kg-dry		
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18052	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16289	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16290	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1890		mg/kg-dry	v	J	5		0.14	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18053	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1790		mg/kg-dry	v		5		0.15	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16297	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	53		mg/kg-dry	v		14			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18059	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	29		mg/kg-dry	v		15			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Aluminum	7429-90-5	14400		mg/kg-dry	v		5		0.29	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8020		mg/kg-dry	v	J	5		0.63	
LRC-1	**LRC-1**	**IIA**	**2**	**P2-00533**	**Sediment**		**Field Sample**	**6/25/2008**	16293	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.78**	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.71	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U	UJ	2		0.94	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		2.08	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Barium	7440-39-3	600		mg/kg-dry	v		5		0.01	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Barium	7440-39-3	365		mg/kg-dry	v	J	5		0.02	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.0046	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.49	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.28	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U	UJ	1		0.04	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18057	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00195	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Chromium	7440-47-3	239		mg/kg-dry	v		5		0.06	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Chromium	7440-47-3	145		mg/kg-dry	v	J	5		0.14	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16295	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.14	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Cobalt	7440-48-4	19		mg/kg-dry	v		5		0.11	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5		0.25	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Copper	7440-50-8	28		mg/kg-dry	v		5		0.05	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Copper	7440-50-8	19		mg/kg-dry	v		5		0.12	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Iron	7439-89-6	21700		mg/kg-dry	v		5		3.5	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Iron	7439-89-6	17400		mg/kg-dry	v	J	8		7.68	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Lead	7439-92-1	11		mg/kg-dry	v	J	5		0.38	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Lead	7439-92-1	7		mg/kg-dry	v		5		0.84	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Manganese	7439-96-5	1350		mg/kg-dry	v		5		0.01	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Manganese	7439-96-5	965		mg/kg-dry	v	J	5		0.04	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16296	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18058	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Nickel	7440-02-0	42		mg/kg-dry	v		5		0.13	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Nickel	7440-02-0	26		mg/kg-dry	v		5		0.29	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.03	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18057	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00196	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.09	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.21	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16294	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000689	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18057	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U	UJ	0.6		0.00151	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Vanadium	7440-62-2	49		mg/kg-dry	v		1		0.08	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Vanadium	7440-62-2	37		mg/kg-dry	v	J	1		0.18	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16293	SW6010B	O	Z	Metals	Zinc	7440-66-6	94		mg/kg-dry	v		5		0.08	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18056	SW6010B	O	Z	Metals	Zinc	7440-66-6	20		mg/kg-dry	v		5		0.19	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16298	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.023		mg/kg-dry	U		0.023		0.00795	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18060	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.026		mg/kg-dry	U		0.026		0.0092	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16298	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.023		mg/kg-dry	U		0.023			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18060	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.026		mg/kg-dry	U		0.026			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16298	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.023		mg/kg-dry	U		0.023			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18060	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.026		mg/kg-dry	U		0.026			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16298	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.023		mg/kg-dry	U		0.023			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18060	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.026		mg/kg-dry	U		0.026			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16298	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.023		mg/kg-dry	U		0.023			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18060	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.026		mg/kg-dry	U		0.026			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16298	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.023		mg/kg-dry	U		0.023		0.00927	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18060	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.026		mg/kg-dry	U		0.026		0.01	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16298	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.023		mg/kg-dry	U		0.023		0.00715	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18060	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.026		mg/kg-dry	U		0.026		0.00828	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16298	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.023		mg/kg-dry	U		0.023			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18060	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.026		mg/kg-dry	U		0.026			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16298	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.023		mg/kg-dry	U		0.023			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18060	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.026		mg/kg-dry	U		0.026			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16291	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.51		wt%	v		0.01		0.01	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18054	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.73		wt%	v		0.01		0.01	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16287	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	28.6		wt%	v		0.2		0.01	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18050	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	34.8		wt%	v		0.2		0.01	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16288	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.8		s.u.	v		0.1			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18051	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16287	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	71.4		wt%	v		0.01		0.01	
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18050	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	65.2		wt%	v		0.01		0.01	
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.067		mg/kg-dry	U	UJ	0.067			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.061		mg/kg-dry	U		0.061			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.7		mg/kg-dry	U	UJ	2.7			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.4		mg/kg-dry	U		2.4			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.7		mg/kg-dry	U	UJ	2.7			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.4		mg/kg-dry	U		2.4			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.7		mg/kg-dry	U	UJ	2.7			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.4		mg/kg-dry	U		2.4			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.067		mg/kg-dry	U	UJ	0.067			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.061		mg/kg-dry	U		0.061			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.067		mg/kg-dry	U	UJ	0.067			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.061		mg/kg-dry	U		0.061			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.13		mg/kg-dry	U	UJ	0.13			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.12		mg/kg-dry	U		0.12			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.13		mg/kg-dry	U	UJ	0.13			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.12		mg/kg-dry	U		0.12			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.067		mg/kg-dry	U	UJ	0.067			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.061		mg/kg-dry	U		0.061			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.067		mg/kg-dry	U	UJ	0.067			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.061		mg/kg-dry	U		0.061			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.7		mg/kg-dry	U	UJ	2.7			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.4		mg/kg-dry	U		2.4			
LRC-1	LRC-1	IIA	2	P2-00533	Sediment		Field Sample	6/25/2008	16292	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.067		mg/kg-dry	U	UJ	0.067			
LRC-1	LRC-1	IIA	2	P2-00953	Sediment		Field Sample	9/10/2008	18055	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.061		mg/kg-dry	U		0.061			
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2860	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2861	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2630		mg/kg-dry	v		10	mg/kg-dry	12.7	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2868	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	23		mg/kg-dry	v		13	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10000		mg/kg-dry	v		5	mg/kg-dry	0.63	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2866	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U		0.3	mg/kg-dry	0.001409149	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2866	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Barium	7440-39-3	440		mg/kg-dry	v		5	mg/kg-dry	1.27	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.008894537	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.54	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.25	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Chromium	7440-47-3	148		mg/kg-dry	v	J	0.4	mg/kg-dry	0.38	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5	mg/kg-dry	0.38	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Copper	7440-50-8	15		mg/kg-dry	v		5	mg/kg-dry	0.25	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Iron	7439-89-6	15700		mg/kg-dry	v		10	mg/kg-dry	12.7	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Lead	7439-92-1	7		mg/kg-dry	v		5	mg/kg-dry	1.27	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Manganese	7439-96-5	299		mg/kg-dry	v	J	5	mg/kg-dry	0.05	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2867	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Nickel	7440-02-0	26		mg/kg-dry	v		5	mg/kg-dry	0.25	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2866	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001624524	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.12	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2866	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001250953	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Vanadium	7440-62-2	31		mg/kg-dry	v		1	mg/kg-dry	0.5	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2865	SW6010B	O	Z	Metals	Zinc	7440-66-6	19		mg/kg-dry	v		5	mg/kg-dry	0.25	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2870	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.022		mg/kg-dry	U		0.022	mg/kg-dry	0.007623888	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2870	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2870	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2870	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2870	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2870	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.022		mg/kg-dry	U		0.022	mg/kg-dry	0.008894537	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2870	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.022		mg/kg-dry	U		0.022	mg/kg-dry	0.0068615	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2870	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2870	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.022		mg/kg-dry	U		0.022	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2871	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0051		mg/kg-dry	U		0.0051	mg/kg-dry	0.000457433	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2871	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0051		mg/kg-dry	U		0.0051	mg/kg-dry	0.001448539	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2871	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.025		mg/kg-dry	U		0.025	mg/kg-dry	0.00111817	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000330369	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000266836	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000343075	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000266836	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000127065	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000317662	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000190597	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.022		mg/kg-dry	U		0.022	mg/kg-dry	0.01	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2871	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.064		mg/kg-dry	U		0.064	mg/kg-dry	0.03	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000343075	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2871	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0064		mg/kg-dry	U		0.0064	mg/kg-dry	0.000546379	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2871	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.025		mg/kg-dry	U		0.025	mg/kg-dry	0.009479035	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000190597	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000241423	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000139771	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000203304	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000165184	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000279543	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000190597	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000152478	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000177891	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000241423	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000139771	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2871	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.1		mg/kg-dry	U		5.1	mg/kg-dry	0.51	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2871	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	10		mg/kg-dry	U		10	mg/kg-dry	0.73	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0022		mg/kg-dry	U		0.0022	mg/kg-dry	0.000355781	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2871	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.001385006	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2869	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2862	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.78		wt%	v		0.01	wt%	0.01	wt%
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2864	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	21		wt%	v		0.2	wt%	0.01	wt%
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2859	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8.2		s.u.	v		0.1	s.u.		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.047		mg/kg-dry	U		0.047	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.047		mg/kg-dry	U		0.047	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.047		mg/kg-dry	U		0.047	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.095		mg/kg-dry	U		0.095	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.095		mg/kg-dry	U		0.095	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.047		mg/kg-dry	U		0.047	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.047		mg/kg-dry	U		0.047	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-1_SED	LRC-1	I	1	P1-00338	Sediment		Field Sample	10/17/2007	2863	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.047		mg/kg-dry	U		0.047	mg/kg-dry		
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17890	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16253	E300.0	O	Z	Anions	Fluoride, 1:2		1.6		mg/kg-dry	v		1		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16254	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2830		mg/kg-dry	v	J	5		0.13	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17891	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2340		mg/kg-dry	v		5		0.12	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16268	SW9012	O	Z	Cyanide	Cyanide, Total	57-12-5	0.5		mg/kg-dry	U		0.5		0.19	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17906	SW9012	O	Z	Cyanide	Cyanide, Total	57-12-5	0.5		mg/kg-dry	U		0.5		0.17	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16261	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	49		mg/kg-dry	v		14			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17897	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	25		mg/kg-dry	v		12			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11900		mg/kg-dry	v		5		0.28	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Aluminum	7429-90-5	3990		mg/kg-dry	v		5		0.5	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19509	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6220		mg/kg-dry	v	UJ	5		0.53	
LRC-2	LRC-2	**IIA**	2	**P2-00531**	**Sediment**		**Field Sample**	**6/25/2008**	16257	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.77**	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.37	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19511	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.000717	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U	UJ	2		0.94	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.66	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19511	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U	UJ	2		0.00606	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Barium	7440-39-3	472		mg/kg-dry	v		5		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Barium	7440-39-3	240		mg/kg-dry	v	J	5		0.01	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19510	SW6010B	O	Z	Metals	Barium	7440-39-3	372		mg/kg-dry	v	UJ	5		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00457	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00808	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19509	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.0085	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.48	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.63	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19509	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.76	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U	UJ	1		0.04	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.08	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19509	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U	UJ	1		0.08	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Chromium	7440-47-3	143		mg/kg-dry	v		5		0.06	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Chromium	7440-47-3	67		mg/kg-dry	v	J	5		0.11	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19510	SW6010B	O	Z	Metals	Chromium	7440-47-3	100		mg/kg-dry	v	UJ	5		0.11	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16259	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.13	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Cobalt	7440-48-4	15		mg/kg-dry	v		5		0.11	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Cobalt	7440-48-4	10		mg/kg-dry	v		5		0.2	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19510	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5		0.21	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Copper	7440-50-8	22		mg/kg-dry	v		5		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Copper	7440-50-8	13		mg/kg-dry	v		5		0.1	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19510	SW6010B	O	Z	Metals	Copper	7440-50-8	29		mg/kg-dry	v		5		0.1	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Iron	7439-89-6	19100		mg/kg-dry	v		5		3.48	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Iron	7439-89-6	23300		mg/kg-dry	v		6		6.16	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19509	SW6010B	O	Z	Metals	Iron	7439-89-6	20800		mg/kg-dry	v		6		6.48	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Lead	7439-92-1	14		mg/kg-dry	v	J	5		0.38	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Lead	7439-92-1	7		mg/kg-dry	v		5		0.67	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19510	SW6010B	O	Z	Metals	Lead	7439-92-1	36		mg/kg-dry	v		5		0.71	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Manganese	7439-96-5	1010		mg/kg-dry	v		5		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Manganese	7439-96-5	865		mg/kg-dry	v	J	5		0.03	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19510	SW6010B	O	Z	Metals	Manganese	7439-96-5	1050		mg/kg-dry	v		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16260	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17896	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Nickel	7440-02-0	30		mg/kg-dry	v		5		0.13	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Nickel	7440-02-0	15		mg/kg-dry	v		5		0.23	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19509	SW6010B	O	Z	Metals	Nickel	7440-02-0	21		mg/kg-dry	v		5		0.24	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.03	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.82	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19509	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		1.91	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.09	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.16	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19509	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.17	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16258	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000685	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17895	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00121	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19511	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000637	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Vanadium	7440-62-2	41		mg/kg-dry	v		1		0.08	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17894	SW6010B	O	Z	Metals	Vanadium	7440-62-2	59		mg/kg-dry	v	J	1		0.14	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19510	SW6010B	O	Z	Metals	Vanadium	7440-62-2	51		mg/kg-dry	v		1		0.15	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16257	SW6010B	O	Z	Metals	Zinc	7440-66-6	26		mg/kg-dry	v		5		0.08	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17895	SW6020	O	Z	Metals	Zinc	7440-66-6	15		mg/kg-dry	v		5		0.01	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19510	SW6010B	O	Z	Metals	Zinc	7440-66-6	18		mg/kg-dry	v		5		0.16	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16263	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.024		mg/kg-dry	U		0.024		0.00834	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17901	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.021		mg/kg-dry	U		0.021		0.00738	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16263	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.024		mg/kg-dry	U		0.024			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17901	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.021		mg/kg-dry	U		0.021			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16263	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.024		mg/kg-dry	U		0.024			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17901	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.021		mg/kg-dry	U		0.021			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16263	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.024		mg/kg-dry	U		0.024			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17901	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.021		mg/kg-dry	U		0.021			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16263	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.024		mg/kg-dry	U		0.024			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17901	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.021		mg/kg-dry	U		0.021			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16263	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.024		mg/kg-dry	U		0.024		0.00974	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17901	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.021		mg/kg-dry	U		0.021		0.00861	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16263	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.024		mg/kg-dry	U		0.024		0.00751	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17901	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.021		mg/kg-dry	U		0.021		0.00664	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16263	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.024		mg/kg-dry	U		0.024			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17901	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.021		mg/kg-dry	U		0.021			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16263	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.024		mg/kg-dry	U		0.024			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17901	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.021		mg/kg-dry	U		0.021			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16264	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0056		mg/kg-dry	U		0.0056		0.000501	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17902	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0049		mg/kg-dry	U		0.0049		0.000443	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16264	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0056		mg/kg-dry	U		0.0056		0.00159	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17902	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0049		mg/kg-dry	U		0.0049		0.0014	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16264	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.028		mg/kg-dry	U		0.028		0.00122	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17902	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.025		mg/kg-dry	U		0.025		0.00108	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.024		mg/kg-dry	U		0.024		0.00362	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0021		mg/kg-dry	U		0.0021		0.00032	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.024		mg/kg-dry	U		0.024		0.00292	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0021		mg/kg-dry	U		0.0021		0.000258	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.024		mg/kg-dry	U		0.024		0.00376	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0021		mg/kg-dry	U		0.0021		0.000332	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.024		mg/kg-dry	U		0.024		0.00292	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0021		mg/kg-dry	U		0.0021		0.000258	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.024		mg/kg-dry	U		0.024		0.00139	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17900	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0021		mg/kg-dry	U		0.0021		0.000123	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.024		mg/kg-dry	U		0.024		0.00348	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0021		mg/kg-dry	U		0.0021		0.000308	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.024		mg/kg-dry	U		0.024		0.00209	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0021		mg/kg-dry	U		0.0021		0.000185	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.24		mg/kg-dry	U		0.24		0.13	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.021		mg/kg-dry	U		0.021		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16264	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.07		mg/kg-dry	U		0.07		0.03	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17902	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.062		mg/kg-dry	U		0.062		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.024		mg/kg-dry	U		0.024		0.00376	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0021		mg/kg-dry	U		0.0021		0.000332	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16264	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.007		mg/kg-dry	U		0.007		0.000598	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17902	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0062		mg/kg-dry	U		0.0062		0.000529	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16264	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.028		mg/kg-dry	U		0.028		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17902	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.025		mg/kg-dry	U		0.025		0.00918	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.024		mg/kg-dry	U		0.024		0.00209	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0021		mg/kg-dry	U		0.0021		0.000185	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.024		mg/kg-dry	U		0.024		0.00264	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0021		mg/kg-dry	U		0.0021		0.000234	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.024		mg/kg-dry	U		0.024		0.00153	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0021		mg/kg-dry	U		0.0021		0.000135	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.024		mg/kg-dry	U		0.024		0.00223	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0021		mg/kg-dry	U		0.0021		0.000197	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.024		mg/kg-dry	U		0.024		0.00181	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0021		mg/kg-dry	U		0.0021		0.00016	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.024		mg/kg-dry	U		0.024		0.00306	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17900	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0021		mg/kg-dry	U		0.0021		0.000271	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.024		mg/kg-dry	U		0.024		0.00209	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0021		mg/kg-dry	U		0.0021		0.000185	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.024		mg/kg-dry	U		0.024		0.00167	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0021		mg/kg-dry	U		0.0021		0.000148	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.024		mg/kg-dry	U		0.024		0.00195	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.0021		mg/kg-dry	U		0.0021		0.000172	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.024		mg/kg-dry	U		0.024		0.00264	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0021		mg/kg-dry	U		0.0021		0.000234	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.024		mg/kg-dry	U		0.024		0.00153	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0021		mg/kg-dry	U		0.0021		0.000135	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.028		mg/kg-dry	U		0.028			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17899	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.0025		mg/kg-dry	U	UJ	0.0025			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16264	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.6		mg/kg-dry	U		5.6		0.56	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17902	SW8151A	O	Z	Pesticides	MCPA	94-74-6	4.9		mg/kg-dry	U		4.9		0.5	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16264	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	5.6		mg/kg-dry	U		5.6		0.8	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17902	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	4.9		mg/kg-dry	U		4.9		0.71	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.024		mg/kg-dry	U		0.024		0.00389	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17900	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0021		mg/kg-dry	U		0.0021		0.000344	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16264	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0028		mg/kg-dry	U		0.0028		0.00152	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17902	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0025		mg/kg-dry	U		0.0025		0.00134	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16262	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	2.3		mg/kg-dry	U		2.3		0.36	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17898	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.21		mg/kg-dry	U		0.21		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16255	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.66		wt%	v		0.01		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17892	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.15		wt%	v		0.01		0.01	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19508	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.28		wt%	v	UJ	0.01		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16251	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	28.1		wt%	v		0.2		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17888	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	18.7		wt%	v		0.2		0.01	
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19506	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	22.7		wt%	v		0.2		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16252	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	8		s.u.	v		0.1			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17889	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.7		s.u.	v		0.1			
LRC-2	LRC-2	IIC	4	P2-01071	Sediment		Field Sample	10/1/2008	19507	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.4		s.u.	v		0.1			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16251	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	71.9		wt%	v		0.01		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17888	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	81.3		wt%	v		0.01		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	0.23		mg/kg-dry	U		0.23		0.06	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	0.21		mg/kg-dry	U		0.21		0.06	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	0.23		mg/kg-dry	U		0.23			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	0.21		mg/kg-dry	U		0.21			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.21		mg/kg-dry	U		0.21		0.05	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.23		mg/kg-dry	U		0.23		0.04	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.21		mg/kg-dry	U		0.21		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.23		mg/kg-dry	U		0.23		0.07	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.21		mg/kg-dry	U		0.21		0.06	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.23		mg/kg-dry	U		0.23		0.06	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.21		mg/kg-dry	U		0.21		0.05	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	0.46		mg/kg-dry	U		0.46		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	0.41		mg/kg-dry	U		0.41		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.23		mg/kg-dry	U		0.23		0.03	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.21		mg/kg-dry	U		0.21		0.02	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.23		mg/kg-dry	U		0.23		0.03	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.21		mg/kg-dry	U		0.21		0.02	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.23		mg/kg-dry	U		0.23		0.07	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.21		mg/kg-dry	U		0.21		0.06	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.21		mg/kg-dry	U		0.21		0.05	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.0046		mg/kg-dry	U		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.0041		mg/kg-dry	U		0.0041			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	0.46		mg/kg-dry	U	UJ	0.46		0.04	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	0.41		mg/kg-dry	U		0.41		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.21		mg/kg-dry	U		0.21		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	0.93		mg/kg-dry	U		0.93		0.17	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	0.82		mg/kg-dry	U		0.82		0.15	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	0.46		mg/kg-dry	U		0.46		0.12	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	0.41		mg/kg-dry	U		0.41		0.11	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	0.46		mg/kg-dry	U		0.46		0.09	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	0.41		mg/kg-dry	U		0.41		0.08	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.21		mg/kg-dry	U		0.21		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.23		mg/kg-dry	U		0.23		0.07	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.21		mg/kg-dry	U		0.21		0.06	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.21		mg/kg-dry	U		0.21		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	0.46		mg/kg-dry	U		0.46		0.04	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	0.41		mg/kg-dry	U		0.41		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.46		mg/kg-dry	U		0.46		0.04	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.41		mg/kg-dry	U		0.41		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.0046		mg/kg-dry	U		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.0041		mg/kg-dry	U		0.0041		0.00234	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.0046		mg/kg-dry	U		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.0041		mg/kg-dry	U		0.0041		0.0022	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	0.23		mg/kg-dry	U		0.23		0.04	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	0.21		mg/kg-dry	U		0.21		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.0046		mg/kg-dry	U		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.0041		mg/kg-dry	U		0.0041		0.00129	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	0.23		mg/kg-dry	U		0.23			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	0.21		mg/kg-dry	U		0.21			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	0.23		mg/kg-dry	U	UJ	0.23			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	0.21		mg/kg-dry	U		0.21			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.018		mg/kg-dry	v		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.0041		mg/kg-dry	U		0.0041		0.00218	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.012		mg/kg-dry	v		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.0041		mg/kg-dry	U		0.0041		0.00153	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.019		mg/kg-dry	v		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.0041		mg/kg-dry	U		0.0041		0.0014	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.0046		mg/kg-dry	U		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.0041		mg/kg-dry	U		0.0041		0.00162	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.016		mg/kg-dry	v		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.0041		mg/kg-dry	U		0.0041		0.00229	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.21		mg/kg-dry	U		0.21		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.23		mg/kg-dry	U		0.23		0.07	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.21		mg/kg-dry	U		0.21		0.06	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.23		mg/kg-dry	U		0.23		0.06	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.21		mg/kg-dry	U		0.21		0.06	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.23		mg/kg-dry	U		0.23		0.09	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.21		mg/kg-dry	U		0.21		0.08	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.23		mg/kg-dry	U		0.23		0.04	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.21		mg/kg-dry	U		0.21		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	0.23		mg/kg-dry	U		0.23			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	0.21		mg/kg-dry	U		0.21			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	0.21		mg/kg-dry	U		0.21		0.05	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.0046		mg/kg-dry	U		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.0041		mg/kg-dry	U		0.0041		0.000654	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.0056		mg/kg-dry	v		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.0041		mg/kg-dry	U		0.0041		0.000896	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	0.23		mg/kg-dry	U		0.23		0.04	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	0.21		mg/kg-dry	U		0.21		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.21		mg/kg-dry	U		0.21		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.23		mg/kg-dry	U		0.23		0.03	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.21		mg/kg-dry	U		0.21		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.23		mg/kg-dry	U		0.23		0.36	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.21		mg/kg-dry	U		0.21		0.32	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.23		mg/kg-dry	U		0.23		0.08	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.21		mg/kg-dry	U		0.21		0.07	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.01		mg/kg-dry	v		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.0041		mg/kg-dry	U		0.0041		0.000779	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.0046		mg/kg-dry	U		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.0041		mg/kg-dry	U		0.0041		0.00218	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.23		mg/kg-dry	U		0.23		0.04	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.21		mg/kg-dry	U		0.21		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.23		mg/kg-dry	U		0.23		0.06	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.21		mg/kg-dry	U		0.21		0.05	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.46		mg/kg-dry	U		0.46		0.03	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.41		mg/kg-dry	U		0.41		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.23		mg/kg-dry	U		0.23		0.06	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.21		mg/kg-dry	U		0.21		0.05	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.01		mg/kg-dry	v		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.0041		mg/kg-dry	U		0.0041		0.00154	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.21		mg/kg-dry	U		0.21		0.05	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.21		mg/kg-dry	U		0.21		0.05	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.0046		mg/kg-dry	U		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.0041		mg/kg-dry	U		0.0041		0.0024	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.23		mg/kg-dry	U		0.23		0.07	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.21		mg/kg-dry	U		0.21		0.06	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.23		mg/kg-dry	U		0.23		0.17	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.21		mg/kg-dry	U		0.21		0.15	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.23		mg/kg-dry	U		0.23		0.04	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.21		mg/kg-dry	U		0.21		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.23		mg/kg-dry	U		0.23		0.05	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.21		mg/kg-dry	U		0.21		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	0.46		mg/kg-dry	U		0.46		0.04	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	0.41		mg/kg-dry	U		0.41		0.04	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.0046		mg/kg-dry	U		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.0041		mg/kg-dry	U		0.0041		0.00178	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16266	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.23		mg/kg-dry	U		0.23		0.07	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17904	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.21		mg/kg-dry	U		0.21		0.06	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16267	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.012		mg/kg-dry	v		0.0046			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17905	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.0041		mg/kg-dry	U		0.0041		0.000995	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.029		mg/kg-dry	U		0.029		0.00298	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.029		mg/kg-dry	U		0.029		0.00768	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.024		mg/kg-dry	U	UJ	0.024		0.00768	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.029		mg/kg-dry	U		0.029		0.00502	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.024		mg/kg-dry	U	UJ	0.024		0.00477	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.029		mg/kg-dry	U		0.029		0.00698	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.024		mg/kg-dry	U	UJ	0.024		0.00428	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.029		mg/kg-dry	U		0.029		0.00551	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.029		mg/kg-dry	U		0.029		0.00492	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.024		mg/kg-dry	U	UJ	0.024		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.029		mg/kg-dry	U		0.029		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.029		mg/kg-dry	U		0.029		0.00883	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.024		mg/kg-dry	U	UJ	0.024		0.00945	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.029		mg/kg-dry	U		0.029		0.00577	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.024		mg/kg-dry	U	UJ	0.024		0.00477	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.029		mg/kg-dry	U		0.029		0.00574	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.024		mg/kg-dry	U	UJ	0.024		0.00983	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.029		mg/kg-dry	U		0.029		0.00349	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.029		mg/kg-dry	U		0.029		0.00716	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.024		mg/kg-dry	U	UJ	0.024		0.00993	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.029		mg/kg-dry	U		0.029		0.00727	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.024		mg/kg-dry	U	UJ	0.024		0.00931	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.029		mg/kg-dry	U		0.029		0.00239	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.024		mg/kg-dry	U	UJ	0.024		0.00458	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.029		mg/kg-dry	U		0.029		0.0047	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.024		mg/kg-dry	U	UJ	0.024		0.00419	
LRC-2	**LRC-2**	**IIA**	**2**	**P2-00531**	**Sediment**		**Field Sample**	**6/25/2008**	16265	**SW8260B**	O	**Z**	**VOCs**	**1,4-Dioxane**	**123-91-1**	**7.2**		**mg/kg-dry**	**U**	**R**	**7.2**		**1.13**	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	1,4-Dioxane	123-91-1	6		mg/kg-dry	U	UJ	6		2.38	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	0.29		mg/kg-dry	U		0.29		0.08	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	0.24		mg/kg-dry	U	UJ	0.24		0.16	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Acetone	67-64-1	0.29		mg/kg-dry	U		0.29		0.15	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Acetone	67-64-1	0.24		mg/kg-dry	U	UJ	0.24		0.41	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.029		mg/kg-dry	U		0.029		0.00428	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.024		mg/kg-dry	U	UJ	0.024		0.00864	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.029		mg/kg-dry	U		0.029		0.00379	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.029		mg/kg-dry	U		0.029		0.00435	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.024		mg/kg-dry	U	UJ	0.024		0.0084	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.029		mg/kg-dry	U		0.029		0.00522	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.029		mg/kg-dry	U		0.029		0.00687	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.024		mg/kg-dry	U	UJ	0.024		0.11	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.029		mg/kg-dry	U		0.029		0.00641	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.024		mg/kg-dry	U	UJ	0.024		0.00477	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.029		mg/kg-dry	U		0.029		0.00451	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.024		mg/kg-dry	U	UJ	0.024		0.00333	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.029		mg/kg-dry	U		0.029		0.00567	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.024		mg/kg-dry	U	UJ	0.024		0.00897	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.029		mg/kg-dry	U		0.029		0.0037	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.024		mg/kg-dry	U	UJ	0.024		0.00807	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.029		mg/kg-dry	U		0.029		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.024		mg/kg-dry	U	UJ	0.024		0.06	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.029		mg/kg-dry	U		0.029		0.00664	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.029		mg/kg-dry	U		0.029		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.024		mg/kg-dry	U	UJ	0.024		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.029		mg/kg-dry	U		0.029		0.00323	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.024		mg/kg-dry	U	UJ	0.024		0.00773	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.029		mg/kg-dry	U		0.029		0.00405	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.029		mg/kg-dry	U		0.029		0.0055	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.024		mg/kg-dry	U	UJ	0.024		0.00477	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.029		mg/kg-dry	U		0.029		0.00498	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.024		mg/kg-dry	U	UJ	0.024		0.03	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.029		mg/kg-dry	U		0.029		0.00301	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.024		mg/kg-dry	U	UJ	0.024		0.00711	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.029		mg/kg-dry	U		0.029		0.00361	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.029		mg/kg-dry	U		0.029		0.00721	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.024		mg/kg-dry	U	UJ	0.024		0.02	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.14		mg/kg-dry	U		0.14		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.59		mg/kg-dry	v	J	0.12		0.00477	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	0.29		mg/kg-dry	U		0.29		0.1	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	0.24		mg/kg-dry	U	UJ	0.24		0.08	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	0.29		mg/kg-dry	U		0.29		0.08	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	0.24		mg/kg-dry	U	UJ	0.24		0.13	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.029		mg/kg-dry	U		0.029		0.0025	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.024		mg/kg-dry	U	UJ	0.024		0.0073	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.029		mg/kg-dry	U		0.029		0.00424	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.024		mg/kg-dry	U	UJ	0.024		0.00477	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.029		mg/kg-dry	U		0.029		0.00523	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.029		mg/kg-dry	U		0.029		0.00544	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.029		mg/kg-dry	U		0.029		0.00426	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.024		mg/kg-dry	U	UJ	0.024		0.00959	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.029		mg/kg-dry	U		0.029		0.00993	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.024		mg/kg-dry	U	UJ	0.024		0.00878	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.029		mg/kg-dry	U		0.029		0.00403	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.024		mg/kg-dry	U	UJ	0.024		0.0083	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.029		mg/kg-dry	U		0.029		0.00283	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.024		mg/kg-dry	U	UJ	0.024		0.00907	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.029		mg/kg-dry	U		0.029		0.00583	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.024		mg/kg-dry	U	UJ	0.024		0.01	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.029		mg/kg-dry	U		0.029		0.01	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.024		mg/kg-dry	U	UJ	0.024		0.00988	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.029		mg/kg-dry	U		0.029		0.003	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.024		mg/kg-dry	U	UJ	0.024		0.02	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16265	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.029		mg/kg-dry	U		0.029		0.00912	
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17903	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.024		mg/kg-dry	U	UJ	0.024		0.02	
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.071		mg/kg-dry	U	UJ	0.071			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.052		mg/kg-dry	U		0.052			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.8		mg/kg-dry	U	UJ	2.8			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.1		mg/kg-dry	U		2.1			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.8		mg/kg-dry	U	UJ	2.8			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.1		mg/kg-dry	U		2.1			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.8		mg/kg-dry	U	UJ	2.8			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.1		mg/kg-dry	U		2.1			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.071		mg/kg-dry	U	UJ	0.071			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.052		mg/kg-dry	U		0.052			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.071		mg/kg-dry	U	UJ	0.071			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.052		mg/kg-dry	U		0.052			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.14		mg/kg-dry	U	UJ	0.14			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.1		mg/kg-dry	U		0.1			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.14		mg/kg-dry	U	UJ	0.14			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.1		mg/kg-dry	U		0.1			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.071		mg/kg-dry	U	UJ	0.071			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.052		mg/kg-dry	U		0.052			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.071		mg/kg-dry	U	UJ	0.071			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.052		mg/kg-dry	U		0.052			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.8		mg/kg-dry	U	UJ	2.8			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.1		mg/kg-dry	U		2.1			
LRC-2	LRC-2	IIA	2	P2-00531	Sediment		Field Sample	6/25/2008	16256	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.071		mg/kg-dry	U	UJ	0.071			
LRC-2	LRC-2	IIA	2	P2-00945	Sediment		Field Sample	9/9/2008	17893	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.052		mg/kg-dry	U		0.052			
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2824	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2825	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1400		mg/kg-dry	v		10	mg/kg-dry	12.33	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2840	SW9012	O	Z	Cyanide	Cyanide, Total	57-12-5	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.17	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2832	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	18		mg/kg-dry	v		12	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9690		mg/kg-dry	v		5	mg/kg-dry	0.61	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2830	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U		0.3	mg/kg-dry	0.001367448	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2830	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Barium	7440-39-3	397		mg/kg-dry	v		5	mg/kg-dry	1.23	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.00863132	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.46	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.24	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Chromium	7440-47-3	135		mg/kg-dry	v	J	0.4	mg/kg-dry	0.36	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5	mg/kg-dry	0.36	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Copper	7440-50-8	23		mg/kg-dry	v		5	mg/kg-dry	0.24	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Iron	7439-89-6	14900		mg/kg-dry	v		10	mg/kg-dry	12.33	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5	mg/kg-dry	1.23	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Manganese	7439-96-5	785		mg/kg-dry	v	J	5	mg/kg-dry	0.04	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2831	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Nickel	7440-02-0	27		mg/kg-dry	v		5	mg/kg-dry	0.24	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2830	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001576449	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.12	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001213933	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Vanadium	7440-62-2	31		mg/kg-dry	v		1	mg/kg-dry	0.49	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2829	SW6010B	O	Z	Metals	Zinc	7440-66-6	20		mg/kg-dry	v		5	mg/kg-dry	0.24	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Azinphos-methyl (Guthion)		0.047		mg/kg	U			mg/kg	0.00047	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Bolstar (Sulprofos)		0.047		mg/kg	U	UJ		mg/kg	0.00048	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Chlorpyrifos		0.047		mg/kg	U			mg/kg	0.00062	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Coumaphos		0.094		mg/kg	U			mg/kg	0.00073	mg/kg
LRC-2_SED	**LRC-2**	**I**	**1**	**P1-00336**	**Sediment**		**Field Sample**	**10/17/2007**	3115	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Demeton-O,S**		**0.095**		**mg/kg**	**U**	**R**		**mg/kg**	**0.012**	**mg/kg**
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Diazinon		0.047		mg/kg	U			mg/kg	0.00074	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Dichlorvos		0.047		mg/kg	U			mg/kg	0.00045	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Dimethoate		0.047		mg/kg	U			mg/kg	0.001	mg/kg
LRC-2_SED	**LRC-2**	**I**	**1**	**P1-00336**	**Sediment**		**Field Sample**	**10/17/2007**	3115	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Disulfoton**		**0.047**		**mg/kg**	**U**	**R**		**mg/kg**	**0.001**	**mg/kg**
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	EPN		0.047		mg/kg	U			mg/kg	0.00067	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Ethoprop (Prophos)		0.047		mg/kg	U			mg/kg	0.00035	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Ethyl Parathion		0.047		mg/kg	U			mg/kg	0.00053	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Fensulfothion		0.047		mg/kg	U			mg/kg	0.0011	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Fenthion		0.047		mg/kg	U	UJ		mg/kg	0.00057	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Malathion		0.047		mg/kg	U			mg/kg	0.00028	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Merphos		0.047		mg/kg	U			mg/kg	0.00051	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Methyl Parathion		0.047		mg/kg	U			mg/kg	0.00047	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Mevinphos		0.047		mg/kg	U			mg/kg	0.0006	mg/kg
LRC-2_SED	**LRC-2**	**I**	**1**	**P1-00336**	**Sediment**		**Field Sample**	**10/17/2007**	3115	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Phorate**		**0.047**		**mg/kg**	**U**	**R**		**mg/kg**	**0.0008**	**mg/kg**
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Ronnel		0.047		mg/kg	U			mg/kg	0.00056	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Stirophos (Tetrachlorovinphos)		0.047		mg/kg	U			mg/kg	0.00043	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Sulfotep		0.047		mg/kg	U			mg/kg	0.0004	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Tokuthion (Prothiofos)		0.047		mg/kg	U			mg/kg	0.00067	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	3115	SW8141A	O	Z	Organophosphorus Pesticides	Trichloronate		0.047		mg/kg	U			mg/kg	0.0006	mg/kg
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2834	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.007422935	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2834	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2834	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2834	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2834	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2834	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.008606659	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2834	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.006596794	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2834	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2834	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2835	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0049		mg/kg-dry	U		0.0049	mg/kg-dry	0.000443896	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2835	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0049		mg/kg-dry	U		0.0049	mg/kg-dry	0.001405672	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2835	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.025		mg/kg-dry	U		0.025	mg/kg-dry	0.00108508	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000320592	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.00025894	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000332922	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.00025894	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000123305	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000308261	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000184957	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.01	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2835	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.062		mg/kg-dry	U		0.062	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000332922	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2835	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0062		mg/kg-dry	U		0.0062	mg/kg-dry	0.00053021	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2835	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.025		mg/kg-dry	U		0.025	mg/kg-dry	0.009198521	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000184957	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000234279	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000135635	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000197287	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000160296	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.00027127	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000184957	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000147965	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000172626	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000234279	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000135635	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2835	SW8151A	O	Z	Pesticides	MCPA	94-74-6	4.9		mg/kg-dry	U		4.9	mg/kg-dry	0.5	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2835	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	4.9		mg/kg-dry	U		4.9	mg/kg-dry	0.71	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000345253	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2835	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.00134402	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2833	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2826	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.35		wt%	v		0.01	wt%	0.01	wt%
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2828	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	19		wt%	v		0.2	wt%	0.01	wt%
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2823	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.8		s.u.	v		0.1	s.u.		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.06	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2839	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.06	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.06	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.17	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.02	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	0.41		mg/kg-dry	U		0.41	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	0.82		mg/kg-dry	U		0.82	mg/kg-dry	0.24	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	0.41		mg/kg-dry	U		0.41	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.22	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.02	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.02	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	0.41		mg/kg-dry	U		0.41	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.25	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.002342787	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.002207152	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.001294698	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.002182491	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.001528977	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.001405672	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.00162762	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.002293465	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.04	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.02	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.00065598	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.000897657	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.04	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.04	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.04	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.000780518	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.002182491	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.04	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.04	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.02	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.001541307	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.02	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.002404439	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	0.21		mg/kg-dry	U		0.21	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	0.41		mg/kg-dry	U		0.41	mg/kg-dry	0.22	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.001787916	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2838	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.07	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2837	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.0041		mg/kg-dry	U		0.0041	mg/kg-dry	0.000997534	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	1,4-Dioxane	123-91-1	1.8		mg/kg-dry	U		1.8	mg/kg-dry	0.36	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	0.37		mg/kg-dry	U		0.37	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Acetone	67-64-1	0.37		mg/kg-dry	U		0.37	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.037		mg/kg-dry	U	UJ	0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.37		mg/kg-dry	v		0.18	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	0.37		mg/kg-dry	U		0.37	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	0.37		mg/kg-dry	U		0.37	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2836	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.037		mg/kg-dry	U		0.037	mg/kg-dry	0.007339557	mg/kg-dry
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.046		mg/kg-dry	U		0.046	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.8		mg/kg-dry	U		1.8	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.8		mg/kg-dry	U		1.8	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.8		mg/kg-dry	U		1.8	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.046		mg/kg-dry	U		0.046	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.046		mg/kg-dry	U		0.046	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.092		mg/kg-dry	U		0.092	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.092		mg/kg-dry	U		0.092	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.046		mg/kg-dry	U		0.046	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.046		mg/kg-dry	U		0.046	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.8		mg/kg-dry	U		1.8	mg/kg-dry		
LRC-2_SED	LRC-2	I	1	P1-00336	Sediment		Field Sample	10/17/2007	2827	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.046		mg/kg-dry	U		0.046	mg/kg-dry		
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17879	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16241	E300.0	O	Z	Anions	Fluoride, 1:2		1.1		mg/kg-dry	v		1		0.01	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16242	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3230		mg/kg-dry	v	J	5		0.14	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17880	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3760		mg/kg-dry	v		5		0.13	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16249	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	56		mg/kg-dry	v		15			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17886	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	35		mg/kg-dry	v		14			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Aluminum	7429-90-5	16100		mg/kg-dry	v		5		0.3	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Aluminum	7429-90-5	16100		mg/kg-dry	v		5		0.57	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19515	SW6010B	O	Z	Metals	Aluminum	7429-90-5	15000		mg/kg-dry	v		5		0.62	
LRC-3	**LRC-3**	**IIA**	**2**	**P2-00466**	**Sediment**		**Field Sample**	**6/25/2008**	16245	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.82**	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.55	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19517	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000834	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U	UJ	2		1	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.89	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19517	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.00705	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Barium	7440-39-3	800		mg/kg-dry	v		5		0.02	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Barium	7440-39-3	675		mg/kg-dry	v	J	5		0.02	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19516	SW6010B	O	Z	Metals	Barium	7440-39-3	888		mg/kg-dry	v		5		0.02	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00489	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00916	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19515	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00989	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.59	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.98	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19515	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.21	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U	UJ	1		0.04	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.09	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19517	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.000958	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Chromium	7440-47-3	233		mg/kg-dry	v		5		0.06	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Chromium	7440-47-3	244		mg/kg-dry	v	J	5		0.12	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19516	SW6010B	O	Z	Metals	Chromium	7440-47-3	258		mg/kg-dry	v		5		0.13	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16247	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.14	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Cobalt	7440-48-4	21		mg/kg-dry	v		5		0.12	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Cobalt	7440-48-4	23		mg/kg-dry	v		5		0.23	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19516	SW6010B	O	Z	Metals	Cobalt	7440-48-4	23		mg/kg-dry	v		5		0.24	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Copper	7440-50-8	36		mg/kg-dry	v		5		0.06	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Copper	7440-50-8	28		mg/kg-dry	v		5		0.11	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19516	SW6010B	O	Z	Metals	Copper	7440-50-8	31		mg/kg-dry	v		5		0.12	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Iron	7439-89-6	22900		mg/kg-dry	v		5		3.72	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Iron	7439-89-6	22500		mg/kg-dry	v		7		6.98	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19516	SW6010B	O	Z	Metals	Iron	7439-89-6	28700		mg/kg-dry	v		8		7.53	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Lead	7439-92-1	17		mg/kg-dry	v	J	5		0.4	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Lead	7439-92-1	14		mg/kg-dry	v		5		0.76	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19516	SW6010B	O	Z	Metals	Lead	7439-92-1	22		mg/kg-dry	v		5		0.82	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Manganese	7439-96-5	545		mg/kg-dry	v		5		0.01	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Manganese	7439-96-5	576		mg/kg-dry	v	J	5		0.03	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19516	SW6010B	O	Z	Metals	Manganese	7439-96-5	603		mg/kg-dry	v		5		0.04	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16248	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17885	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Nickel	7440-02-0	46		mg/kg-dry	v		5		0.14	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Nickel	7440-02-0	52		mg/kg-dry	v		5		0.26	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19516	SW6010B	O	Z	Metals	Nickel	7440-02-0	52		mg/kg-dry	v		5		0.28	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.1	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		2.06	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19515	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		2.22	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.1	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.19	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19515	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.2	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16246	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000733	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17884	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00137	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19517	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000741	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Vanadium	7440-62-2	48		mg/kg-dry	v		1		0.08	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17883	SW6010B	O	Z	Metals	Vanadium	7440-62-2	39		mg/kg-dry	v	J	1		0.16	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19516	SW6010B	O	Z	Metals	Vanadium	7440-62-2	55		mg/kg-dry	v		1		0.18	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16245	SW6010B	O	Z	Metals	Zinc	7440-66-6	31		mg/kg-dry	v		5		0.09	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17884	SW6020	O	Z	Metals	Zinc	7440-66-6	39		mg/kg-dry	v		5		0.01	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19515	SW6010B	O	Z	Metals	Zinc	7440-66-6	31		mg/kg-dry	v		5		0.18	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16250	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.025		mg/kg-dry	U		0.025		0.00893	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17887	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.024		mg/kg-dry	U		0.024		0.00836	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16250	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.025		mg/kg-dry	U		0.025			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17887	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.024		mg/kg-dry	U		0.024			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16250	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.025		mg/kg-dry	U		0.025			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17887	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.024		mg/kg-dry	U		0.024			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16250	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.025		mg/kg-dry	U		0.025			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17887	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.024		mg/kg-dry	U		0.024			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16250	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.025		mg/kg-dry	U		0.025			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17887	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.024		mg/kg-dry	U		0.024			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16250	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.025		mg/kg-dry	U		0.025		0.01	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17887	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.024		mg/kg-dry	U		0.024		0.00975	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16250	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.025		mg/kg-dry	U		0.025		0.00804	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17887	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.024		mg/kg-dry	U		0.024		0.00753	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16250	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.025		mg/kg-dry	U		0.025			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17887	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.024		mg/kg-dry	U		0.024			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16250	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.025		mg/kg-dry	U		0.025			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17887	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.024		mg/kg-dry	U		0.024			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16243	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.42		wt%	v		0.01		0.01	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17881	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.24		wt%	v		0.01		0.01	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19514	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.48		wt%	v		0.01		0.01	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16239	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	32.8		wt%	v		0.2		0.01	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17877	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	28.2		wt%	v		0.2		0.01	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19512	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	33.5		wt%	v		0.2		0.01	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16240	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.8		s.u.	v		0.1			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17878	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.5		s.u.	v		0.1			
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19513	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.5		s.u.	v		0.1			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16239	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	67.2		wt%	v		0.01		0.01	
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17877	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	71.8		wt%	v		0.01		0.01	
LRC-3	LRC-3	IIC	4	P2-01072	Sediment		Field Sample	10/2/2008	19512	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	66.5		wt%	v		0.01		0.01	
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.088		mg/kg-dry	U	UJ	0.088			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.066		mg/kg-dry	U		0.066			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.5		mg/kg-dry	U	UJ	3.5			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.6		mg/kg-dry	U		2.6			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.5		mg/kg-dry	U	UJ	3.5			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.6		mg/kg-dry	U		2.6			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.5		mg/kg-dry	U	UJ	3.5			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.6		mg/kg-dry	U		2.6			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.088		mg/kg-dry	U	UJ	0.088			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.066		mg/kg-dry	U		0.066			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.088		mg/kg-dry	U	UJ	0.088			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.066		mg/kg-dry	U		0.066			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.18		mg/kg-dry	U	UJ	0.18			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.13		mg/kg-dry	U		0.13			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.18		mg/kg-dry	U	UJ	0.18			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.13		mg/kg-dry	U		0.13			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.088		mg/kg-dry	U	UJ	0.088			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.066		mg/kg-dry	U		0.066			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.088		mg/kg-dry	U	UJ	0.088			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.066		mg/kg-dry	U		0.066			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.5		mg/kg-dry	U	UJ	3.5			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.6		mg/kg-dry	U		2.6			
LRC-3	LRC-3	IIA	2	P2-00466	Sediment		Field Sample	6/25/2008	16244	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.088		mg/kg-dry	U	UJ	0.088			
LRC-3	LRC-3	IIA	2	P2-00944	Sediment		Field Sample	9/9/2008	17882	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.066		mg/kg-dry	U		0.066			
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2777	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2778	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	4980		mg/kg-dry	v		30	mg/kg-dry	33	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2781	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		7.3		mg/kg-dry	u	J	17	mg/kg-dry	2.75	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2780	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		17		mg/kg-dry	U	UJ	17	mg/kg-dry	1.36	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2780	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		17		mg/kg-dry	U	UJ	17	mg/kg-dry	2.45	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2781	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	13		mg/kg-dry	u	J	17	mg/kg-dry	5.47	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2787	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	71		mg/kg-dry	v		17	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Aluminum	7429-90-5	16200		mg/kg-dry	v		5	mg/kg-dry	0.82	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2785	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001830033	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2785	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Barium	7440-39-3	1080		mg/kg-dry	v		5	mg/kg-dry	1.65	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.01	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	3.3	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2785	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.002101485	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Chromium	7440-47-3	233		mg/kg-dry	v	J	0.5	mg/kg-dry	0.49	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Cobalt	7440-48-4	24		mg/kg-dry	v		5	mg/kg-dry	0.49	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Copper	7440-50-8	36		mg/kg-dry	v		5	mg/kg-dry	0.33	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Iron	7439-89-6	27800		mg/kg-dry	v		20	mg/kg-dry	16.5	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Lead	7439-92-1	22		mg/kg-dry	v		5	mg/kg-dry	1.65	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Manganese	7439-96-5	798		mg/kg-dry	v	J	5	mg/kg-dry	0.06	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2786	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Nickel	7440-02-0	48		mg/kg-dry	v		5	mg/kg-dry	0.33	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2785	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.002109736	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.16	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2785	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001624587	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Vanadium	7440-62-2	58		mg/kg-dry	v		1	mg/kg-dry	0.66	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2784	SW6010B	O	Z	Metals	Zinc	7440-66-6	34		mg/kg-dry	v		5	mg/kg-dry	0.33	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2789	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.028		mg/kg-dry	U		0.028	mg/kg-dry	0.009933994	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2789	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2789	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2789	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2789	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2789	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.028		mg/kg-dry	U		0.028	mg/kg-dry	0.01	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2789	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.028		mg/kg-dry	U		0.028	mg/kg-dry	0.008828383	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2789	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2789	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.028		mg/kg-dry	U		0.028	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2790	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0066		mg/kg-dry	U		0.0066	mg/kg-dry	0.000594059	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2790	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0066		mg/kg-dry	U		0.0066	mg/kg-dry	0.001881188	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2790	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.001452145	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000429043	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000346535	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0028		mg/kg-dry	U	UJ	0.0028	mg/kg-dry	0.000445545	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000346535	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000165017	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000412541	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000247525	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.028		mg/kg-dry	U		0.028	mg/kg-dry	0.01	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2790	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.083		mg/kg-dry	U		0.083	mg/kg-dry	0.04	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000445545	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2790	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0083		mg/kg-dry	U		0.0083	mg/kg-dry	0.000709571	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2790	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.033		mg/kg-dry	U		0.033	mg/kg-dry	0.01	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000247525	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000313531	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000181518	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000264026	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000214521	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000363036	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000247525	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.00019802	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000231023	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000313531	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.000181518	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.0033		mg/kg-dry	U		0.0033	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2790	SW8151A	O	Z	Pesticides	MCPA	94-74-6	6.6		mg/kg-dry	U		6.6	mg/kg-dry	0.67	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2790	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	6.6		mg/kg-dry	U		6.6	mg/kg-dry	0.95	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0028		mg/kg-dry	U	UJ	0.0028	mg/kg-dry	0.000462046	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2790	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0033		mg/kg-dry	U		0.0033	mg/kg-dry	0.00179868	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2788	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.28		mg/kg-dry	U		0.28	mg/kg-dry	0.04	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2779	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.61		wt%	v		0.01	wt%	0.01	wt%
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2783	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	39		wt%	v		0.2	wt%	0.01	wt%
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2776	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1	s.u.		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.06	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.16	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.13	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2791	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.55		mg/kg-dry	U		0.55	mg/kg-dry	0.09	mg/kg-dry
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.067		mg/kg-dry	U		0.067	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.7		mg/kg-dry	U		2.7	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.7		mg/kg-dry	U		2.7	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.7		mg/kg-dry	U		2.7	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.067		mg/kg-dry	U		0.067	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.067		mg/kg-dry	U		0.067	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.13		mg/kg-dry	U		0.13	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.13		mg/kg-dry	U		0.13	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.067		mg/kg-dry	U		0.067	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.067		mg/kg-dry	U		0.067	mg/kg-dry		
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.7		mg/kg-dry	U		2.7	mg/kg-dry		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-3_SED	LRC-3	I	1	P1-00335	Sediment		Field Sample	10/16/2007	2782	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.067		mg/kg-dry	U		0.067	mg/kg-dry		
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17868	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16229	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16230	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3870		mg/kg-dry	v	J	5		0.12	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17869	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	4410		mg/kg-dry	v		5		0.12	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16237	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	40		mg/kg-dry	v		12			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17875	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	22		mg/kg-dry	v		13			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9150		mg/kg-dry	v		5		0.25	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Aluminum	7429-90-5	7160		mg/kg-dry	v		5		0.53	
LRC-4	LRC-4	**IIA**	2	**P2-00465**	**Sediment**		**Field Sample**	**6/25/2008**	16233	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.69**	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.43	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U	UJ	2		0.84	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.75	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Barium	7440-39-3	647		mg/kg-dry	v		5		0.01	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Barium	7440-39-3	390		mg/kg-dry	v	J	5		0.01	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00408	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00848	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.32	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.76	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U	UJ	1		0.04	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.08	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Chromium	7440-47-3	122		mg/kg-dry	v		5		0.05	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Chromium	7440-47-3	95		mg/kg-dry	v	J	5		0.11	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16235	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.12	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5		0.1	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Cobalt	7440-48-4	10		mg/kg-dry	v		5		0.21	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Copper	7440-50-8	26		mg/kg-dry	v		5		0.05	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Copper	7440-50-8	19		mg/kg-dry	v		5		0.1	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Iron	7439-89-6	18100		mg/kg-dry	v		5		3.1	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Iron	7439-89-6	14100		mg/kg-dry	v		6		6.46	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Lead	7439-92-1	67		mg/kg-dry	v	J	5		0.34	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5		0.7	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Manganese	7439-96-5	383		mg/kg-dry	v		5		0.01	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Manganese	7439-96-5	347		mg/kg-dry	v	J	5		0.03	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16236	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17874	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Nickel	7440-02-0	26		mg/kg-dry	v		5		0.11	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Nickel	7440-02-0	21		mg/kg-dry	v		5		0.24	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		0.91	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.91	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.08	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.17	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16234	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000611	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17873	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00127	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Vanadium	7440-62-2	43		mg/kg-dry	v		1		0.07	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17872	SW6010B	O	Z	Metals	Vanadium	7440-62-2	30		mg/kg-dry	v	J	1		0.15	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16233	SW6010B	O	Z	Metals	Zinc	7440-66-6	19		mg/kg-dry	v		5		0.07	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17873	SW6020	O	Z	Metals	Zinc	7440-66-6	17		mg/kg-dry	v		5		0.01	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16238	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.021		mg/kg-dry	U		0.021		0.00744	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17876	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.022		mg/kg-dry	U		0.022		0.00774	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16238	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.021		mg/kg-dry	U		0.021			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17876	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.022		mg/kg-dry	U		0.022			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16238	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.021		mg/kg-dry	U		0.021			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17876	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.022		mg/kg-dry	U		0.022			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16238	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.021		mg/kg-dry	U		0.021			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17876	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.022		mg/kg-dry	U		0.022			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16238	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.021		mg/kg-dry	U		0.021			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17876	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.022		mg/kg-dry	U		0.022			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16238	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.021		mg/kg-dry	U		0.021		0.00868	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17876	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.022		mg/kg-dry	U		0.022		0.00904	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16238	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.021		mg/kg-dry	U		0.021		0.0067	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17876	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.022		mg/kg-dry	U		0.022		0.00697	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16238	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.021		mg/kg-dry	U		0.021			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17876	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.022		mg/kg-dry	U		0.022			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16238	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.021		mg/kg-dry	U		0.021			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17876	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.022		mg/kg-dry	U		0.022			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16231	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.37		wt%	v		0.01		0.01	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17870	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.62		wt%	v		0.01		0.01	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16227	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	19.4		wt%	v		0.2		0.01	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17866	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	22.5		wt%	v		0.2		0.01	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16228	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.7		s.u.	v		0.1			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17867	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.7		s.u.	v		0.1			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16227	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	80.6		wt%	v		0.01		0.01	
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17866	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	77.5		wt%	v		0.01		0.01	
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.062		mg/kg-dry	U	UJ	0.062			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.06		mg/kg-dry	U		0.06			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.5		mg/kg-dry	U	UJ	2.5			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.4		mg/kg-dry	U		2.4			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.5		mg/kg-dry	U	UJ	2.5			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.4		mg/kg-dry	U		2.4			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.5		mg/kg-dry	U	UJ	2.5			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.4		mg/kg-dry	U		2.4			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.062		mg/kg-dry	U	UJ	0.062			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.06		mg/kg-dry	U		0.06			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.062		mg/kg-dry	U	UJ	0.062			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.06		mg/kg-dry	U		0.06			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.12		mg/kg-dry	U	UJ	0.12			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.12		mg/kg-dry	U		0.12			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.12		mg/kg-dry	U	UJ	0.12			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.12		mg/kg-dry	U		0.12			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.062		mg/kg-dry	U	UJ	0.062			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.06		mg/kg-dry	U		0.06			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.062		mg/kg-dry	U	UJ	0.062			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.06		mg/kg-dry	U		0.06			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.5		mg/kg-dry	U	UJ	2.5			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.4		mg/kg-dry	U		2.4			
LRC-4	LRC-4	IIA	2	P2-00465	Sediment		Field Sample	6/25/2008	16232	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.062		mg/kg-dry	U	UJ	0.062			
LRC-4	LRC-4	IIA	2	P2-00943	Sediment		Field Sample	9/9/2008	17871	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.06		mg/kg-dry	U		0.06			
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2763	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2764	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1470		mg/kg-dry	v		10	mg/kg-dry	13.6	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2771	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	36		mg/kg-dry	v		14	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Aluminum	7429-90-5	3460		mg/kg-dry	v		5	mg/kg-dry	0.68	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2769	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001508844	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2769	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Barium	7440-39-3	186		mg/kg-dry	v		5	mg/kg-dry	1.36	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.00952381	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.72	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2769	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001333333	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Chromium	7440-47-3	38.8		mg/kg-dry	v	J	0.4	mg/kg-dry	0.4	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg-dry	v		5	mg/kg-dry	0.4	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Copper	7440-50-8	13		mg/kg-dry	v		5	mg/kg-dry	0.27	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Iron	7439-89-6	9880		mg/kg-dry	v		10	mg/kg-dry	13.6	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Lead	7439-92-1	5		mg/kg-dry	U		5	mg/kg-dry	1.36	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Manganese	7439-96-5	301		mg/kg-dry	v	J	5	mg/kg-dry	0.05	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2770	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Nickel	7440-02-0	9		mg/kg-dry	v		5	mg/kg-dry	0.27	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2769	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001739456	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.13	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2769	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001339456	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Vanadium	7440-62-2	27		mg/kg-dry	v		1	mg/kg-dry	0.54	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2768	SW6010B	O	Z	Metals	Zinc	7440-66-6	9		mg/kg-dry	v		5	mg/kg-dry	0.27	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2773	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.023		mg/kg-dry	U		0.023	mg/kg-dry	0.008190476	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2773	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.023		mg/kg-dry	U		0.023	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2773	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.023		mg/kg-dry	U		0.023	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2773	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.023		mg/kg-dry	U		0.023	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2773	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.023		mg/kg-dry	U		0.023	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2773	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.023		mg/kg-dry	U		0.023	mg/kg-dry	0.009496599	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2773	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.023		mg/kg-dry	U		0.023	mg/kg-dry	0.007278912	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2773	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.023		mg/kg-dry	U		0.023	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2773	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.023		mg/kg-dry	U		0.023	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2774	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0054		mg/kg-dry	U		0.0054	mg/kg-dry	0.000489796	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2774	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0054		mg/kg-dry	U		0.0054	mg/kg-dry	0.00155102	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2774	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.027		mg/kg-dry	U		0.027	mg/kg-dry	0.001197279	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000353741	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000285714	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0023		mg/kg-dry	U	UJ	0.0023	mg/kg-dry	0.000367347	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000285714	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000136054	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000340136	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000204082	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.023		mg/kg-dry	U		0.023	mg/kg-dry	0.01	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2774	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.068		mg/kg-dry	U		0.068	mg/kg-dry	0.03	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000367347	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2774	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0068		mg/kg-dry	U		0.0068	mg/kg-dry	0.000585034	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2774	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.027		mg/kg-dry	U		0.027	mg/kg-dry	0.01	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000204082	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000258503	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.00014966	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000217687	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000176871	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.00029932	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000204082	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000163265	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000190476	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.000258503	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0023		mg/kg-dry	U		0.0023	mg/kg-dry	0.00014966	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.0027		mg/kg-dry	U		0.0027	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2774	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.4		mg/kg-dry	U		5.4	mg/kg-dry	0.55	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2774	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	5.4		mg/kg-dry	U		5.4	mg/kg-dry	0.78	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0023		mg/kg-dry	U	UJ	0.0023	mg/kg-dry	0.000380952	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2774	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0027		mg/kg-dry	U		0.0027	mg/kg-dry	0.001482993	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2772	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.23		mg/kg-dry	U		0.23	mg/kg-dry	0.03	mg/kg-dry
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2765	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.07		wt%	v		0.01	wt%	0.01	wt%
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2767	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	26		wt%	v		0.2	wt%	0.01	wt%
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2762	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.8		s.u.	v		0.1	s.u.		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.048		mg/kg-dry	U		0.048	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.048		mg/kg-dry	U		0.048	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.048		mg/kg-dry	U		0.048	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.096		mg/kg-dry	U		0.096	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.096		mg/kg-dry	U		0.096	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.048		mg/kg-dry	U		0.048	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.048		mg/kg-dry	U		0.048	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-4_SED	LRC-4	I	1	P1-00329	Sediment		Field Sample	10/16/2007	2766	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.048		mg/kg-dry	U		0.048	mg/kg-dry		
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17857	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16217	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16218	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3010		mg/kg-dry	v	J	5		0.13	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17858	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2050		mg/kg-dry	v		5		0.12	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16225	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	63		mg/kg-dry	v		14			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17864	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	41		mg/kg-dry	v		13			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11400		mg/kg-dry	v		5		0.28	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8220		mg/kg-dry	v		5		0.53	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12700		mg/kg-dry	v	J	5		0.57	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-5	LRC-5	**IIA**	2	**P2-00464**	**Sediment**		**Field Sample**	**6/25/2008**	16221	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.77**	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.43	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19505	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	J	2		0.000767	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U	UJ	2		0.93	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.74	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19505	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U	J	2		0.00648	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Barium	7440-39-3	596		mg/kg-dry	v		5		0.01	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Barium	7440-39-3	497		mg/kg-dry	v	J	5		0.01	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19504	SW6010B	O	Z	Metals	Barium	7440-39-3	658		mg/kg-dry	v	J	5		0.02	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00454	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00844	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	J	5		0.00909	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.47	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.74	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	J	5		2.95	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U	UJ	1		0.04	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.08	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19505	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U	J	1		0.000881	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Chromium	7440-47-3	126		mg/kg-dry	v		5		0.06	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Chromium	7440-47-3	101		mg/kg-dry	v	J	5		0.11	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Chromium	7440-47-3	173		mg/kg-dry	v	J	5		0.12	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16223	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.13	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Cobalt	7440-48-4	14		mg/kg-dry	v		5		0.11	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Cobalt	7440-48-4	12		mg/kg-dry	v		5		0.21	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Cobalt	7440-48-4	17		mg/kg-dry	v	J	5		0.22	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Copper	7440-50-8	28		mg/kg-dry	v		5		0.05	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Copper	7440-50-8	21		mg/kg-dry	v		5		0.1	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Copper	7440-50-8	27		mg/kg-dry	v	J	5		0.11	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Iron	7439-89-6	16600		mg/kg-dry	v		5		3.46	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Iron	7439-89-6	18600		mg/kg-dry	v		6		6.43	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Iron	7439-89-6	21500		mg/kg-dry	v	J	7		6.92	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Lead	7439-92-1	13		mg/kg-dry	v	J	5		0.38	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5		0.7	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19504	SW6010B	O	Z	Metals	Lead	7439-92-1	15		mg/kg-dry	v	J	5		0.76	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Manganese	7439-96-5	461		mg/kg-dry	v		5		0.01	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Manganese	7439-96-5	371		mg/kg-dry	v	J	5		0.03	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Manganese	7439-96-5	443		mg/kg-dry	v	J	5		0.03	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16224	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17863	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Nickel	7440-02-0	29		mg/kg-dry	v		5		0.13	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Nickel	7440-02-0	24		mg/kg-dry	v		5		0.24	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Nickel	7440-02-0	34		mg/kg-dry	v	J	5		0.26	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.02	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		2.04	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.09	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.17	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.18	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16222	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000681	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17862	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00126	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19505	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U	UJ	0.6		0.000681	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Vanadium	7440-62-2	35		mg/kg-dry	v		1		0.08	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17861	SW6010B	O	Z	Metals	Vanadium	7440-62-2	42		mg/kg-dry	v	J	1		0.15	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Vanadium	7440-62-2	44		mg/kg-dry	v	UJ	1		0.16	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16221	SW6010B	O	Z	Metals	Zinc	7440-66-6	24		mg/kg-dry	v		5		0.08	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17862	SW6020	O	Z	Metals	Zinc	7440-66-6	19		mg/kg-dry	v		5		0.01	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19503	SW6010B	O	Z	Metals	Zinc	7440-66-6	25		mg/kg-dry	v	UJ	5		0.17	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16226	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.024		mg/kg-dry	U		0.024		0.0083	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17865	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.022		mg/kg-dry	U		0.022		0.00771	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16226	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.024		mg/kg-dry	U		0.024			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17865	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.022		mg/kg-dry	U		0.022			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16226	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.024		mg/kg-dry	U		0.024			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17865	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.022		mg/kg-dry	U		0.022			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16226	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.024		mg/kg-dry	U		0.024			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17865	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.022		mg/kg-dry	U		0.022			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16226	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.024		mg/kg-dry	U		0.024			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17865	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.022		mg/kg-dry	U		0.022			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16226	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.024		mg/kg-dry	U		0.024		0.00968	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17865	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.022		mg/kg-dry	U		0.022		0.00899	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16226	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.024		mg/kg-dry	U		0.024		0.00747	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17865	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.022		mg/kg-dry	U		0.022		0.00694	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16226	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.024		mg/kg-dry	U		0.024			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17865	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.022		mg/kg-dry	U		0.022			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16226	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.024		mg/kg-dry	U		0.024			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17865	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.022		mg/kg-dry	U		0.022			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16219	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.09		wt%	v		0.01		0.01	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17859	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.8		wt%	v		0.01		0.01	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19502	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.68		wt%	v	J	0.01		0.01	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16215	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	27.7		wt%	v		0.2		0.01	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17855	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	22.2		wt%	v		0.2		0.01	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19500	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	27.7		wt%	v	J	0.2		0.01	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16216	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.7		s.u.	v		0.1			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17856	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.1		s.u.	v		0.1			
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19501	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.5		s.u.	v	UJ	0.1			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16215	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	72.3		wt%	v		0.01		0.01	
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17855	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	77.8		wt%	v		0.01		0.01	
LRC-5	LRC-5	IIC	4	P2-01070	Sediment		Field Sample	10/1/2008	19500	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	72.3		wt%	v	UJ	0.01		0.01	
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.069		mg/kg-dry	U	UJ	0.069			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.067		mg/kg-dry	U		0.067			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.8		mg/kg-dry	U	UJ	2.8			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.7		mg/kg-dry	U		2.7			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.8		mg/kg-dry	U	UJ	2.8			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.7		mg/kg-dry	U		2.7			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.8		mg/kg-dry	U	UJ	2.8			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.7		mg/kg-dry	U		2.7			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.069		mg/kg-dry	U	UJ	0.069			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.067		mg/kg-dry	U		0.067			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.069		mg/kg-dry	U	UJ	0.069			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.067		mg/kg-dry	U		0.067			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.14		mg/kg-dry	U	UJ	0.14			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.13		mg/kg-dry	U		0.13			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.14		mg/kg-dry	U	UJ	0.14			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.13		mg/kg-dry	U		0.13			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.069		mg/kg-dry	U	UJ	0.069			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.067		mg/kg-dry	U		0.067			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.069		mg/kg-dry	U	UJ	0.069			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.067		mg/kg-dry	U		0.067			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.8		mg/kg-dry	U	UJ	2.8			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.7		mg/kg-dry	U		2.7			
LRC-5	LRC-5	IIA	2	P2-00464	Sediment		Field Sample	6/25/2008	16220	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.069		mg/kg-dry	U	UJ	0.069			
LRC-5	LRC-5	IIA	2	P2-00942	Sediment		Field Sample	9/9/2008	17860	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.067		mg/kg-dry	U		0.067			
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2750	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2751	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2240		mg/kg-dry	v		10	mg/kg-dry	12.48	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2758	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	40		mg/kg-dry	v		12	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11200		mg/kg-dry	v		5	mg/kg-dry	0.62	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2756	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001384519	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2756	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Barium	7440-39-3	543		mg/kg-dry	v		5	mg/kg-dry	1.24	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.008739076	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.49	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2756	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001223471	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Chromium	7440-47-3	129		mg/kg-dry	v	J	0.4	mg/kg-dry	0.37	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Cobalt	7440-48-4	13		mg/kg-dry	v		5	mg/kg-dry	0.37	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Copper	7440-50-8	22		mg/kg-dry	v		5	mg/kg-dry	0.24	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Iron	7439-89-6	20700		mg/kg-dry	v		10	mg/kg-dry	12.48	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Lead	7439-92-1	11		mg/kg-dry	v		5	mg/kg-dry	1.24	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Manganese	7439-96-5	493		mg/kg-dry	v	J	5	mg/kg-dry	0.04	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2757	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Nickel	7440-02-0	26		mg/kg-dry	v		5	mg/kg-dry	0.24	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2756	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.00159613	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.12	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2756	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001229089	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Vanadium	7440-62-2	48		mg/kg-dry	v		1	mg/kg-dry	0.49	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2755	SW6010B	O	Z	Metals	Zinc	7440-66-6	25		mg/kg-dry	v		5	mg/kg-dry	0.24	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2760	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.007515606	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2760	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2760	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2760	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2760	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2760	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.008714108	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2760	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.006679151	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2760	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2760	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.021		mg/kg-dry	U		0.021	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2761	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.000449438	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2761	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.005		mg/kg-dry	U		0.005	mg/kg-dry	0.001423221	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2761	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.025		mg/kg-dry	U		0.025	mg/kg-dry	0.001098627	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000324594	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000262172	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0021		mg/kg-dry	U	UJ	0.0021	mg/kg-dry	0.000337079	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000262172	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000124844	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.00031211	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000187266	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.021		mg/kg-dry	U		0.021	mg/kg-dry	0.01	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2761	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.062		mg/kg-dry	U		0.062	mg/kg-dry	0.03	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000337079	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2761	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0062		mg/kg-dry	U		0.0062	mg/kg-dry	0.000536829	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2761	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.025		mg/kg-dry	U		0.025	mg/kg-dry	0.009313358	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000187266	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000237204	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000137328	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.00019975	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000162297	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000274657	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000187266	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000149813	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000174782	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000237204	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0021		mg/kg-dry	U		0.0021	mg/kg-dry	0.000137328	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2761	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5		mg/kg-dry	U		5	mg/kg-dry	0.5	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2761	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	5		mg/kg-dry	U		5	mg/kg-dry	0.72	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0021		mg/kg-dry	U	UJ	0.0021	mg/kg-dry	0.000349563	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2761	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.001360799	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2759	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.21		mg/kg-dry	U		0.21	mg/kg-dry	0.03	mg/kg-dry
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2752	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.65		wt%	v		0.01	wt%	0.01	wt%
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2754	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	20		wt%	v		0.2	wt%	0.01	wt%
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2749	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.7		s.u.	v		0.1	s.u.		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.2		mg/kg-dry	U		2.2	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.2		mg/kg-dry	U		2.2	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.2		mg/kg-dry	U		2.2	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.11		mg/kg-dry	U		0.11	mg/kg-dry		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.2		mg/kg-dry	U		2.2	mg/kg-dry		
LRC-5_SED	LRC-5	I	1	P1-00328	Sediment		Field Sample	10/16/2007	2753	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.054		mg/kg-dry	U		0.054	mg/kg-dry		
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16055	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17846	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16056	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3310		mg/kg-dry	v		10		0.15	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17847	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3390		mg/kg-dry	v		5		0.14	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16063	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	199		mg/kg-dry	v		15			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17853	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	74		mg/kg-dry	v		15			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8290		mg/kg-dry	v		5		0.31	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11800		mg/kg-dry	v		5		0.6	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.85	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.63	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.04	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.99	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Barium	7440-39-3	686		mg/kg-dry	v		5		0.01	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Barium	7440-39-3	799		mg/kg-dry	v	J	5		0.02	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00504	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00965	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.64	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.14	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.05	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.09	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Chromium	7440-47-3	87		mg/kg-dry	v		5		0.07	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Chromium	7440-47-3	136		mg/kg-dry	v	J	5		0.13	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16061	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.15	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Cobalt	7440-48-4	11		mg/kg-dry	v		5		0.12	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Cobalt	7440-48-4	17		mg/kg-dry	v		5		0.24	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Copper	7440-50-8	26		mg/kg-dry	v		5		0.06	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Copper	7440-50-8	28		mg/kg-dry	v		5		0.12	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Iron	7439-89-6	15300		mg/kg-dry	v		5		3.84	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Iron	7439-89-6	21200		mg/kg-dry	v		7		7.35	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Lead	7439-92-1	17		mg/kg-dry	v		5		0.42	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Lead	7439-92-1	18		mg/kg-dry	v		5		0.8	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Manganese	7439-96-5	406		mg/kg-dry	v		5		0.02	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Manganese	7439-96-5	524		mg/kg-dry	v	J	5		0.03	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16062	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17852	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Nickel	7440-02-0	21		mg/kg-dry	v		5		0.14	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Nickel	7440-02-0	35		mg/kg-dry	v		5		0.28	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.13	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		2.17	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.1	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.2	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16060	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000755	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17851	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00145	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Vanadium	7440-62-2	35		mg/kg-dry	v		1		0.09	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17850	SW6010B	O	Z	Metals	Vanadium	7440-62-2	42		mg/kg-dry	v	J	1		0.17	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16059	SW6010B	O	Z	Metals	Zinc	7440-66-6	22		mg/kg-dry	v		5		0.09	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17851	SW6020	O	Z	Metals	Zinc	7440-66-6	32		mg/kg-dry	v		5		0.01	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16064	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.026		mg/kg-dry	U		0.026		0.00921	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17854	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.025		mg/kg-dry	U		0.025		0.00881	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16064	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.026		mg/kg-dry	U		0.026			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17854	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.025		mg/kg-dry	U		0.025			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16064	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.026		mg/kg-dry	U		0.026			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17854	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.025		mg/kg-dry	U		0.025			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16064	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.026		mg/kg-dry	U		0.026			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17854	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.025		mg/kg-dry	U		0.025			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16064	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.026		mg/kg-dry	U		0.026			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17854	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.025		mg/kg-dry	U		0.025			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16064	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.026		mg/kg-dry	U		0.026		0.01	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17854	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.025		mg/kg-dry	U		0.025		0.01	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16064	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.026		mg/kg-dry	U		0.026		0.00829	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17854	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.025		mg/kg-dry	U		0.025		0.00793	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16064	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.026		mg/kg-dry	U		0.026			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17854	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.025		mg/kg-dry	U		0.025			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16064	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.026		mg/kg-dry	U		0.026			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17854	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.025		mg/kg-dry	U		0.025			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16057	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.69		wt%	v		0.01		0.01	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17848	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.86		wt%	v		0.01		0.01	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16053	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	34.8		wt%	v		0.2		0.01	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17844	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	31.9		wt%	v		0.2		0.01	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16054	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.7		s.u.	v		0.1			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17845	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16053	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	65.2		wt%	v		0.01		0.01	
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17844	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	68.1		wt%	v		0.01		0.01	
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.083		mg/kg-dry	U	UJ	0.083			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.11		mg/kg-dry	U		0.11			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.3		mg/kg-dry	U	UJ	3.3			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		4.5		mg/kg-dry	U		4.5			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.3		mg/kg-dry	U	UJ	3.3			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		4.5		mg/kg-dry	U		4.5			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.3		mg/kg-dry	J	J	3.3			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		4.5		mg/kg-dry	U		4.5			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.083		mg/kg-dry	U	UJ	0.083			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.11		mg/kg-dry	U		0.11			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.083		mg/kg-dry	U	UJ	0.083			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.11		mg/kg-dry	U		0.11			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.17		mg/kg-dry	U	UJ	0.17			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.22		mg/kg-dry	U		0.22			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.17		mg/kg-dry	U	UJ	0.17			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.22		mg/kg-dry	U		0.22			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.083		mg/kg-dry	U	UJ	0.083			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.11		mg/kg-dry	U		0.11			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.083		mg/kg-dry	U	UJ	0.083			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.11		mg/kg-dry	U		0.11			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	5.1		mg/kg-dry	v	J	3.3			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	4.5		mg/kg-dry	U		4.5			
LRC-6	LRC-6	IIA	2	P2-00461	Sediment		Field Sample	6/24/2008	16058	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.083		mg/kg-dry	U	UJ	0.083			
LRC-6	LRC-6	IIA	2	P2-00941	Sediment		Field Sample	9/9/2008	17849	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.11		mg/kg-dry	U		0.11			
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2734	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2735	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3520		mg/kg-dry	v		10	mg/kg-dry	14.1	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2738	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		14		mg/kg-dry	U	UJ	14	mg/kg-dry	2.35	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2737	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		14		mg/kg-dry	U	UJ	14	mg/kg-dry	1.17	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2737	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		14		mg/kg-dry	U	UJ	14	mg/kg-dry	2.1	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2738	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	14		mg/kg-dry	U	UJ	14	mg/kg-dry	4.68	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2744	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	76		mg/kg-dry	v		14	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11200		mg/kg-dry	v		5	mg/kg-dry	0.7	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2742	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001564175	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2742	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Barium	7440-39-3	855		mg/kg-dry	v		5	mg/kg-dry	1.41	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.00987306	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.82	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2742	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001382228	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Chromium	7440-47-3	126		mg/kg-dry	v	J	0.4	mg/kg-dry	0.42	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Cobalt	7440-48-4	19		mg/kg-dry	v		5	mg/kg-dry	0.42	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Copper	7440-50-8	36		mg/kg-dry	v		5	mg/kg-dry	0.28	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Iron	7439-89-6	33200		mg/kg-dry	v		10	mg/kg-dry	14.1	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Lead	7439-92-1	23		mg/kg-dry	v		5	mg/kg-dry	1.41	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Manganese	7439-96-5	492		mg/kg-dry	v	J	5	mg/kg-dry	0.05	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2743	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Nickel	7440-02-0	31		mg/kg-dry	v		5	mg/kg-dry	0.28	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2742	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001803244	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.14	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2742	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001388575	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Vanadium	7440-62-2	80		mg/kg-dry	v		1	mg/kg-dry	0.56	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2741	SW6010B	O	Z	Metals	Zinc	7440-66-6	26		mg/kg-dry	v		5	mg/kg-dry	0.28	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2746	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.024		mg/kg-dry	U		0.024	mg/kg-dry	0.008490832	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2746	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.024		mg/kg-dry	U		0.024	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2746	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.024		mg/kg-dry	U		0.024	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2746	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.024		mg/kg-dry	U		0.024	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2746	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.024		mg/kg-dry	U		0.024	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2746	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.024		mg/kg-dry	U		0.024	mg/kg-dry	0.009844852	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2746	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.024		mg/kg-dry	U		0.024	mg/kg-dry	0.007545839	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2746	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.024		mg/kg-dry	U		0.024	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2746	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.024		mg/kg-dry	U		0.024	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2747	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0056		mg/kg-dry	U		0.0056	mg/kg-dry	0.000507757	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2747	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0056		mg/kg-dry	U		0.0056	mg/kg-dry	0.001607898	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2747	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.028		mg/kg-dry	U		0.028	mg/kg-dry	0.001241185	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000366714	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000296192	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0024		mg/kg-dry	U	UJ	0.0024	mg/kg-dry	0.000380818	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000296192	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0025		mg/kg-dry	U		0.0025	mg/kg-dry	0.000141044	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000352609	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000211566	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.024		mg/kg-dry	U		0.024	mg/kg-dry	0.01	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2747	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.071		mg/kg-dry	U		0.071	mg/kg-dry	0.03	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000380818	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2747	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0071		mg/kg-dry	U		0.0071	mg/kg-dry	0.000606488	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2747	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.028		mg/kg-dry	U		0.028	mg/kg-dry	0.01	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000211566	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000267983	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000155148	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.00022567	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000183357	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000310296	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000211566	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000169252	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000197461	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000267983	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry	0.000155148	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2747	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.6		mg/kg-dry	U		5.6	mg/kg-dry	0.57	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2747	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	5.6		mg/kg-dry	U		5.6	mg/kg-dry	0.81	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0024		mg/kg-dry	U	UJ	0.0024	mg/kg-dry	0.000394922	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2747	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0028		mg/kg-dry	U		0.0028	mg/kg-dry	0.001537377	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2745	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.24		mg/kg-dry	U		0.24	mg/kg-dry	0.03	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2736	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.15		wt%	v		0.01	wt%	0.01	wt%
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2740	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	29		wt%	v		0.2	wt%	0.01	wt%
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2733	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.4		s.u.	v		0.1	s.u.		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.08	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.11	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.08	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.08	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.05	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.11	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.08	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.08	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.11	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.08	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.11	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.11	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.08	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.14	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.11	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.08	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2748	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.47		mg/kg-dry	U		0.47	mg/kg-dry	0.08	mg/kg-dry
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.049		mg/kg-dry	U		0.049	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.049		mg/kg-dry	U		0.049	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.049		mg/kg-dry	U		0.049	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.097		mg/kg-dry	U		0.097	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.097		mg/kg-dry	U		0.097	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.049		mg/kg-dry	U		0.049	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.049		mg/kg-dry	U		0.049	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.9		mg/kg-dry	U		1.9	mg/kg-dry		
LRC-6_SED	LRC-6	I	1	P1-00327	Sediment		Field Sample	10/16/2007	2739	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.049		mg/kg-dry	U		0.049	mg/kg-dry		
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24549	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		189		mg/kg-dry	v		20		15.74	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24555	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	290		mg/kg-dry	v		16		1.81	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Aluminum	7429-90-5	15800		mg/kg-dry	v		5		3.24	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	v		1		0.62	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24552	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		1		0.02	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Barium	7440-39-3	635		mg/kg-dry	v		1		0.03	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.006732205	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.01	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Chromium	7440-47-3	214		mg/kg-dry	v		1		0.07	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Cobalt	7440-48-4	17		mg/kg-dry	v		1		0.14	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Copper	7440-50-8	45		mg/kg-dry	v		1		0.32	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Iron	7439-89-6	23100		mg/kg-dry	v		5		1.31	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Lead	7439-92-1	26		mg/kg-dry	v		1		0.79	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Magnesium	7439-95-4	22800		mg/kg-dry	v		5		0.84	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Manganese	7439-96-5	466		mg/kg-dry	v		1		0.04	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24553	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.01	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Nickel	7440-02-0	35		mg/kg-dry	v		1		0.17	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24552	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	U		1		0.4	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.37	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Strontium	7440-24-6	156		mg/kg-dry	v		1		0.01	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	U		2		0.41	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Vanadium	7440-62-2	47		mg/kg-dry	v		1		0.22	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24551	SW6010B	O	Z	Metals	Zinc	7440-66-6	219		mg/kg-dry	v		1		0.28	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24548	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	6		mg/kg-dry	v		1		0.15	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24557	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.027		mg/kg-dry	U		0.027		0.009448819	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24557	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.027		mg/kg-dry	U		0.027			
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24557	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.027		mg/kg-dry	U		0.027			
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24557	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.027		mg/kg-dry	U		0.027			
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24557	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.027		mg/kg-dry	U		0.027			
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24557	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.027		mg/kg-dry	U		0.027		0.00888189	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24557	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.027		mg/kg-dry	U		0.027		0.008503937	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24557	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.027		mg/kg-dry	U		0.027			
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24557	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.027		mg/kg-dry	U		0.027			
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0063		mg/kg-dry	U		0.0063		0.002283465	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0063		mg/kg-dry	U		0.0063		0.000458268	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.031		mg/kg-dry	U		0.031		0.002724409	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.079		mg/kg-dry	U		0.079		0.003984252	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.016		mg/kg-dry	U		0.016		0.00076063	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0027		mg/kg-dry	U		0.0027		0.000409449	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0027		mg/kg-dry	U		0.0027		0.000330709	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0027		mg/kg-dry	U		0.0027		0.000425197	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.016		mg/kg-dry	U		0.016		0.001026772	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0027		mg/kg-dry	U		0.0027		0.000330709	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0027		mg/kg-dry	U		0.0027		0.00015748	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0027		mg/kg-dry	U		0.0027		0.000393701	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.079		mg/kg-dry	U		0.079		0.002661417	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0027		mg/kg-dry	U		0.0027		0.00023622	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.016		mg/kg-dry	U		0.016		0.001244094	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.027		mg/kg-dry	U		0.027		0.01	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.031		mg/kg-dry	U		0.031		0.000738583	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.079		mg/kg-dry	U		0.079		0.01	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0027		mg/kg-dry	U		0.0027		0.000425197	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0079		mg/kg-dry	U		0.0079		0.003464567	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.031		mg/kg-dry	U		0.031		0.002818898	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0027		mg/kg-dry	U		0.0027		0.00023622	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.031		mg/kg-dry	U		0.031		0.006204724	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0027		mg/kg-dry	U		0.0027		0.000299213	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0027		mg/kg-dry	U		0.0027		0.000173228	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0027		mg/kg-dry	U		0.0027		0.000251969	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0027		mg/kg-dry	U		0.0027		0.000204724	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0027		mg/kg-dry	U		0.0027		0.000346457	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0027		mg/kg-dry	U		0.0027		0.00023622	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0027		mg/kg-dry	U		0.0027		0.000188976	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0027		mg/kg-dry	U		0.0027		0.000220472	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0027		mg/kg-dry	U		0.0027		0.000299213	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0027		mg/kg-dry	U		0.0027		0.000173228	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	MCPA	94-74-6	6.3		mg/kg-dry	U		6.3		0.75	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	MCPP	93-65-2	6.3		mg/kg-dry	U		6.3		0.75	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0027		mg/kg-dry	U		0.0027		0.000440945	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0031		mg/kg-dry	U		0.0031		0.000437795	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.016		mg/kg-dry	U		0.016		0.002598425	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24556	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.17		mg/kg-dry	U		0.17		0.04	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24555	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	76		mg/kg-dry	v		16		1.68	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24554	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	4.3		mg/kg-dry	U		4.3		1.01	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24550	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	36		wt%	v		0.2		0.01	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24547	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	0.9		%-as rcvd	v		0.1		0.009	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24546	ASA10-3	O	Z	Sediment/soil quality parameters	pH		6.8		s.u.	v		0.1		0.1	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.53		mg/kg-dry	U		0.53		0.39	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.53		mg/kg-dry	U		0.53		0.2	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.53		mg/kg-dry	U		0.53		0.2	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.53		mg/kg-dry	U		0.53		0.12	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	5.3		mg/kg-dry	U		5.3		0.16	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.53		mg/kg-dry	U		0.53		0.19	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.53		mg/kg-dry	U		0.53		0.19	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.53		mg/kg-dry	U		0.53		0.21	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.53		mg/kg-dry	U		0.53		0.13	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.53		mg/kg-dry	U		0.53		0.23	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.53		mg/kg-dry	U		0.53		0.45	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	3,3`-Dichlorobenzidine	91-94-1	0.53		mg/kg-dry	U		0.53		0.14	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	5.3		mg/kg-dry	U		5.3		0.18	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.53		mg/kg-dry	U		0.53		0.21	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.53		mg/kg-dry	U		0.53		0.15	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.53		mg/kg-dry	U		0.53		0.22	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24558	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.016		mg/kg-dry	U		0.016		0.001329134	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	5.3		mg/kg-dry	U		5.3		0.1	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.53		mg/kg-dry	U		0.53		0.19	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.53		mg/kg-dry	U		0.53		0.19	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.53		mg/kg-dry	U		0.53		0.15	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.53		mg/kg-dry	U		0.53		0.16	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.53		mg/kg-dry	U		0.53		0.22	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.53		mg/kg-dry	U		0.53		0.22	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.53		mg/kg-dry	U		0.53		0.37	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.53		mg/kg-dry	U		0.53		0.36	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.53		mg/kg-dry	U		0.53		0.13	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.53		mg/kg-dry	U		0.53		0.3	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.53		mg/kg-dry	U		0.53		0.26	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.53		mg/kg-dry	U		0.53		0.25	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.53		mg/kg-dry	U		0.53		0.14	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.53		mg/kg-dry	U		0.53		0.14	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.53		mg/kg-dry	U		0.53		0.31	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.53		mg/kg-dry	U		0.53		0.13	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.53		mg/kg-dry	U		0.53		0.18	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.53		mg/kg-dry	U		0.53		0.15	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.53		mg/kg-dry	U		0.53		0.11	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.53		mg/kg-dry	U		0.53		0.14	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.53		mg/kg-dry	U		0.53		0.14	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.53		mg/kg-dry	U		0.53		0.24	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.53		mg/kg-dry	U		0.53		0.15	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.53		mg/kg-dry	U		0.53		0.12	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.53		mg/kg-dry	U		0.53		0.16	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.53		mg/kg-dry	U		0.53		0.18	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.53		mg/kg-dry	U		0.53		0.13	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.53		mg/kg-dry	U		0.53		0.27	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.53		mg/kg-dry	U		0.53		0.15	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.53		mg/kg-dry	U		0.53		0.22	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.53		mg/kg-dry	U		0.53		0.12	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.53		mg/kg-dry	U		0.53		0.36	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.53		mg/kg-dry	U		0.53		0.25	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	5.3		mg/kg-dry	U		5.3		0.28	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.53		mg/kg-dry	U		0.53		0.16	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.53		mg/kg-dry	U		0.53		0.08	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.53		mg/kg-dry	U		0.53		0.12	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.53		mg/kg-dry	U		0.53		0.23	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.53		mg/kg-dry	U		0.53		0.14	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.53		mg/kg-dry	U		0.53		0.13	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.53		mg/kg-dry	U		0.53		0.17	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.53		mg/kg-dry	U		0.53		0.19	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.53		mg/kg-dry	U		0.53		0.3	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.53		mg/kg-dry	U		0.53		0.16	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.53		mg/kg-dry	U		0.53		0.15	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.53		mg/kg-dry	U		0.53		0.2	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24559	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.53		mg/kg-dry	U		0.53		0.32	
MP	MP	VB	5	MP	Sediment		Field Sample	4/27/2012	24554	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	4.3		mg/kg-dry	U		4.3		0.96	
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2707	E300.0	O	Z	Anions	Fluoride, 1:2		4.1		mg/kg-dry	v		1	mg/kg-dry	0.04	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2708	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3320		mg/kg-dry	v		40	mg/kg-dry	40.65	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2710	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		56		mg/kg-dry	v		41	mg/kg-dry	6.78	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2711	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		69		mg/kg-dry	v		41	mg/kg-dry	3.37	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2711	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		41		mg/kg-dry	U		41	mg/kg-dry	6.05	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2710	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	176		mg/kg-dry	v		41	mg/kg-dry	13.49	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2717	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	686		mg/kg-dry	v		81	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11200		mg/kg-dry	v		5	mg/kg-dry	2.03	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2715	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.00450813	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2715	SW6020	O	Z	Metals	Arsenic	7440-38-2	6		mg/kg-dry	v		2	mg/kg-dry	0.03	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Barium	7440-39-3	703		mg/kg-dry	v		5	mg/kg-dry	4.06	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.02	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Boron	7440-42-8	8		mg/kg-dry	U		8	mg/kg-dry	8.13	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2715	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.00398374	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Chromium	7440-47-3	48		mg/kg-dry	v	J	1	mg/kg-dry	1.21	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Cobalt	7440-48-4	11		mg/kg-dry	v		5	mg/kg-dry	1.21	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Copper	7440-50-8	49		mg/kg-dry	v		5	mg/kg-dry	0.81	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Iron	7439-89-6	14000		mg/kg-dry	v		5	mg/kg-dry	2.84	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Lead	7439-92-1	15		mg/kg-dry	v		5	mg/kg-dry	4.06	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Manganese	7439-96-5	953		mg/kg-dry	v	J	5	mg/kg-dry	0.16	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2716	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.04	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Nickel	7440-02-0	17		mg/kg-dry	v		5	mg/kg-dry	0.81	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2715	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.005197155	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.4	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2715	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.004002033	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Vanadium	7440-62-2	31		mg/kg-dry	v		2	mg/kg-dry	1.62	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2714	SW6010B	O	Z	Metals	Zinc	7440-66-6	39		mg/kg-dry	v		5	mg/kg-dry	0.81	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2709	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		5.47		wt%	v		0.01	wt%	0.01	wt%

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2713	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	75		wt%	v		0.2	wt%	0.01	wt%
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2706	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.3		s.u.	v		0.1	s.u.		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.24	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.32	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.24	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.24	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.16	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.32	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.24	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.24	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.32	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.24	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.32	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.32	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.24	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.4	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.32	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.24	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2718	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.24	mg/kg-dry
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.19		mg/kg-dry	U		0.19	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7.8		mg/kg-dry	U		7.8	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		7.8		mg/kg-dry	U		7.8	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		7.8		mg/kg-dry	U		7.8	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.19		mg/kg-dry	U		0.19	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.19		mg/kg-dry	U		0.19	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.39		mg/kg-dry	U		0.39	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.39		mg/kg-dry	U		0.39	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.19		mg/kg-dry	U		0.19	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.19		mg/kg-dry	U		0.19	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	7.8		mg/kg-dry	U		7.8	mg/kg-dry		
MP_SED	MP	I	1	P1-00348	Sediment		Field Sample	10/15/2007	2712	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.19		mg/kg-dry	U		0.19	mg/kg-dry		
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18243	E300.0	O	Z	Anions	Fluoride	16984-48-8	5.4		mg/kg-dry	v		1		0.02	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21423	E300.0	O	Z	Anions	Fluoride, 1:2		5.2		mg/kg-dry	v		1		0.02	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21424	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2230		mg/kg-dry	v		5		0.25	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18244	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1180		mg/kg-dry	v		5		0.26	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21427	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		88		mg/kg-dry	v	J	26		4.33	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18247	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		277		mg/kg-dry	v	J	27		4.47	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21426	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		186		mg/kg-dry	v	J	26		2.15	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18246	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		569		mg/kg-dry	v	J	27		2.22	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21426	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		22		mg/kg-dry	u	J	26		3.86	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18246	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		79		mg/kg-dry	v	J	27		3.99	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21427	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	341		mg/kg-dry	v	J	26		8.61	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21434	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	591		mg/kg-dry	v		26			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18253	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	1620		mg/kg-dry	v		27			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Aluminum	7429-90-5	30900		mg/kg-dry	v	J	5		2.68	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Aluminum	7429-90-5	32400		mg/kg-dry	v	J	5		2.22	
MP-1	MP-1	**IIA**	2	**P2-00520**	**Sediment**		**Field Sample**	**7/1/2008**	21431	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001438765**	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18251	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00297	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21431	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18251	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.02	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Barium	7440-39-3	1780		mg/kg-dry	v	J	5		0.09	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Barium	7440-39-3	1820		mg/kg-dry	v	J	5		0.07	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21429	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.008523612	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.03	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21429	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.77	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18249	SW6010B	O	Z	Metals	Boron	7440-42-8	6		mg/kg-dry	U		6		5.72	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21431	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00165218	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18249	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.17	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Chromium	7440-47-3	460		mg/kg-dry	v	J	5		0.59	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Chromium	7440-47-3	426		mg/kg-dry	v	J	5		0.49	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21432	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.25	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Cobalt	7440-48-4	46		mg/kg-dry	v	J	5		1.07	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Cobalt	7440-48-4	42		mg/kg-dry	v		5		0.88	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Copper	7440-50-8	130		mg/kg-dry	v	J	5		0.53	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Copper	7440-50-8	155		mg/kg-dry	v		5		0.43	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Iron	7439-89-6	45400		mg/kg-dry	v	J	30		32.49	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Iron	7439-89-6	45500		mg/kg-dry	v	J	30		26.84	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Lead	7439-92-1	75		mg/kg-dry	v	J	5		3.56	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Lead	7439-92-1	74		mg/kg-dry	v		5		2.94	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Manganese	7439-96-5	1490		mg/kg-dry	v	J	5		0.17	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Manganese	7439-96-5	1540		mg/kg-dry	v	J	5		0.14	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21433	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18252	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Nickel	7440-02-0	105		mg/kg-dry	v	J	5		1.23	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Nickel	7440-02-0	97		mg/kg-dry	v		5		1.02	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21431	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001658666	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18249	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		3.96	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21429	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.17	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18249	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.36	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21431	SW6020	O	Z	Metals	Thallium	7440-28-0	0.7		mg/kg-dry	v		0.6		0.001277244	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18251	SW6020	O	Z	Metals	Thallium	7440-28-0	0.7		mg/kg-dry	v	J	0.6		0.00264	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Vanadium	7440-62-2	98		mg/kg-dry	v	J	1		0.77	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Vanadium	7440-62-2	86		mg/kg-dry	v		1		0.64	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21430	SW6010B	O	Z	Metals	Zinc	7440-66-6	75		mg/kg-dry	v	J	5		0.8	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18250	SW6010B	O	Z	Metals	Zinc	7440-66-6	80		mg/kg-dry	v		5		0.66	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21425	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.53		wt%	v		0.01		0.01	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18245	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.61		wt%	v		0.01		0.01	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21421	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	61.5		wt%	v		0.2		0.01	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18241	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	62.7		wt%	v		0.2		0.01	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21422	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18242	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.7		s.u.	v		0.1			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21421	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	38.5		wt%	v		0.01		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18241	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	37.3		wt%	v		0.01		0.01	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.87		mg/kg-dry	U		0.87		0.15	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.89		mg/kg-dry	U		0.89		0.16	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.87		mg/kg-dry	U		0.87		0.2	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.89		mg/kg-dry	U		0.89		0.21	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.87		mg/kg-dry	U		0.87		0.15	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.89		mg/kg-dry	U		0.89		0.16	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.87		mg/kg-dry	U		0.87		0.15	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.89		mg/kg-dry	U		0.89		0.16	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.87		mg/kg-dry	U		0.87		0.1	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.89		mg/kg-dry	U		0.89		0.1	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.87		mg/kg-dry	U		0.87		0.2	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.89		mg/kg-dry	U		0.89		0.21	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.87		mg/kg-dry	U		0.87		0.15	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.89		mg/kg-dry	U		0.89		0.16	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.87		mg/kg-dry	U		0.87		0.15	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.89		mg/kg-dry	U		0.89		0.16	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.87		mg/kg-dry	U		0.87		0.2	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.89		mg/kg-dry	U		0.89		0.21	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.87		mg/kg-dry	U		0.87		0.15	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.89		mg/kg-dry	U		0.89		0.16	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.87		mg/kg-dry	U		0.87		0.2	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.89		mg/kg-dry	U		0.89		0.21	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.87		mg/kg-dry	U		0.87		0.2	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.89		mg/kg-dry	U		0.89		0.21	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.87		mg/kg-dry	U		0.87		0.15	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.89		mg/kg-dry	U		0.89		0.16	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.87		mg/kg-dry	U		0.87		0.25	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.89		mg/kg-dry	U		0.89		0.26	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.87		mg/kg-dry	U		0.87		0.2	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.89		mg/kg-dry	U		0.89		0.21	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.87		mg/kg-dry	U		0.87		0.15	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.89		mg/kg-dry	U		0.89		0.16	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21435	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.87		mg/kg-dry	U		0.87		0.15	
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18254	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.22		mg/kg-dry	u		0.89		0.16	
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.19		mg/kg-dry	U	UJ	0.19			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.17		mg/kg-dry	U	UJ	0.17			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7.6		mg/kg-dry	U	UJ	7.6			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		6.9		mg/kg-dry	U	UJ	6.9			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		7.6		mg/kg-dry	U	UJ	7.6			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		6.9		mg/kg-dry	U	UJ	6.9			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		7.6		mg/kg-dry	U	UJ	7.6			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		12		mg/kg-dry	v	J	6.9			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.19		mg/kg-dry	U	UJ	0.19			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.17		mg/kg-dry	U	UJ	0.17			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.19		mg/kg-dry	U	UJ	0.19			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.17		mg/kg-dry	U	UJ	0.17			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.38		mg/kg-dry	U	UJ	0.38			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.35		mg/kg-dry	U	UJ	0.35			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.32		mg/kg-dry	u	J	0.38			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.35		mg/kg-dry	U	UJ	0.35			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.19		mg/kg-dry	U	UJ	0.19			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.17		mg/kg-dry	U	UJ	0.17			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.19		mg/kg-dry	U	UJ	0.19			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.17		mg/kg-dry	U	UJ	0.17			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	7.6		mg/kg-dry	U	UJ	7.6			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	25		mg/kg-dry	v	J	6.9			
MP-1	MP-1	IIA	2	P2-00520	Sediment		Field Sample	7/1/2008	21428	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.19		mg/kg-dry	U	UJ	0.19			
MP-1	MP-1	IIA	2	P2-00963	Sediment		Field Sample	9/11/2008	18248	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.17		mg/kg-dry	U	UJ	0.17			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18229	E300.0	O	Z	Anions	Fluoride	16984-48-8	4.7		mg/kg-dry	v		1		0.02	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21438	E300.0	O	Z	Anions	Fluoride, 1:2		5.7		mg/kg-dry	v		1		0.02	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21439	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3100		mg/kg-dry	v		5		0.24	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18230	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2010		mg/kg-dry	v		5		0.24	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21442	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		470		mg/kg-dry	v	J	25		4.15	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18233	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		407		mg/kg-dry	v		25		4.13	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21441	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		739		mg/kg-dry	v	J	25		2.06	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18232	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		680		mg/kg-dry	v		25		2.05	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21441	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		267		mg/kg-dry	v	J	25		3.7	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18232	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		203		mg/kg-dry	v		25		3.68	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21442	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	1610		mg/kg-dry	v	J	25		8.25	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21449	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	2360		mg/kg-dry	v		25			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18233	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	1480		mg/kg-dry	v		25		8.22	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18239	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	2110		mg/kg-dry	v		25			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Aluminum	7429-90-5	34800		mg/kg-dry	v	J	5		2.57	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18235	SW6010B	O	Z	Metals	Aluminum	7429-90-5	28900		mg/kg-dry	v	J	5		1.02	
MP-2	MP-2	**IIA**	2	**P2-00522**	**Sediment**		**Field Sample**	**7/1/2008**	21446	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001378667**	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18237	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00275	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21446	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18237	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Barium	7440-39-3	1970		mg/kg-dry	v	J	5		0.09	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18236	SW6010B	O	Z	Metals	Barium	7440-39-3	1850		mg/kg-dry	v	J	5		0.07	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21444	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.008167578	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18235	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21444	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.65	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18235	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		5.29	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21446	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001583168	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18235	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.16	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Chromium	7440-47-3	503		mg/kg-dry	v	J	5		0.57	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18236	SW6010B	O	Z	Metals	Chromium	7440-47-3	486		mg/kg-dry	v	J	5		0.45	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21447	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.24	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Cobalt	7440-48-4	51		mg/kg-dry	v	J	5		1.02	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18236	SW6010B	O	Z	Metals	Cobalt	7440-48-4	47		mg/kg-dry	v		5		0.81	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Copper	7440-50-8	116		mg/kg-dry	v	J	5		0.51	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18236	SW6010B	O	Z	Metals	Copper	7440-50-8	113		mg/kg-dry	v		5		0.4	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Iron	7439-89-6	45100		mg/kg-dry	v	J	30		31.14	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18236	SW6010B	O	Z	Metals	Iron	7439-89-6	45300		mg/kg-dry	v	J	20		24.81	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Lead	7439-92-1	63		mg/kg-dry	v	J	5		3.41	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18235	SW6010B	O	Z	Metals	Lead	7439-92-1	56		mg/kg-dry	v		5		1.36	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Manganese	7439-96-5	1510		mg/kg-dry	v	J	5		0.16	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18236	SW6010B	O	Z	Metals	Manganese	7439-96-5	1090		mg/kg-dry	v	J	5		0.13	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21448	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18238	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Nickel	7440-02-0	115		mg/kg-dry	v	J	5		1.18	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18236	SW6010B	O	Z	Metals	Nickel	7440-02-0	108		mg/kg-dry	v		5		0.94	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21446	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001589383	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18235	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		3.66	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21444	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.17	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18235	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.34	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21446	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.001223894	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18237	SW6020	O	Z	Metals	Thallium	7440-28-0	0.7		mg/kg-dry	v	J	0.6		0.00244	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Vanadium	7440-62-2	89		mg/kg-dry	v	J	1		0.74	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18236	SW6010B	O	Z	Metals	Vanadium	7440-62-2	79		mg/kg-dry	v		1		0.59	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21445	SW6010B	O	Z	Metals	Zinc	7440-66-6	73		mg/kg-dry	v	J	5		0.77	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18236	SW6010B	O	Z	Metals	Zinc	7440-66-6	66		mg/kg-dry	v		5		0.61	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21440	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.74		wt%	v		0.01		0.01	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18231	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.65		wt%	v		0.01		0.01	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21436	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	59.8		wt%	v		0.2		0.01	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18227	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	59.6		wt%	v		0.2		0.01	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21437	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18228	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21436	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	40.2		wt%	v		0.01		0.01	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18227	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	40.4		wt%	v		0.01		0.01	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.83		mg/kg-dry	U		0.83		0.09	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.83		mg/kg-dry	U		0.83		0.09	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.83		mg/kg-dry	U		0.83		0.24	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.83		mg/kg-dry	U		0.83		0.24	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.83		mg/kg-dry	U		0.83		0.19	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.83		mg/kg-dry	U		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21450	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.26		mg/kg-dry	u		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18240	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.45		mg/kg-dry	u		0.83		0.14	
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.24		mg/kg-dry	U	UJ	0.24			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.18		mg/kg-dry	U	UJ	0.18			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		9.4		mg/kg-dry	U	UJ	9.4			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7		mg/kg-dry	U	UJ	7			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		9.4		mg/kg-dry	U	UJ	9.4			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		16		mg/kg-dry	v	J	7			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		9.4		mg/kg-dry	U	UJ	9.4			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		21		mg/kg-dry	v	J	7			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.24		mg/kg-dry	U	UJ	0.24			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.18		mg/kg-dry	U	UJ	0.18			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.24		mg/kg-dry	U	UJ	0.24			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.18		mg/kg-dry	U	UJ	0.18			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.47		mg/kg-dry	U	UJ	0.47			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.35		mg/kg-dry	U	UJ	0.35			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.47		mg/kg-dry	U	UJ	0.47			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.5		mg/kg-dry	U	UJ	0.5			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.24		mg/kg-dry	U	UJ	0.24			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.18		mg/kg-dry	U	UJ	0.18			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.24		mg/kg-dry	U	UJ	0.24			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.18		mg/kg-dry	U	UJ	0.18			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	12		mg/kg-dry	v	J	9.4			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	72		mg/kg-dry	v	J	7			
MP-2	MP-2	IIA	2	P2-00522	Sediment		Field Sample	7/1/2008	21443	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.24		mg/kg-dry	U	UJ	0.24			
MP-2	MP-2	IIA	2	P2-00962	Sediment		Field Sample	9/11/2008	18234	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.18		mg/kg-dry	U	UJ	0.18			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18215	E300.0	O	Z	Anions	Fluoride	16984-48-8	6.8		mg/kg-dry	v		1		0.02	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21468	E300.0	O	Z	Anions	Fluoride, 1:2		6.6		mg/kg-dry	v		1		0.02	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21469	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1370		mg/kg-dry	v		5		0.24	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18216	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1820		mg/kg-dry	v		5		0.26	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21472	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		36		mg/kg-dry	v	J	25		4.12	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18219	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		54		mg/kg-dry	v	J	26		4.42	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21471	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		148		mg/kg-dry	v	J	25		2.04	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18218	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		146		mg/kg-dry	v	J	26		2.19	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21471	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		25		mg/kg-dry	U	UJ	25		3.67	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18218	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		26		mg/kg-dry	U	UJ	26		3.94	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21472	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	236		mg/kg-dry	v	J	25		8.19	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21479	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	310		mg/kg-dry	v		25			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18219	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	253		mg/kg-dry	v	J	26		8.79	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18225	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	454		mg/kg-dry	v		26			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Aluminum	7429-90-5	30600		mg/kg-dry	v	J	5		2.55	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18221	SW6010B	O	Z	Metals	Aluminum	7429-90-5	25900		mg/kg-dry	v	J	5		1.09	
MP-3	MP-3	**IIA**	2	**P2-00524**	**Sediment**		**Field Sample**	**7/1/2008**	21476	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.00136846**	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18223	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00294	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21476	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.01	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18223	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.02	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Barium	7440-39-3	1460		mg/kg-dry	v	J	5		0.09	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18222	SW6010B	O	Z	Metals	Barium	7440-39-3	1320		mg/kg-dry	v	J	5		0.07	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21474	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.008107108	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18222	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.03	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21474	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.63	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18221	SW6010B	O	Z	Metals	Boron	7440-42-8	6		mg/kg-dry	U		6		5.66	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21476	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001571446	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18221	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.17	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Chromium	7440-47-3	374		mg/kg-dry	v	J	5		0.56	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18222	SW6010B	O	Z	Metals	Chromium	7440-47-3	335		mg/kg-dry	v	J	5		0.48	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21477	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.24	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Cobalt	7440-48-4	39		mg/kg-dry	v	J	5		1.02	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18221	SW6010B	O	Z	Metals	Cobalt	7440-48-4	34		mg/kg-dry	v		5		0.43	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Copper	7440-50-8	101		mg/kg-dry	v		5		0.5	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18221	SW6010B	O	Z	Metals	Copper	7440-50-8	92		mg/kg-dry	v		5		0.21	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Iron	7439-89-6	39900		mg/kg-dry	v	J	30		30.91	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18222	SW6010B	O	Z	Metals	Iron	7439-89-6	40400		mg/kg-dry	v	J	30		26.54	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Lead	7439-92-1	54		mg/kg-dry	v	J	5		3.39	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18221	SW6010B	O	Z	Metals	Lead	7439-92-1	47		mg/kg-dry	v		5		1.45	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Manganese	7439-96-5	933		mg/kg-dry	v	J	5		0.16	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18222	SW6010B	O	Z	Metals	Manganese	7439-96-5	834		mg/kg-dry	v	J	5		0.14	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21478	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18224	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Nickel	7440-02-0	89		mg/kg-dry	v	J	5		1.17	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18222	SW6010B	O	Z	Metals	Nickel	7440-02-0	84		mg/kg-dry	v		5		1.01	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21476	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001577616	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18221	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		3.92	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21474	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.16	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18221	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.36	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21476	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.001214832	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18223	SW6020	O	Z	Metals	Thallium	7440-28-0	0.7		mg/kg-dry	v	J	0.6		0.00261	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Vanadium	7440-62-2	77		mg/kg-dry	v	J	1		0.73	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18222	SW6010B	O	Z	Metals	Vanadium	7440-62-2	70		mg/kg-dry	v		1		0.63	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21475	SW6010B	O	Z	Metals	Zinc	7440-66-6	69		mg/kg-dry	v	J	5		0.76	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18222	SW6010B	O	Z	Metals	Zinc	7440-66-6	61		mg/kg-dry	v		5		0.65	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21470	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.13		wt%	v		0.01		0.01	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18217	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.69		wt%	v		0.01		0.01	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21466	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	59.5		wt%	v		0.2		0.01	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18213	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	62.2		wt%	v		0.2		0.01	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21467	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18214	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21466	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	40.5		wt%	v		0.01		0.01	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18213	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	37.8		wt%	v		0.01		0.01	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.82		mg/kg-dry	U		0.82		0.14	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.88		mg/kg-dry	U		0.88		0.15	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.82		mg/kg-dry	U		0.82		0.19	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.88		mg/kg-dry	U		0.88		0.21	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.82		mg/kg-dry	U		0.82		0.14	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.88		mg/kg-dry	U		0.88		0.15	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.82		mg/kg-dry	U		0.82		0.14	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.88		mg/kg-dry	U		0.88		0.15	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.82		mg/kg-dry	U		0.82		0.09	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.88		mg/kg-dry	U		0.88		0.1	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.82		mg/kg-dry	U		0.82		0.19	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.88		mg/kg-dry	U		0.88		0.21	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.82		mg/kg-dry	U		0.82		0.14	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.88		mg/kg-dry	U		0.88		0.15	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.82		mg/kg-dry	U		0.82		0.14	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.88		mg/kg-dry	U		0.88		0.15	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.82		mg/kg-dry	U		0.82		0.19	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.88		mg/kg-dry	U		0.88		0.21	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.82		mg/kg-dry	U		0.82		0.14	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.88		mg/kg-dry	U		0.88		0.15	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.82		mg/kg-dry	U		0.82		0.19	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.88		mg/kg-dry	U		0.88		0.21	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.82		mg/kg-dry	U		0.82		0.19	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.88		mg/kg-dry	U		0.88		0.21	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.82		mg/kg-dry	U		0.82		0.14	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.88		mg/kg-dry	U		0.88		0.15	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.82		mg/kg-dry	U		0.82		0.24	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.88		mg/kg-dry	U		0.88		0.26	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.82		mg/kg-dry	U		0.82		0.19	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.88		mg/kg-dry	U		0.88		0.21	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.82		mg/kg-dry	U		0.82		0.14	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.88		mg/kg-dry	U		0.88		0.15	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21480	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.82		mg/kg-dry	U		0.82		0.14	
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18226	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.88		mg/kg-dry	U		0.88		0.15	
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.17		mg/kg-dry	U	UJ	0.17			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.19		mg/kg-dry	U		0.19			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		6.8		mg/kg-dry	U	UJ	6.8			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7.8		mg/kg-dry	U		7.8			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		6.8		mg/kg-dry	U	UJ	6.8			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		7.8		mg/kg-dry	U		7.8			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		6.8		mg/kg-dry	U	UJ	6.8			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		7.8		mg/kg-dry	U		7.8			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.17		mg/kg-dry	U	UJ	0.17			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.19		mg/kg-dry	U		0.19			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.17		mg/kg-dry	U	UJ	0.17			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.19		mg/kg-dry	U		0.19			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.34		mg/kg-dry	U	UJ	0.34			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.39		mg/kg-dry	U		0.39			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.34		mg/kg-dry	U	UJ	0.34			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.39		mg/kg-dry	U		0.39			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.17		mg/kg-dry	U	UJ	0.17			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.19		mg/kg-dry	U		0.19			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.17		mg/kg-dry	U	UJ	0.17			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.19		mg/kg-dry	U		0.19			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	6.8		mg/kg-dry	U	UJ	6.8			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	7.8		mg/kg-dry	U		7.8			
MP-3	MP-3	IIA	2	P2-00524	Sediment		Field Sample	7/1/2008	21473	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.17		mg/kg-dry	U	UJ	0.17			
MP-3	MP-3	IIA	2	P2-00961	Sediment		Field Sample	9/11/2008	18220	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.19		mg/kg-dry	U		0.19			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18257	E300.0	O	Z	Anions	Fluoride	16984-48-8	2.9		mg/kg-dry	v		1		0.01	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21483	E300.0	O	Z	Anions	Fluoride, 1:2		3.9		mg/kg-dry	v		1		0.02	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21484	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2760		mg/kg-dry	v		5		0.2	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18258	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2620		mg/kg-dry	v		5		0.19	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21487	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		42		mg/kg-dry	v	J	21		3.48	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21486	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		80		mg/kg-dry	v	J	21		1.73	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21486	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		96		mg/kg-dry	v	J	21		3.1	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21487	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	295		mg/kg-dry	v	J	21		6.92	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21494	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	519		mg/kg-dry	v		21			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18265	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	63		mg/kg-dry	v		19			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21490	SW6010B	O	Z	Metals	Aluminum	7429-90-5	26500		mg/kg-dry	v	J	5		2.16	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18262	SW6010B	O	Z	Metals	Aluminum	7429-90-5	22300		mg/kg-dry	v	J	5		1.61	
MP-4	MP-4	**IIA**	2	**P2-00525**	**Sediment**		**Field Sample**	**7/2/2008**	21491	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001156413**	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18263	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00216	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21491	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.009770594	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18263	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.01	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21490	SW6010B	O	Z	Metals	Barium	7440-39-3	1640		mg/kg-dry	v	J	5		0.07	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18262	SW6010B	O	Z	Metals	Barium	7440-39-3	1260		mg/kg-dry	v	J	5		0.05	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21489	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.006850886	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18261	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21489	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.23	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18261	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		4.16	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21491	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001327946	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18261	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.12	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21490	SW6010B	O	Z	Metals	Chromium	7440-47-3	465		mg/kg-dry	v	J	5		0.47	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18262	SW6010B	O	Z	Metals	Chromium	7440-47-3	394		mg/kg-dry	v	J	5		0.35	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21492	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.2	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21490	SW6010B	O	Z	Metals	Cobalt	7440-48-4	42		mg/kg-dry	v	J	5		0.86	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18262	SW6010B	O	Z	Metals	Cobalt	7440-48-4	33		mg/kg-dry	v		5		0.64	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21489	SW6010B	O	Z	Metals	Copper	7440-50-8	74		mg/kg-dry	v		5		0.08	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18261	SW6010B	O	Z	Metals	Copper	7440-50-8	64		mg/kg-dry	v		5		0.15	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21490	SW6010B	O	Z	Metals	Iron	7439-89-6	36500		mg/kg-dry	v	J	30		26.12	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18262	SW6010B	O	Z	Metals	Iron	7439-89-6	31200		mg/kg-dry	v	J	20		19.49	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21490	SW6010B	O	Z	Metals	Lead	7439-92-1	33		mg/kg-dry	v	J	5		2.86	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18261	SW6010B	O	Z	Metals	Lead	7439-92-1	23		mg/kg-dry	v		5		1.07	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21490	SW6010B	O	Z	Metals	Manganese	7439-96-5	3210		mg/kg-dry	v	J	5		0.13	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18262	SW6010B	O	Z	Metals	Manganese	7439-96-5	2380		mg/kg-dry	v	J	5		0.1	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21493	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18264	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21490	SW6010B	O	Z	Metals	Nickel	7440-02-0	90		mg/kg-dry	v	J	5		0.99	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18262	SW6010B	O	Z	Metals	Nickel	7440-02-0	75		mg/kg-dry	v		5		0.74	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21491	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00133316	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18261	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		2.88	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21489	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.14	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18261	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.26	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21491	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	v		0.6		0.00102659	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18263	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U	UJ	0.6		0.00192	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21489	SW6010B	O	Z	Metals	Vanadium	7440-62-2	56		mg/kg-dry	v	J	1		0.12	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18262	SW6010B	O	Z	Metals	Vanadium	7440-62-2	62		mg/kg-dry	v		1		0.46	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21490	SW6010B	O	Z	Metals	Zinc	7440-66-6	77		mg/kg-dry	v	J	5		0.64	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18262	SW6010B	O	Z	Metals	Zinc	7440-66-6	57		mg/kg-dry	v		5		0.48	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21485	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.25		wt%	v		0.01		0.01	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18259	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.23		wt%	v		0.01		0.01	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21481	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	52		wt%	v		0.2		0.01	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18255	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	48.6		wt%	v		0.2		0.01	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21482	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18256	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.7		s.u.	v		0.1			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21481	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	48		wt%	v		0.01		0.01	
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18255	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	51.4		wt%	v		0.01		0.01	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.7		mg/kg-dry	U		0.7		0.12	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.7		mg/kg-dry	U		0.7		0.16	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.7		mg/kg-dry	U		0.7		0.12	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.7		mg/kg-dry	U		0.7		0.12	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.7		mg/kg-dry	U		0.7		0.08	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.7		mg/kg-dry	U		0.7		0.16	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.7		mg/kg-dry	U		0.7		0.12	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.7		mg/kg-dry	U		0.7		0.12	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.7		mg/kg-dry	U		0.7		0.16	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.7		mg/kg-dry	U		0.7		0.12	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.7		mg/kg-dry	U		0.7		0.16	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.7		mg/kg-dry	U		0.7		0.16	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.7		mg/kg-dry	U		0.7		0.12	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.7		mg/kg-dry	U		0.7		0.2	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.7		mg/kg-dry	U		0.7		0.16	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.7		mg/kg-dry	U		0.7		0.12	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21495	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.7		mg/kg-dry	U		0.7		0.12	
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.14		mg/kg-dry	U	UJ	0.14			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.12		mg/kg-dry	U	UJ	0.12			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		5.5		mg/kg-dry	U	UJ	5.5			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		4.9		mg/kg-dry	U	UJ	4.9			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		5.5		mg/kg-dry	U	UJ	5.5			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		4.9		mg/kg-dry	U	UJ	4.9			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		5.5		mg/kg-dry	U	UJ	5.5			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		4.9		mg/kg-dry	U	UJ	4.9			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.14		mg/kg-dry	U	UJ	0.14			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.12		mg/kg-dry	U	UJ	0.12			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.14		mg/kg-dry	U	UJ	0.14			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.12		mg/kg-dry	U	UJ	0.12			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.27		mg/kg-dry	U	UJ	0.27			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.24		mg/kg-dry	U	UJ	0.24			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.27		mg/kg-dry	U	UJ	0.27			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.24		mg/kg-dry	U	UJ	0.24			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.14		mg/kg-dry	U	UJ	0.14			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.12		mg/kg-dry	U	UJ	0.12			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.14		mg/kg-dry	U	UJ	0.14			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.12		mg/kg-dry	U	UJ	0.12			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	5.5		mg/kg-dry	U	UJ	5.5			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	4.9		mg/kg-dry	U	UJ	4.9			
MP-4	MP-4	IIA	2	P2-00525	Sediment		Field Sample	7/2/2008	21488	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.14		mg/kg-dry	U	UJ	0.14			
MP-4	MP-4	IIA	2	P2-00964	Sediment		Field Sample	9/11/2008	18260	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.12		mg/kg-dry	U	UJ	0.12			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18268	E300.0	O	Z	Anions	Fluoride	16984-48-8	2.5		mg/kg-dry	v		1		0.02	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21498	E300.0	O	Z	Anions	Fluoride, 1:2		3.4		mg/kg-dry	v		1		0.02	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21499	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1310		mg/kg-dry	v		5		0.21	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18269	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1290		mg/kg-dry	v		5		0.2	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21502	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		153		mg/kg-dry	v	J	22		3.59	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18272	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		54		mg/kg-dry	v		20		3.39	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21501	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		140		mg/kg-dry	v	J	22		1.78	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18271	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		96		mg/kg-dry	v		20		1.68	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21501	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		25		mg/kg-dry	v	J	22		3.2	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18271	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		20		mg/kg-dry	U		20		3.03	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21502	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	359		mg/kg-dry	v	J	22		7.13	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21509	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	520		mg/kg-dry	v		22			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18272	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	186		mg/kg-dry	v		20		6.75	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18278	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	329		mg/kg-dry	v		20			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Aluminum	7429-90-5	24700		mg/kg-dry	v	J	5		2.22	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18274	SW6010B	O	Z	Metals	Aluminum	7429-90-5	22800		mg/kg-dry	v	J	5		0.84	
MP-5	**MP-5**	**IIA**	**2**	**P2-00526**	**Sediment**		**Field Sample**	**7/2/2008**	21506	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001192217**	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18276	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00226	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21506	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.01	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18276	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Barium	7440-39-3	1460		mg/kg-dry	v	J	5		0.07	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18275	SW6010B	O	Z	Metals	Barium	7440-39-3	1410		mg/kg-dry	v	J	5		0.06	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21504	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.007062997	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18275	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21504	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.29	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18274	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		4.35	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21506	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00136906	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18274	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.13	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Chromium	7440-47-3	388		mg/kg-dry	v	J	5		0.49	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18275	SW6010B	O	Z	Metals	Chromium	7440-47-3	361		mg/kg-dry	v	J	5		0.37	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21507	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.21	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Cobalt	7440-48-4	46		mg/kg-dry	v	J	5		0.88	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18275	SW6010B	O	Z	Metals	Cobalt	7440-48-4	44		mg/kg-dry	v		5		0.67	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Copper	7440-50-8	84		mg/kg-dry	v		5		0.44	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18275	SW6010B	O	Z	Metals	Copper	7440-50-8	76		mg/kg-dry	v		5		0.33	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Iron	7439-89-6	35900		mg/kg-dry	v	J	30		26.92	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18275	SW6010B	O	Z	Metals	Iron	7439-89-6	38800		mg/kg-dry	v	J	20		20.39	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Lead	7439-92-1	44		mg/kg-dry	v	J	5		2.95	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18274	SW6010B	O	Z	Metals	Lead	7439-92-1	40		mg/kg-dry	v		5		1.11	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Manganese	7439-96-5	1040		mg/kg-dry	v	J	5		0.14	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18275	SW6010B	O	Z	Metals	Manganese	7439-96-5	956		mg/kg-dry	v	J	5		0.1	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21508	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18277	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Nickel	7440-02-0	103		mg/kg-dry	v	J	5		1.02	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18274	SW6010B	O	Z	Metals	Nickel	7440-02-0	93		mg/kg-dry	v		5		0.38	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21506	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001374436	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18274	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		3.01	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21504	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.14	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18274	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.27	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21506	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.001058375	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18276	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U	UJ	0.6		0.002	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Vanadium	7440-62-2	61		mg/kg-dry	v	J	1		0.64	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18275	SW6010B	O	Z	Metals	Vanadium	7440-62-2	57		mg/kg-dry	v		1		0.48	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21505	SW6010B	O	Z	Metals	Zinc	7440-66-6	66		mg/kg-dry	v	J	5		0.66	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18275	SW6010B	O	Z	Metals	Zinc	7440-66-6	56		mg/kg-dry	v		5		0.5	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21500	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.02		wt%	v		0.01		0.01	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18270	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.51		wt%	v		0.01		0.01	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21496	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	53.5		wt%	v		0.2		0.01	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18266	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	50.9		wt%	v		0.2		0.01	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21497	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18267	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21496	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	46.5		wt%	v		0.01		0.01	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18266	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	49.1		wt%	v		0.01		0.01	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.72		mg/kg-dry	U		0.72		0.12	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.68		mg/kg-dry	U		0.68		0.12	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.72		mg/kg-dry	U		0.72		0.17	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.68		mg/kg-dry	U		0.68		0.16	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.72		mg/kg-dry	U		0.72		0.12	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.68		mg/kg-dry	U		0.68		0.12	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.72		mg/kg-dry	U		0.72		0.12	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.68		mg/kg-dry	U		0.68		0.12	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.72		mg/kg-dry	U		0.72		0.08	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.68		mg/kg-dry	U		0.68		0.08	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.72		mg/kg-dry	U		0.72		0.17	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.68		mg/kg-dry	U		0.68		0.16	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.72		mg/kg-dry	U		0.72		0.12	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.68		mg/kg-dry	U		0.68		0.12	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.72		mg/kg-dry	U		0.72		0.12	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.68		mg/kg-dry	U		0.68		0.12	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.72		mg/kg-dry	U		0.72		0.17	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.68		mg/kg-dry	U		0.68		0.16	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.72		mg/kg-dry	U		0.72		0.12	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.68		mg/kg-dry	U		0.68		0.12	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.72		mg/kg-dry	U		0.72		0.17	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.68		mg/kg-dry	U		0.68		0.16	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.72		mg/kg-dry	U		0.72		0.17	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.68		mg/kg-dry	U		0.68		0.16	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.72		mg/kg-dry	U		0.72		0.12	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.68		mg/kg-dry	U		0.68		0.12	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.72		mg/kg-dry	U		0.72		0.21	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.68		mg/kg-dry	U		0.68		0.2	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.72		mg/kg-dry	U		0.72		0.17	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.68		mg/kg-dry	U		0.68		0.16	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.72		mg/kg-dry	U		0.72		0.12	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.68		mg/kg-dry	U		0.68		0.12	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21510	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.72		mg/kg-dry	U		0.72		0.12	
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18279	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.68		mg/kg-dry	U		0.68		0.12	
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.14		mg/kg-dry	U	UJ	0.14			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.13		mg/kg-dry	U		0.13			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		5.6		mg/kg-dry	U	UJ	5.6			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		5		mg/kg-dry	U		5			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		5.6		mg/kg-dry	U	UJ	5.6			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		5		mg/kg-dry	U		5			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		5.6		mg/kg-dry	U	UJ	5.6			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		5		mg/kg-dry	U		5			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.14		mg/kg-dry	U	UJ	0.14			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.13		mg/kg-dry	U		0.13			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.14		mg/kg-dry	U	UJ	0.14			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.13		mg/kg-dry	U		0.13			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.28		mg/kg-dry	U	UJ	0.28			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.25		mg/kg-dry	U		0.25			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.28		mg/kg-dry	U	UJ	0.28			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.25		mg/kg-dry	U		0.25			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.14		mg/kg-dry	U	UJ	0.14			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.13		mg/kg-dry	U		0.13			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.14		mg/kg-dry	U	UJ	0.14			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.13		mg/kg-dry	U		0.13			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	5.6		mg/kg-dry	U	UJ	5.6			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	5		mg/kg-dry	U		5			
MP-5	MP-5	IIA	2	P2-00526	Sediment		Field Sample	7/2/2008	21503	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.14		mg/kg-dry	U	UJ	0.14			
MP-5	MP-5	IIA	2	P2-00965	Sediment		Field Sample	9/11/2008	18273	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.13		mg/kg-dry	U		0.13			
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Aluminum	7429-90-5	7350		mg/kg-dry	v	J	5		0.55	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19495	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000737	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19495	SW6020	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg-dry	v		2		0.00623	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Barium	7440-39-3	53		mg/kg-dry	v		5		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00873	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.84	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.08	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Chromium	7440-47-3	6		mg/kg-dry	v	J	5		0.12	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg-dry	v		5		0.21	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Copper	7440-50-8	11		mg/kg-dry	v		5		0.1	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Iron	7439-89-6	14000		mg/kg-dry	v		7		6.65	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5		0.73	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Manganese	7439-96-5	267		mg/kg-dry	v	J	5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19496	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Nickel	7440-02-0	9		mg/kg-dry	v		5		0.25	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		1.96	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.18	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19495	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000654	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Vanadium	7440-62-2	6		mg/kg-dry	v		1		0.15	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19494	SW6010B	O	Z	Metals	Zinc	7440-66-6	37		mg/kg-dry	v		5		0.16	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19498	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0053		mg/kg-dry	U		0.0053		0.000478	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19498	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0053		mg/kg-dry	U		0.0053		0.00151	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19498	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.027		mg/kg-dry	U		0.027		0.00117	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0023		mg/kg-dry	U		0.0023		0.000346	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0023		mg/kg-dry	U		0.0023		0.000279	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0023		mg/kg-dry	U		0.0023		0.000359	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0023		mg/kg-dry	U		0.0023		0.000279	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0023		mg/kg-dry	U		0.0023		0.000133	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0023		mg/kg-dry	U		0.0023		0.000332	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0023		mg/kg-dry	U		0.0023		0.000199	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.023		mg/kg-dry	U		0.023		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19498	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.066		mg/kg-dry	U		0.066		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0023		mg/kg-dry	U		0.0023		0.000359	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19498	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0066		mg/kg-dry	U		0.0066		0.000571	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19498	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.027		mg/kg-dry	U		0.027		0.00991	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0023		mg/kg-dry	U		0.0023		0.000199	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0023		mg/kg-dry	U		0.0023		0.000252	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0023		mg/kg-dry	U		0.0023		0.000146	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0023		mg/kg-dry	U		0.0023		0.000213	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0023		mg/kg-dry	U		0.0023		0.000173	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0023		mg/kg-dry	U		0.0023		0.000292	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0023		mg/kg-dry	U		0.0023		0.000199	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0023		mg/kg-dry	U		0.0023		0.000159	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.0023		mg/kg-dry	U		0.0023		0.000186	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0023		mg/kg-dry	U		0.0023		0.000252	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0023		mg/kg-dry	U		0.0023		0.000146	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.0027		mg/kg-dry	U		0.0027			
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19498	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.3		mg/kg-dry	U		5.3		0.54	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19498	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	5.3		mg/kg-dry	U		5.3		0.76	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0023		mg/kg-dry	U		0.0023		0.000372	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19498	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0027		mg/kg-dry	U		0.0027		0.00145	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19497	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.22		mg/kg-dry	U		0.22		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19493	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.31		wt%	v		0.01		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19491	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	24.8		wt%	v		0.2		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19492	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1			
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19491	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	75.2		wt%	v		0.01		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	0.22		mg/kg-dry	U		0.22		0.06	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	0.22		mg/kg-dry	U		0.22			
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.22		mg/kg-dry	U		0.22		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.22		mg/kg-dry	U		0.22		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.22		mg/kg-dry	U		0.22		0.06	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.22		mg/kg-dry	U		0.22		0.06	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	0.44		mg/kg-dry	U		0.44		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.22		mg/kg-dry	U		0.22		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.22		mg/kg-dry	U		0.22		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.22		mg/kg-dry	U		0.22		0.07	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.22		mg/kg-dry	U		0.22		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	0.44		mg/kg-dry	U		0.44		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.22		mg/kg-dry	U		0.22		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	0.89		mg/kg-dry	U		0.89		0.16	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	0.44		mg/kg-dry	U		0.44		0.12	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	0.44		mg/kg-dry	U		0.44		0.09	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.22		mg/kg-dry	U		0.22		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.22		mg/kg-dry	U		0.22		0.07	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.22		mg/kg-dry	U		0.22		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	0.44		mg/kg-dry	U		0.44		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.44		mg/kg-dry	U		0.44		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	0.22		mg/kg-dry	U		0.22		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	0.22		mg/kg-dry	U		0.22			
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	0.22		mg/kg-dry	U	UJ	0.22			
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroethoxy)Methane	111-91-1	0.22		mg/kg-dry	U		0.22		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.22		mg/kg-dry	U		0.22		0.06	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.22		mg/kg-dry	U		0.22		0.06	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.22		mg/kg-dry	U		0.22		0.09	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.22		mg/kg-dry	U		0.22		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	0.22		mg/kg-dry	U	UJ	0.22			
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	0.22		mg/kg-dry	U		0.22		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	0.22		mg/kg-dry	U		0.22		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.22		mg/kg-dry	U		0.22		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.22		mg/kg-dry	U		0.22		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.22		mg/kg-dry	U		0.22		0.34	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.22		mg/kg-dry	U		0.22		0.07	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.22		mg/kg-dry	U		0.22		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.22		mg/kg-dry	U		0.22		0.06	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.44		mg/kg-dry	U		0.44		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.22		mg/kg-dry	U		0.22		0.06	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.22		mg/kg-dry	U		0.22		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.22		mg/kg-dry	U		0.22		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.22		mg/kg-dry	U		0.22		0.07	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.22		mg/kg-dry	U		0.22		0.17	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.22		mg/kg-dry	U		0.22		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.22		mg/kg-dry	U		0.22		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	0.44		mg/kg-dry	U		0.44		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01082	Sediment		Field Sample	10/7/2008	19499	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.22		mg/kg-dry	U		0.22		0.07	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24605	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		34.3		mg/kg-dry	U		34.3		34.27	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24611	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	357		mg/kg-dry	v		34		3.94	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Aluminum	7429-90-5	57700		mg/kg-dry	v		10		8.62	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24608	SW6020	O	Z	Metals	Antimony	7440-36-0	1		mg/kg-dry	U		1		0.12	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24608	SW6020	O	Z	Metals	Arsenic	7440-38-2	4		mg/kg-dry	v		1		0.06	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Barium	7440-39-3	3210		mg/kg-dry	v		1		0.09	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.01	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.04	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Chromium	7440-47-3	642		mg/kg-dry	v		1		0.2	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Cobalt	7440-48-4	85		mg/kg-dry	v		1		0.39	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Copper	7440-50-8	73		mg/kg-dry	v		1		0.87	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Iron	7439-89-6	86000		mg/kg-dry	v		5		3.5	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Lead	7439-92-1	78		mg/kg-dry	v		2		2.12	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Magnesium	7439-95-4	109000		mg/kg-dry	v		5		2.24	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Manganese	7439-96-5	1220		mg/kg-dry	v		1		0.12	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24609	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.03	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Nickel	7440-02-0	167		mg/kg-dry	v		1		0.47	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24608	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	v		1		1.08	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.99	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Strontium	7440-24-6	581		mg/kg-dry	v		1		0.03	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	U		2		1.1	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Vanadium	7440-62-2	121		mg/kg-dry	v		1		0.59	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24607	SW6010B	O	Z	Metals	Zinc	7440-66-6	103		mg/kg-dry	v		1		0.76	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24604	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	7		mg/kg-dry	v		1		0.34	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24613	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.058		mg/kg-dry	U		0.058		0.02	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24613	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.058		mg/kg-dry	U		0.058			
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24613	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.058		mg/kg-dry	U		0.058			
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24613	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.058		mg/kg-dry	U		0.058			
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24613	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.058		mg/kg-dry	U		0.058			
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24613	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.058		mg/kg-dry	U		0.058		0.01	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24613	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.058		mg/kg-dry	U		0.058		0.01	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24613	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.058		mg/kg-dry	U		0.058			
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24613	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.058		mg/kg-dry	U		0.058			
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.014		mg/kg-dry	U		0.014		0.004969157	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.014		mg/kg-dry	U		0.014		0.000997258	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.069		mg/kg-dry	U		0.069		0.005928718	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.17		mg/kg-dry	U		0.17		0.008670322	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.034		mg/kg-dry	U		0.034		0.001655243	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0058		mg/kg-dry	U		0.0058		0.000891021	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0058		mg/kg-dry	U		0.0058		0.00071967	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0058		mg/kg-dry	U		0.0058		0.000925291	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.034		mg/kg-dry	U		0.034		0.002234407	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0058		mg/kg-dry	U		0.0058		0.000719671	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0058		mg/kg-dry	U		0.0058		0.0003427	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0058		mg/kg-dry	U		0.0058		0.000856751	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.17		mg/kg-dry	U		0.17		0.005791638	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0058		mg/kg-dry	U		0.0058		0.000514051	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.034		mg/kg-dry	U		0.034		0.002707334	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.058		mg/kg-dry	U		0.058		0.03	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.069		mg/kg-dry	U		0.069		0.001607265	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.17		mg/kg-dry	U		0.17		0.03	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0058		mg/kg-dry	U		0.0058		0.000925291	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.017		mg/kg-dry	U		0.017		0.00753941	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.069		mg/kg-dry	U		0.069		0.006134339	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0058		mg/kg-dry	U		0.0058		0.000514051	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.069		mg/kg-dry	U		0.069		0.01	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0058		mg/kg-dry	U		0.0058		0.000651131	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0058		mg/kg-dry	U		0.0058		0.000376971	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0058		mg/kg-dry	U		0.0058		0.000548321	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0058		mg/kg-dry	U		0.0058		0.000445511	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0058		mg/kg-dry	U		0.0058		0.00753941	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0058		mg/kg-dry	U		0.0058		0.000514051	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0058		mg/kg-dry	U		0.0058		0.00041241	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0058		mg/kg-dry	U		0.0058		0.000479781	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0058		mg/kg-dry	U		0.0058		0.000651131	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0058		mg/kg-dry	U		0.0058		0.000376971	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	MCPA	94-74-6	14		mg/kg-dry	U		14		1.65	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	MCPP	93-65-2	14		mg/kg-dry	U		14		1.64	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0069		mg/kg-dry	U		0.0069		0.000952707	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.034		mg/kg-dry	U		0.034		0.005654558	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24612	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.28		mg/kg-dry	U		0.28		0.09	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24611	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	76		mg/kg-dry	v		34		3.66	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24610	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	12		mg/kg-dry	U		12		2.75	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24606	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	71		wt%	v		0.2		0.01	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24603	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	4.2		%-as rcvd	v		0.1		0.009	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24602	ASA10-3	O	Z	Sediment/soil quality parameters	pH		6.6		s.u.	v		0.1		0.1	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	1.1		mg/kg-dry	U		1.1		0.86	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	1.1		mg/kg-dry	U		1.1		0.43	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	1.1		mg/kg-dry	U		1.1		0.44	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	1.1		mg/kg-dry	U		1.1		0.27	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	11		mg/kg-dry	U		11		0.34	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	1.1		mg/kg-dry	U		1.1		0.42	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	1.1		mg/kg-dry	U		1.1		0.42	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	1.1		mg/kg-dry	U		1.1		0.46	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	1.1		mg/kg-dry	U		1.1		0.28	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.1		mg/kg-dry	U		1.1		0.5	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	1.1		mg/kg-dry	U		1.1		0.99	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	1.1		mg/kg-dry	U		1.1		0.3	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	11		mg/kg-dry	U		11		0.4	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	1.1		mg/kg-dry	U		1.1		0.45	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	1.1		mg/kg-dry	U		1.1		0.34	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	1.1		mg/kg-dry	U		1.1		0.48	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24614	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.034		mg/kg-dry	U		0.034		0.002892392	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	11		mg/kg-dry	U		11		0.23	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.1		mg/kg-dry	U		1.1		0.41	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.1		mg/kg-dry	U		1.1		0.41	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.1		mg/kg-dry	U		1.1		0.32	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.1		mg/kg-dry	U		1.1		0.35	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.1		mg/kg-dry	U		1.1		0.48	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.1		mg/kg-dry	U		1.1		0.48	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.1		mg/kg-dry	U		1.1		0.82	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.1		mg/kg-dry	U		1.1		0.78	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	1.1		mg/kg-dry	U		1.1		0.28	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	1.1		mg/kg-dry	U		1.1		0.66	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	1.1		mg/kg-dry	U		1.1		0.56	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	1.1		mg/kg-dry	U		1.1		0.54	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	1.1		mg/kg-dry	U		1.1		0.31	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.1		mg/kg-dry	U		1.1		0.32	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.1		mg/kg-dry	U		1.1		0.68	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	1.1		mg/kg-dry	U		1.1		0.28	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	1.1		mg/kg-dry	U		1.1		0.39	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	1.1		mg/kg-dry	U		1.1		0.33	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	1.1		mg/kg-dry	U		1.1		0.25	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.1		mg/kg-dry	U		1.1		0.31	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.1		mg/kg-dry	U		1.1		0.31	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	1.1		mg/kg-dry	U		1.1		0.52	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	1.1		mg/kg-dry	U		1.1		0.33	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	1.1		mg/kg-dry	U		1.1		0.26	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	1.1		mg/kg-dry	U		1.1		0.35	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.1		mg/kg-dry	U		1.1		0.4	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	1.1		mg/kg-dry	U		1.1		0.29	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	1.1		mg/kg-dry	U		1.1		0.6	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.1		mg/kg-dry	U		1.1		0.34	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	1.1		mg/kg-dry	U		1.1		0.48	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	1.1		mg/kg-dry	U		1.1		0.27	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	1.1		mg/kg-dry	U		1.1		0.78	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	1.1		mg/kg-dry	U		1.1		0.54	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	11		mg/kg-dry	U		11		0.61	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.1		mg/kg-dry	U		1.1		0.36	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	1.1		mg/kg-dry	U		1.1		0.18	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.1		mg/kg-dry	U		1.1		0.27	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	1.1		mg/kg-dry	U		1.1		0.51	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	1.1		mg/kg-dry	U		1.1		0.31	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	1.1		mg/kg-dry	U		1.1		0.3	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	1.1		mg/kg-dry	U		1.1		0.38	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	1.1		mg/kg-dry	U		1.1		0.43	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	1.1		mg/kg-dry	U		1.1		0.65	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	1.1		mg/kg-dry	U		1.1		0.36	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	VOCs	Benzidine	92-87-5	1.1		mg/kg-dry	U		1.1		0.34	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	1.1		mg/kg-dry	U		1.1		0.45	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24615	SW8270C	O	Z	VOCs	Pyridine	110-86-1	1.1		mg/kg-dry	U		1.1		0.69	
Schrieber Lake	Schrieber Lake	VB	5	REF3	Sediment		Field Sample	4/28/2012	24610	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	12		mg/kg-dry	U		12		2.63	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24577	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		20		mg/kg-dry	U		20		16.58	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24583	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	132		mg/kg-dry	v		17		1.9	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Aluminum	7429-90-5	25100		mg/kg-dry	v		5		3.84	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24580	SW6020	O	Z	Metals	Antimony	7440-36-0	1		mg/kg-dry	U		1		0.05	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24580	SW6020	O	Z	Metals	Arsenic	7440-38-2	4		mg/kg-dry	v		1		0.02	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Barium	7440-39-3	335		mg/kg-dry	v		1		0.04	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.007985954	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.01	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Chromium	7440-47-3	10		mg/kg-dry	v		1		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg-dry	v		1		0.17	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Copper	7440-50-8	12		mg/kg-dry	v		1		0.39	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Iron	7439-89-6	17200		mg/kg-dry	v		5		1.56	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Lead	7439-92-1	16		mg/kg-dry	v		1		0.94	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Magnesium	7439-95-4	3730		mg/kg-dry	v		5		1	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Manganese	7439-96-5	120		mg/kg-dry	v		1		0.05	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24581	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.01	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Nickel	7440-02-0	9		mg/kg-dry	v		1		0.21	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24580	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	U		1		0.48	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.44	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Strontium	7440-24-6	16		mg/kg-dry	v		1		0.01	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	v		2		0.49	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Vanadium	7440-62-2	15		mg/kg-dry	v		1		0.26	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24579	SW6010B	O	Z	Metals	Zinc	7440-66-6	32		mg/kg-dry	v		1		0.34	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24576	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	4		mg/kg-dry	v		1		0.16	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24585	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.028		mg/kg-dry	U		0.028		0.00995355	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24585	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.028		mg/kg-dry	U		0.028			
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24585	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.028		mg/kg-dry	U		0.028			
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24585	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.028		mg/kg-dry	U		0.028			
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24585	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.028		mg/kg-dry	U		0.028			
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24585	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.028		mg/kg-dry	U		0.028		0.009356337	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24585	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.028		mg/kg-dry	U		0.028		0.008958195	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24585	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.028		mg/kg-dry	U		0.028			
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24585	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.028		mg/kg-dry	U		0.028			
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0066		mg/kg-dry	U		0.0066		0.002405441	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0066		mg/kg-dry	U		0.0066		0.000482747	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.033		mg/kg-dry	U		0.033		0.00286994	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.083		mg/kg-dry	U		0.083		0.00419708	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.017		mg/kg-dry	U		0.017		0.000801261	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0028		mg/kg-dry	U		0.0028		0.000431321	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0028		mg/kg-dry	U		0.0028		0.000348374	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0028		mg/kg-dry	U		0.0028		0.00044791	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.017		mg/kg-dry	U		0.017		0.001081619	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0028		mg/kg-dry	U		0.0028		0.000348374	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0028		mg/kg-dry	U		0.0028		0.000165893	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0028		mg/kg-dry	U		0.0028		0.000414731	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.083		mg/kg-dry	U		0.083		0.002803583	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0028		mg/kg-dry	U		0.0028		0.000248839	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.017		mg/kg-dry	U		0.017		0.001310551	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.028		mg/kg-dry	U		0.028		0.01	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.033		mg/kg-dry	U		0.033		0.000778036	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.083		mg/kg-dry	U		0.083		0.01	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0028		mg/kg-dry	U		0.0028		0.00044791	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0083		mg/kg-dry	U		0.0083		0.003649635	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.033		mg/kg-dry	U		0.033		0.002969476	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0028		mg/kg-dry	U		0.0028		0.000248839	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.033		mg/kg-dry	U		0.033		0.006536165	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0028		mg/kg-dry	U		0.0028		0.000315196	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0028		mg/kg-dry	U		0.0028		0.000182482	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0028		mg/kg-dry	U		0.0028		0.000265428	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0028		mg/kg-dry	U		0.0028		0.00021566	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0028		mg/kg-dry	U		0.0028		0.000364964	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0028		mg/kg-dry	U		0.0028		0.000248839	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0028		mg/kg-dry	U		0.0028		0.00019907	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0028		mg/kg-dry	U		0.0028		0.00023225	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0028		mg/kg-dry	U		0.0028		0.000315196	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0028		mg/kg-dry	U		0.0028		0.000182482	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	MCPA	94-74-6	6.6		mg/kg-dry	U		6.6		0.79	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	MCPP	93-65-2	6.6		mg/kg-dry	U		6.6		0.79	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0028		mg/kg-dry	U		0.0028		0.000464499	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0033		mg/kg-dry	U		0.0033		0.000461181	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.017		mg/kg-dry	U		0.017		0.002737226	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24584	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.17		mg/kg-dry	U		0.17		0.04	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24583	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	25		mg/kg-dry	v		17		1.77	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24582	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	4.6		mg/kg-dry	U		4.6		1.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24578	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	40		wt%	v		0.2		0.01	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24575	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	1.7		%-as rcvd	v		0.1		0.009	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24574	ASA10-3	O	Z	Sediment/soil quality parameters	pH		6.6		s.u.	v		0.1		0.1	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.33		mg/kg-dry	U		0.33		0.2	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.33		mg/kg-dry	U		0.33		0.1	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.33		mg/kg-dry	U		0.33		0.1	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.33		mg/kg-dry	U		0.33		0.06	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	2.8		mg/kg-dry	U		2.8		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.33		mg/kg-dry	U		0.33		0.1	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.33		mg/kg-dry	U		0.33		0.1	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.33		mg/kg-dry	U		0.33		0.06	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.33		mg/kg-dry	U		0.33		0.12	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.33		mg/kg-dry	U		0.33		0.24	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	2.8		mg/kg-dry	U		2.8		0.09	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24586	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.017		mg/kg-dry	U		0.017		0.001400133	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	2.8		mg/kg-dry	U		2.8		0.05	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.33		mg/kg-dry	U		0.33		0.1	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.33		mg/kg-dry	U		0.33		0.1	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.33		mg/kg-dry	U		0.33		0.19	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.33		mg/kg-dry	U		0.33		0.19	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.33		mg/kg-dry	U		0.33		0.16	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.33		mg/kg-dry	U		0.33		0.13	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.33		mg/kg-dry	U		0.33		0.13	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.33		mg/kg-dry	U		0.33		0.16	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.33		mg/kg-dry	U		0.33		0.06	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.33		mg/kg-dry	U		0.33		0.06	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.33		mg/kg-dry	U		0.33		0.12	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.33		mg/kg-dry	U		0.33		0.06	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.33		mg/kg-dry	U		0.33		0.14	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.33		mg/kg-dry	U		0.33		0.06	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.33		mg/kg-dry	U		0.33		0.19	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.33		mg/kg-dry	U		0.33		0.13	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	2.8		mg/kg-dry	U		2.8		0.14	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.33		mg/kg-dry	U		0.33		0.04	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.33		mg/kg-dry	U		0.33		0.06	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.33		mg/kg-dry	U		0.33		0.12	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.33		mg/kg-dry	U		0.33		0.1	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.33		mg/kg-dry	U		0.33		0.15	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.33		mg/kg-dry	U		0.33		0.1	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24587	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.33		mg/kg-dry	U		0.33		0.16	
Tepee Pond 1	Tepee Pond 1	VB	5	REF1	Sediment		Field Sample	4/28/2012	24582	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	4.6		mg/kg-dry	U		4.6		1.04	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24591	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		20		mg/kg-dry	U		20		18.58	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24597	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	172		mg/kg-dry	v		19		2.13	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Aluminum	7429-90-5	23300		mg/kg-dry	v		5		3.2	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24594	SW6020	O	Z	Metals	Antimony	7440-36-0	1		mg/kg-dry	U		1		0.04	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24594	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		1		0.02	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Barium	7440-39-3	135		mg/kg-dry	v		1		0.03	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.006640189	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.01	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Chromium	7440-47-3	10		mg/kg-dry	v		1		0.07	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Cobalt	7440-48-4	3		mg/kg-dry	v		1		0.14	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Copper	7440-50-8	11		mg/kg-dry	v		1		0.32	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Iron	7439-89-6	11900		mg/kg-dry	v		5		1.29	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		1		0.78	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Magnesium	7439-95-4	2390		mg/kg-dry	v		5		0.83	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Manganese	7439-96-5	56		mg/kg-dry	v		1		0.04	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24595	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.01	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Nickel	7440-02-0	12		mg/kg-dry	v		1		0.17	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24594	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	U		1		0.4	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.36	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Strontium	7440-24-6	10		mg/kg-dry	v		1		0.01	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	U		2		0.41	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Vanadium	7440-62-2	16		mg/kg-dry	v		1		0.21	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24593	SW6010B	O	Z	Metals	Zinc	7440-66-6	47		mg/kg-dry	v		1		0.28	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24590	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	4		mg/kg-dry	v		1		0.18	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24599	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.032		mg/kg-dry	U		0.032		0.01	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24599	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.032		mg/kg-dry	U		0.032			
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24599	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.032		mg/kg-dry	U		0.032			
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24599	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.032		mg/kg-dry	U		0.032			
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24599	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.032		mg/kg-dry	U		0.032			
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24599	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.032		mg/kg-dry	U		0.032		0.01	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24599	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.032		mg/kg-dry	U		0.032		0.01	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24599	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.032		mg/kg-dry	U		0.032			
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24599	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.032		mg/kg-dry	U		0.032			
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0074		mg/kg-dry	U		0.0074		0.002694666	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0074		mg/kg-dry	U		0.0074		0.000540792	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.037		mg/kg-dry	U		0.037		0.003215016	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.093		mg/kg-dry	U		0.093		0.004701728	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.019		mg/kg-dry	U		0.019		0.000897603	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0032		mg/kg-dry	U		0.0032		0.000483182	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0032		mg/kg-dry	U		0.0032		0.000390262	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0032		mg/kg-dry	U		0.0032		0.000501765	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.019		mg/kg-dry	U		0.019		0.001211671	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0032		mg/kg-dry	U		0.0032		0.000390262	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0032		mg/kg-dry	U		0.0032		0.000185839	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0032		mg/kg-dry	U		0.0032		0.000464598	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.093		mg/kg-dry	U		0.093		0.00314068	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0032		mg/kg-dry	U		0.0032		0.000278759	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.019		mg/kg-dry	U		0.019		0.001468129	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.032		mg/kg-dry	U		0.032		0.01	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.037		mg/kg-dry	U		0.037		0.000871585	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.093		mg/kg-dry	U		0.093		0.01	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0032		mg/kg-dry	U		0.0032		0.000501765	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0093		mg/kg-dry	U		0.0093		0.004088459	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.037		mg/kg-dry	U		0.037		0.003326519	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0032		mg/kg-dry	U		0.0032		0.000278759	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.037		mg/kg-dry	U		0.037		0.007322059	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0032		mg/kg-dry	U		0.0032		0.000353094	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0032		mg/kg-dry	U		0.0032		0.000204423	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0032		mg/kg-dry	U		0.0032		0.000297342	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0032		mg/kg-dry	U		0.0032		0.000241591	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0032		mg/kg-dry	U		0.0032		0.000408846	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0032		mg/kg-dry	U		0.0032		0.000278759	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0032		mg/kg-dry	U		0.0032		0.000223007	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0032		mg/kg-dry	U		0.0032		0.000260175	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0032		mg/kg-dry	U		0.0032		0.000353094	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0032		mg/kg-dry	U		0.0032		0.000204423	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	MCPA	94-74-6	7.4		mg/kg-dry	U		7.4		0.89	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	MCPP	93-65-2	7.4		mg/kg-dry	U		7.4		0.89	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0032		mg/kg-dry	U		0.0032		0.000520349	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0037		mg/kg-dry	U		0.0037		0.000516633	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.019		mg/kg-dry	U		0.019		0.003066344	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24598	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.17		mg/kg-dry	U		0.17		0.04	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24597	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	33		mg/kg-dry	v		19		1.98	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24596	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	5.4		mg/kg-dry	U		5.4		1.27	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24592	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	46		wt%	v		0.2		0.01	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24589	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	2.1		%-as rcvd	v		0.1		0.009	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24588	ASA10-3	O	Z	Sediment/soil quality parameters	pH		5.4		s.u.	v		0.1		0.1	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.33		mg/kg-dry	U		0.33		0.23	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.33		mg/kg-dry	U		0.33		0.12	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	3.1		mg/kg-dry	U		3.1		0.09	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.33		mg/kg-dry	U		0.33		0.12	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.33		mg/kg-dry	U		0.33		0.13	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.33		mg/kg-dry	U		0.33		0.26	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	3.1		mg/kg-dry	U		3.1		0.1	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.33		mg/kg-dry	U		0.33		0.12	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.33		mg/kg-dry	U		0.33		0.13	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24600	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.019		mg/kg-dry	U		0.019		0.001568482	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	3.1		mg/kg-dry	U		3.1		0.06	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.33		mg/kg-dry	U		0.33		0.13	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.33		mg/kg-dry	U		0.33		0.13	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.33		mg/kg-dry	U		0.33		0.22	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.33		mg/kg-dry	U		0.33		0.21	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.33		mg/kg-dry	U		0.33		0.18	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.33		mg/kg-dry	U		0.33		0.15	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.33		mg/kg-dry	U		0.33		0.14	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.33		mg/kg-dry	U		0.33		0.18	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.33		mg/kg-dry	U		0.33		0.07	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.33		mg/kg-dry	U		0.33		0.1	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.33		mg/kg-dry	U		0.33		0.06	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.33		mg/kg-dry	U		0.33		0.14	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.33		mg/kg-dry	U		0.33		0.16	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.33		mg/kg-dry	U		0.33		0.13	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.33		mg/kg-dry	U		0.33		0.21	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.33		mg/kg-dry	U		0.33		0.14	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	3.1		mg/kg-dry	U		3.1		0.16	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.33		mg/kg-dry	U		0.33		0.05	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.33		mg/kg-dry	U		0.33		0.07	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.33		mg/kg-dry	U		0.33		0.13	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.33		mg/kg-dry	U		0.33		0.08	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.33		mg/kg-dry	U		0.33		0.1	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.33		mg/kg-dry	U		0.33		0.11	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.33		mg/kg-dry	U		0.33		0.17	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.33		mg/kg-dry	U		0.33		0.09	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.33		mg/kg-dry	U		0.33		0.12	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24601	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.33		mg/kg-dry	U		0.33		0.18	
Tepee Pond 2	Tepee Pond 2	VB	5	REF2	Sediment		Field Sample	4/28/2012	24596	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	5.4		mg/kg-dry	U		5.4		1.22	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24563	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		20		mg/kg-dry	U		20		16.85	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24569	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	259		mg/kg-dry	v		17		1.93	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Aluminum	7429-90-5	28600		mg/kg-dry	v		5		3.92	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Antimony	7440-36-0	5		mg/kg-dry	v		1		0.75	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24566	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		1		0.02	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Barium	7440-39-3	1700		mg/kg-dry	v		1		0.04	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.008131982	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.01	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Chromium	7440-47-3	321		mg/kg-dry	v		1		0.09	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Cobalt	7440-48-4	42		mg/kg-dry	v		1		0.18	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Copper	7440-50-8	35		mg/kg-dry	v		1		0.39	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Iron	7439-89-6	42300		mg/kg-dry	v		5		1.59	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Lead	7439-92-1	37		mg/kg-dry	v		1		0.96	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Magnesium	7439-95-4	53500		mg/kg-dry	v		5		1.01	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Manganese	7439-96-5	586		mg/kg-dry	v		1		0.05	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24567	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.01	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Nickel	7440-02-0	82		mg/kg-dry	v		1		0.21	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24566	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	U		1		0.49	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.45	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Strontium	7440-24-6	281		mg/kg-dry	v		1		0.01	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	U		2		0.5	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Vanadium	7440-62-2	63		mg/kg-dry	v		1		0.26	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24565	SW6010B	O	Z	Metals	Zinc	7440-66-6	49		mg/kg-dry	v		1		0.34	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24562	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	2		mg/kg-dry	v		1		0.16	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24571	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.029		mg/kg-dry	U		0.029		0.01	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24571	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.029		mg/kg-dry	U		0.029			
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24571	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.029		mg/kg-dry	U		0.029			
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24571	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.029		mg/kg-dry	U		0.029			
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24571	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.029		mg/kg-dry	U		0.029			
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24571	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.029		mg/kg-dry	U		0.029		0.009506152	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24571	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.029		mg/kg-dry	U		0.029		0.009101635	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24571	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.029		mg/kg-dry	U		0.029			
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24571	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.029		mg/kg-dry	U		0.029			
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0067		mg/kg-dry	U		0.0067		0.002443957	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0067		mg/kg-dry	U		0.0067		0.000490477	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.034		mg/kg-dry	U		0.034		0.002915894	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.084		mg/kg-dry	U		0.084		0.004264284	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.017		mg/kg-dry	U		0.017		0.000814091	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0029		mg/kg-dry	U		0.0029		0.000438227	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0029		mg/kg-dry	U		0.0029		0.000353952	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0029		mg/kg-dry	U		0.0029		0.000455082	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.017		mg/kg-dry	U		0.017		0.001098938	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0029		mg/kg-dry	U		0.0029		0.000353952	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0029		mg/kg-dry	U		0.0029		0.000168549	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0029		mg/kg-dry	U		0.0029		0.000421372	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.084		mg/kg-dry	U		0.084		0.002848475	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0029		mg/kg-dry	U		0.0029		0.000252823	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.017		mg/kg-dry	U		0.017		0.001331535	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.029		mg/kg-dry	U		0.029		0.01	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.034		mg/kg-dry	U		0.034		0.000790494	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.084		mg/kg-dry	U		0.084		0.01	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0029		mg/kg-dry	U		0.0029		0.000455082	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0084		mg/kg-dry	U		0.0084		0.003708073	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.034		mg/kg-dry	U		0.034		0.003017023	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0029		mg/kg-dry	U		0.0029		0.000252823	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.034		mg/kg-dry	U		0.034		0.006640822	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0029		mg/kg-dry	U		0.0029		0.000320243	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0029		mg/kg-dry	U		0.0029		0.000185404	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0029		mg/kg-dry	U		0.0029		0.000269678	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0029		mg/kg-dry	U		0.0029		0.000219113	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0029		mg/kg-dry	U		0.0029		0.000370807	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0029		mg/kg-dry	U		0.0029		0.000252823	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0029		mg/kg-dry	U		0.0029		0.000202259	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0029		mg/kg-dry	U		0.0029		0.000235968	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0029		mg/kg-dry	U		0.0029		0.000320243	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0029		mg/kg-dry	U		0.0029		0.000185404	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	MCPA	94-74-6	6.7		mg/kg-dry	U		6.7		0.81	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	MCPP	93-65-2	6.7		mg/kg-dry	U		6.7		0.81	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0029		mg/kg-dry	U		0.0029		0.000471937	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0034		mg/kg-dry	U		0.0034		0.000468566	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.017		mg/kg-dry	U		0.017		0.002781055	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24570	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.17		mg/kg-dry	U		0.17		0.04	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24569	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	131		mg/kg-dry	v		17		1.8	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24568	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	4.7		mg/kg-dry	U		4.7		1.11	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24564	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	41		wt%	v		0.2		0.01	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24561	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	0.4		%-as rcvd	v		0.1		0.009	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24560	ASA10-3	O	Z	Sediment/soil quality parameters	pH		7.2		s.u.	v		0.1		0.1	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.33		mg/kg-dry	U		0.33		0.21	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.33		mg/kg-dry	U		0.33		0.1	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.33		mg/kg-dry	U		0.33		0.11	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.33		mg/kg-dry	U		0.33		0.06	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	2.8		mg/kg-dry	U		2.8		0.08	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.33		mg/kg-dry	U		0.33		0.1	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.33		mg/kg-dry	U		0.33		0.1	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.33		mg/kg-dry	U		0.33		0.11	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.33		mg/kg-dry	U		0.33		0.06	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.33		mg/kg-dry	U		0.33		0.12	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.33		mg/kg-dry	U		0.33		0.24	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	0.33		mg/kg-dry	U		0.33		0.07	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	2.8		mg/kg-dry	U		2.8		0.09	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.33		mg/kg-dry	U		0.33		0.11	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.33		mg/kg-dry	U		0.33		0.08	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.33		mg/kg-dry	U		0.33		0.12	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24572	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.017		mg/kg-dry	U		0.017		0.001422552	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	2.8		mg/kg-dry	U		2.8		0.05	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.33		mg/kg-dry	U		0.33		0.1	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.33		mg/kg-dry	U		0.33		0.1	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.33		mg/kg-dry	U		0.33		0.08	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.33		mg/kg-dry	U		0.33		0.08	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.33		mg/kg-dry	U		0.33		0.11	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.33		mg/kg-dry	U		0.33		0.11	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.33		mg/kg-dry	U		0.33		0.2	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.33		mg/kg-dry	U		0.33		0.19	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.33		mg/kg-dry	U		0.33		0.07	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.33		mg/kg-dry	U		0.33		0.16	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.33		mg/kg-dry	U		0.33		0.13	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.33		mg/kg-dry	U		0.33		0.13	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.33		mg/kg-dry	U		0.33		0.07	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.33		mg/kg-dry	U		0.33		0.07	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.33		mg/kg-dry	U		0.33		0.16	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.33		mg/kg-dry	U		0.33		0.06	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.33		mg/kg-dry	U		0.33		0.09	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.33		mg/kg-dry	U		0.33		0.08	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.33		mg/kg-dry	U		0.33		0.06	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.33		mg/kg-dry	U		0.33		0.07	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.33		mg/kg-dry	U		0.33		0.07	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.33		mg/kg-dry	U		0.33		0.13	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.33		mg/kg-dry	U		0.33		0.08	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.33		mg/kg-dry	U		0.33		0.06	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.33		mg/kg-dry	U		0.33		0.08	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.33		mg/kg-dry	U		0.33		0.1	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.33		mg/kg-dry	U		0.33		0.07	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.33		mg/kg-dry	U		0.33		0.14	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.33		mg/kg-dry	U		0.33		0.08	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.33		mg/kg-dry	U		0.33		0.11	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.33		mg/kg-dry	U		0.33		0.06	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.33		mg/kg-dry	U		0.33		0.19	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.33		mg/kg-dry	U		0.33		0.13	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	2.8		mg/kg-dry	U		2.8		0.15	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.33		mg/kg-dry	U		0.33		0.09	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.33		mg/kg-dry	U		0.33		0.04	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.33		mg/kg-dry	U		0.33		0.06	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.33		mg/kg-dry	U		0.33		0.12	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.33		mg/kg-dry	U		0.33		0.07	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.33		mg/kg-dry	U		0.33		0.07	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.33		mg/kg-dry	U		0.33		0.09	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.33		mg/kg-dry	U		0.33		0.1	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.33		mg/kg-dry	U		0.33		0.16	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.33		mg/kg-dry	U		0.33		0.09	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.33		mg/kg-dry	U		0.33		0.08	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.33		mg/kg-dry	U		0.33		0.11	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24573	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.33		mg/kg-dry	U		0.33		0.17	
TP	TP	VB	5	TP	Sediment		Field Sample	4/27/2012	24568	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	4.7		mg/kg-dry	U		4.7		1.06	
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2576	E300.0	O	Z	Anions	Fluoride, 1:2		1.5		mg/kg-dry	v		1	mg/kg-dry	0.04	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2577	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	4250		mg/kg-dry	v		40	mg/kg-dry	42.73	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2579	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		436		mg/kg-dry	v		43	mg/kg-dry	7.13	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2580	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		350		mg/kg-dry	v		43	mg/kg-dry	3.54	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2580	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		162		mg/kg-dry	v		43	mg/kg-dry	6.36	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2579	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	1240		mg/kg-dry	v		43	mg/kg-dry	14.18	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2586	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	928		mg/kg-dry	v		43	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11200		mg/kg-dry	v		5	mg/kg-dry	2.13	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2584	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.004739316	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2584	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2	mg/kg-dry	0.04	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Barium	7440-39-3	906		mg/kg-dry	v		5	mg/kg-dry	4.27	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.02	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Boron	7440-42-8	9		mg/kg-dry	U		9	mg/kg-dry	8.54	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2584	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.004188034	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Chromium	7440-47-3	110		mg/kg-dry	v	J	1	mg/kg-dry	1.28	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Cobalt	7440-48-4	17		mg/kg-dry	v		5	mg/kg-dry	1.28	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Copper	7440-50-8	29		mg/kg-dry	v		5	mg/kg-dry	0.85	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Iron	7439-89-6	16200		mg/kg-dry	v		5	mg/kg-dry	2.99	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Lead	7439-92-1	19		mg/kg-dry	v		5	mg/kg-dry	4.27	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Manganese	7439-96-5	392		mg/kg-dry	v		5	mg/kg-dry	0.17	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2585	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.04	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Nickel	7440-02-0	32		mg/kg-dry	v		5	mg/kg-dry	0.85	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2584	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.005463675	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.42	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2584	SW6020	O	Z	Metals	Thallium	7440-28-0	0.7		mg/kg-dry	v		0.6	mg/kg-dry	0.004207265	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Vanadium	7440-62-2	26		mg/kg-dry	v		2	mg/kg-dry	1.7	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2583	SW6010B	O	Z	Metals	Zinc	7440-66-6	29		mg/kg-dry	v		5	mg/kg-dry	0.85	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2578	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		6.76		wt%	v		0.01	wt%	0.01	wt%
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2582	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	77		wt%	v		0.2	wt%	0.01	wt%
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2575	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.7		s.u.	v		0.1	s.u.		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.25	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.34	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.25	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.25	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.17	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.34	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.25	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.25	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.34	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.25	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.34	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.34	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.25	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.42	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.34	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.25	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2587	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.4		mg/kg-dry	U		1.4	mg/kg-dry	0.25	mg/kg-dry
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.26		mg/kg-dry	U		0.26	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		10		mg/kg-dry	U		10	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		10		mg/kg-dry	U		10	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		10		mg/kg-dry	U		10	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.26		mg/kg-dry	U		0.26	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.26		mg/kg-dry	U		0.26	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.51		mg/kg-dry	U		0.51	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.51		mg/kg-dry	U		0.51	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.26		mg/kg-dry	U		0.26	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.26		mg/kg-dry	U		0.26	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	17		mg/kg-dry	v		10	mg/kg-dry		
TP_SED	TP	I	1	P1-00407	Sediment		Field Sample	10/14/2007	2581	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.26		mg/kg-dry	U		0.26	mg/kg-dry		
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18010	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16933	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16934	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3930		mg/kg-dry	v	J	5		0.14	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18011	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3290		mg/kg-dry	v		5		0.1	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16942	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	14		mg/kg-dry	U		14			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18017	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	97		mg/kg-dry	v		11			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Aluminum	7429-90-5	40700		mg/kg-dry	v		5		1.46	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Aluminum	7429-90-5	38500		mg/kg-dry	v	J	5		0.44	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16939	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000784	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.21	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16937	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.95	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.47	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Barium	7440-39-3	1750		mg/kg-dry	v		5		0.05	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Barium	7440-39-3	1430		mg/kg-dry	v	J	5		0.03	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16937	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00465	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00713	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16937	SW6010B	O	Z	Metals	Boron	7440-42-8	6		mg/kg-dry	v		5		1.51	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.32	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16937	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.04	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18015	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00138	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Chromium	7440-47-3	678		mg/kg-dry	v		5		0.32	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18015	SW6020	O	Z	Metals	Chromium	7440-47-3	712		mg/kg-dry	v		5		0.01	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16940	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.14	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Cobalt	7440-48-4	59		mg/kg-dry	v		5		0.58	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Cobalt	7440-48-4	49		mg/kg-dry	v		5		0.17	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Copper	7440-50-8	24		mg/kg-dry	v	J	5		0.29	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Copper	7440-50-8	23		mg/kg-dry	v		5		0.08	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Iron	7439-89-6	51900		mg/kg-dry	v		20		17.71	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Iron	7439-89-6	42200		mg/kg-dry	v	J	5		5.43	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Lead	7439-92-1	29		mg/kg-dry	v		5		1.94	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Lead	7439-92-1	16		mg/kg-dry	v		5		0.59	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Manganese	7439-96-5	571		mg/kg-dry	v		5		0.09	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Manganese	7439-96-5	470		mg/kg-dry	v	J	5		0.02	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16941	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18016	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Nickel	7440-02-0	133		mg/kg-dry	v		5		0.67	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Nickel	7440-02-0	118		mg/kg-dry	v		5		0.2	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16939	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.000904	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18015	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00139	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16937	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.09	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.14	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16939	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000696	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18015	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	v	J	0.6		0.00107	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Vanadium	7440-62-2	72		mg/kg-dry	v		1		0.42	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Vanadium	7440-62-2	55		mg/kg-dry	v	J	1		0.12	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16938	SW6010B	O	Z	Metals	Zinc	7440-66-6	52		mg/kg-dry	v		5		0.43	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18014	SW6010B	O	Z	Metals	Zinc	7440-66-6	44		mg/kg-dry	v		5		0.13	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16935	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.32		wt%	v		0.01		0.01	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18012	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.44		wt%	v		0.01		0.01	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16931	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	29.3		wt%	v		0.2		0.01	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18008	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	7.84		wt%	v		0.2		0.01	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16932	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.3		s.u.	v		0.1			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18009	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.1		s.u.	v		0.1			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16931	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	70.7		wt%	v		0.01		0.01	
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18008	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	92.2		wt%	v		0.01		0.01	
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.08		mg/kg-dry	U	UJ	0.08			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.072		mg/kg-dry	U		0.072			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.2		mg/kg-dry	U	UJ	3.2			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.9		mg/kg-dry	U		2.9			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.2		mg/kg-dry	U	UJ	3.2			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.9		mg/kg-dry	U		2.9			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.2		mg/kg-dry	U	UJ	3.2			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.9		mg/kg-dry	U		2.9			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.08		mg/kg-dry	U	UJ	0.08			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.072		mg/kg-dry	U		0.072			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.08		mg/kg-dry	U	UJ	0.08			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.072		mg/kg-dry	U		0.072			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.16		mg/kg-dry	U	UJ	0.16			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.14		mg/kg-dry	U		0.14			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.16		mg/kg-dry	U	UJ	0.16			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.14		mg/kg-dry	U		0.14			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.08		mg/kg-dry	U	UJ	0.08			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.072		mg/kg-dry	U		0.072			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.08		mg/kg-dry	U	UJ	0.08			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.072		mg/kg-dry	U		0.072			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.2		mg/kg-dry	U	UJ	3.2			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.9		mg/kg-dry	U		2.9			
TP-1	TP-1	IIA	2	P2-00477	Sediment		Field Sample	6/27/2008	16936	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.08		mg/kg-dry	U	UJ	0.08			
TP-1	TP-1	IIA	2	P2-00949	Sediment		Field Sample	9/10/2008	18013	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.072		mg/kg-dry	U		0.072			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18786	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.03	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21260	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.02	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21261	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	5900		mg/kg-dry	v		5		0.21	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18787	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	4540		mg/kg-dry	v	J	5		0.31	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21264	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		113		mg/kg-dry	v	J	22		3.61	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18790	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		38		mg/kg-dry	v	J	31		5.25	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21263	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		164		mg/kg-dry	v	J	22		1.79	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18789	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		66		mg/kg-dry	v	J	31		2.61	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21263	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		198		mg/kg-dry	v	J	22		3.22	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18789	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		80		mg/kg-dry	v	J	31		4.68	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21271	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	618		mg/kg-dry	v		22			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18790	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	186		mg/kg-dry	v	J	31		10.44	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18796	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	379		mg/kg-dry	v		31			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Aluminum	7429-90-5	31000		mg/kg-dry	v	J	5		2.24	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18792	SW6010B	O	Z	Metals	Aluminum	7429-90-5	28600		mg/kg-dry	v	J	5		1.3	
TP-10	TP-10	**IIA**	2	**P2-00507**	**Sediment**		**Field Sample**	**7/1/2008**	21268	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001198919**	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18794	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00349	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21268	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18794	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Barium	7440-39-3	2480		mg/kg-dry	v	J	5		0.08	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18793	SW6010B	O	Z	Metals	Barium	7440-39-3	2240		mg/kg-dry	v		5		0.09	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21266	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.007102703	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18792	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21266	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.31	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18794	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.49	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21268	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001059459	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18792	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.2	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Chromium	7440-47-3	417		mg/kg-dry	v	J	5		0.49	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18793	SW6010B	O	Z	Metals	Chromium	7440-47-3	442		mg/kg-dry	v		5		0.57	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21269	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.21	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Cobalt	7440-48-4	62		mg/kg-dry	v	J	5		0.89	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18793	SW6010B	O	Z	Metals	Cobalt	7440-48-4	61		mg/kg-dry	v		5		1.04	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Copper	7440-50-8	57		mg/kg-dry	v	J	5		0.44	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18793	SW6010B	O	Z	Metals	Copper	7440-50-8	57		mg/kg-dry	v		5		0.51	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Iron	7439-89-6	47300		mg/kg-dry	v	J	30		27.08	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18793	SW6010B	O	Z	Metals	Iron	7439-89-6	50500		mg/kg-dry	v		30		31.5	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Lead	7439-92-1	61		mg/kg-dry	v	J	5		2.97	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18792	SW6010B	O	Z	Metals	Lead	7439-92-1	50		mg/kg-dry	v		5		1.72	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Manganese	7439-96-5	799		mg/kg-dry	v	J	5		0.14	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18793	SW6010B	O	Z	Metals	Manganese	7439-96-5	711		mg/kg-dry	v		5		0.16	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21270	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.04	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18795	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Nickel	7440-02-0	111		mg/kg-dry	v	J	5		1.03	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18792	SW6010B	O	Z	Metals	Nickel	7440-02-0	106		mg/kg-dry	v		5		0.6	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21268	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001382162	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18792	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		4.65	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21266	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.14	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18792	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.43	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21268	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.001064324	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18794	SW6020	O	Z	Metals	Thallium	7440-28-0	0.7		mg/kg-dry	v		0.6		0.0031	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Vanadium	7440-62-2	69		mg/kg-dry	v	J	1		0.64	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18793	SW6010B	O	Z	Metals	Vanadium	7440-62-2	66		mg/kg-dry	v		1		0.75	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21267	SW6010B	O	Z	Metals	Zinc	7440-66-6	60		mg/kg-dry	v	J	5		0.67	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18793	SW6010B	O	Z	Metals	Zinc	7440-66-6	59		mg/kg-dry	v		5		0.78	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21262	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.48		wt%	v		0.01		0.01	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18788	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.79		wt%	v		0.01		0.01	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21258	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	53.8		wt%	v		0.2		0.01	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18784	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	68.2		wt%	v		0.2		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21259	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18785	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21258	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	46.2		wt%	v		0.01		0.01	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18784	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	31.8		wt%	v		0.01		0.01	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.72		mg/kg-dry	U		0.72		0.12	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1		mg/kg-dry	U		1		0.18	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.72		mg/kg-dry	U		0.72		0.17	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1		mg/kg-dry	U		1		0.25	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.72		mg/kg-dry	U		0.72		0.12	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1		mg/kg-dry	U		1		0.18	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.72		mg/kg-dry	U		0.72		0.12	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1		mg/kg-dry	U		1		0.18	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.72		mg/kg-dry	U		0.72		0.08	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1		mg/kg-dry	U		1		0.12	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.72		mg/kg-dry	U		0.72		0.17	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1		mg/kg-dry	U		1		0.25	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.72		mg/kg-dry	U		0.72		0.12	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1		mg/kg-dry	U		1		0.18	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.72		mg/kg-dry	U		0.72		0.12	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1		mg/kg-dry	U		1		0.18	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.72		mg/kg-dry	U		0.72		0.17	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1		mg/kg-dry	U		1		0.25	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.72		mg/kg-dry	U		0.72		0.12	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1		mg/kg-dry	U		1		0.18	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.72		mg/kg-dry	U		0.72		0.17	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1		mg/kg-dry	U		1		0.25	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.72		mg/kg-dry	U		0.72		0.17	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1		mg/kg-dry	U		1		0.25	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.29		mg/kg-dry	u		0.72		0.12	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1		mg/kg-dry	U		1		0.18	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.72		mg/kg-dry	U		0.72		0.21	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1		mg/kg-dry	U		1		0.31	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.72		mg/kg-dry	U		0.72		0.17	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1		mg/kg-dry	U		1		0.25	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.23		mg/kg-dry	u		0.72		0.12	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1		mg/kg-dry	U		1		0.18	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21272	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.72		mg/kg-dry	U		0.72		0.12	
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18797	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1		mg/kg-dry	U		1		0.18	
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.16		mg/kg-dry	U	UJ	0.16			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.23		mg/kg-dry	U	UJ	0.23			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		6.2		mg/kg-dry	U	UJ	6.2			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		9.2		mg/kg-dry	U	UJ	9.2			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		6.1		mg/kg-dry	u	J	6.2			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		12		mg/kg-dry	v	J	9.2			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		8.3		mg/kg-dry	v	J	6.2			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		16		mg/kg-dry	v	J	9.2			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.16		mg/kg-dry	U	UJ	0.16			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.23		mg/kg-dry	U	UJ	0.23			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.16		mg/kg-dry	U	UJ	0.16			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.23		mg/kg-dry	U	UJ	0.23			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.31		mg/kg-dry	U	UJ	0.31			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.46		mg/kg-dry	U	UJ	0.46			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.31		mg/kg-dry	U	UJ	0.31			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.46		mg/kg-dry	U	UJ	0.46			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.16		mg/kg-dry	U	UJ	0.16			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.23		mg/kg-dry	U	UJ	0.23			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.16		mg/kg-dry	U	UJ	0.16			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.23		mg/kg-dry	U	UJ	0.23			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	39		mg/kg-dry	v	J	6.2			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	59		mg/kg-dry	v	J	9.2			
TP-10	TP-10	IIA	2	P2-00507	Sediment		Field Sample	7/1/2008	21265	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.16		mg/kg-dry	U	UJ	0.16			
TP-10	TP-10	IIA	2	P2-00975	Sediment		Field Sample	9/12/2008	18791	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.23		mg/kg-dry	U	UJ	0.23			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18801	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.2		mg/kg-dry	v		1		0.03	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21275	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.02	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21276	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3280		mg/kg-dry	v		5		0.24	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18802	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2300		mg/kg-dry	v	J	5		0.32	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21279	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		309		mg/kg-dry	v	J	25		4.12	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18805	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		338		mg/kg-dry	v	J	33		5.47	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21278	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		438		mg/kg-dry	v	J	25		2.05	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18804	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		484		mg/kg-dry	v	J	33		2.72	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21278	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		466		mg/kg-dry	v	J	25		3.68	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18804	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		590		mg/kg-dry	v	J	33		4.88	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21279	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	1250		mg/kg-dry	v	J	25		8.2	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21286	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	1440		mg/kg-dry	v		25			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18805	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	1470		mg/kg-dry	v	J	33		10.89	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18810	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	2160		mg/kg-dry	v		33			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Aluminum	7429-90-5	32900		mg/kg-dry	v	J	5		2.56	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Aluminum	7429-90-5	23200		mg/kg-dry	v	J	5		1.35	
TP-11	**TP-11**	**IIA**	**2**	**P2-00509**	**Sediment**		**Field Sample**	**7/1/2008**	21283	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001370828**	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18808	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00364	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21283	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18808	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.03	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Barium	7440-39-3	2110		mg/kg-dry	v	J	5		0.09	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Barium	7440-39-3	814		mg/kg-dry	v	J	5		0.04	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21281	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.008121137	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21281	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.64	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18808	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.52	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21283	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001574166	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.21	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Chromium	7440-47-3	436		mg/kg-dry	v	J	5		0.56	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Chromium	7440-47-3	295		mg/kg-dry	v	J	5		0.3	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21284	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.24	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Cobalt	7440-48-4	59		mg/kg-dry	v	J	5		1.02	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Cobalt	7440-48-4	38		mg/kg-dry	v		5		0.54	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Copper	7440-50-8	66		mg/kg-dry	v	J	5		0.5	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Copper	7440-50-8	76		mg/kg-dry	v		5		0.26	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Iron	7439-89-6	48900		mg/kg-dry	v	J	30		30.96	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Iron	7439-89-6	38300		mg/kg-dry	v		20		16.43	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Lead	7439-92-1	58		mg/kg-dry	v	J	5		3.39	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Lead	7439-92-1	47		mg/kg-dry	v		5		1.8	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Manganese	7439-96-5	668		mg/kg-dry	v	J	5		0.16	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Manganese	7439-96-5	333		mg/kg-dry	v	J	5		0.08	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21285	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18809	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Nickel	7440-02-0	123		mg/kg-dry	v	J	5		1.18	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Nickel	7440-02-0	82		mg/kg-dry	v		5		0.62	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21283	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001580346	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18808	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00419	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21281	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.16	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.45	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21283	SW6020	O	Z	Metals	Thallium	7440-28-0	0.9		mg/kg-dry	v		0.6		0.001216934	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18808	SW6020	O	Z	Metals	Thallium	7440-28-0	1		mg/kg-dry	v		0.6		0.00323	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Vanadium	7440-62-2	68		mg/kg-dry	v	J	1		0.73	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Vanadium	7440-62-2	51		mg/kg-dry	v		1		0.39	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21282	SW6010B	O	Z	Metals	Zinc	7440-66-6	63		mg/kg-dry	v	J	5		0.76	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18807	SW6010B	O	Z	Metals	Zinc	7440-66-6	55		mg/kg-dry	v		5		0.4	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21277	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.37		wt%	v		0.01		0.01	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18803	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.8		wt%	v		0.01		0.01	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21273	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	59.6		wt%	v		0.2		0.01	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18799	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	69.5		wt%	v		0.2		0.01	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21274	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.1		s.u.	v		0.1			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18800	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21273	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	40.4		wt%	v		0.01		0.01	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18799	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	30.5		wt%	v		0.01		0.01	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.83		mg/kg-dry	U		0.83		0.14	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.1		mg/kg-dry	U		1.1		0.19	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.83		mg/kg-dry	U		0.83		0.19	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.1		mg/kg-dry	U		1.1		0.26	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.83		mg/kg-dry	U		0.83		0.14	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.1		mg/kg-dry	U		1.1		0.19	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.83		mg/kg-dry	U		0.83		0.14	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.1		mg/kg-dry	U		1.1		0.19	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.83		mg/kg-dry	U		0.83		0.09	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.1		mg/kg-dry	U		1.1		0.13	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.83		mg/kg-dry	U		0.83		0.19	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.1		mg/kg-dry	U		1.1		0.26	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.83		mg/kg-dry	U		0.83		0.14	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.1		mg/kg-dry	U		1.1		0.19	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.83		mg/kg-dry	U		0.83		0.14	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.1		mg/kg-dry	U		1.1		0.19	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.83		mg/kg-dry	U		0.83		0.19	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.1		mg/kg-dry	U		1.1		0.26	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.83		mg/kg-dry	U		0.83		0.14	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.1		mg/kg-dry	U		1.1		0.19	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.83		mg/kg-dry	U		0.83		0.19	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.1		mg/kg-dry	U		1.1		0.26	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.83		mg/kg-dry	U		0.83		0.19	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.1		mg/kg-dry	U		1.1		0.26	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.83		mg/kg-dry	U		0.83		0.14	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.1		mg/kg-dry	U		1.1		0.19	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.83		mg/kg-dry	U		0.83		0.24	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.1		mg/kg-dry	U		1.1		0.32	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.83		mg/kg-dry	U		0.83		0.19	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.1		mg/kg-dry	U		1.1		0.26	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.83		mg/kg-dry	U		0.83		0.14	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.1		mg/kg-dry	U		1.1		0.19	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21287	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.83		mg/kg-dry	U		0.83		0.14	
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18811	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.33		mg/kg-dry	J		1.1		0.19	
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.18		mg/kg-dry	U	UJ	0.18			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.22		mg/kg-dry	U	UJ	0.22			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7.2		mg/kg-dry	U	UJ	7.2			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		8.9		mg/kg-dry	U	UJ	8.9			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		17		mg/kg-dry	v	J	7.2			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		48		mg/kg-dry	v	J	8.9			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		21		mg/kg-dry	v	J	7.2			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		58		mg/kg-dry	v	J	8.9			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.18		mg/kg-dry	U	UJ	0.18			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.22		mg/kg-dry	U	UJ	0.22			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.18		mg/kg-dry	U	UJ	0.18			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.22		mg/kg-dry	U	UJ	0.22			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.36		mg/kg-dry	U	UJ	0.36			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.45		mg/kg-dry	U	UJ	0.45			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.36		mg/kg-dry	U	UJ	0.36			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		mg/kg-dry	U	UJ	1			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.18		mg/kg-dry	U	UJ	0.18			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.22		mg/kg-dry	U	UJ	0.22			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.18		mg/kg-dry	U	UJ	0.18			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.22		mg/kg-dry	U	UJ	0.22			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	107		mg/kg-dry	v	J	7.2			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	197		mg/kg-dry	v	J	8.9			
TP-11	TP-11	IIA	2	P2-00509	Sediment		Field Sample	7/1/2008	21280	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.18		mg/kg-dry	U	UJ	0.18			
TP-11	TP-11	IIA	2	P2-00977	Sediment		Field Sample	9/13/2008	18806	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.22		mg/kg-dry	U	UJ	0.22			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18773	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.1		mg/kg-dry	v		1		0.03	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21411	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.02	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21412	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	6400		mg/kg-dry	v		5		0.23	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18774	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2490		mg/kg-dry	v	J	5		0.37	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18777	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		38		mg/kg-dry	U	UJ	38		6.28	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18776	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		85		mg/kg-dry	v	J	38		3.12	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18776	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		48		mg/kg-dry	v	J	38		5.6	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21420	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	1370		mg/kg-dry	v		24			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18777	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	133		mg/kg-dry	v	J	38		12.5	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18782	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	475		mg/kg-dry	v		38			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Aluminum	7429-90-5	31800		mg/kg-dry	v	J	5		2.46	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Aluminum	7429-90-5	17800		mg/kg-dry	v	J	5		1.56	
TP-12	TP-12	**IIA**	2	**P2-00519**	**Sediment**		**Field Sample**	**7/1/2008**	21417	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001317728**	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18780	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00418	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21417	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18780	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.03	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Barium	7440-39-3	2440		mg/kg-dry	v	J	5		0.08	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Barium	7440-39-3	1350		mg/kg-dry	v		5		0.05	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21415	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.007806559	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21415	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.54	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18780	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.59	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21417	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001513189	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.24	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Chromium	7440-47-3	434		mg/kg-dry	v	J	5		0.54	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Chromium	7440-47-3	242		mg/kg-dry	v		5		0.34	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21418	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.23	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Cobalt	7440-48-4	59		mg/kg-dry	v	J	5		0.98	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Cobalt	7440-48-4	32		mg/kg-dry	v		5		0.62	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Copper	7440-50-8	62		mg/kg-dry	v	J	5		0.48	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Copper	7440-50-8	40		mg/kg-dry	v		5		0.3	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Iron	7439-89-6	47600		mg/kg-dry	v	J	30		29.76	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Iron	7439-89-6	28500		mg/kg-dry	v		20		18.86	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Lead	7439-92-1	51		mg/kg-dry	v	J	5		3.26	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Lead	7439-92-1	29		mg/kg-dry	v		5		2.07	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Manganese	7439-96-5	795		mg/kg-dry	v	J	5		0.15	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Manganese	7439-96-5	510		mg/kg-dry	v		5		0.1	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21419	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18781	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Nickel	7440-02-0	111		mg/kg-dry	v	J	5		1.13	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Nickel	7440-02-0	65		mg/kg-dry	v		5		0.71	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21417	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00151913	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18780	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00481	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21415	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.16	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.51	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21417	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.001169796	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18780	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00371	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Vanadium	7440-62-2	71		mg/kg-dry	v	J	1		0.71	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Vanadium	7440-62-2	38		mg/kg-dry	v		1		0.45	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21416	SW6010B	O	Z	Metals	Zinc	7440-66-6	57		mg/kg-dry	v	J	5		0.73	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18779	SW6010B	O	Z	Metals	Zinc	7440-66-6	36		mg/kg-dry	v		5		0.46	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21413	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.71		wt%	v		0.01		0.01	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18775	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.01		wt%	v		0.01		0.01	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21409	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	57.9		wt%	v		0.2		0.01	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18771	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	73.4		wt%	v		0.2		0.01	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21410	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18772	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21409	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	42.1		wt%	v		0.01		0.01	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18771	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	26.6		wt%	v		0.01		0.01	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.3		mg/kg-dry	U		1.3		0.22	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.3		mg/kg-dry	U		1.3		0.3	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.3		mg/kg-dry	U		1.3		0.22	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.3		mg/kg-dry	U		1.3		0.22	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.3		mg/kg-dry	U		1.3		0.15	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.3		mg/kg-dry	U		1.3		0.3	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.3		mg/kg-dry	U		1.3		0.22	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.3		mg/kg-dry	U		1.3		0.22	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.3		mg/kg-dry	U		1.3		0.3	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.3		mg/kg-dry	U		1.3		0.22	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.3		mg/kg-dry	U		1.3		0.3	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.3		mg/kg-dry	U		1.3		0.3	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.3		mg/kg-dry	U		1.3		0.22	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.3		mg/kg-dry	U		1.3		0.37	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.3		mg/kg-dry	U		1.3		0.3	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.3		mg/kg-dry	U		1.3		0.22	
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18783	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.3		mg/kg-dry	U		1.3		0.22	
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.2		mg/kg-dry	U	UJ	0.2			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.33		mg/kg-dry	U	UJ	0.33			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7.8		mg/kg-dry	U	UJ	7.8			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		13		mg/kg-dry	U	UJ	13			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		63		mg/kg-dry	v	J	7.8			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		13		mg/kg-dry	U	UJ	13			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		56		mg/kg-dry	v	J	7.8			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		13		mg/kg-dry	U	UJ	13			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.2		mg/kg-dry	U	UJ	0.2			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.33		mg/kg-dry	U	UJ	0.33			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.2		mg/kg-dry	U	UJ	0.2			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.33		mg/kg-dry	U	UJ	0.33			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.39		mg/kg-dry	U	UJ	0.39			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.66		mg/kg-dry	U	UJ	0.66			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	2.8		mg/kg-dry	v	J	0.39			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.66		mg/kg-dry	U	UJ	0.66			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.2		mg/kg-dry	U	UJ	0.2			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.33		mg/kg-dry	U	UJ	0.33			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.2		mg/kg-dry	U	UJ	0.2			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.33		mg/kg-dry	U	UJ	0.33			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	276		mg/kg-dry	v	J	7.8			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	21		mg/kg-dry	v	J	13			
TP-12	TP-12	IIA	2	P2-00519	Sediment		Field Sample	7/1/2008	21414	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.2		mg/kg-dry	U	UJ	0.2			
TP-12	TP-12	IIA	2	P2-00974	Sediment		Field Sample	9/12/2008	18778	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.33		mg/kg-dry	U	UJ	0.33			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18707	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.03	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21396	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.02	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21397	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	5490		mg/kg-dry	v		5		0.27	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18708	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2070		mg/kg-dry	v	J	5		0.34	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21400	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		136		mg/kg-dry	v	J	27		4.53	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18711	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		102		mg/kg-dry	v	J	34		5.72	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21399	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		161		mg/kg-dry	v	J	27		2.25	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18710	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		135		mg/kg-dry	v	J	34		2.84	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21399	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		205		mg/kg-dry	v	J	27		4.05	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18710	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		171		mg/kg-dry	v	J	34		5.1	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21400	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	509		mg/kg-dry	v	J	27		9.02	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21407	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	780		mg/kg-dry	v		27			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18711	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	411		mg/kg-dry	v	J	34		11.37	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18717	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	630		mg/kg-dry	v		34			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Aluminum	7429-90-5	32000		mg/kg-dry	v	J	5		2.81	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18713	SW6010B	O	Z	Metals	Aluminum	7429-90-5	24000		mg/kg-dry	v	J	5		1.42	
TP-13	TP-13	**IIA**	2	**P2-00518**	**Sediment**		**Field Sample**	**7/1/2008**	21404	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001507203**	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18715	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.0038	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21404	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18715	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.03	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Barium	7440-39-3	2300		mg/kg-dry	v	J	5		0.1	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18714	SW6010B	O	Z	Metals	Barium	7440-39-3	1590		mg/kg-dry	v		5		0.1	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21402	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.008929057	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18713	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21402	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.9	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18715	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.54	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21404	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001730769	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18713	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.22	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Chromium	7440-47-3	438		mg/kg-dry	v	J	5		0.62	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18714	SW6010B	O	Z	Metals	Chromium	7440-47-3	380		mg/kg-dry	v		5		0.62	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21405	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.27	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Cobalt	7440-48-4	60		mg/kg-dry	v	J	5		1.12	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18714	SW6010B	O	Z	Metals	Cobalt	7440-48-4	46		mg/kg-dry	v		5		1.13	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Copper	7440-50-8	61		mg/kg-dry	v	J	5		0.55	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18714	SW6010B	O	Z	Metals	Copper	7440-50-8	58		mg/kg-dry	v		5		0.56	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Iron	7439-89-6	48100		mg/kg-dry	v	J	30		34.04	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18714	SW6010B	O	Z	Metals	Iron	7439-89-6	44200		mg/kg-dry	v		30		34.33	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Lead	7439-92-1	69		mg/kg-dry	v	J	5		3.73	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18714	SW6010B	O	Z	Metals	Lead	7439-92-1	54		mg/kg-dry	v		5		3.76	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Manganese	7439-96-5	759		mg/kg-dry	v	J	5		0.18	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18714	SW6010B	O	Z	Metals	Manganese	7439-96-5	513		mg/kg-dry	v		5		0.18	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21406	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18716	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Nickel	7440-02-0	117		mg/kg-dry	v	J	5		1.29	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18714	SW6010B	O	Z	Metals	Nickel	7440-02-0	95		mg/kg-dry	v		5		1.3	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21404	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001737565	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18713	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		5.07	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21402	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.18	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18713	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.47	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21404	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.001337999	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18715	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00337	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Vanadium	7440-62-2	71		mg/kg-dry	v	J	1		0.81	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18713	SW6010B	O	Z	Metals	Vanadium	7440-62-2	54		mg/kg-dry	v		1		0.41	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21403	SW6010B	O	Z	Metals	Zinc	7440-66-6	58		mg/kg-dry	v	J	5		0.84	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18714	SW6010B	O	Z	Metals	Zinc	7440-66-6	54		mg/kg-dry	v		5		0.85	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21398	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.49		wt%	v		0.01		0.01	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18709	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.77		wt%	v		0.01		0.01	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21394	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	63.2		wt%	v		0.2		0.01	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18705	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	70.8		wt%	v		0.2		0.01	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21395	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18706	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21394	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	36.8		wt%	v		0.01		0.01	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18705	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	29.2		wt%	v		0.01		0.01	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.91		mg/kg-dry	U		0.91		0.16	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.1		mg/kg-dry	U		1.1		0.2	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.91		mg/kg-dry	U		0.91		0.21	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.1		mg/kg-dry	U		1.1		0.27	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.91		mg/kg-dry	U		0.91		0.16	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.1		mg/kg-dry	U		1.1		0.2	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.91		mg/kg-dry	U		0.91		0.16	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.1		mg/kg-dry	U		1.1		0.2	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.91		mg/kg-dry	U		0.91		0.1	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.1		mg/kg-dry	U		1.1		0.13	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.91		mg/kg-dry	U		0.91		0.21	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.1		mg/kg-dry	U		1.1		0.27	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.91		mg/kg-dry	U		0.91		0.16	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.1		mg/kg-dry	U		1.1		0.2	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.91		mg/kg-dry	U		0.91		0.16	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.1		mg/kg-dry	U		1.1		0.2	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.91		mg/kg-dry	U		0.91		0.21	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.1		mg/kg-dry	U		1.1		0.27	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.91		mg/kg-dry	U		0.91		0.16	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.1		mg/kg-dry	U		1.1		0.2	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.91		mg/kg-dry	U		0.91		0.21	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.1		mg/kg-dry	U		1.1		0.27	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.91		mg/kg-dry	U		0.91		0.21	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.1		mg/kg-dry	U		1.1		0.27	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.91		mg/kg-dry	U		0.91		0.16	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.1		mg/kg-dry	U		1.1		0.2	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.91		mg/kg-dry	U		0.91		0.27	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.1		mg/kg-dry	U		1.1		0.34	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.91		mg/kg-dry	U		0.91		0.21	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.1		mg/kg-dry	U		1.1		0.27	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.23		mg/kg-dry	u		0.91		0.16	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.1		mg/kg-dry	U		1.1		0.2	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21408	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.91		mg/kg-dry	U		0.91		0.16	
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18718	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.1		mg/kg-dry	U		1.1		0.2	
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.2		mg/kg-dry	U	UJ	0.2			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.3		mg/kg-dry	U		0.3			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		8.1		mg/kg-dry	U	UJ	8.1			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		12		mg/kg-dry	U		12			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		8.1		mg/kg-dry	U	UJ	8.1			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		12		mg/kg-dry	U		12			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		9.8		mg/kg-dry	v	J	8.1			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		12		mg/kg-dry	U		12			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.2		mg/kg-dry	U	UJ	0.2			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.3		mg/kg-dry	U		0.3			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.2		mg/kg-dry	U	UJ	0.2			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.3		mg/kg-dry	U		0.3			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.41		mg/kg-dry	U	UJ	0.41			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.59		mg/kg-dry	U		0.59			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.41		mg/kg-dry	U	UJ	0.41			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.59		mg/kg-dry	U		0.59			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.2		mg/kg-dry	U	UJ	0.2			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.3		mg/kg-dry	U		0.3			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.2		mg/kg-dry	U	UJ	0.2			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.3		mg/kg-dry	U		0.3			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	22		mg/kg-dry	v	J	8.1			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	14		mg/kg-dry	v		12			
TP-13	TP-13	IIA	2	P2-00518	Sediment		Field Sample	7/1/2008	21401	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.2		mg/kg-dry	U	UJ	0.2			
TP-13	TP-13	IIA	2	P2-00969	Sediment		Field Sample	9/12/2008	18712	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.3		mg/kg-dry	U		0.3			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18721	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.6		mg/kg-dry	v		1		0.03	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21384	E300.0	O	Z	Anions	Fluoride, 1:2		1.5		mg/kg-dry	v		1		0.02	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21385	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2740		mg/kg-dry	v		5		0.27	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18722	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1770		mg/kg-dry	v	J	5		0.34	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18725	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		34		mg/kg-dry	U	UJ	34		5.72	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18724	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		55		mg/kg-dry	v	J	34		2.84	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18724	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		65		mg/kg-dry	v	J	34		5.1	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21393	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	137		mg/kg-dry	v		27			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18725	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	142		mg/kg-dry	v	J	34		11.37	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18731	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		mg/kg-dry	v		34			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Aluminum	7429-90-5	25000		mg/kg-dry	v	J	5		1.42	
TP-14	**TP-14**	**IIA**	**2**	**P2-00517**	**Sediment**		**Field Sample**	**7/1/2008**	21390	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001505975**	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18729	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.0038	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21390	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18729	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.03	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Barium	7440-39-3	1880		mg/kg-dry	v	J	5		0.1	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18728	SW6010B	O	Z	Metals	Barium	7440-39-3	1580		mg/kg-dry	v		5		0.1	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21388	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.008921782	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18727	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21388	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.9	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18729	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.54	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21390	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001729359	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18727	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	v		1		0.22	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Chromium	7440-47-3	339		mg/kg-dry	v	J	5		0.62	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18728	SW6010B	O	Z	Metals	Chromium	7440-47-3	339		mg/kg-dry	v		5		0.62	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21391	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.27	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Cobalt	7440-48-4	57		mg/kg-dry	v	J	5		1.12	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18728	SW6010B	O	Z	Metals	Cobalt	7440-48-4	49		mg/kg-dry	v		5		1.13	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Copper	7440-50-8	60		mg/kg-dry	v	J	5		0.55	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18728	SW6010B	O	Z	Metals	Copper	7440-50-8	57		mg/kg-dry	v		5		0.56	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Iron	7439-89-6	47000		mg/kg-dry	v	J	30		34.01	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18728	SW6010B	O	Z	Metals	Iron	7439-89-6	45300		mg/kg-dry	v		30		34.33	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Lead	7439-92-1	47		mg/kg-dry	v	J	5		3.73	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18727	SW6010B	O	Z	Metals	Lead	7439-92-1	42		mg/kg-dry	v		5		1.88	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Manganese	7439-96-5	683		mg/kg-dry	v	J	5		0.18	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18728	SW6010B	O	Z	Metals	Manganese	7439-96-5	546		mg/kg-dry	v		5		0.18	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21392	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18730	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Nickel	7440-02-0	106		mg/kg-dry	v	J	5		1.29	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18728	SW6010B	O	Z	Metals	Nickel	7440-02-0	99		mg/kg-dry	v		5		1.3	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21390	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001736149	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18727	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		5.07	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21388	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.18	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18727	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.47	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21390	SW6020	O	Z	Metals	Thallium	7440-28-0	0.9		mg/kg-dry	v		0.6		0.001336909	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18729	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.00337	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Vanadium	7440-62-2	63		mg/kg-dry	v	J	1		0.81	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18728	SW6010B	O	Z	Metals	Vanadium	7440-62-2	69		mg/kg-dry	v		1		0.82	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21389	SW6010B	O	Z	Metals	Zinc	7440-66-6	56		mg/kg-dry	v	J	5		0.84	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18728	SW6010B	O	Z	Metals	Zinc	7440-66-6	51		mg/kg-dry	v		5		0.85	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21386	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.12		wt%	v		0.01		0.01	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18723	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.27		wt%	v		0.01		0.01	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21382	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	63.2		wt%	v		0.2		0.01	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18719	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	70.8		wt%	v		0.2		0.01	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21383	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18720	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21382	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	36.8		wt%	v		0.01		0.01	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18719	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	29.2		wt%	v		0.01		0.01	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.1		mg/kg-dry	U		1.1		0.2	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.1		mg/kg-dry	U		1.1		0.27	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.1		mg/kg-dry	U		1.1		0.2	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.1		mg/kg-dry	U		1.1		0.2	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.1		mg/kg-dry	U		1.1		0.13	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.1		mg/kg-dry	U		1.1		0.27	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.1		mg/kg-dry	U		1.1		0.2	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.1		mg/kg-dry	U		1.1		0.2	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.1		mg/kg-dry	U		1.1		0.27	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.1		mg/kg-dry	U		1.1		0.2	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.1		mg/kg-dry	U		1.1		0.27	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.1		mg/kg-dry	U		1.1		0.27	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.1		mg/kg-dry	U		1.1		0.2	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.1		mg/kg-dry	U		1.1		0.34	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.1		mg/kg-dry	U		1.1		0.27	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.1		mg/kg-dry	U		1.1		0.2	
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18732	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.1		mg/kg-dry	U		1.1		0.2	
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.19		mg/kg-dry	U	UJ	0.19			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.28		mg/kg-dry	U		0.28			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7.5		mg/kg-dry	U	UJ	7.5			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		11		mg/kg-dry	U		11			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		7.5		mg/kg-dry	U	UJ	7.5			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		14		mg/kg-dry	v		11			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		7.5		mg/kg-dry	U	UJ	7.5			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		mg/kg-dry	v		11			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.19		mg/kg-dry	U	UJ	0.19			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.28		mg/kg-dry	U		0.28			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.19		mg/kg-dry	U	UJ	0.19			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.28		mg/kg-dry	U		0.28			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.37		mg/kg-dry	U	UJ	0.37			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.56		mg/kg-dry	U		0.56			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.37		mg/kg-dry	U	UJ	0.37			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.56		mg/kg-dry	U		0.56			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.19		mg/kg-dry	U	UJ	0.19			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.28		mg/kg-dry	U		0.28			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.19		mg/kg-dry	U	UJ	0.19			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.28		mg/kg-dry	U		0.28			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	13		mg/kg-dry	v	J	7.5			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	64		mg/kg-dry	v		11			
TP-14	TP-14	IIA	2	P2-00517	Sediment		Field Sample	7/1/2008	21387	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.19		mg/kg-dry	U	UJ	0.19			
TP-14	TP-14	IIA	2	P2-00970	Sediment		Field Sample	9/12/2008	18726	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.28		mg/kg-dry	U		0.28			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18735	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.4		mg/kg-dry	v		1		0.03	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21368	E300.0	O	Z	Anions	Fluoride, 1:2		1.4		mg/kg-dry	v		1		0.02	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21369	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2080		mg/kg-dry	v		5		0.26	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18736	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1530		mg/kg-dry	v	J	5		0.34	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21372	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		32		mg/kg-dry	v	J	27		4.44	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21371	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		62		mg/kg-dry	v	J	27		2.21	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21371	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		73		mg/kg-dry	v	J	27		3.96	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21372	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	183		mg/kg-dry	v	J	27		8.84	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21380	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	219		mg/kg-dry	v		27			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18743	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	97		mg/kg-dry	v		34			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21374	SW6010B	O	Z	Metals	Aluminum	7429-90-5	20400		mg/kg-dry	v	J	5		0.55	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Aluminum	7429-90-5	14500		mg/kg-dry	v	J	5		1.42	
TP-15	**TP-15**	**IIA**	**2**	**P2-00516**	**Sediment**		**Field Sample**	**7/1/2008**	21376	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001477091**	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18740	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00381	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21376	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18740	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.03	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21375	SW6010B	O	Z	Metals	Barium	7440-39-3	1730		mg/kg-dry	v	J	5		0.09	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Barium	7440-39-3	658		mg/kg-dry	v		5		0.05	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21377	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.000321723	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21374	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.84	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18740	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.54	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21376	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001696191	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.22	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21375	SW6010B	O	Z	Metals	Chromium	7440-47-3	303		mg/kg-dry	v	J	5		0.61	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Chromium	7440-47-3	92		mg/kg-dry	v		5		0.31	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21378	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.26	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21375	SW6010B	O	Z	Metals	Cobalt	7440-48-4	49		mg/kg-dry	v	J	5		1.1	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Cobalt	7440-48-4	16		mg/kg-dry	v		5		0.56	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21375	SW6010B	O	Z	Metals	Copper	7440-50-8	55		mg/kg-dry	v	J	5		0.54	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Copper	7440-50-8	32		mg/kg-dry	v		5		0.28	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21375	SW6010B	O	Z	Metals	Iron	7439-89-6	43800		mg/kg-dry	v	J	30		33.36	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Iron	7439-89-6	18500		mg/kg-dry	v		20		17.2	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21375	SW6010B	O	Z	Metals	Lead	7439-92-1	40		mg/kg-dry	v	J	5		3.66	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Lead	7439-92-1	19		mg/kg-dry	v		5		1.88	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21375	SW6010B	O	Z	Metals	Manganese	7439-96-5	629		mg/kg-dry	v	J	5		0.17	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Manganese	7439-96-5	240		mg/kg-dry	v		5		0.09	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21379	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18742	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21375	SW6010B	O	Z	Metals	Nickel	7440-02-0	94		mg/kg-dry	v	J	5		1.27	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Nickel	7440-02-0	32		mg/kg-dry	v		5		0.65	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21376	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00170285	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		5.08	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21374	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.18	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.47	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21376	SW6020	O	Z	Metals	Thallium	7440-28-0	0.7		mg/kg-dry	v		0.6		0.001311268	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18740	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00338	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21375	SW6010B	O	Z	Metals	Vanadium	7440-62-2	60		mg/kg-dry	v	J	1		0.79	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18739	SW6010B	O	Z	Metals	Vanadium	7440-62-2	31		mg/kg-dry	v		1		0.41	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21375	SW6010B	O	Z	Metals	Zinc	7440-66-6	53		mg/kg-dry	v	J	5		0.82	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18741	SW6020	O	Z	Metals	Zinc	7440-66-6	42		mg/kg-dry	v		5		0.02	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21370	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.9		wt%	v		0.01		0.01	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18737	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.56		wt%	v		0.01		0.01	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21366	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	62.5		wt%	v		0.2		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18733	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	70.9		wt%	v		0.2		0.01	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21367	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.1		s.u.	v		0.1			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18734	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21366	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	37.5		wt%	v		0.01		0.01	
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18733	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	29.1		wt%	v		0.01		0.01	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.89		mg/kg-dry	U		0.89		0.15	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.89		mg/kg-dry	U		0.89		0.21	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.89		mg/kg-dry	U		0.89		0.15	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.89		mg/kg-dry	U		0.89		0.15	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.89		mg/kg-dry	U		0.89		0.1	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.89		mg/kg-dry	U		0.89		0.21	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.89		mg/kg-dry	U		0.89		0.15	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.89		mg/kg-dry	U		0.89		0.15	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.89		mg/kg-dry	U		0.89		0.21	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.89		mg/kg-dry	U		0.89		0.15	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.89		mg/kg-dry	U		0.89		0.21	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.89		mg/kg-dry	U		0.89		0.21	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.89		mg/kg-dry	U		0.89		0.15	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.89		mg/kg-dry	U		0.89		0.26	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.89		mg/kg-dry	U		0.89		0.21	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.89		mg/kg-dry	U		0.89		0.15	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21381	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.89		mg/kg-dry	U		0.89		0.15	
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.21		mg/kg-dry	U	UJ	0.21			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.31		mg/kg-dry	U	UJ	0.31			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		8.3		mg/kg-dry	U	UJ	8.3			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		13		mg/kg-dry	U	UJ	13			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		mg/kg-dry	v	J	8.3			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		13		mg/kg-dry	U	UJ	13			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		43		mg/kg-dry	v	J	8.3			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		13		mg/kg-dry	U	UJ	13			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.21		mg/kg-dry	U	UJ	0.21			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.31		mg/kg-dry	U	UJ	0.31			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.21		mg/kg-dry	U	UJ	0.21			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.31		mg/kg-dry	U	UJ	0.31			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.41		mg/kg-dry	U	UJ	0.41			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.63		mg/kg-dry	U	UJ	0.63			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1.4		mg/kg-dry	v	J	0.41			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.63		mg/kg-dry	U	UJ	0.63			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.21		mg/kg-dry	U	UJ	0.21			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.31		mg/kg-dry	U	UJ	0.31			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.21		mg/kg-dry	U	UJ	0.21			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.31		mg/kg-dry	U	UJ	0.31			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	61		mg/kg-dry	v	J	8.3			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	13		mg/kg-dry	U	UJ	13			
TP-15	TP-15	IIA	2	P2-00516	Sediment		Field Sample	7/1/2008	21373	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.21		mg/kg-dry	U	UJ	0.21			
TP-15	TP-15	IIA	2	P2-00971	Sediment		Field Sample	9/12/2008	18738	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.31		mg/kg-dry	U	UJ	0.31			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18746	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.8		mg/kg-dry	v		1		0.03	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21353	E300.0	O	Z	Anions	Fluoride, 1:2		2		mg/kg-dry	v		1		0.03	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21354	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1810		mg/kg-dry	v		5		0.33	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18747	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1600		mg/kg-dry	v	J	5		0.37	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21357	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		237		mg/kg-dry	v	J	34		5.61	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18750	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		507		mg/kg-dry	v	J	38		6.27	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21356	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		230		mg/kg-dry	v	J	34		2.79	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18749	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		527		mg/kg-dry	v	J	38		3.11	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21356	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		175		mg/kg-dry	v	J	34		5.01	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18749	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		332		mg/kg-dry	v	J	38		5.59	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21357	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	678		mg/kg-dry	v	J	34		11.16	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21364	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	792		mg/kg-dry	v		34			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18750	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	1410		mg/kg-dry	v	J	38		12.46	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18756	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	2100		mg/kg-dry	v		38			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Aluminum	7429-90-5	34200		mg/kg-dry	v	J	5		3.48	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18752	SW6010B	O	Z	Metals	Aluminum	7429-90-5	24900		mg/kg-dry	v	J	5		1.55	
TP-16	**TP-16**	**IIA**	**2**	**P2-00515**	**Sediment**		**Field Sample**	**7/1/2008**	21361	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001865119**	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18754	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00416	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21361	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18754	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.03	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Barium	7440-39-3	1970		mg/kg-dry	v	J	5		0.12	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18753	SW6010B	O	Z	Metals	Barium	7440-39-3	1320		mg/kg-dry	v		5		0.11	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21359	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.01	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18752	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21359	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		3.59	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18754	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.59	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21361	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.002141776	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18752	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.24	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Chromium	7440-47-3	468		mg/kg-dry	v	J	5		0.77	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18753	SW6010B	O	Z	Metals	Chromium	7440-47-3	322		mg/kg-dry	v		5		0.68	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21362	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.33	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Cobalt	7440-48-4	53		mg/kg-dry	v	J	5		1.39	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18753	SW6010B	O	Z	Metals	Cobalt	7440-48-4	44		mg/kg-dry	v		5		1.24	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Copper	7440-50-8	92		mg/kg-dry	v	J	5		0.69	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18753	SW6010B	O	Z	Metals	Copper	7440-50-8	68		mg/kg-dry	v		5		0.61	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Iron	7439-89-6	53300		mg/kg-dry	v	J	40		42.12	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18753	SW6010B	O	Z	Metals	Iron	7439-89-6	45400		mg/kg-dry	v		40		37.62	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Lead	7439-92-1	72		mg/kg-dry	v	J	5		4.62	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18753	SW6010B	O	Z	Metals	Lead	7439-92-1	66		mg/kg-dry	v		5		4.13	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Manganese	7439-96-5	823		mg/kg-dry	v	J	5		0.22	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18753	SW6010B	O	Z	Metals	Manganese	7439-96-5	686		mg/kg-dry	v		5		0.2	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21363	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18755	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Nickel	7440-02-0	124		mg/kg-dry	v	J	5		1.6	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18753	SW6010B	O	Z	Metals	Nickel	7440-02-0	96		mg/kg-dry	v		5		1.43	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21361	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.002150185	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18754	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.0048	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21359	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.23	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18752	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.51	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21361	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.001655735	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18754	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.0037	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Vanadium	7440-62-2	84		mg/kg-dry	v	J	1		1	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18753	SW6010B	O	Z	Metals	Vanadium	7440-62-2	59		mg/kg-dry	v		1		0.89	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21360	SW6010B	O	Z	Metals	Zinc	7440-66-6	75		mg/kg-dry	v	J	5		1.04	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18753	SW6010B	O	Z	Metals	Zinc	7440-66-6	60		mg/kg-dry	v		5		0.93	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21355	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.39		wt%	v		0.01		0.01	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18748	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.65		wt%	v		0.01		0.01	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21351	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	70.3		wt%	v		0.2		0.01	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18744	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	73.4		wt%	v		0.2		0.01	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21352	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18745	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21351	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	29.7		wt%	v		0.01		0.01	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18744	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	26.6		wt%	v		0.01		0.01	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.1		mg/kg-dry	U		1.1		0.2	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.3		mg/kg-dry	U		1.3		0.22	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.1		mg/kg-dry	U		1.1		0.26	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.3		mg/kg-dry	U		1.3		0.3	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.1		mg/kg-dry	U		1.1		0.2	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.3		mg/kg-dry	U		1.3		0.22	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.1		mg/kg-dry	U		1.1		0.2	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.3		mg/kg-dry	U		1.3		0.22	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.1		mg/kg-dry	U		1.1		0.13	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.3		mg/kg-dry	U		1.3		0.15	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.1		mg/kg-dry	U		1.1		0.26	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.3		mg/kg-dry	U		1.3		0.3	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.1		mg/kg-dry	U		1.1		0.2	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.3		mg/kg-dry	U		1.3		0.22	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.1		mg/kg-dry	U		1.1		0.2	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.3		mg/kg-dry	U		1.3		0.22	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.1		mg/kg-dry	U		1.1		0.26	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.3		mg/kg-dry	U		1.3		0.3	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.1		mg/kg-dry	U		1.1		0.2	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.3		mg/kg-dry	U		1.3		0.22	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.1		mg/kg-dry	U		1.1		0.26	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.3		mg/kg-dry	U		1.3		0.3	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.1		mg/kg-dry	U		1.1		0.26	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.3		mg/kg-dry	U		1.3		0.3	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.1		mg/kg-dry	U		1.1		0.2	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.3		mg/kg-dry	U		1.3		0.22	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.1		mg/kg-dry	U		1.1		0.33	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.3		mg/kg-dry	U		1.3		0.37	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.1		mg/kg-dry	U		1.1		0.26	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.3		mg/kg-dry	U		1.3		0.3	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.1		mg/kg-dry	U		1.1		0.2	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.29		mg/kg-dry	J		1.3		0.22	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21365	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.1		mg/kg-dry	U		1.1		0.2	
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18757	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.37		mg/kg-dry	J		1.3		0.22	
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.21		mg/kg-dry	U	UJ	0.21			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.32		mg/kg-dry	U	UJ	0.32			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		8.5		mg/kg-dry	U	UJ	8.5			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		13		mg/kg-dry	U	UJ	13			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		8.5		mg/kg-dry	U	UJ	8.5			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		38		mg/kg-dry	v	J	13			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		15		mg/kg-dry	v	J	8.5			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		54		mg/kg-dry	v	J	13			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.21		mg/kg-dry	U	UJ	0.21			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.32		mg/kg-dry	U	UJ	0.32			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.21		mg/kg-dry	U	UJ	0.21			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.32		mg/kg-dry	U	UJ	0.32			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.42		mg/kg-dry	U	UJ	0.42			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.63		mg/kg-dry	U	UJ	0.63			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.42		mg/kg-dry	U	UJ	0.42			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		mg/kg-dry	U	UJ	1			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.21		mg/kg-dry	U	UJ	0.21			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.32		mg/kg-dry	U	UJ	0.32			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.21		mg/kg-dry	U	UJ	0.21			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.32		mg/kg-dry	U	UJ	0.32			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	17		mg/kg-dry	v	J	8.5			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	237		mg/kg-dry	v	J	13			
TP-16	TP-16	IIA	2	P2-00515	Sediment		Field Sample	7/1/2008	21358	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.21		mg/kg-dry	U	UJ	0.21			
TP-16	TP-16	IIA	2	P2-00972	Sediment		Field Sample	9/12/2008	18751	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.32		mg/kg-dry	U	UJ	0.32			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18760	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.3		mg/kg-dry	v		1		0.05	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21341	E300.0	O	Z	Anions	Fluoride, 1:2		5.9		mg/kg-dry	v		1		0.03	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21342	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1920		mg/kg-dry	v		5		0.35	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18761	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	657		mg/kg-dry	v	J	5		0.28	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18764	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		20		mg/kg-dry	J	J	28		4.69	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18763	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		28		mg/kg-dry	U	UJ	28		2.33	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18763	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		28		mg/kg-dry	U	UJ	28		4.18	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21350	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	200		mg/kg-dry	v		35			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18764	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	26		mg/kg-dry	J	J	28		9.33	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18769	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	206		mg/kg-dry	v		28			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21346	SW6010B	O	Z	Metals	Aluminum	7429-90-5	19600		mg/kg-dry	v	J	5		3.65	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Aluminum	7429-90-5	14300		mg/kg-dry	v	J	5		1.16	
TP-17	TP-17	**IIA**	2	**P2-00514**	**Sediment**		**Field Sample**	**7/1/2008**	21347	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001958672**	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18767	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00312	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21347	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.01	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18767	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.02	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21346	SW6010B	O	Z	Metals	Barium	7440-39-3	701		mg/kg-dry	v	J	5		0.13	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Barium	7440-39-3	379		mg/kg-dry	v		5		0.04	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21345	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21345	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		3.77	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18767	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.44	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21347	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.002249205	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.18	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21346	SW6010B	O	Z	Metals	Chromium	7440-47-3	76		mg/kg-dry	v	J	5		0.81	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Chromium	7440-47-3	20		mg/kg-dry	v		5		0.25	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21348	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.35	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21346	SW6010B	O	Z	Metals	Cobalt	7440-48-4	12		mg/kg-dry	v	J	5		1.46	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg-dry	v		5		0.46	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21346	SW6010B	O	Z	Metals	Copper	7440-50-8	41		mg/kg-dry	v	J	5		0.72	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Copper	7440-50-8	33		mg/kg-dry	v		5		0.23	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21346	SW6010B	O	Z	Metals	Iron	7439-89-6	17700		mg/kg-dry	v	J	30		29.49	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Iron	7439-89-6	11600		mg/kg-dry	v		9		9.38	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21347	SW6020	O	Z	Metals	Lead	7439-92-1	15		mg/kg-dry	v		5		0.01	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Lead	7439-92-1	11		mg/kg-dry	v		5		1.54	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21345	SW6010B	O	Z	Metals	Manganese	7439-96-5	339		mg/kg-dry	v	J	5		0.04	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Manganese	7439-96-5	364		mg/kg-dry	v		5		0.07	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21349	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18768	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21345	SW6010B	O	Z	Metals	Nickel	7440-02-0	22		mg/kg-dry	v	J	5		0.33	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Nickel	7440-02-0	11		mg/kg-dry	v		5		0.53	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21347	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.002258036	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		4.16	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21345	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.24	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.38	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21347	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.001738785	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18767	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00277	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21345	SW6010B	O	Z	Metals	Vanadium	7440-62-2	24		mg/kg-dry	v	J	1		0.21	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Vanadium	7440-62-2	18		mg/kg-dry	v		1		0.33	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21345	SW6010B	O	Z	Metals	Zinc	7440-66-6	38		mg/kg-dry	v	J	5		0.21	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18766	SW6010B	O	Z	Metals	Zinc	7440-66-6	33		mg/kg-dry	v		5		0.34	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21343	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.34		wt%	v		0.01		0.01	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18762	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		3.26		wt%	v		0.01		0.01	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21339	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	71.7		wt%	v		0.2		0.01	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18758	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	64.4		wt%	v		0.2		0.01	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21340	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.7		s.u.	v		0.1			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18759	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.6		s.u.	v		0.1			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21339	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	28.3		wt%	v		0.01		0.01	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18758	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	35.6		wt%	v		0.01		0.01	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.94		mg/kg-dry	U		0.94		0.16	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.94		mg/kg-dry	U		0.94		0.22	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.94		mg/kg-dry	U		0.94		0.16	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.94		mg/kg-dry	U		0.94		0.16	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.94		mg/kg-dry	U		0.94		0.11	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.94		mg/kg-dry	U		0.94		0.22	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.94		mg/kg-dry	U		0.94		0.16	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.94		mg/kg-dry	U		0.94		0.16	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.94		mg/kg-dry	U		0.94		0.22	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.94		mg/kg-dry	U		0.94		0.16	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.94		mg/kg-dry	U		0.94		0.22	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.94		mg/kg-dry	U		0.94		0.22	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.94		mg/kg-dry	U		0.94		0.16	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.94		mg/kg-dry	U		0.94		0.28	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.94		mg/kg-dry	U		0.94		0.22	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.94		mg/kg-dry	U		0.94		0.16	
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18770	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.94		mg/kg-dry	U		0.94		0.16	
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.24		mg/kg-dry	U	UJ	0.24			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.23		mg/kg-dry	U	UJ	0.23			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		9.6		mg/kg-dry	U	UJ	9.6			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		9.2		mg/kg-dry	U	UJ	9.2			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		9.6		mg/kg-dry	U	UJ	9.6			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		28		mg/kg-dry	v	J	9.2			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		14		mg/kg-dry	v	J	9.6			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		42		mg/kg-dry	v	J	9.2			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.24		mg/kg-dry	U	UJ	0.24			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.23		mg/kg-dry	U	UJ	0.23			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.24		mg/kg-dry	U	UJ	0.24			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.23		mg/kg-dry	U	UJ	0.23			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.48		mg/kg-dry	U	UJ	0.48			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.46		mg/kg-dry	U	UJ	0.46			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.48		mg/kg-dry	U	UJ	0.48			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.5		mg/kg-dry	U	UJ	0.5			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.24		mg/kg-dry	U	UJ	0.24			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.23		mg/kg-dry	U	UJ	0.23			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.24		mg/kg-dry	U	UJ	0.24			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.23		mg/kg-dry	U	UJ	0.23			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	17		mg/kg-dry	v	J	9.6			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	117		mg/kg-dry	v	J	9.2			
TP-17	TP-17	IIA	2	P2-00514	Sediment		Field Sample	7/1/2008	21344	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.24		mg/kg-dry	U	UJ	0.24			
TP-17	TP-17	IIA	2	P2-00973	Sediment		Field Sample	9/12/2008	18765	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.23		mg/kg-dry	U	UJ	0.23			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	17999	E300.0	O	Z	Anions	Fluoride	16984-48-8	4.7		mg/kg-dry	v		1		0.01	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16945	E300.0	O	Z	Anions	Fluoride, 1:2		4.6		mg/kg-dry	v		1		0.02	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16946	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2960		mg/kg-dry	v	J	5		0.2	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18000	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3060		mg/kg-dry	v		5		0.14	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16954	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	58		mg/kg-dry	v		21			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18007	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	171		mg/kg-dry	v		15			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Aluminum	7429-90-5	39800		mg/kg-dry	v		5		2.14	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18003	SW6010B	O	Z	Metals	Aluminum	7429-90-5	29300		mg/kg-dry	v	J	5		0.62	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16951	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00115	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18003	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.67	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16951	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.0097	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18003	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		2.03	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Barium	7440-39-3	2030		mg/kg-dry	v		5		0.07	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Barium	7440-39-3	1910		mg/kg-dry	v	J	5		0.04	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16949	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.0068	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16949	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.21	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18003	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.2	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16951	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00101	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18005	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00191	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Chromium	7440-47-3	608		mg/kg-dry	v		5		0.47	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Chromium	7440-47-3	518		mg/kg-dry	v	J	5		0.27	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16952	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.2	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Cobalt	7440-48-4	63		mg/kg-dry	v		5		0.85	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Cobalt	7440-48-4	53		mg/kg-dry	v		5		0.49	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Copper	7440-50-8	52		mg/kg-dry	v	J	5		0.42	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Copper	7440-50-8	48		mg/kg-dry	v		5		0.24	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Iron	7439-89-6	56300		mg/kg-dry	v		30		25.94	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Iron	7439-89-6	47800		mg/kg-dry	v	J	20		15	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Lead	7439-92-1	48		mg/kg-dry	v		5		2.84	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Lead	7439-92-1	40		mg/kg-dry	v		5		1.64	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Manganese	7439-96-5	997		mg/kg-dry	v		5		0.13	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Manganese	7439-96-5	851		mg/kg-dry	v	J	5		0.08	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16953	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18006	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Nickel	7440-02-0	146		mg/kg-dry	v		5		0.98	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Nickel	7440-02-0	123		mg/kg-dry	v		5		0.57	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16951	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00132	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18005	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00191	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16949	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.14	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18003	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.2	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16951	SW6020	O	Z	Metals	Thallium	7440-28-0	1.1		mg/kg-dry	v		0.6		0.00102	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18005	SW6020	O	Z	Metals	Thallium	7440-28-0	1.2		mg/kg-dry	v	J	0.6		0.00147	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Vanadium	7440-62-2	66		mg/kg-dry	v		1		0.61	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Vanadium	7440-62-2	54		mg/kg-dry	v	J	1		0.35	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16950	SW6010B	O	Z	Metals	Zinc	7440-66-6	60		mg/kg-dry	v		5		0.64	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18004	SW6010B	O	Z	Metals	Zinc	7440-66-6	49		mg/kg-dry	v		5		0.37	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16947	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.51		wt%	v		0.01		0.01	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18001	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.56		wt%	v		0.01		0.01	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16943	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	51.7		wt%	v		0.2		0.01	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	17997	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	33.2		wt%	v		0.2		0.01	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16944	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	17998	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.8		s.u.	v		0.1			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16943	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	48.3		wt%	v		0.01		0.01	
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	17997	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	66.8		wt%	v		0.01		0.01	
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.13		mg/kg-dry	U	UJ	0.13			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.17		mg/kg-dry	U	UJ	5.3			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		6.9		mg/kg-dry	U		6.9			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		5.3		mg/kg-dry	U	UJ	5.3			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		6.9		mg/kg-dry	U		6.9			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		5.3		mg/kg-dry	U	UJ	5.3			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		6.9		mg/kg-dry	U		6.9			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.13		mg/kg-dry	U	UJ	0.13			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.17		mg/kg-dry	U		0.17			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.13		mg/kg-dry	U	UJ	0.13			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.17		mg/kg-dry	U		0.17			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.26		mg/kg-dry	U	UJ	0.26			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.34		mg/kg-dry	U		0.34			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.26		mg/kg-dry	U	UJ	0.26			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.34		mg/kg-dry	U		0.34			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.13		mg/kg-dry	U	UJ	0.13			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.17		mg/kg-dry	U		0.17			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.13		mg/kg-dry	U	UJ	0.13			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.17		mg/kg-dry	U		0.17			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	5.3		mg/kg-dry	U	UJ	5.3			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	6.9		mg/kg-dry	U		6.9			
TP-2	TP-2	IIA	2	P2-00478	Sediment		Field Sample	6/27/2008	16948	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.13		mg/kg-dry	U	UJ	0.13			
TP-2	TP-2	IIA	2	P2-00948	Sediment		Field Sample	9/10/2008	18002	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.17		mg/kg-dry	U		0.17			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18020	E300.0	O	Z	Anions	Fluoride	16984-48-8	18		mg/kg-dry	v		1		0.01	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16986	E300.0	O	Z	Anions	Fluoride, 1:2		14		mg/kg-dry	v		1		0.01	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16987	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3800		mg/kg-dry	v	J	5		0.16	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18021	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3550		mg/kg-dry	v		5		0.12	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16995	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	101		mg/kg-dry	v		16			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18028	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	150		mg/kg-dry	v		12			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Aluminum	7429-90-5	35300		mg/kg-dry	v		5		1.67	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Aluminum	7429-90-5	34400		mg/kg-dry	v	J	5		1.01	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16992	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000895	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18024	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.37	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16992	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.00756	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18024	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		1.66	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Barium	7440-39-3	2640		mg/kg-dry	v		5		0.05	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Barium	7440-39-3	2340		mg/kg-dry	v	J	5		0.03	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16990	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.0053	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18024	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00808	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16990	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.72	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18024	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.63	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16992	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.000791	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18026	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00157	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Chromium	7440-47-3	508		mg/kg-dry	v		5		0.37	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Chromium	7440-47-3	469		mg/kg-dry	v	J	5		0.22	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16993	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.16	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Cobalt	7440-48-4	67		mg/kg-dry	v		5		0.66	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Cobalt	7440-48-4	59		mg/kg-dry	v		5		0.4	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Copper	7440-50-8	60		mg/kg-dry	v	J	5		0.33	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Copper	7440-50-8	62		mg/kg-dry	v		5		0.2	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Iron	7439-89-6	53100		mg/kg-dry	v		20		20.2	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Iron	7439-89-6	49700		mg/kg-dry	v	J	10		12.32	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Lead	7439-92-1	45		mg/kg-dry	v		5		2.21	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Lead	7439-92-1	43		mg/kg-dry	v		5		1.35	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Manganese	7439-96-5	1230		mg/kg-dry	v		5		0.1	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Manganese	7439-96-5	864		mg/kg-dry	v	J	5		0.06	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16994	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18027	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Nickel	7440-02-0	137		mg/kg-dry	v		5		0.77	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Nickel	7440-02-0	127		mg/kg-dry	v		5		0.46	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16992	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00103	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18026	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00157	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16990	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.11	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18024	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.16	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16992	SW6020	O	Z	Metals	Thallium	7440-28-0	1		mg/kg-dry	v		0.6		0.000794	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18026	SW6020	O	Z	Metals	Thallium	7440-28-0	1		mg/kg-dry	v	J	0.6		0.00121	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Vanadium	7440-62-2	69		mg/kg-dry	v		1		0.48	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Vanadium	7440-62-2	60		mg/kg-dry	v	J	1		0.29	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16991	SW6010B	O	Z	Metals	Zinc	7440-66-6	60		mg/kg-dry	v		5		0.5	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18025	SW6010B	O	Z	Metals	Zinc	7440-66-6	55		mg/kg-dry	v		5		0.3	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16988	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.44		wt%	v		0.01		0.01	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18022	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.88		wt%	v		0.01		0.01	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16984	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	38		wt%	v		0.2		0.01	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18018	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	18.7		wt%	v		0.2		0.01	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16985	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.4		s.u.	v		0.1			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18019	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.5		s.u.	v		0.1			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16984	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	62		wt%	v		0.01		0.01	
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18018	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	81.3		wt%	v		0.01		0.01	
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.09		mg/kg-dry	U	UJ	0.09			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.082		mg/kg-dry	U		0.082			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.6		mg/kg-dry	U	UJ	3.6			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.3		mg/kg-dry	U		3.3			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.6		mg/kg-dry	U	UJ	3.6			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.3		mg/kg-dry	U		3.3			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.6		mg/kg-dry	U	UJ	3.6			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.3		mg/kg-dry	U		3.3			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.09		mg/kg-dry	U	UJ	0.09			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.082		mg/kg-dry	U		0.082			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.09		mg/kg-dry	U	UJ	0.09			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.082		mg/kg-dry	U		0.082			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.18		mg/kg-dry	U	UJ	0.18			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.16		mg/kg-dry	U		0.16			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.18		mg/kg-dry	U	UJ	0.18			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.16		mg/kg-dry	U		0.16			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.09		mg/kg-dry	U	UJ	0.09			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.082		mg/kg-dry	U		0.082			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.09		mg/kg-dry	U	UJ	0.09			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.082		mg/kg-dry	U		0.082			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.6		mg/kg-dry	U	UJ	3.6			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.3		mg/kg-dry	U		3.3			
TP-3	TP-3	IIA	2	P2-00483	Sediment		Field Sample	6/28/2008	16989	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.09		mg/kg-dry	U	UJ	0.09			
TP-3	TP-3	IIA	2	P2-00950	Sediment		Field Sample	9/10/2008	18023	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.082		mg/kg-dry	U		0.082			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18041	E300.0	O	Z	Anions	Fluoride	16984-48-8	4		mg/kg-dry	v		1		0.01	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16971	E300.0	O	Z	Anions	Fluoride, 1:2		4.6		mg/kg-dry	v		1		0.01	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16972	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	4780		mg/kg-dry	v	J	5		0.17	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18042	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3820		mg/kg-dry	v		5		0.15	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16975	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		21		mg/kg-dry	v	J	18		2.92	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16974	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		130		mg/kg-dry	v	J	18		1.45	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16974	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		34		mg/kg-dry	v	J	18		2.61	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16975	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	207		mg/kg-dry	v	J	18		5.81	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16982	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	325		mg/kg-dry	v		18			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18049	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	142		mg/kg-dry	v		15			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Aluminum	7429-90-5	35600		mg/kg-dry	v		5		1.81	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18046	SW6010B	O	Z	Metals	Aluminum	7429-90-5	36200		mg/kg-dry	v	J	5		1.26	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16979	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000971	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18045	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.7	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16979	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.00821	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18045	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		2.06	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Barium	7440-39-3	2030		mg/kg-dry	v		5		0.06	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18046	SW6010B	O	Z	Metals	Barium	7440-39-3	2090		mg/kg-dry	v	J	5		0.04	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16977	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00576	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18045	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16977	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.87	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18045	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.26	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16979	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00112	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18045	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.1	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Chromium	7440-47-3	549		mg/kg-dry	v		5		0.4	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18046	SW6010B	O	Z	Metals	Chromium	7440-47-3	394		mg/kg-dry	v	J	5		0.28	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16980	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.17	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Cobalt	7440-48-4	61		mg/kg-dry	v		5		0.72	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18046	SW6010B	O	Z	Metals	Cobalt	7440-48-4	58		mg/kg-dry	v		5		0.5	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Copper	7440-50-8	54		mg/kg-dry	v	J	5		0.35	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18046	SW6010B	O	Z	Metals	Copper	7440-50-8	45		mg/kg-dry	v		5		0.25	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Iron	7439-89-6	51900		mg/kg-dry	v		20		21.94	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18046	SW6010B	O	Z	Metals	Iron	7439-89-6	51900		mg/kg-dry	v	J	20		15.28	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Lead	7439-92-1	49		mg/kg-dry	v		5		2.4	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18045	SW6010B	O	Z	Metals	Lead	7439-92-1	30		mg/kg-dry	v		5		0.83	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Manganese	7439-96-5	948		mg/kg-dry	v		5		0.11	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18046	SW6010B	O	Z	Metals	Manganese	7439-96-5	975		mg/kg-dry	v	J	5		0.08	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16981	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18048	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Nickel	7440-02-0	120		mg/kg-dry	v		5		0.83	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	9/10/2008	18046	SW6010B	O	Z	Metals	Nickel	7440-02-0	103		mg/kg-dry	v		5		0.58	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16979	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00112	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18047	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00195	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16977	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.12	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18045	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.2	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16979	SW6020	O	Z	Metals	Thallium	7440-28-0	1.1		mg/kg-dry	v		0.6		0.000862	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18047	SW6020	O	Z	Metals	Thallium	7440-28-0	1.2		mg/kg-dry	v	J	0.6		0.0015	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Vanadium	7440-62-2	70		mg/kg-dry	v		1		0.52	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18046	SW6010B	O	Z	Metals	Vanadium	7440-62-2	57		mg/kg-dry	v	J	1		0.36	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16978	SW6010B	O	Z	Metals	Zinc	7440-66-6	58		mg/kg-dry	v		5		0.54	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18046	SW6010B	O	Z	Metals	Zinc	7440-66-6	53		mg/kg-dry	v		5		0.37	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16973	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.15		wt%	v		0.01		0.01	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18043	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.36		wt%	v		0.01		0.01	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16969	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	42.9		wt%	v		0.2		0.01	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18039	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	34.4		wt%	v		0.2		0.01	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16970	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.4		s.u.	v		0.1			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18040	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.7		s.u.	v		0.1			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16969	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	57.1		wt%	v		0.01		0.01	
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18039	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	65.6		wt%	v		0.01		0.01	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.59		mg/kg-dry	U		0.59		0.1	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.59		mg/kg-dry	U		0.59		0.14	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.59		mg/kg-dry	U		0.59		0.1	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.59		mg/kg-dry	U		0.59		0.1	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.59		mg/kg-dry	U		0.59		0.07	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.59		mg/kg-dry	U		0.59		0.14	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.59		mg/kg-dry	U		0.59		0.1	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.59		mg/kg-dry	U		0.59		0.1	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.59		mg/kg-dry	U		0.59		0.14	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.59		mg/kg-dry	U		0.59		0.1	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.59		mg/kg-dry	U		0.59		0.14	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.59		mg/kg-dry	U		0.59		0.14	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.59		mg/kg-dry	U		0.59		0.1	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.59		mg/kg-dry	U		0.59		0.17	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.59		mg/kg-dry	U		0.59		0.14	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.59		mg/kg-dry	U		0.59		0.1	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16983	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.59		mg/kg-dry	U		0.59		0.1	
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.098		mg/kg-dry	U	UJ	0.098			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.098		mg/kg-dry	U		0.098			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.9		mg/kg-dry	U	UJ	3.9			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.9		mg/kg-dry	U		3.9			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.9		mg/kg-dry	U	UJ	3.9			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.9		mg/kg-dry	U		3.9			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.9		mg/kg-dry	U	UJ	3.9			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.9		mg/kg-dry	U		3.9			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.098		mg/kg-dry	U	UJ	0.098			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.098		mg/kg-dry	U		0.098			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.098		mg/kg-dry	U	UJ	0.098			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.098		mg/kg-dry	U		0.098			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.2		mg/kg-dry	U	UJ	0.2			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.2		mg/kg-dry	U		0.2			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.2		mg/kg-dry	U	UJ	0.2			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.2		mg/kg-dry	U		0.2			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.098		mg/kg-dry	U	UJ	0.098			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.098		mg/kg-dry	U		0.098			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.098		mg/kg-dry	U	UJ	0.098			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.098		mg/kg-dry	U		0.098			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.9		mg/kg-dry	U	UJ	3.9			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.9		mg/kg-dry	U		3.9			
TP-4	TP-4	IIA	2	P2-00482	Sediment		Field Sample	6/28/2008	16976	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.098		mg/kg-dry	U	UJ	0.098			
TP-4	TP-4	IIA	2	P2-00952	Sediment		Field Sample	9/10/2008	18044	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.098		mg/kg-dry	U		0.098			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18031	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.8		mg/kg-dry	v		1		0.01	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	16998	E300.0	O	Z	Anions	Fluoride, 1:2		4.9		mg/kg-dry	v		1		0.02	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	16999	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	4330		mg/kg-dry	v	J	5		0.23	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18032	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3630		mg/kg-dry	v		5		0.16	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17002	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		61		mg/kg-dry	v	J	24		3.96	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17001	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		301		mg/kg-dry	v	J	24		1.97	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17001	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		56		mg/kg-dry	v	J	24		3.53	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17002	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	454		mg/kg-dry	v	J	24		7.88	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17010	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	605		mg/kg-dry	v		24			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18038	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	97		mg/kg-dry	v		17			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Aluminum	7429-90-5	36300		mg/kg-dry	v		5		2.45	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Aluminum	7429-90-5	30400		mg/kg-dry	v	J	5		0.7	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17005	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		1.32	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.89	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17005	SW6010B	O	Z	Metals	Arsenic	7440-38-2	4		mg/kg-dry	v		2		1.6	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		2.3	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Barium	7440-39-3	2950		mg/kg-dry	v	J	5		0.08	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Barium	7440-39-3	1850		mg/kg-dry	v	J	5		0.02	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17005	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.0078	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17005	SW6010B	O	Z	Metals	Boron	7440-42-8	6		mg/kg-dry	v		5		2.53	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.62	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17005	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.07	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18036	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00216	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Chromium	7440-47-3	406		mg/kg-dry	v		5		0.54	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Chromium	7440-47-3	457		mg/kg-dry	v	J	5		0.15	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17008	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.23	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Cobalt	7440-48-4	75		mg/kg-dry	v		5		0.98	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Cobalt	7440-48-4	49		mg/kg-dry	v		5		0.28	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Copper	7440-50-8	79		mg/kg-dry	v		5		0.48	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Copper	7440-50-8	72		mg/kg-dry	v		5		0.13	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Iron	7439-89-6	62900		mg/kg-dry	v	J	30		29.72	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Iron	7439-89-6	42300		mg/kg-dry	v	J	9		8.5	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Lead	7439-92-1	72		mg/kg-dry	v		5		3.26	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Lead	7439-92-1	48		mg/kg-dry	v		5		0.93	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Manganese	7439-96-5	1250		mg/kg-dry	v		5		0.15	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Manganese	7439-96-5	747		mg/kg-dry	v	J	5		0.04	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17009	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18037	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Nickel	7440-02-0	109		mg/kg-dry	v		5		1.13	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Nickel	7440-02-0	106		mg/kg-dry	v		5		0.32	
TP-5	**TP-5**	**IIA**	**2**	**P2-00484**	**Sediment**		**Field Sample**	**6/28/2008**	17005	**SW6010B**	O	**Z**	**Metals**	**Selenium**	**7782-49-2**	**5**		**mg/kg-dry**	**U**	**R**	**5**		**1.75**	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18036	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00217	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17005	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.16	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.23	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17007	SW6020	O	Z	Metals	Thallium	7440-28-0	1.2		mg/kg-dry	v	J	0.6		0.00117	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18036	SW6020	O	Z	Metals	Thallium	7440-28-0	0.9		mg/kg-dry	v	J	0.6		0.00167	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Vanadium	7440-62-2	95		mg/kg-dry	v		1		0.71	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Vanadium	7440-62-2	60		mg/kg-dry	v	J	1		0.2	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17006	SW6010B	O	Z	Metals	Zinc	7440-66-6	79		mg/kg-dry	v		5		0.73	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18035	SW6010B	O	Z	Metals	Zinc	7440-66-6	54		mg/kg-dry	v		5		0.21	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17000	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.14		wt%	v		0.01		0.01	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18033	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.8		wt%	v		0.01		0.01	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	16996	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	57.9		wt%	v		0.2		0.01	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17004	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	49		wt%	v		0.2		0.01	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18029	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	41.1		wt%	v		0.2		0.01	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	16997	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18030	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	16996	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	42.1		wt%	v		0.01		0.01	
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18029	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	58.9		wt%	v		0.01		0.01	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.79		mg/kg-dry	U		0.79		0.14	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.79		mg/kg-dry	U		0.79		0.18	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.79		mg/kg-dry	U		0.79		0.14	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.79		mg/kg-dry	U		0.79		0.14	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.79		mg/kg-dry	U		0.79		0.09	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.79		mg/kg-dry	U		0.79		0.18	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.79		mg/kg-dry	U		0.79		0.14	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.79		mg/kg-dry	U		0.79		0.14	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.79		mg/kg-dry	U		0.79		0.18	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.79		mg/kg-dry	U		0.79		0.14	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.79		mg/kg-dry	U		0.79		0.18	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.79		mg/kg-dry	U		0.79		0.18	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.79		mg/kg-dry	U		0.79		0.14	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.79		mg/kg-dry	U		0.79		0.23	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.79		mg/kg-dry	U		0.79		0.18	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.79		mg/kg-dry	U		0.79		0.14	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17011	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.79		mg/kg-dry	U		0.79		0.14	
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.15		mg/kg-dry	U	UJ	0.15			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.11		mg/kg-dry	U		0.11			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		6.1		mg/kg-dry	U	UJ	6.1			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		4.3		mg/kg-dry	U		4.3			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		6.1		mg/kg-dry	U	UJ	6.1			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		4.3		mg/kg-dry	U		4.3			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		6.1		mg/kg-dry	U	UJ	6.1			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		4.3		mg/kg-dry	U		4.3			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.15		mg/kg-dry	U	UJ	0.15			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.11		mg/kg-dry	U		0.11			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.15		mg/kg-dry	U	UJ	0.15			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.11		mg/kg-dry	U		0.11			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.3		mg/kg-dry	U	UJ	0.3			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.22		mg/kg-dry	U		0.22			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.3		mg/kg-dry	U	UJ	0.3			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.22		mg/kg-dry	U		0.22			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.15		mg/kg-dry	U	UJ	0.15			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.11		mg/kg-dry	U		0.11			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.15		mg/kg-dry	U	UJ	0.15			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.11		mg/kg-dry	U		0.11			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	6.1		mg/kg-dry	U	UJ	6.1			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	4.3		mg/kg-dry	U		4.3			
TP-5	TP-5	IIA	2	P2-00484	Sediment		Field Sample	6/28/2008	17003	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.15		mg/kg-dry	U	UJ	0.15			
TP-5	TP-5	IIA	2	P2-00951	Sediment		Field Sample	9/10/2008	18034	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.11		mg/kg-dry	U		0.11			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18868	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.4		mg/kg-dry	v		1		0.02	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21200	E300.0	O	Z	Anions	Fluoride, 1:2		1.7		mg/kg-dry	v		1		0.02	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21201	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2980		mg/kg-dry	v		5		0.24	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18869	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	3610		mg/kg-dry	v		5		0.29	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21204	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		86		mg/kg-dry	v	J	23		3.91	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18872	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		68		mg/kg-dry	v	J	30		4.99	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21203	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		167		mg/kg-dry	v	J	23		1.94	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18871	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		106		mg/kg-dry	v	J	30		2.48	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21203	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		284		mg/kg-dry	v	J	23		3.48	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18871	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		228		mg/kg-dry	v	J	30		4.45	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21204	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	546		mg/kg-dry	v	J	23		7.77	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21211	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	604		mg/kg-dry	v		23			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18872	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	411		mg/kg-dry	v	J	30		9.93	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18878	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	617		mg/kg-dry	v		30			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Aluminum	7429-90-5	34700		mg/kg-dry	v	J	5		2.42	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18874	SW6010B	O	Z	Metals	Aluminum	7429-90-5	26000		mg/kg-dry	v	J	5		1.23	
TP-6	**TP-6**	**IIA**	**2**	**P2-00503**	**Sediment**		**Field Sample**	**7/1/2008**	21208	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001298595**	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18876	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00332	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21208	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18876	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Barium	7440-39-3	2570		mg/kg-dry	v	J	5		0.08	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18875	SW6010B	O	Z	Metals	Barium	7440-39-3	1830		mg/kg-dry	v	J	5		0.08	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21208	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.000282845	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18874	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21206	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.5	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18876	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.47	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21208	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001491218	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18874	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.19	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Chromium	7440-47-3	639		mg/kg-dry	v	J	5		0.53	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18875	SW6010B	O	Z	Metals	Chromium	7440-47-3	439		mg/kg-dry	v	J	5		0.54	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21209	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.23	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Cobalt	7440-48-4	64		mg/kg-dry	v	J	5		0.96	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18874	SW6010B	O	Z	Metals	Cobalt	7440-48-4	46		mg/kg-dry	v		5		0.49	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Copper	7440-50-8	55		mg/kg-dry	v	J	5		0.48	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18874	SW6010B	O	Z	Metals	Copper	7440-50-8	46		mg/kg-dry	v		5		0.24	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Iron	7439-89-6	52000		mg/kg-dry	v	J	30		29.33	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18875	SW6010B	O	Z	Metals	Iron	7439-89-6	41200		mg/kg-dry	v		30		29.98	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Lead	7439-92-1	52		mg/kg-dry	v	J	5		3.22	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18874	SW6010B	O	Z	Metals	Lead	7439-92-1	35		mg/kg-dry	v		5		1.64	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Manganese	7439-96-5	902		mg/kg-dry	v	J	5		0.15	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18875	SW6010B	O	Z	Metals	Manganese	7439-96-5	669		mg/kg-dry	v	J	5		0.16	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21210	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.04	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18877	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Nickel	7440-02-0	145		mg/kg-dry	v	J	5		1.11	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18874	SW6010B	O	Z	Metals	Nickel	7440-02-0	97		mg/kg-dry	v		5		0.57	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21208	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001497073	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18876	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00383	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21206	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.16	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18874	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.41	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21208	SW6020	O	Z	Metals	Thallium	7440-28-0	1		mg/kg-dry	v		0.6		0.00115281	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18876	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.00295	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Vanadium	7440-62-2	67		mg/kg-dry	v	J	1		0.7	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18875	SW6010B	O	Z	Metals	Vanadium	7440-62-2	51		mg/kg-dry	v		1		0.71	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21207	SW6010B	O	Z	Metals	Zinc	7440-66-6	53		mg/kg-dry	v	J	5		0.72	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18874	SW6010B	O	Z	Metals	Zinc	7440-66-6	41		mg/kg-dry	v		5		0.37	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21202	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.23		wt%	v		0.01		0.01	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18870	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.55		wt%	v		0.01		0.01	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21198	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	57.3		wt%	v		0.2		0.01	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18866	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	66.6		wt%	v		0.2		0.01	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21199	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18867	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.8		s.u.	v		0.1			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21198	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	42.7		wt%	v		0.01		0.01	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18866	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	33.4		wt%	v		0.01		0.01	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.78		mg/kg-dry	U		0.78		0.14	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1		mg/kg-dry	U		1		0.17	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.78		mg/kg-dry	U		0.78		0.18	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1		mg/kg-dry	U		1		0.23	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.78		mg/kg-dry	U		0.78		0.14	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1		mg/kg-dry	U		1		0.17	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.78		mg/kg-dry	U		0.78		0.14	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1		mg/kg-dry	U		1		0.17	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.78		mg/kg-dry	U		0.78		0.09	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1		mg/kg-dry	U		1		0.11	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.78		mg/kg-dry	U		0.78		0.18	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1		mg/kg-dry	U		1		0.23	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.78		mg/kg-dry	U		0.78		0.14	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1		mg/kg-dry	U		1		0.17	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.78		mg/kg-dry	U		0.78		0.14	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1		mg/kg-dry	U		1		0.17	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.78		mg/kg-dry	U		0.78		0.18	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1		mg/kg-dry	U		1		0.23	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.78		mg/kg-dry	U		0.78		0.14	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1		mg/kg-dry	U		1		0.17	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.78		mg/kg-dry	U		0.78		0.18	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1		mg/kg-dry	U		1		0.23	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.78		mg/kg-dry	U		0.78		0.18	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1		mg/kg-dry	U		1		0.23	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.78		mg/kg-dry	U		0.78		0.14	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1		mg/kg-dry	U		1		0.17	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.78		mg/kg-dry	U		0.78		0.23	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1		mg/kg-dry	U		1		0.29	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.78		mg/kg-dry	U		0.78		0.18	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1		mg/kg-dry	U		1		0.23	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.78		mg/kg-dry	U		0.78		0.14	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1		mg/kg-dry	U		1		0.17	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21212	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.78		mg/kg-dry	U		0.78		0.14	
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18879	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1		mg/kg-dry	U		1		0.17	
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.15		mg/kg-dry	U	UJ	0.15			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.24		mg/kg-dry	U	UJ	0.24			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		6.2		mg/kg-dry	U	UJ	6.2			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		9.8		mg/kg-dry	U	UJ	9.8			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		6.2		mg/kg-dry	U	UJ	6.2			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		9.8		mg/kg-dry	U	UJ	9.8			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		6.2		mg/kg-dry	U	UJ	6.2			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		14		mg/kg-dry	v	J	9.8			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.15		mg/kg-dry	U	UJ	0.15			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.24		mg/kg-dry	U	UJ	0.24			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.15		mg/kg-dry	U	UJ	0.15			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.24		mg/kg-dry	U	UJ	0.24			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.31		mg/kg-dry	U	UJ	0.31			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.49		mg/kg-dry	U	UJ	0.49			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.31		mg/kg-dry	U	UJ	0.31			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.49		mg/kg-dry	U	UJ	0.49			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.15		mg/kg-dry	U	UJ	0.15			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.24		mg/kg-dry	U	UJ	0.24			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.15		mg/kg-dry	U	UJ	0.15			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.24		mg/kg-dry	U	UJ	0.24			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	23		mg/kg-dry	v	J	6.2			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	37		mg/kg-dry	v	J	9.8			
TP-6	TP-6	IIA	2	P2-00503	Sediment		Field Sample	7/1/2008	21205	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.15		mg/kg-dry	U	UJ	0.15			
TP-6	TP-6	IIA	2	P2-00982	Sediment		Field Sample	9/13/2008	18873	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.24		mg/kg-dry	U	UJ	0.24			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18854	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	v		1		0.05	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21215	E300.0	O	Z	Anions	Fluoride, 1:2		1.4		mg/kg-dry	v		1		0.02	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21216	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2410		mg/kg-dry	v		5		0.24	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18855	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	527		mg/kg	v		5		0.1	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21219	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		216		mg/kg-dry	v	J	25		4.16	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18858	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		20		mg/kg-dry	J	J	30		4.98	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21218	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		293		mg/kg-dry	v	J	25		2.06	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18857	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		38		mg/kg-dry	v	J	30		2.47	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21218	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		334		mg/kg-dry	v	J	25		3.71	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18857	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		35		mg/kg-dry	v	J	30		4.44	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21219	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	870		mg/kg-dry	v	J	25		8.27	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21226	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	992		mg/kg-dry	v		25			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18858	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	105		mg/kg-dry	v	J	30		9.9	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18864	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	360		mg/kg-dry	v		30			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Aluminum	7429-90-5	32100		mg/kg-dry	v	J	5		2.58	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18860	SW6010B	O	Z	Metals	Aluminum	7429-90-5	32300		mg/kg-dry	v	J	5		1.23	
TP-7	TP-7	**IIA**	2	**P2-00504**	**Sediment**		**Field Sample**	**7/1/2008**	21223	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001382104**	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18862	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00331	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21223	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18862	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Barium	7440-39-3	2210		mg/kg-dry	v	J	5		0.09	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18861	SW6010B	O	Z	Metals	Barium	7440-39-3	2350		mg/kg-dry	v	J	5		0.08	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21221	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.008187936	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18862	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.000721	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21221	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.66	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18862	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.47	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21223	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001587114	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18862	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.0038	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Chromium	7440-47-3	536		mg/kg-dry	v	J	5		0.57	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18861	SW6010B	O	Z	Metals	Chromium	7440-47-3	618		mg/kg-dry	v	J	5		0.54	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21224	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.24	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Cobalt	7440-48-4	57		mg/kg-dry	v	J	5		1.03	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18861	SW6010B	O	Z	Metals	Cobalt	7440-48-4	53		mg/kg-dry	v		5		0.98	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Copper	7440-50-8	52		mg/kg-dry	v	J	5		0.51	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18861	SW6010B	O	Z	Metals	Copper	7440-50-8	63		mg/kg-dry	v		5		0.49	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Iron	7439-89-6	47500		mg/kg-dry	v	J	30		31.21	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18861	SW6010B	O	Z	Metals	Iron	7439-89-6	47500		mg/kg-dry	v		30		29.9	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Lead	7439-92-1	48		mg/kg-dry	v	J	5		3.42	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18860	SW6010B	O	Z	Metals	Lead	7439-92-1	59		mg/kg-dry	v		5		1.64	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Manganese	7439-96-5	767		mg/kg-dry	v	J	5		0.16	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21225	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.04	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18863	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Nickel	7440-02-0	126		mg/kg-dry	v	J	5		1.19	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18861	SW6010B	O	Z	Metals	Nickel	7440-02-0	121		mg/kg-dry	v		5		1.14	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21223	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001593345	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18862	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00382	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21221	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.17	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18862	SW6020	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.00345	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21223	SW6020	O	Z	Metals	Thallium	7440-28-0	0.9		mg/kg-dry	v		0.6		0.001226944	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18862	SW6020	O	Z	Metals	Thallium	7440-28-0	1		mg/kg-dry	v		0.6		0.00294	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Vanadium	7440-62-2	62		mg/kg-dry	v	J	1		0.74	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18861	SW6010B	O	Z	Metals	Vanadium	7440-62-2	64		mg/kg-dry	v		1		0.71	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21222	SW6010B	O	Z	Metals	Zinc	7440-66-6	50		mg/kg-dry	v	J	5		0.77	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18860	SW6010B	O	Z	Metals	Zinc	7440-66-6	50		mg/kg-dry	v		5		0.37	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21217	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.43		wt%	v		0.01		0.01	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18856	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.28		wt%	v		0.01		0.01	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21213	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	59.9		wt%	v		0.2		0.01	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18852	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	66.5		wt%	v		0.2		0.01	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21214	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18853	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21213	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	40.1		wt%	v		0.01		0.01	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18852	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	33.5		wt%	v		0.01		0.01	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.83		mg/kg-dry	U		0.83		0.14	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.99		mg/kg-dry	U		0.99		0.17	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.83		mg/kg-dry	U		0.83		0.19	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.99		mg/kg-dry	U		0.99		0.23	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.83		mg/kg-dry	U		0.83		0.14	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.99		mg/kg-dry	U		0.99		0.17	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.83		mg/kg-dry	U		0.83		0.14	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.99		mg/kg-dry	U		0.99		0.17	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.83		mg/kg-dry	U		0.83		0.09	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.99		mg/kg-dry	U		0.99		0.11	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.83		mg/kg-dry	U		0.83		0.19	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.99		mg/kg-dry	U		0.99		0.23	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.83		mg/kg-dry	U		0.83		0.14	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.99		mg/kg-dry	U		0.99		0.17	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.83		mg/kg-dry	U		0.83		0.14	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.99		mg/kg-dry	U		0.99		0.17	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.83		mg/kg-dry	U		0.83		0.19	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.99		mg/kg-dry	U		0.99		0.23	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.83		mg/kg-dry	U		0.83		0.14	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.99		mg/kg-dry	U		0.99		0.17	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.83		mg/kg-dry	U		0.83		0.19	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.99		mg/kg-dry	U		0.99		0.23	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.83		mg/kg-dry	U		0.83		0.19	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.99		mg/kg-dry	U		0.99		0.23	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.42		mg/kg-dry	u		0.83		0.14	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.99		mg/kg-dry	U		0.99		0.17	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.83		mg/kg-dry	U		0.83		0.24	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.99		mg/kg-dry	U		0.99		0.29	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.83		mg/kg-dry	U		0.83		0.19	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.99		mg/kg-dry	U		0.99		0.23	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.31		mg/kg-dry	u		0.83		0.14	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.99		mg/kg-dry	U		0.99		0.17	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21227	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.83		mg/kg-dry	U		0.83		0.14	
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18865	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.99		mg/kg-dry	U		0.99		0.17	
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.18		mg/kg-dry	U	UJ	0.18			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.24		mg/kg-dry	U	UJ	0.24			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7.3		mg/kg-dry	U	UJ	7.3			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		9.5		mg/kg-dry	U	UJ	9.5			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		7.3		mg/kg-dry	U	UJ	7.3			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		8.3		mg/kg-dry	J	J	9.5			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		7.3		mg/kg-dry	U	UJ	7.3			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		8.4		mg/kg-dry	J	J	9.5			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.18		mg/kg-dry	U	UJ	0.18			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.24		mg/kg-dry	U	UJ	0.24			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.18		mg/kg-dry	U	UJ	0.18			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.24		mg/kg-dry	U	UJ	0.24			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.36		mg/kg-dry	U	UJ	0.36			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.47		mg/kg-dry	U	UJ	0.47			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.36		mg/kg-dry	U	UJ	0.36			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.47		mg/kg-dry	U	UJ	0.47			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.18		mg/kg-dry	U	UJ	0.18			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.24		mg/kg-dry	U	UJ	0.24			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.18		mg/kg-dry	U	UJ	0.18			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.24		mg/kg-dry	U	UJ	0.24			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	16		mg/kg-dry	v	J	7.3			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	42		mg/kg-dry	v	J	9.5			
TP-7	TP-7	IIA	2	P2-00504	Sediment		Field Sample	7/1/2008	21220	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.18		mg/kg-dry	U	UJ	0.18			
TP-7	TP-7	IIA	2	P2-00981	Sediment		Field Sample	9/13/2008	18859	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.24		mg/kg-dry	U	UJ	0.24			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18827	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	v		1		0.03	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21230	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.02	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21231	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	8390		mg/kg-dry	v		5		0.2	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18828	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2090		mg/kg-dry	v		5		0.34	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21234	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		103		mg/kg-dry	v	J	21		3.49	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18831	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		56		mg/kg-dry	v	J	34		5.72	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21233	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		106		mg/kg-dry	v	J	21		1.73	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18830	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		59		mg/kg-dry	v	J	34		2.84	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21233	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		298		mg/kg-dry	v	J	21		3.11	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18830	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		99		mg/kg-dry	v	J	34		5.1	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21234	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	523		mg/kg-dry	v	J	21		6.94	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21241	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	728		mg/kg-dry	v		21			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18831	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	216		mg/kg-dry	v	J	34		11.38	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Aluminum	7429-90-5	36700		mg/kg-dry	v	J	5		2.16	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Aluminum	7429-90-5	27200		mg/kg-dry	v	J	5		1.42	
TP-8	**TP-8**	**IIA**	**2**	**P2-00505**	**Sediment**		**Field Sample**	**7/1/2008**	21238	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001159557**	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18834	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.0038	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21238	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.009797156	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18834	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.03	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Barium	7440-39-3	2230		mg/kg-dry	v	J	5		0.07	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Barium	7440-39-3	1860		mg/kg-dry	v	J	5		0.05	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21236	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.006869511	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.02	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21236	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.23	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18834	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.54	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21238	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001331556	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.22	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Chromium	7440-47-3	307		mg/kg-dry	v	J	5		0.48	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Chromium	7440-47-3	469		mg/kg-dry	v	J	5		0.31	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21239	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.2	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Cobalt	7440-48-4	65		mg/kg-dry	v	J	5		0.86	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Cobalt	7440-48-4	50		mg/kg-dry	v		5		0.56	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Copper	7440-50-8	54		mg/kg-dry	v	J	5		0.42	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Copper	7440-50-8	54		mg/kg-dry	v		5		0.28	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Iron	7439-89-6	50800		mg/kg-dry	v	J	30		26.19	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Iron	7439-89-6	42800		mg/kg-dry	v		20		17.17	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Lead	7439-92-1	35		mg/kg-dry	v	J	5		2.87	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Lead	7439-92-1	47		mg/kg-dry	v		5		1.88	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Manganese	7439-96-5	794		mg/kg-dry	v	J	5		0.14	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Manganese	7439-96-5	557		mg/kg-dry	v	J	5		0.09	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21240	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.04	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18835	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.03	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Nickel	7440-02-0	112		mg/kg-dry	v	J	5		0.99	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Nickel	7440-02-0	115		mg/kg-dry	v		5		0.65	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21238	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001336784	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18834	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00438	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21236	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.14	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.47	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21238	SW6020	O	Z	Metals	Thallium	7440-28-0	0.8		mg/kg-dry	v		0.6		0.001029381	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18834	SW6020	O	Z	Metals	Thallium	7440-28-0	1		mg/kg-dry	v		0.6		0.00338	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Vanadium	7440-62-2	71		mg/kg-dry	v	J	1		0.62	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Vanadium	7440-62-2	51		mg/kg-dry	v		1		0.41	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21237	SW6010B	O	Z	Metals	Zinc	7440-66-6	60		mg/kg-dry	v	J	5		0.64	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18833	SW6010B	O	Z	Metals	Zinc	7440-66-6	49		mg/kg-dry	v		5		0.42	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21232	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.23		wt%	v		0.01		0.01	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18829	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.56		wt%	v		0.01		0.01	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21228	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	52.2		wt%	v		0.2		0.01	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18825	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	70.8		wt%	v		0.2		0.01	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21229	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18826	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21228	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	47.8		wt%	v		0.01		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18825	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	29.2		wt%	v		0.01		0.01	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.7		mg/kg-dry	U		0.7		0.12	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.1		mg/kg-dry	U		1.1		0.2	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.7		mg/kg-dry	U		0.7		0.16	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.1		mg/kg-dry	U		1.1		0.27	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.7		mg/kg-dry	U		0.7		0.12	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.1		mg/kg-dry	U		1.1		0.2	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.7		mg/kg-dry	U		0.7		0.12	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.1		mg/kg-dry	U		1.1		0.2	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.7		mg/kg-dry	U		0.7		0.08	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.1		mg/kg-dry	U		1.1		0.13	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.7		mg/kg-dry	U		0.7		0.16	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.1		mg/kg-dry	U		1.1		0.27	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.7		mg/kg-dry	U		0.7		0.12	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.1		mg/kg-dry	U		1.1		0.2	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.7		mg/kg-dry	U		0.7		0.12	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.1		mg/kg-dry	U		1.1		0.2	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.7		mg/kg-dry	U		0.7		0.16	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.1		mg/kg-dry	U		1.1		0.27	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.7		mg/kg-dry	U		0.7		0.12	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.1		mg/kg-dry	U		1.1		0.2	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.7		mg/kg-dry	U		0.7		0.16	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.1		mg/kg-dry	U		1.1		0.27	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.7		mg/kg-dry	U		0.7		0.16	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.1		mg/kg-dry	U		1.1		0.27	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.7		mg/kg-dry	U		0.7		0.12	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.1		mg/kg-dry	U		1.1		0.2	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.7		mg/kg-dry	U		0.7		0.2	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.1		mg/kg-dry	U		1.1		0.34	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.7		mg/kg-dry	U		0.7		0.16	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.1		mg/kg-dry	U		1.1		0.27	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.15		mg/kg-dry	u		0.7		0.12	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.1		mg/kg-dry	U		1.1		0.2	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21242	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.7		mg/kg-dry	U		0.7		0.12	
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18837	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.1		mg/kg-dry	U		1.1		0.2	
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.12		mg/kg-dry	U	UJ	0.12			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.27		mg/kg-dry	U	UJ	0.27			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		5		mg/kg-dry	U	UJ	5			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		11		mg/kg-dry	U	UJ	11			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		12		mg/kg-dry	v	J	5			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		11		mg/kg-dry	U	UJ	11			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		mg/kg-dry	v	J	5			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		11		mg/kg-dry	J	J	11			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.12		mg/kg-dry	U	UJ	0.12			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.27		mg/kg-dry	U	UJ	0.27			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.12		mg/kg-dry	U	UJ	0.12			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.27		mg/kg-dry	U	UJ	0.27			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.25		mg/kg-dry	U	UJ	0.25			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.54		mg/kg-dry	U	UJ	0.54			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.25		mg/kg-dry	U	UJ	0.25			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.54		mg/kg-dry	U	UJ	0.54			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.12		mg/kg-dry	U	UJ	0.12			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.27		mg/kg-dry	U	UJ	0.27			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.12		mg/kg-dry	U	UJ	0.12			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.27		mg/kg-dry	U	UJ	0.27			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	58		mg/kg-dry	v	J	5			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	28		mg/kg-dry	v	J	11			
TP-8	TP-8	IIA	2	P2-00505	Sediment		Field Sample	7/1/2008	21235	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.12		mg/kg-dry	U	UJ	0.12			
TP-8	TP-8	IIA	2	P2-00979	Sediment		Field Sample	9/13/2008	18832	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.27		mg/kg-dry	U	UJ	0.27			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18840	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.1		mg/kg-dry	v		1		0.02	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21245	E300.0	O	Z	Anions	Fluoride, 1:2		1.2		mg/kg-dry	v		1		0.02	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21246	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	4330		mg/kg-dry	v		5		0.22	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18841	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2280		mg/kg-dry	v		5		0.28	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21249	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		107		mg/kg-dry	v	J	23		3.78	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18844	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		56		mg/kg-dry	v	J	29		4.81	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21248	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		196		mg/kg-dry	v	J	23		1.87	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18843	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		183		mg/kg-dry	v	J	29		2.39	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21248	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		205		mg/kg-dry	v	J	23		3.37	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18843	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		147		mg/kg-dry	v	J	29		4.29	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21249	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	516		mg/kg-dry	v	J	23		7.51	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21256	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	644		mg/kg-dry	v		23			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18844	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	390		mg/kg-dry	v	J	29		9.57	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18850	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	550		mg/kg-dry	v		29			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21252	SW6010B	O	Z	Metals	Aluminum	7429-90-5	35100		mg/kg-dry	v	J	5		2.34	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18846	SW6010B	O	Z	Metals	Aluminum	7429-90-5	32600		mg/kg-dry	v	J	5		1.19	
TP-9	TP-9	**IIA**	2	**P2-00506**	**Sediment**		**Field Sample**	**7/1/2008**	21253	**SW6020**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.001255377**	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18848	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.0032	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21253	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.01	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18848	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.02	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21252	SW6010B	O	Z	Metals	Barium	7440-39-3	2970		mg/kg-dry	v	J	5		0.08	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18847	SW6010B	O	Z	Metals	Barium	7440-39-3	2640		mg/kg-dry	v	J	5		0.08	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21251	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U	UJ	5		0.007437175	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18846	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21251	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U	UJ	5		2.42	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18848	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.45	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21253	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.001441589	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18846	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	v		1		0.19	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21252	SW6010B	O	Z	Metals	Chromium	7440-47-3	513		mg/kg-dry	v	J	5		0.51	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18847	SW6010B	O	Z	Metals	Chromium	7440-47-3	510		mg/kg-dry	v	J	5		0.52	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21254	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.22	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21252	SW6010B	O	Z	Metals	Cobalt	7440-48-4	66		mg/kg-dry	v	J	5		0.93	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18847	SW6010B	O	Z	Metals	Cobalt	7440-48-4	57		mg/kg-dry	v		5		0.95	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21251	SW6010B	O	Z	Metals	Copper	7440-50-8	51		mg/kg-dry	v	J	5		0.09	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18846	SW6010B	O	Z	Metals	Copper	7440-50-8	64		mg/kg-dry	v		5		0.23	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21252	SW6010B	O	Z	Metals	Iron	7439-89-6	51800		mg/kg-dry	v	J	30		28.35	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18847	SW6010B	O	Z	Metals	Iron	7439-89-6	51100		mg/kg-dry	v		30		28.9	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21252	SW6010B	O	Z	Metals	Lead	7439-92-1	63		mg/kg-dry	v	J	5		3.11	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18846	SW6010B	O	Z	Metals	Lead	7439-92-1	55		mg/kg-dry	v		5		1.58	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21252	SW6010B	O	Z	Metals	Manganese	7439-96-5	955		mg/kg-dry	v	J	5		0.15	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18847	SW6010B	O	Z	Metals	Manganese	7439-96-5	810		mg/kg-dry	v	J	5		0.15	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21255	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.04	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18849	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21252	SW6010B	O	Z	Metals	Nickel	7440-02-0	127		mg/kg-dry	v	J	5		1.08	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18846	SW6010B	O	Z	Metals	Nickel	7440-02-0	115		mg/kg-dry	v		5		0.55	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21253	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.001447249	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18848	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00369	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21251	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U	UJ	1		0.15	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18846	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.39	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21253	SW6020	O	Z	Metals	Thallium	7440-28-0	0.9		mg/kg-dry	v		0.6		0.001114444	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18848	SW6020	O	Z	Metals	Thallium	7440-28-0	1		mg/kg-dry	v		0.6		0.00284	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21252	SW6010B	O	Z	Metals	Vanadium	7440-62-2	78		mg/kg-dry	v	J	1		0.67	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18847	SW6010B	O	Z	Metals	Vanadium	7440-62-2	70		mg/kg-dry	v		1		0.69	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21252	SW6010B	O	Z	Metals	Zinc	7440-66-6	67		mg/kg-dry	v	J	5		0.7	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18846	SW6010B	O	Z	Metals	Zinc	7440-66-6	58		mg/kg-dry	v		5		0.35	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21247	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.49		wt%	v		0.01		0.01	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18842	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.95		wt%	v		0.01		0.01	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21243	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	55.8		wt%	v		0.2		0.01	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18838	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	65.3		wt%	v		0.2		0.01	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21244	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18839	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	6.9		s.u.	v		0.1			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21243	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	44.2		wt%	v		0.01		0.01	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18838	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	34.7		wt%	v		0.01		0.01	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.76		mg/kg-dry	U		0.76		0.13	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.96		mg/kg-dry	U		0.96		0.17	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.76		mg/kg-dry	U		0.76		0.18	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.96		mg/kg-dry	U		0.96		0.23	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.76		mg/kg-dry	U		0.76		0.13	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.96		mg/kg-dry	U		0.96		0.17	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.76		mg/kg-dry	U		0.76		0.13	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.96		mg/kg-dry	U		0.96		0.17	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.76		mg/kg-dry	U		0.76		0.09	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.96		mg/kg-dry	U		0.96		0.11	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.76		mg/kg-dry	U		0.76		0.18	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.96		mg/kg-dry	U		0.96		0.23	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.76		mg/kg-dry	U		0.76		0.13	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.96		mg/kg-dry	U		0.96		0.17	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.76		mg/kg-dry	U		0.76		0.13	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.76		mg/kg-dry	U		0.76		0.18	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.96		mg/kg-dry	U		0.96		0.23	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.76		mg/kg-dry	U		0.76		0.13	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.96		mg/kg-dry	U		0.96		0.17	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.76		mg/kg-dry	U		0.76		0.18	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.96		mg/kg-dry	U		0.96		0.23	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.76		mg/kg-dry	U		0.76		0.18	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.96		mg/kg-dry	U		0.96		0.23	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.76		mg/kg-dry	U		0.76		0.13	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.96		mg/kg-dry	U		0.96		0.17	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.76		mg/kg-dry	U		0.76		0.22	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.96		mg/kg-dry	U		0.96		0.28	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.76		mg/kg-dry	U		0.76		0.18	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.96		mg/kg-dry	U		0.96		0.23	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.15		mg/kg-dry	u		0.76		0.13	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.96		mg/kg-dry	U		0.96		0.17	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21257	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.76		mg/kg-dry	U		0.76		0.13	
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18851	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.96		mg/kg-dry	U		0.96		0.17	
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.14		mg/kg-dry	U	UJ	0.14			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.23		mg/kg-dry	U	UJ	0.23			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		5.5		mg/kg-dry	U	UJ	5.5			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		9.3		mg/kg-dry	U	UJ	9.3			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		11		mg/kg-dry	v	J	5.5			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		9.3		mg/kg-dry	U	UJ	9.3			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		15		mg/kg-dry	v	J	5.5			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		9.3		mg/kg-dry	U	UJ	9.3			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.14		mg/kg-dry	U	UJ	0.14			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.23		mg/kg-dry	U	UJ	0.23			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.14		mg/kg-dry	U	UJ	0.14			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.23		mg/kg-dry	U	UJ	0.23			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.27		mg/kg-dry	U	UJ	0.27			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.46		mg/kg-dry	U	UJ	0.46			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.27		mg/kg-dry	U	UJ	0.27			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.46		mg/kg-dry	U	UJ	0.46			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.14		mg/kg-dry	U	UJ	0.14			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.23		mg/kg-dry	U	UJ	0.23			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.14		mg/kg-dry	U	UJ	0.14			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.23		mg/kg-dry	U	UJ	0.23			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	62		mg/kg-dry	v	J	5.5			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	8.3		mg/kg-dry	J	J	9.3			
TP-9	TP-9	IIA	2	P2-00506	Sediment		Field Sample	7/1/2008	21250	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.14		mg/kg-dry	U	UJ	0.14			
TP-9	TP-9	IIA	2	P2-00980	Sediment		Field Sample	9/13/2008	18845	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.23		mg/kg-dry	U	UJ	0.23			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18696	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.1		mg/kg-dry	v		1		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16457	E300.0	O	Z	Anions	Fluoride, 1:2		1.6		mg/kg-dry	v		1		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16458	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	777		mg/kg-dry	v		5		0.15	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18697	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1420		mg/kg-dry	v	J	5		0.13	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16465	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	56		mg/kg-dry	v		15			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18704	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	34		mg/kg-dry	v		13			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10700		mg/kg-dry	v		5		0.31	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11100		mg/kg-dry	v	J	5		0.54	
TP-TOE1	TP-TOE1	**IIA**	2	**P2-00470**	**Sediment**		**Field Sample**	**6/26/2008**	16461	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.84**	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.45	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Arsenic	7440-38-2	4		mg/kg-dry	v	J	2		1.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Arsenic	7440-38-2	5		mg/kg-dry	v		2		1.77	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Barium	7440-39-3	898		mg/kg-dry	v		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18701	SW6010B	O	Z	Metals	Barium	7440-39-3	781		mg/kg-dry	v		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00496	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00858	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	v		5		1.61	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.79	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U	UJ	1		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Chromium	7440-47-3	118		mg/kg-dry	v		5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Chromium	7440-47-3	101		mg/kg-dry	v		5		0.11	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16463	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.15	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Cobalt	7440-48-4	19		mg/kg-dry	v		5		0.12	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Cobalt	7440-48-4	18		mg/kg-dry	v		5		0.21	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Copper	7440-50-8	19		mg/kg-dry	v		5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Copper	7440-50-8	19		mg/kg-dry	v		5		0.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Iron	7439-89-6	13500		mg/kg-dry	v		5		3.78	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18701	SW6010B	O	Z	Metals	Iron	7439-89-6	16100		mg/kg-dry	v		10		13.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v	J	5		0.41	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Lead	7439-92-1	11		mg/kg-dry	v		5		0.71	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Manganese	7439-96-5	10200		mg/kg-dry	v		5		0.16	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18701	SW6010B	O	Z	Metals	Manganese	7439-96-5	6720		mg/kg-dry	v		5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16464	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18703	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Nickel	7440-02-0	33		mg/kg-dry	v		5		0.14	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Nickel	7440-02-0	31		mg/kg-dry	v		5		0.24	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.11	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1.93	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18700	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.17	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16462	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000743	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18702	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00129	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Vanadium	7440-62-2	33		mg/kg-dry	v		1		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18701	SW6010B	O	Z	Metals	Vanadium	7440-62-2	30		mg/kg-dry	v		1		0.31	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16461	SW6010B	O	Z	Metals	Zinc	7440-66-6	31		mg/kg-dry	v		5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18701	SW6010B	O	Z	Metals	Zinc	7440-66-6	37		mg/kg-dry	v		5		0.32	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16459	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.28		wt%	v		0.01		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18698	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.26		wt%	v		0.01		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16455	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	33.7		wt%	v		0.2		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18694	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	23.4		wt%	v		0.2		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16456	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.1		s.u.	v		0.1			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18695	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.1		s.u.	v		0.1			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16455	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	66.3		wt%	v		0.01		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18694	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	76.6		wt%	v		0.01		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.11		mg/kg-dry	U		0.11			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.066		mg/kg-dry	U		0.066			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		4.2		mg/kg-dry	U		4.2			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.6		mg/kg-dry	U		2.6			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		4.2		mg/kg-dry	U		4.2			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.6		mg/kg-dry	U		2.6			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		4.2		mg/kg-dry	U		4.2			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.6		mg/kg-dry	U		2.6			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.11		mg/kg-dry	U		0.11			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.066		mg/kg-dry	U		0.066			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.11		mg/kg-dry	U		0.11			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.066		mg/kg-dry	U		0.066			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.21		mg/kg-dry	U		0.21			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.13		mg/kg-dry	U		0.13			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.21		mg/kg-dry	U		0.21			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.13		mg/kg-dry	U		0.13			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.11		mg/kg-dry	U		0.11			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.066		mg/kg-dry	U		0.066			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.11		mg/kg-dry	U		0.11			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.066		mg/kg-dry	U		0.066			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	4.2		mg/kg-dry	U		4.2			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.6		mg/kg-dry	U		2.6			
TP-TOE1	TP-TOE1	IIA	2	P2-00470	Sediment		Field Sample	6/26/2008	16460	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.11		mg/kg-dry	U		0.11			
TP-TOE1	TP-TOE1	IIA	2	P2-00968	Sediment		Field Sample	9/12/2008	18699	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.066		mg/kg-dry	U		0.066			
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2697	E300.0	O	Z	Anions	Fluoride, 1:2		1.7		mg/kg-dry	v		1	mg/kg-dry	0.01	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2698	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	2580		mg/kg-dry	v		20	mg/kg-dry	24.24	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2705	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	41		mg/kg-dry	v		12	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Aluminum	7429-90-5	4730		mg/kg-dry	v		5	mg/kg-dry	0.6	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2703	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001344242	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2703	SW6020	O	Z	Metals	Arsenic	7440-38-2	7		mg/kg-dry	v		2	mg/kg-dry	0.01	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Barium	7440-39-3	1120		mg/kg-dry	v		5	mg/kg-dry	1.21	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.008484848	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.42	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2703	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001187879	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Chromium	7440-47-3	43		mg/kg-dry	v	J	0.4	mg/kg-dry	0.36	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Cobalt	7440-48-4	26		mg/kg-dry	v		5	mg/kg-dry	0.36	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Copper	7440-50-8	16		mg/kg-dry	v		5	mg/kg-dry	0.24	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Iron	7439-89-6	14500		mg/kg-dry	v		10	mg/kg-dry	12.12	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Lead	7439-92-1	11		mg/kg-dry	v		5	mg/kg-dry	1.21	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Manganese	7439-96-5	12700		mg/kg-dry	v	J	5	mg/kg-dry	0.48	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2704	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Nickel	7440-02-0	24		mg/kg-dry	v		5	mg/kg-dry	0.24	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2703	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001549697	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.12	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2703	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001193333	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Vanadium	7440-62-2	46		mg/kg-dry	v		1	mg/kg-dry	0.48	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2702	SW6010B	O	Z	Metals	Zinc	7440-66-6	17		mg/kg-dry	v		5	mg/kg-dry	0.24	mg/kg-dry
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2699	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.24		wt%	v		0.01	wt%	0.01	wt%
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2701	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	18		wt%	v		0.2	wt%	0.01	wt%
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2696	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.1		s.u.	v		0.1	s.u.		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.1		mg/kg-dry	U		2.1	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.11		mg/kg-dry	U		0.11	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.1		mg/kg-dry	U		2.1	mg/kg-dry		
TP-TOE1_SED	TP-TOE1	I	1	P1-00326	Sediment		Field Sample	10/15/2007	2700	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.053		mg/kg-dry	U		0.053	mg/kg-dry		
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24507	AVS/TTR	O	Z	Acid Volatile Sulfide	Acid Volatile Sulfide		20		mg/kg-dry	U		20		13.99	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18073	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.1		mg/kg-dry	v		1		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16439	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16440	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1690		mg/kg-dry	v		5		0.13	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18074	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1140		mg/kg-dry	v		5		0.17	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16454	SW9012	O	Z	Cyanide	Cyanide, Total	57-12-5	0.5		mg/kg-dry	U	UJ	0.5		0.18	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18088	SW9012	O	Z	Cyanide	Cyanide, Total	57-12-5	0.5		mg/kg-dry	U		0.5		0.23	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16447	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	14		mg/kg-dry	U		14			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18080	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	81		mg/kg-dry	v		17			
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24513	SW8015B	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	36		mg/kg-dry	v		14		1.6	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Aluminum	7429-90-5	14700		mg/kg-dry	v		5		0.28	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Aluminum	7429-90-5	19200		mg/kg-dry	v	J	5		0.7	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19527	SW6010B	O	Z	Metals	Aluminum	7429-90-5	15300		mg/kg-dry	v		5		0.63	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Aluminum	7429-90-5	17600		mg/kg-dry	v	J	5		0.66	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Aluminum	7429-90-5	29600		mg/kg-dry	v		5		3.39	
TP-TOE2	**TP-TOE2**	**IIA**	**2**	**P2-00469**	**Sediment**		**Field Sample**	**6/26/2008**	16443	**SW6010B**	O	**Z**	**Metals**	**Antimony**	**7440-36-0**	**2**		**mg/kg-dry**	**U**	**R**	**2**		**0.75**	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		1.9	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19529	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000856	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19484	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000885	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24510	SW6020	O	Z	Metals	Antimony	7440-36-0	1		mg/kg-dry	U		1		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U	UJ	2		0.91	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Arsenic	7440-38-2	4		mg/kg-dry	v		2		2.31	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19529	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.00723	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19484	SW6020	O	Z	Metals	Arsenic	7440-38-2	4		mg/kg-dry	v		2		0.00748	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24510	SW6020	O	Z	Metals	Arsenic	7440-38-2	1		mg/kg-dry	U		1		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Barium	7440-39-3	916		mg/kg-dry	v		5		0.02	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19527	SW6010B	O	Z	Metals	Barium	7440-39-3	1040		mg/kg-dry	v		5		0.02	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Barium	7440-39-3	1160		mg/kg-dry	v		5		0.02	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Barium	7440-39-3	1720		mg/kg-dry	v		1		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00444	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19530	SW6020	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.03	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Beryllium	7440-41-7	1		mg/kg-dry	U		1		0.007049999	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.44	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	v		5		3.64	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19527	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.3	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.41	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U	UJ	1		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18078	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00167	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19529	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.000983	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19484	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.000782	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Chromium	7440-47-3	297		mg/kg-dry	v		5		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Chromium	7440-47-3	397		mg/kg-dry	v	J	5		0.15	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19528	SW6010B	O	Z	Metals	Chromium	7440-47-3	327		mg/kg-dry	v		5		0.14	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Chromium	7440-47-3	358		mg/kg-dry	v	J	5		0.14	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Chromium	7440-47-3	655		mg/kg-dry	v		1		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16445	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.13	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Cobalt	7440-48-4	23		mg/kg-dry	v		5		0.11	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Cobalt	7440-48-4	35		mg/kg-dry	v		5		0.28	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19528	SW6010B	O	Z	Metals	Cobalt	7440-48-4	31		mg/kg-dry	v		5		0.25	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Cobalt	7440-48-4	32		mg/kg-dry	v		5		0.26	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Cobalt	7440-48-4	41		mg/kg-dry	v		1		0.15	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Copper	7440-50-8	27		mg/kg-dry	v		5		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Copper	7440-50-8	43		mg/kg-dry	v		5		0.13	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19528	SW6010B	O	Z	Metals	Copper	7440-50-8	32		mg/kg-dry	v		5		0.12	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Copper	7440-50-8	34		mg/kg-dry	v		5		0.13	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Copper	7440-50-8	41		mg/kg-dry	v		1		0.34	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Iron	7439-89-6	20000		mg/kg-dry	v		5		3.38	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Iron	7439-89-6	28400		mg/kg-dry	v	J	9		8.53	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19528	SW6010B	O	Z	Metals	Iron	7439-89-6	29000		mg/kg-dry	v		8		7.73	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Iron	7439-89-6	28200		mg/kg-dry	v		8		7.99	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Iron	7439-89-6	39600		mg/kg-dry	v		5		1.37	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Lead	7439-92-1	13		mg/kg-dry	v	J	5		0.37	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Lead	7439-92-1	18		mg/kg-dry	v		5		0.93	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19527	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5		0.84	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Lead	7439-92-1	14		mg/kg-dry	v		5		0.87	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Lead	7439-92-1	24		mg/kg-dry	v		1		0.83	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Magnesium	7439-95-4	59500		mg/kg-dry	v		5		0.88	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Manganese	7439-96-5	5130		mg/kg-dry	v		5		0.14	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Manganese	7439-96-5	9790		mg/kg-dry	v	J	5		0.37	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19528	SW6010B	O	Z	Metals	Manganese	7439-96-5	7190		mg/kg-dry	v		5		0.33	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Manganese	7439-96-5	7670		mg/kg-dry	v	J	5		0.03	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Manganese	7439-96-5	692		mg/kg-dry	v		1		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16446	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18079	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24511	SW7471A	O	Z	Metals	Mercury	7439-97-6	1		mg/kg-dry	U		1		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Nickel	7440-02-0	51		mg/kg-dry	v		5		0.12	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Nickel	7440-02-0	77		mg/kg-dry	v		5		0.32	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19528	SW6010B	O	Z	Metals	Nickel	7440-02-0	62		mg/kg-dry	v		5		0.29	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Nickel	7440-02-0	66		mg/kg-dry	v		5		0.3	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Nickel	7440-02-0	101		mg/kg-dry	v		1		0.18	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		1	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18078	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00218	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19527	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		2.28	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		2.36	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24510	SW6020	O	Z	Metals	Selenium	7782-49-2	1		mg/kg-dry	U		1		0.42	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.23	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19527	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.21	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.21	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.39	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Strontium	7440-24-6	105		mg/kg-dry	v		1		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16444	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000665	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18078	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U	UJ	0.6		0.00168	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19529	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00076	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19484	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000786	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Tin	7440-31-5	2		mg/kg-dry	U		2		0.43	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Vanadium	7440-62-2	51		mg/kg-dry	v		1		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Vanadium	7440-62-2	71		mg/kg-dry	v	J	1		0.2	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19528	SW6010B	O	Z	Metals	Vanadium	7440-62-2	69		mg/kg-dry	v		1		0.18	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Vanadium	7440-62-2	64		mg/kg-dry	v		1		0.19	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Vanadium	7440-62-2	89		mg/kg-dry	v		1		0.23	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16443	SW6010B	O	Z	Metals	Zinc	7440-66-6	27		mg/kg-dry	v		5		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18077	SW6010B	O	Z	Metals	Zinc	7440-66-6	41		mg/kg-dry	v		5		0.21	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19527	SW6010B	O	Z	Metals	Zinc	7440-66-6	31		mg/kg-dry	v		5		0.19	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19483	SW6010B	O	Z	Metals	Zinc	7440-66-6	37		mg/kg-dry	v		5		0.19	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24509	SW6010B	O	Z	Metals	Zinc	7440-66-6	50		mg/kg-dry	v		1		0.3	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24506	ASA33-7	O	Z	Nitrogen compounds	Ammonia as N, KCL Extract	7664-41-7	3		mg/kg-dry	v		1		0.13	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16449	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.023		mg/kg-dry	U		0.023		0.00811	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18084	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.029		mg/kg-dry	U		0.029		0.01	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24515	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.024		mg/kg-dry	U		0.024		0.008399832	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16449	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.023		mg/kg-dry	U		0.023			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18084	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.029		mg/kg-dry	U		0.029			
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24515	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.024		mg/kg-dry	U		0.024			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16449	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.023		mg/kg-dry	U		0.023			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18084	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.029		mg/kg-dry	U		0.029			
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24515	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.024		mg/kg-dry	U		0.024			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16449	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.023		mg/kg-dry	U		0.023			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18084	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.029		mg/kg-dry	U		0.029			
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24515	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.024		mg/kg-dry	U		0.024			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16449	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.023		mg/kg-dry	U		0.023			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18084	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.029		mg/kg-dry	U		0.029			
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24515	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.024		mg/kg-dry	U		0.024			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16449	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.023		mg/kg-dry	U		0.023		0.00946	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18084	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.029		mg/kg-dry	U		0.029		0.01	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24515	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.024		mg/kg-dry	U		0.024		0.007895842	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16449	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.023		mg/kg-dry	U		0.023		0.0073	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18084	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.029		mg/kg-dry	U		0.029		0.0092	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24515	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.024		mg/kg-dry	U		0.024		0.007559849	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16449	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.023		mg/kg-dry	U		0.023			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18084	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.029		mg/kg-dry	U		0.029			
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24515	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.024		mg/kg-dry	U		0.024			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16449	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.023		mg/kg-dry	U		0.023			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18084	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.029		mg/kg-dry	U		0.029			
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24515	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.024		mg/kg-dry	U		0.024			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16450	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0054		mg/kg-dry	U		0.0054		0.000486	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18085	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0068		mg/kg-dry	U		0.0068		0.000613	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0056		mg/kg-dry	U		0.0056		0.002029959	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16450	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0054		mg/kg-dry	U		0.0054		0.00154	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18085	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0068		mg/kg-dry	U		0.0068		0.00194	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0056		mg/kg-dry	U		0.0056		0.000407392	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16450	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.027		mg/kg-dry	U		0.027		0.00119	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18085	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.034		mg/kg-dry	U		0.034		0.0015	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.028		mg/kg-dry	U		0.028		0.002421952	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	2,4-DB	94-82-6	0.07		mg/kg-dry	U		0.07		0.003541929	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	3,5-Dichlorobenzoic Acid	51-36-5	0.014		mg/kg-dry	U		0.014		0.000676186	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.023		mg/kg-dry	U		0.023		0.00351	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.029		mg/kg-dry	U	UJ	0.029		0.00443	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.0024		mg/kg-dry	U		0.0024		0.000363993	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.023		mg/kg-dry	U		0.023		0.00284	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.029		mg/kg-dry	U	UJ	0.029		0.00358	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.0024		mg/kg-dry	U		0.0024		0.000293994	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.023		mg/kg-dry	U		0.023		0.00365	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.029		mg/kg-dry	U		0.029		0.0046	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.0024		mg/kg-dry	U		0.0024		0.000377992	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	Acifluorfen	62476-59-9	0.014		mg/kg-dry	U		0.014		0.000912782	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.023		mg/kg-dry	U		0.023		0.00284	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.029		mg/kg-dry	U		0.029		0.00358	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.0024		mg/kg-dry	U		0.0024		0.000293994	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.023		mg/kg-dry	U		0.023		0.00135	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18083	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.029		mg/kg-dry	U	UJ	0.029		0.0017	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.0024		mg/kg-dry	U		0.0024		0.000139997	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.023		mg/kg-dry	U		0.023		0.00338	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.029		mg/kg-dry	U		0.029		0.00426	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.0024		mg/kg-dry	U		0.0024		0.000349993	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	Bentazon	25057-89-0	0.07		mg/kg-dry	U		0.07		0.002365953	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.023		mg/kg-dry	U		0.023		0.00203	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.029		mg/kg-dry	U		0.029		0.00255	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.0024		mg/kg-dry	U		0.0024		0.000209996	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	Chloramben	133-90-4	0.014		mg/kg-dry	U		0.014		0.001105978	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.23		mg/kg-dry	U		0.23		0.12	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.29		mg/kg-dry	U		0.29		0.16	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.024		mg/kg-dry	U		0.024		0.01	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	Dacthal	1861-32-1	0.028		mg/kg-dry	U		0.028		0.000656587	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16450	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.068		mg/kg-dry	U		0.068		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18085	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.085		mg/kg-dry	U		0.085		0.04	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.07		mg/kg-dry	U		0.07		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.023		mg/kg-dry	U		0.023		0.00365	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.029		mg/kg-dry	U		0.029		0.0046	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.0024		mg/kg-dry	U		0.0024		0.000377992	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16450	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0068		mg/kg-dry	U		0.0068		0.000581	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18085	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0085		mg/kg-dry	U		0.0085		0.000732	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.007		mg/kg-dry	U		0.007		0.003079938	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16450	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.027		mg/kg-dry	U		0.027		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18085	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.034		mg/kg-dry	U		0.034		0.01	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.028		mg/kg-dry	U		0.028		0.00250595	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.023		mg/kg-dry	U		0.023		0.00203	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.029		mg/kg-dry	U		0.029		0.00255	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.0024		mg/kg-dry	U		0.0024		0.000209996	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	Dinoseb	88-85-7	0.028		mg/kg-dry	U		0.028		0.00551589	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.023		mg/kg-dry	U		0.023		0.00257	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.029		mg/kg-dry	U		0.029		0.00324	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.0024		mg/kg-dry	U		0.0024		0.000265995	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.023		mg/kg-dry	U		0.023		0.00149	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.029		mg/kg-dry	U		0.029		0.00187	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.0024		mg/kg-dry	U		0.0024		0.000153997	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.023		mg/kg-dry	U		0.023		0.00216	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.029		mg/kg-dry	U		0.029		0.00273	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.0024		mg/kg-dry	U		0.0024		0.000223996	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.023		mg/kg-dry	U		0.023		0.00176	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.029		mg/kg-dry	U	UJ	0.029		0.00221	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.0024		mg/kg-dry	U		0.0024		0.000181996	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.023		mg/kg-dry	U		0.023		0.00297	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18083	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.029		mg/kg-dry	U		0.029		0.00375	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.0024		mg/kg-dry	U		0.0024		0.000307994	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.023		mg/kg-dry	U		0.023		0.00203	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.029		mg/kg-dry	U		0.029		0.00255	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.0024		mg/kg-dry	U		0.0024		0.000209996	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.023		mg/kg-dry	U		0.023		0.00162	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.029		mg/kg-dry	U		0.029		0.00204	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.0024		mg/kg-dry	U		0.0024		0.000167997	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.023		mg/kg-dry	U		0.023		0.00189	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.029		mg/kg-dry	U		0.029		0.00238	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	gamma-Chlordane	5566-34-7	0.0024		mg/kg-dry	U		0.0024		0.000195996	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.023		mg/kg-dry	U		0.023		0.00257	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.029		mg/kg-dry	U		0.029		0.00324	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.0024		mg/kg-dry	U		0.0024		0.000265995	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.023		mg/kg-dry	U		0.023		0.00149	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.029		mg/kg-dry	U		0.029		0.00187	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.0024		mg/kg-dry	U		0.0024		0.000153997	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.027		mg/kg-dry	U		0.027			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18082	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.034		mg/kg-dry	U	UJ	0.034			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16450	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.4		mg/kg-dry	U		5.4		0.54	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18085	SW8151A	O	Z	Pesticides	MCPA	94-74-6	6.8		mg/kg-dry	U		6.8		0.69	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	MCPA	94-74-6	5.6		mg/kg-dry	U		5.6		0.67	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16450	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	5.4		mg/kg-dry	U		5.4		0.78	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18085	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	6.8		mg/kg-dry	U		6.8		0.98	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	MCPP	93-65-2	5.6		mg/kg-dry	U		5.6		0.67	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.023		mg/kg-dry	U		0.023		0.00378	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18083	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.029		mg/kg-dry	U	UJ	0.029		0.00477	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.0024		mg/kg-dry	U		0.0024		0.000391992	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16450	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0027		mg/kg-dry	U		0.0027		0.00147	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18085	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0034		mg/kg-dry	U		0.0034		0.00186	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.0028		mg/kg-dry	U		0.0028		0.000389192	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	Pesticides	Picloram	2/1/1918	0.014		mg/kg-dry	U		0.014		0.002309954	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16448	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	2.3		mg/kg-dry	U		2.3		0.35	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18081	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	2.8		mg/kg-dry	U		2.8		0.45	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24514	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.17		mg/kg-dry	U		0.17		0.03	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24513	SW8015B	O	Z	Petroleum Hydrocarbons	Diesel Range Organics (DRO)	DRO	14		mg/kg-dry	U		14		1.49	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24512	SW8015B	O	Z	Petroleum Hydrocarbons	Gasoline Range Organics (GRO)	GRO	3.6		mg/kg-dry	U		3.6		0.84	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16441	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.16		wt%	v		0.01		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18075	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.66		wt%	v		0.01		0.01	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19526	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.43		wt%	v		0.01		0.01	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19482	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.76		wt%	v		0.01		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16437	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	26		wt%	v		0.2		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18071	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	41.3		wt%	v		0.2		0.01	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19524	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	35.2		wt%	v		0.2		0.01	
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19480	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	37.4		wt%	v		0.2		0.01	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24508	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	29		wt%	v		0.2		0.01	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24505	ASA29-3	O	Z	Sediment/soil quality parameters	Organic Carbon	7440-44-0	0.4		%-as rcvd	v		0.1		0.009	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24504	ASA10-3	O	Z	Sediment/soil quality parameters	pH		7		s.u.	v		0.1		0.1	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16438	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18072	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19525	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.5		s.u.	v		0.1			
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19481	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16437	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	74		wt%	v		0.01		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18071	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	58.7		wt%	v		0.01		0.01	
TP-TOE2	TP-TOE2	IIC	4	P2-01074	Sediment		Field Sample	10/2/2008	19524	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	64.8		wt%	v		0.01		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE2	TP-TOE2	IIC	4	P2-01080	Sediment		Field Sample	10/7/2008	19480	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	62.6		wt%	v		0.01		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	0.23		mg/kg-dry	U		0.23		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	0.28		mg/kg-dry	U		0.28		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	0.23		mg/kg-dry	U		0.23			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	0.28		mg/kg-dry	U		0.28			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.28		mg/kg-dry	U		0.28		0.07	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.33		mg/kg-dry	U		0.33		0.17	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.23		mg/kg-dry	U		0.23		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.28		mg/kg-dry	U		0.28		0.05	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.33		mg/kg-dry	U		0.33		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.23		mg/kg-dry	U		0.23		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.28		mg/kg-dry	U		0.28		0.08	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.33		mg/kg-dry	U		0.33		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.23		mg/kg-dry	U		0.23		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.28		mg/kg-dry	U		0.28		0.07	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.33		mg/kg-dry	U		0.33		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	0.45		mg/kg-dry	U		0.45		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	0.57		mg/kg-dry	U		0.57		0.06	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	2.3		mg/kg-dry	U		2.3		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.23		mg/kg-dry	U		0.23		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.28		mg/kg-dry	U		0.28		0.04	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.33		mg/kg-dry	U		0.33		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.23		mg/kg-dry	U		0.23		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.28		mg/kg-dry	U		0.28		0.03	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.33		mg/kg-dry	U		0.33		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.23		mg/kg-dry	U		0.23		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.28		mg/kg-dry	U		0.28		0.09	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.33		mg/kg-dry	U		0.33		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.28		mg/kg-dry	U		0.28		0.07	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.33		mg/kg-dry	U		0.33		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.02		mg/kg-dry	v		0.0057			
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.33		mg/kg-dry	U		0.33		0.1	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	0.45		mg/kg-dry	U		0.45		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	0.57		mg/kg-dry	U		0.57		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.28		mg/kg-dry	U		0.28		0.06	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.33		mg/kg-dry	U		0.33		0.2	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	0.9		mg/kg-dry	U		0.9		0.16	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	1.1		mg/kg-dry	U		1.1		0.21	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	0.45		mg/kg-dry	U		0.45		0.12	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	0.57		mg/kg-dry	U		0.57		0.15	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	0.45		mg/kg-dry	U		0.45		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	0.57		mg/kg-dry	U		0.57		0.11	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	2.3		mg/kg-dry	U		2.3		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.28		mg/kg-dry	U		0.28		0.06	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.33		mg/kg-dry	U		0.33		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.23		mg/kg-dry	U		0.23		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.28		mg/kg-dry	U		0.28		0.09	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.33		mg/kg-dry	U		0.33		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.28		mg/kg-dry	U		0.28		0.06	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.33		mg/kg-dry	U		0.33		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	0.45		mg/kg-dry	U		0.45		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	0.57		mg/kg-dry	U		0.57		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.45		mg/kg-dry	U		0.45		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.57		mg/kg-dry	U		0.57		0.04	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24516	SW8151A	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.014		mg/kg-dry	U		0.014		0.001181576	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	2.3		mg/kg-dry	U		2.3		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.0057		mg/kg-dry	U		0.0057		0.00324	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.33		mg/kg-dry	U		0.33		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.0057		mg/kg-dry	U		0.0057		0.00305	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.33		mg/kg-dry	U		0.33		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	0.23		mg/kg-dry	U		0.23			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	0.28		mg/kg-dry	U		0.28		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.0057		mg/kg-dry	U		0.0057		0.00179	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	0.23		mg/kg-dry	U		0.23			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	0.28		mg/kg-dry	U	UJ	0.28			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	0.23		mg/kg-dry	U		0.23			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	0.28		mg/kg-dry	U	UJ	0.28			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.0057		mg/kg-dry	U		0.0057		0.00301	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.33		mg/kg-dry	U		0.33		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.0057		mg/kg-dry	U		0.0057		0.00211	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.33		mg/kg-dry	U		0.33		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.039		mg/kg-dry	v		0.0057		0.00194	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.33		mg/kg-dry	U		0.33		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.0057		mg/kg-dry	U		0.0057		0.00225	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.33		mg/kg-dry	U		0.33		0.16	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.033		mg/kg-dry	v		0.0057		0.00317	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.33		mg/kg-dry	U		0.33		0.16	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.28		mg/kg-dry	U		0.28		0.06	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.33		mg/kg-dry	U		0.33		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.23		mg/kg-dry	U		0.23		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.28		mg/kg-dry	U		0.28		0.08	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.33		mg/kg-dry	U		0.33		0.13	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.23		mg/kg-dry	U		0.23		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.28		mg/kg-dry	U		0.28		0.08	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.33		mg/kg-dry	U		0.33		0.11	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.23		mg/kg-dry	U		0.23		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.28		mg/kg-dry	U		0.28		0.12	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.33		mg/kg-dry	U		0.33		0.11	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.23		mg/kg-dry	U		0.23		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.28		mg/kg-dry	U		0.28		0.05	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	0.23		mg/kg-dry	U		0.23			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	0.28		mg/kg-dry	U		0.28			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	0.28		mg/kg-dry	U		0.28		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.0057		mg/kg-dry	U		0.0057		0.000906	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.0057		mg/kg-dry	U		0.0057		0.00124	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.33		mg/kg-dry	U		0.33		0.13	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	0.23		mg/kg-dry	U		0.23		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	0.28		mg/kg-dry	U		0.28		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.28		mg/kg-dry	U		0.28		0.06	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.33		mg/kg-dry	U		0.33		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.23		mg/kg-dry	U		0.23		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.28		mg/kg-dry	U		0.28		0.04	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.33		mg/kg-dry	U		0.33		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.23		mg/kg-dry	U		0.23		0.35	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.28		mg/kg-dry	U		0.28		0.44	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.23		mg/kg-dry	U		0.23		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.28		mg/kg-dry	U		0.28		0.09	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.33		mg/kg-dry	U		0.33		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.0057		mg/kg-dry	U		0.0057		0.00108	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.0057		mg/kg-dry	U		0.0057		0.00301	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.23		mg/kg-dry	U		0.23		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.28		mg/kg-dry	U		0.28		0.05	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.33		mg/kg-dry	U		0.33		0.1	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.23		mg/kg-dry	U		0.23		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.28		mg/kg-dry	U		0.28		0.08	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.45		mg/kg-dry	U		0.45		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.57		mg/kg-dry	U		0.57		0.04	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.33		mg/kg-dry	U		0.33		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.23		mg/kg-dry	U		0.23		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.28		mg/kg-dry	U		0.28		0.08	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.33		mg/kg-dry	U		0.33		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.0057		mg/kg-dry	U		0.0057		0.00213	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.33		mg/kg-dry	U		0.33		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.28		mg/kg-dry	U		0.28		0.07	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.28		mg/kg-dry	U		0.28		0.07	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.33		mg/kg-dry	U		0.33		0.12	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.0057		mg/kg-dry	U		0.0057		0.00332	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.33		mg/kg-dry	U		0.33		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.23		mg/kg-dry	U		0.23		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.28		mg/kg-dry	U		0.28		0.09	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.33		mg/kg-dry	U		0.33		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.23		mg/kg-dry	U		0.23		0.17	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.28		mg/kg-dry	U		0.28		0.21	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.33		mg/kg-dry	U		0.33		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.23		mg/kg-dry	U		0.23		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.28		mg/kg-dry	U		0.28		0.06	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.33		mg/kg-dry	U		0.33		0.16	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.23		mg/kg-dry	U		0.23		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.28		mg/kg-dry	U		0.28		0.06	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.33		mg/kg-dry	U		0.33		0.11	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	0.45		mg/kg-dry	U		0.45		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	0.57		mg/kg-dry	U		0.57		0.05	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	2.3		mg/kg-dry	U		2.3		0.12	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.0057		mg/kg-dry	U		0.0057		0.00247	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.33		mg/kg-dry	U		0.33		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16452	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.23		mg/kg-dry	U		0.23		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.28		mg/kg-dry	U		0.28		0.09	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.33		mg/kg-dry	U		0.33		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16453	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.0045		mg/kg-dry	U		0.0045			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18087	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.0057		mg/kg-dry	U		0.0057		0.00138	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.33		mg/kg-dry	U		0.33		0.05	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.027		mg/kg-dry	U		0.027		0.00278	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.027		mg/kg-dry	U		0.027		0.00715	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.027		mg/kg-dry	U		0.027		0.00467	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.04		mg/kg-dry	U	UJ	0.04		0.0079	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.027		mg/kg-dry	U		0.027		0.00651	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.04		mg/kg-dry	U	UJ	0.04		0.00709	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.027		mg/kg-dry	U		0.027		0.00514	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.027		mg/kg-dry	U		0.027		0.00458	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.04		mg/kg-dry	U	UJ	0.04		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.027		mg/kg-dry	U		0.027		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.04		mg/kg-dry	U	UJ	0.04		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.027		mg/kg-dry	U		0.027		0.00823	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.33		mg/kg-dry	U		0.33		0.1	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.027		mg/kg-dry	U		0.027		0.00538	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.04		mg/kg-dry	U	UJ	0.04		0.0079	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.027		mg/kg-dry	U		0.027		0.00535	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.027		mg/kg-dry	U		0.027		0.00325	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.04		mg/kg-dry	U	UJ	0.04		0.02	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.027		mg/kg-dry	U		0.027		0.00667	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.027		mg/kg-dry	U		0.027		0.00678	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.027		mg/kg-dry	U		0.027		0.00223	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.04		mg/kg-dry	U	UJ	0.04		0.00759	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.33		mg/kg-dry	U		0.33		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.027		mg/kg-dry	U		0.027		0.00438	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.04		mg/kg-dry	U	UJ	0.04		0.00694	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.33		mg/kg-dry	U		0.33		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	1,4-Dioxane	123-91-1	6.7		mg/kg-dry	U		6.7		1.05	
TP-TOE2	TP-TOE2	**IIA**	2	**P2-01010**	**Sediment**		**Field Sample**	**9/10/2008**	18086	**SW8260B**	O	**Z**	**VOCs**	**1,4-Dioxane**	**123-91-1**	**9.9**		**mg/kg-dry**	**U**	**R**	**9.9**		**3.95**	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	VOCs	1-Methylnaphthalene	90-12-0	0.33		mg/kg-dry	U		0.33		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	0.27		mg/kg-dry	U		0.27		0.08	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	0.4		mg/kg-dry	U	UJ	0.4		0.26	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	VOCs	4-Chlorophenol	106-48-9	0.33		mg/kg-dry	U		0.33		0.13	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Acetone	67-64-1	0.27		mg/kg-dry	U		0.27		0.14	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Acetone	67-64-1	0.4		mg/kg-dry	U	UJ	0.4		0.69	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	VOCs	Azobenzene	103-33-3	0.33		mg/kg-dry	U		0.33		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.027		mg/kg-dry	U		0.027		0.00399	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	VOCs	Benzidine	92-87-5	0.33		mg/kg-dry	U		0.33		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.027		mg/kg-dry	U		0.027		0.00353	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.04		mg/kg-dry	U	UJ	0.04		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.027		mg/kg-dry	U		0.027		0.00406	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.027		mg/kg-dry	U		0.027		0.00487	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.04		mg/kg-dry	U	UJ	0.04		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.027		mg/kg-dry	U		0.027		0.0064	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.04		mg/kg-dry	U	UJ	0.04		0.18	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.027		mg/kg-dry	U		0.027		0.00597	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.04		mg/kg-dry	U	UJ	0.04		0.0079	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.027		mg/kg-dry	U		0.027		0.0042	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.04		mg/kg-dry	U	UJ	0.04		0.00552	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.027		mg/kg-dry	U		0.027		0.00528	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.027		mg/kg-dry	U		0.027		0.00345	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.027		mg/kg-dry	U		0.027		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.04		mg/kg-dry	U	UJ	0.04		0.1	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.027		mg/kg-dry	U		0.027		0.00619	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.027		mg/kg-dry	U		0.027		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.04		mg/kg-dry	U	UJ	0.04		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.027		mg/kg-dry	U		0.027		0.00301	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.027		mg/kg-dry	U		0.027		0.00378	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.027		mg/kg-dry	U		0.027		0.00513	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.04		mg/kg-dry	U	UJ	0.04		0.0079	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.027		mg/kg-dry	U		0.027		0.00464	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.04		mg/kg-dry	U	UJ	0.04		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.027		mg/kg-dry	U		0.027		0.0028	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.027		mg/kg-dry	U		0.027		0.00336	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.04		mg/kg-dry	U	UJ	0.04		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.027		mg/kg-dry	U		0.027		0.00672	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.04		mg/kg-dry	U	UJ	0.04		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.13		mg/kg-dry	U		0.13		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	1.4		mg/kg-dry	v	J	0.2		0.0079	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	0.27		mg/kg-dry	U		0.27		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	0.4		mg/kg-dry	U	UJ	0.4		0.14	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	0.27		mg/kg-dry	U		0.27		0.07	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	0.4		mg/kg-dry	U	UJ	0.4		0.22	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.027		mg/kg-dry	U		0.027		0.00233	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.027		mg/kg-dry	U		0.027		0.00395	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.04		mg/kg-dry	U	UJ	0.04		0.0079	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.027		mg/kg-dry	U		0.027		0.00488	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.04		mg/kg-dry	U	UJ	0.04		0.02	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	VOCs	n-Nitrosodimethylamine	62-75-9	0.33		mg/kg-dry	U		0.33		0.09	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.027		mg/kg-dry	U		0.027		0.00507	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.04		mg/kg-dry	U	UJ	0.04		0.02	
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24517	SW8270C	O	Z	VOCs	Pyridine	110-86-1	0.33		mg/kg-dry	U		0.33		0.14	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.027		mg/kg-dry	U		0.027		0.00397	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.027		mg/kg-dry	U		0.027		0.00925	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.027		mg/kg-dry	U		0.027		0.00375	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.027		mg/kg-dry	U		0.027		0.00264	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.027		mg/kg-dry	U		0.027		0.00543	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.027		mg/kg-dry	U		0.027		0.00936	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.04		mg/kg-dry	U	UJ	0.04		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.027		mg/kg-dry	U		0.027		0.00279	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.04		mg/kg-dry	U	UJ	0.04		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16451	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.027		mg/kg-dry	U		0.027		0.0085	
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18086	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.04		mg/kg-dry	U	UJ	0.04		0.04	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.061		mg/kg-dry	U		0.061			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.098		mg/kg-dry	U		0.098			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		2.4		mg/kg-dry	U		2.4			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.9		mg/kg-dry	U		3.9			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		2.4		mg/kg-dry	U		2.4			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.9		mg/kg-dry	U		3.9			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		2.4		mg/kg-dry	U		2.4			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.9		mg/kg-dry	U		3.9			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.061		mg/kg-dry	U		0.061			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.098		mg/kg-dry	U		0.098			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.061		mg/kg-dry	U		0.061			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.098		mg/kg-dry	U		0.098			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.12		mg/kg-dry	U		0.12			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.2		mg/kg-dry	U		0.2			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.12		mg/kg-dry	U		0.12			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.2		mg/kg-dry	U		0.2			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.061		mg/kg-dry	U		0.061			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.098		mg/kg-dry	U		0.098			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.061		mg/kg-dry	U		0.061			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.098		mg/kg-dry	U		0.098			
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	2.4		mg/kg-dry	U		2.4			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.9		mg/kg-dry	U		3.9			
TP-TOE2	TP-TOE2	VB	5	TPTOE2-LT1	Sediment		Field Sample	4/25/2012	24512	SW8015B	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TPH	3.6		mg/kg-dry	U		3.6		0.81	
TP-TOE2	TP-TOE2	IIA	2	P2-00469	Sediment		Field Sample	6/26/2008	16442	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.061		mg/kg-dry	U		0.061			
TP-TOE2	TP-TOE2	IIA	2	P2-01010	Sediment		Field Sample	9/10/2008	18076	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.098		mg/kg-dry	U		0.098			
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2679	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2680	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1740		mg/kg-dry	v		10	mg/kg-dry	11.77	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2695	SW9012	O	Z	Cyanide	Cyanide, Total	57-12-5	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.16	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2687	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	16		mg/kg-dry	v		12	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11300		mg/kg-dry	v		5	mg/kg-dry	0.58	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2685	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.001306243	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2685	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2	mg/kg-dry	0.01	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Barium	7440-39-3	637		mg/kg-dry	v		5	mg/kg-dry	1.17	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.008244994	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	2.35	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2685	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001154299	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Chromium	7440-47-3	213		mg/kg-dry	v	J	0.4	mg/kg-dry	0.35	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Cobalt	7440-48-4	20		mg/kg-dry	v		5	mg/kg-dry	0.35	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Copper	7440-50-8	21		mg/kg-dry	v		5	mg/kg-dry	0.23	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Iron	7439-89-6	27000		mg/kg-dry	v		10	mg/kg-dry	11.77	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Lead	7439-92-1	100		mg/kg-dry	v		5	mg/kg-dry	1.17	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Manganese	7439-96-5	2470		mg/kg-dry	v	J	5	mg/kg-dry	0.04	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2686	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.01	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Nickel	7440-02-0	41		mg/kg-dry	v		5	mg/kg-dry	0.23	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2685	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	U		0.5	mg/kg-dry	0.001505889	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.11	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2685	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.0011596	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Vanadium	7440-62-2	79		mg/kg-dry	v		1	mg/kg-dry	0.47	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2684	SW6010B	O	Z	Metals	Zinc	7440-66-6	19		mg/kg-dry	v		5	mg/kg-dry	0.23	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Azinphos-methyl (Guthion)		0.057		mg/kg	U	UJ		mg/kg	0.00054	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Bolstar (Sulprofos)		0.057		mg/kg	U	UJ		mg/kg	0.00055	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Chlorpyrifos		0.057		mg/kg	U	UJ		mg/kg	0.00071	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Coumaphos		0.12		mg/kg	U	UJ		mg/kg	0.00083	mg/kg
TP-TOE2_SED	TP-TOE2	**I**	1	**P1-00325**	**Sediment**		**Field Sample**	**10/15/2007**	3114	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Demeton-O,S**		**0.12**		**mg/kg**	**U**	**R**		**mg/kg**	**0.015**	**mg/kg**
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Diazinon		0.057		mg/kg	U	UJ		mg/kg	0.00085	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Dichlorvos		0.057		mg/kg	Ui	UJ		mg/kg	0.0075	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Dimethoate		0.057		mg/kg	U	UJ		mg/kg	0.0012	mg/kg
TP-TOE2_SED	TP-TOE2	**I**	1	**P1-00325**	**Sediment**		**Field Sample**	**10/15/2007**	3114	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Disulfoton**		**0.057**		**mg/kg**	**U**	**R**		**mg/kg**	**0.0012**	**mg/kg**
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	EPN		0.057		mg/kg	U	UJ		mg/kg	0.00077	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Ethoprop (Prophos)		0.057		mg/kg	U	UJ		mg/kg	0.0004	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Ethyl Parathion		0.057		mg/kg	U	UJ		mg/kg	0.00061	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Fensulfothion		0.057		mg/kg	U	UJ		mg/kg	0.0013	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Fenthion		0.057		mg/kg	U	UJ		mg/kg	0.00065	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Malathion		0.057		mg/kg	U	UJ		mg/kg	0.00032	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Merphos		0.057		mg/kg	U	UJ		mg/kg	0.00058	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Methyl Parathion		0.057		mg/kg	U	UJ		mg/kg	0.00054	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Mevinphos		0.057		mg/kg	U	UJ		mg/kg	0.00069	mg/kg
TP-TOE2_SED	TP-TOE2	**I**	1	**P1-00325**	**Sediment**		**Field Sample**	**10/15/2007**	3114	**SW8141A**	O	**Z**	**Organophosphorus Pesticides**	**Phorate**		**0.057**		**mg/kg**	**U**	**R**		**mg/kg**	**0.00091**	**mg/kg**
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Ronnel		0.057		mg/kg	U	UJ		mg/kg	0.00064	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Stirophos (Tetrachlorovinphos)		0.057		mg/kg	U	UJ		mg/kg	0.00049	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Sulfotep		0.057		mg/kg	U	UJ		mg/kg	0.00046	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Tokuthion (Prothiofos)		0.057		mg/kg	U	UJ		mg/kg	0.00077	mg/kg

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	3114	SW8141A	O	Z	Organophosphorus Pesticides	Trichloronate		0.057		mg/kg	U	UJ		mg/kg	0.00069	mg/kg
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2689	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.02		mg/kg-dry	U		0.02	mg/kg-dry	0.007067138	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2689	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.02		mg/kg-dry	U		0.02	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2689	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.02		mg/kg-dry	U		0.02	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2689	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.02		mg/kg-dry	U		0.02	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2689	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.02		mg/kg-dry	U		0.02	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2689	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.02		mg/kg-dry	U		0.02	mg/kg-dry	0.008244994	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2689	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.02		mg/kg-dry	U		0.02	mg/kg-dry	0.006360424	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2689	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.02		mg/kg-dry	U		0.02	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2689	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.02		mg/kg-dry	U		0.02	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2690	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.0047		mg/kg-dry	U		0.0047	mg/kg-dry	0.000424028	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2690	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.0047		mg/kg-dry	U		0.0047	mg/kg-dry	0.001342756	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2690	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	0.07		mg/kg-dry	U		0.07	mg/kg-dry	0.001036514	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000306243	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.00024735	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000318021	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.00024735	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000117786	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000294464	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000176678	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.02		mg/kg-dry	U		0.02	mg/kg-dry	0.01	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2690	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.03	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000318021	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2690	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.0059		mg/kg-dry	U		0.0059	mg/kg-dry	0.000506478	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2690	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	0.024		mg/kg-dry	U		0.024	mg/kg-dry	0.008786808	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000176678	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000223793	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000129564	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000188457	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000153121	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000259128	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000176678	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000141343	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.0001649	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000223793	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.000129564	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.0024		mg/kg-dry	U		0.0024	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2690	SW8151A	O	Z	Pesticides	MCPA	94-74-6	50		mg/kg-dry	U		50	mg/kg-dry	0.47	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2690	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	4.7		mg/kg-dry	U		4.7	mg/kg-dry	0.68	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.002		mg/kg-dry	U		0.002	mg/kg-dry	0.0003298	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2690	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.004		mg/kg-dry	U		0.004	mg/kg-dry	0.001283863	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2688	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.03	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2681	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		0.42		wt%	v		0.01	wt%	0.01	wt%
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2683	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	15		wt%	v		0.2	wt%	0.01	wt%
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2678	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1	s.u.		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.05	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2694	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.09	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.05	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	0.39		mg/kg-dry	U		0.39	mg/kg-dry	0.04	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.08	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	0.39		mg/kg-dry	U		0.39	mg/kg-dry	0.08	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.08	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	0.79		mg/kg-dry	U		0.79	mg/kg-dry	0.18	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	0.39		mg/kg-dry	U		0.39	mg/kg-dry	0.11	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	0.39		mg/kg-dry	U		0.39	mg/kg-dry	0.04	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.06	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.05	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.08	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	0.39		mg/kg-dry	U		0.39	mg/kg-dry	0.1	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	0.39		mg/kg-dry	U		0.39	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.002237927	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.002108363	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.001236749	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.002084806	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.001460542	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.001342756	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.00155477	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.002190813	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.09	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.1	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.08	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.00062662	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.000857479	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.06	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.08	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.08	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.24	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.05	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.000745583	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.002084806	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.05	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	0.39		mg/kg-dry	U		0.39	mg/kg-dry	0.06	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.00147232	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.06	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.05	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.00229682	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.08	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.09	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.07	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.13	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	0.39		mg/kg-dry	U		0.39	mg/kg-dry	0.11	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.0039		mg/kg-dry	U		0.0039	mg/kg-dry	0.001707892	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2693	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry	0.08	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2692	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.0049		mg/kg-dry	v		0.0039	mg/kg-dry	0.000952886	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.03		mg/kg-dry	U	UJ	0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	**I**	**1**	**P1-00325**	**Sediment**		**Field Sample**	**10/15/2007**	2691	**SW8260B**	O	**Z**	**VOCs**	**1,4-Dioxane**	**123-91-1**	**1.5**		**mg/kg-dry**	**U**	**R**	**1.5**	**mg/kg-dry**	**0.3**	**mg/kg-dry**
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	0.3		mg/kg-dry	U		0.3	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Acetone	67-64-1	0.3		mg/kg-dry	U		0.3	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.03		mg/kg-dry	U	UJ	0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.24		mg/kg-dry	v		0.15	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	0.3		mg/kg-dry	U		0.3	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	0.3		mg/kg-dry	U		0.3	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2691	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.03		mg/kg-dry	U		0.03	mg/kg-dry	0.006040289	mg/kg-dry
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.039		mg/kg-dry	U		0.039	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		1.6		mg/kg-dry	U		1.6	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.039		mg/kg-dry	U		0.039	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.039		mg/kg-dry	U		0.039	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.079		mg/kg-dry	U		0.079	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.079		mg/kg-dry	U		0.079	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.039		mg/kg-dry	U		0.039	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.039		mg/kg-dry	U		0.039	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	1.6		mg/kg-dry	U		1.6	mg/kg-dry		
TP-TOE2_SED	TP-TOE2	I	1	P1-00325	Sediment		Field Sample	10/15/2007	2682	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.039		mg/kg-dry	U		0.039	mg/kg-dry		
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18974	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.02	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16894	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.02	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16895	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	264		mg/kg-dry	v	J	5		0.27	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18975	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	367		mg/kg-dry	v	J	5		0.23	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16902	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	116		mg/kg-dry	v		28			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18981	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	110		mg/kg-dry	v		24			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11200		mg/kg-dry	v		5		0.57	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6600		mg/kg-dry	v		5		0.99	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16899	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00154	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18979	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00266	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16899	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.01	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18979	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.02	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Barium	7440-39-3	414		mg/kg-dry	v		5		0.02	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Barium	7440-39-3	391		mg/kg-dry	v		5		0.03	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00911	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.96	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18979	SW6020	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		0.38	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16899	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.00177	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.15	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Chromium	7440-47-3	8		mg/kg-dry	v		5		0.12	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Chromium	7440-47-3	5		mg/kg-dry	v		5		0.21	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16900	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.27	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg-dry	U		5		0.22	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg-dry	U		5		0.39	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Copper	7440-50-8	18		mg/kg-dry	v	J	5		0.11	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Copper	7440-50-8	14		mg/kg-dry	v		5		0.19	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Iron	7439-89-6	7290		mg/kg-dry	v		5		4.63	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Iron	7439-89-6	5210		mg/kg-dry	v		8		7.99	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Lead	7439-92-1	7		mg/kg-dry	v		5		0.76	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Lead	7439-92-1	8		mg/kg-dry	v	U	5		1.31	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Manganese	7439-96-5	392		mg/kg-dry	v		5		0.03	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Manganese	7439-96-5	804		mg/kg-dry	v		5		0.06	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16901	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18980	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.02	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Nickel	7440-02-0	5		mg/kg-dry	v		5		0.26	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Nickel	7440-02-0	5		mg/kg-dry	U		5		0.45	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16899	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00177	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		3.54	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.19	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.32	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16899	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00137	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18979	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00236	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Vanadium	7440-62-2	9		mg/kg-dry	v		1		0.16	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Vanadium	7440-62-2	5		mg/kg-dry	v		1		0.28	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16898	SW6010B	O	Z	Metals	Zinc	7440-66-6	25		mg/kg-dry	v		5		0.17	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18978	SW6010B	O	Z	Metals	Zinc	7440-66-6	21		mg/kg-dry	v		5		0.29	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16896	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		3.8		wt%	v		0.01		0.01	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18976	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		4.39		wt%	v		0.01		0.01	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16892	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	63.9		wt%	v		0.2		0.01	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18972	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	58.2		wt%	v		0.2		0.01	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16893	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.6		s.u.	v		0.1			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18973	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.3		s.u.	v		0.1			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16892	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	36.1		wt%	v		0.01		0.01	
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18972	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	41.8		wt%	v		0.01		0.01	
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		7		mg/kg-dry	U	UJ	7			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		6.9		mg/kg-dry	U	UJ	6.9			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		7		mg/kg-dry	U	UJ	7			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		6.9		mg/kg-dry	U	UJ	6.9			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		7		mg/kg-dry	U	UJ	7			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		6.9		mg/kg-dry	U	UJ	6.9			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.35		mg/kg-dry	U	UJ	0.35			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.35		mg/kg-dry	U	UJ	0.35			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.35		mg/kg-dry	U	UJ	0.35			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.35		mg/kg-dry	U	UJ	0.35			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	7		mg/kg-dry	U	UJ	7			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	6.9		mg/kg-dry	U	UJ	6.9			
URC-1	URC-1	IIA	2	P2-00474	Sediment		Field Sample	6/27/2008	16897	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.17		mg/kg-dry	U	UJ	0.17			
URC-1	URC-1	IIA	2	P2-00994	Sediment		Field Sample	9/14/2008	18977	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.17		mg/kg-dry	U	UJ	0.17			
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2602	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.04	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2603	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	408		mg/kg-dry	v		40	mg/kg-dry	40.48	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2605	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		40		mg/kg-dry	U		40	mg/kg-dry	6.76	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2606	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		40		mg/kg-dry	U		40	mg/kg-dry	3.36	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2606	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		40		mg/kg-dry	U		40	mg/kg-dry	6.03	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2605	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	40		mg/kg-dry	U		40	mg/kg-dry	13.44	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2612	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	291		mg/kg-dry	v		40	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Aluminum	7429-90-5	6870		mg/kg-dry	v		5	mg/kg-dry	2.02	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2610	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.004489879	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2610	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2	mg/kg-dry	0.03	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Barium	7440-39-3	284		mg/kg-dry	v		5	mg/kg-dry	4.04	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.02	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Boron	7440-42-8	8		mg/kg-dry	U		8	mg/kg-dry	8.09	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2610	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.003967612	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Chromium	7440-47-3	6		mg/kg-dry	v	J	1	mg/kg-dry	1.21	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg-dry	U		5	mg/kg-dry	1.21	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Copper	7440-50-8	19		mg/kg-dry	v		5	mg/kg-dry	0.8	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Iron	7439-89-6	5120		mg/kg-dry	v		5	mg/kg-dry	2.83	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Lead	7439-92-1	7		mg/kg-dry	v		5	mg/kg-dry	4.04	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Manganese	7439-96-5	306		mg/kg-dry	v		5	mg/kg-dry	0.16	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2611	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	U		0.1	mg/kg-dry	0.04	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Nickel	7440-02-0	5		mg/kg-dry	U		5	mg/kg-dry	0.8	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2610	SW6020	O	Z	Metals	Selenium	7782-49-2	1.2		mg/kg-dry	v		0.5	mg/kg-dry	0.005176114	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.4	mg/kg-dry

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2610	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.00398583	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Vanadium	7440-62-2	6		mg/kg-dry	v		2	mg/kg-dry	1.61	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2609	SW6010B	O	Z	Metals	Zinc	7440-66-6	15		mg/kg-dry	v		5	mg/kg-dry	0.8	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2604	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		15.4		wt%	v		0.01	wt%	0.01	wt%
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2608	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	75		wt%	v		0.2	wt%	0.01	wt%
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2601	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.1		s.u.	v		0.1	s.u.		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.24	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.32	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.24	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.24	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.16	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.32	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.24	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.24	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.32	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.24	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.32	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.32	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.24	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.4	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.32	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.24	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2613	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	1.3		mg/kg-dry	U		1.3	mg/kg-dry	0.24	mg/kg-dry
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		8		mg/kg-dry	U		8	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		10		mg/kg-dry	v		8	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.8		mg/kg-dry	u		8	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.4		mg/kg-dry	U		0.4	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.4		mg/kg-dry	U		0.4	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	12		mg/kg-dry	v		8	mg/kg-dry		
URC-1_SED	URC-1	I	1	P1-00409	Sediment		Field Sample	10/14/2007	2607	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.2		mg/kg-dry	U		0.2	mg/kg-dry		
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18897	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16883	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16884	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	296		mg/kg-dry	v	J	5		0.14	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18898	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	341		mg/kg-dry	v	J	5		0.15	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16891	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	15		mg/kg-dry	U		15			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18904	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	16		mg/kg-dry	U		16			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12900		mg/kg-dry	v		5		0.3	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12100		mg/kg-dry	v		5		0.64	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19541	SW6010B	O	Z	Metals	Aluminum	7429-90-5	9790		mg/kg-dry	v		5		0.68	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18902	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U	UJ	2		0.00174	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19542	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00091	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16888	SW6020	O	Z	Metals	Arsenic	7440-38-2	4		mg/kg-dry	v		2		0.00693	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18902	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.01	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19542	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.00769	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Barium	7440-39-3	213		mg/kg-dry	v		5		0.01	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Barium	7440-39-3	196		mg/kg-dry	v		5		0.02	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19541	SW6010B	O	Z	Metals	Barium	7440-39-3	214		mg/kg-dry	v		5		0.02	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00486	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19540	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		1.58	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.35	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19540	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.51	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16888	SW6020	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.000942	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.1	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19540	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.1	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Chromium	7440-47-3	12		mg/kg-dry	v		5		0.06	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Chromium	7440-47-3	11		mg/kg-dry	v		5		0.14	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19540	SW6010B	O	Z	Metals	Chromium	7440-47-3	9		mg/kg-dry	v		5		0.15	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16889	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.14	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg-dry	U		5		0.12	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg-dry	U		5		0.25	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19541	SW6010B	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg-dry	U		5		0.27	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Copper	7440-50-8	22		mg/kg-dry	v	J	5		0.06	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Copper	7440-50-8	20		mg/kg-dry	v		5		0.12	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19541	SW6010B	O	Z	Metals	Copper	7440-50-8	14		mg/kg-dry	v		5		0.13	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Iron	7439-89-6	10500		mg/kg-dry	v		5		3.7	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Iron	7439-89-6	9700		mg/kg-dry	v		8		7.84	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19541	SW6010B	O	Z	Metals	Iron	7439-89-6	8960		mg/kg-dry	v		8		8.22	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5		0.4	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Lead	7439-92-1	8		mg/kg-dry	v		5		0.86	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19541	SW6010B	O	Z	Metals	Lead	7439-92-1	9		mg/kg-dry	v		5		0.9	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Manganese	7439-96-5	374		mg/kg-dry	v		5		0.01	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Manganese	7439-96-5	212		mg/kg-dry	v		5		0.04	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19541	SW6010B	O	Z	Metals	Manganese	7439-96-5	218		mg/kg-dry	v		5		0.04	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16890	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18903	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Nickel	7440-02-0	7		mg/kg-dry	v		5		0.14	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Nickel	7440-02-0	7		mg/kg-dry	v		5		0.29	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19540	SW6010B	O	Z	Metals	Nickel	7440-02-0	6		mg/kg-dry	v		5		0.31	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16888	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.000945	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U	UJ	5		2.32	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19540	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		2.43	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.1	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.21	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19540	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.22	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16888	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000728	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18902	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00154	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19542	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000808	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Vanadium	7440-62-2	17		mg/kg-dry	v		1		0.08	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Vanadium	7440-62-2	12		mg/kg-dry	v		1		0.18	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19541	SW6010B	O	Z	Metals	Vanadium	7440-62-2	13		mg/kg-dry	v		1		0.19	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16887	SW6010B	O	Z	Metals	Zinc	7440-66-6	26		mg/kg-dry	v		5		0.09	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18901	SW6010B	O	Z	Metals	Zinc	7440-66-6	23		mg/kg-dry	v		5		0.19	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19541	SW6010B	O	Z	Metals	Zinc	7440-66-6	23		mg/kg-dry	v		5		0.2	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16885	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.45		wt%	v		0.01		0.01	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18899	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		1.84		wt%	v		0.01		0.01	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19539	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.35		wt%	v		0.01		0.01	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16881	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	32.4		wt%	v		0.2		0.01	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18895	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	36.2		wt%	v		0.2		0.01	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19537	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	39.1		wt%	v		0.2		0.01	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16882	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.5		s.u.	v		0.1			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18896	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19538	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7		s.u.	v		0.1			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16881	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	67.6		wt%	v		0.01		0.01	
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18895	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	63.8		wt%	v		0.01		0.01	
URC-1A	URC-1A	IIC	4	P2-01076	Sediment		Field Sample	10/2/2008	19537	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	60.9		wt%	v		0.01		0.01	
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.085		mg/kg-dry	U	UJ	0.085			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.092		mg/kg-dry	U	UJ	0.092			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.4		mg/kg-dry	U	UJ	3.4			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.7		mg/kg-dry	U	UJ	3.7			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.4		mg/kg-dry	U	UJ	3.4			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.7		mg/kg-dry	U	UJ	3.7			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.4		mg/kg-dry	U	UJ	3.4			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.7		mg/kg-dry	U	UJ	3.7			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.085		mg/kg-dry	U	UJ	0.085			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.092		mg/kg-dry	U	UJ	0.092			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.085		mg/kg-dry	U	UJ	0.085			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.092		mg/kg-dry	U	UJ	0.092			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.17		mg/kg-dry	U	UJ	0.17			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.18		mg/kg-dry	U	UJ	0.18			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.17		mg/kg-dry	U	UJ	0.17			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.18		mg/kg-dry	U	UJ	0.18			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.085		mg/kg-dry	U	UJ	0.085			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.092		mg/kg-dry	U	UJ	0.092			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.085		mg/kg-dry	U	UJ	0.085			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.092		mg/kg-dry	U	UJ	0.092			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.4		mg/kg-dry	U	UJ	3.4			
URC-1A	URC-1A	IIA	2	P2-00986	Sediment		Field Sample	9/14/2008	18900	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.7		mg/kg-dry	U	UJ	3.7			
URC-1A	URC-1A	IIA	2	P2-00473	Sediment		Field Sample	6/27/2008	16886	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.092		mg/kg-dry	U	UJ	0.092			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18882	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/kg-dry	U		1		0.01	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16869	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1		0.01	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16870	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	714		mg/kg-dry	v	J	5		0.19	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18883	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	604		mg/kg-dry	v		5		0.16	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16873	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		81		mg/kg-dry	v	J	20		3.26	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18886	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		80		mg/kg-dry	v	J	17		2.76	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16872	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		66		mg/kg-dry	v	J	20		1.62	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18885	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		65		mg/kg-dry	v	J	17		1.37	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16872	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		20		mg/kg-dry	U	UJ	20		2.91	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18885	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		17		mg/kg-dry	U	UJ	17		2.46	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16873	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	205		mg/kg-dry	v	J	20		6.49	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16879	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	403		mg/kg-dry	v		20			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18886	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	186		mg/kg-dry	v	J	17		5.49	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18891	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	434		mg/kg-dry	v		17			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Aluminum	7429-90-5	11000		mg/kg-dry	v		5		0.4	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Aluminum	7429-90-5	10300		mg/kg-dry	v	J	5		0.68	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19535	SW6010B	O	Z	Metals	Aluminum	7429-90-5	8680		mg/kg-dry	v		5		0.69	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16876	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00108	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18889	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.00183	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19536	SW6020	O	Z	Metals	Antimony	7440-36-0	2		mg/kg-dry	U		2		0.000926	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16876	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2		0.00916	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18889	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	v		2		0.01	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19536	SW6020	O	Z	Metals	Arsenic	7440-38-2	2		mg/kg-dry	U		2		0.00782	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Barium	7440-39-3	284		mg/kg-dry	v		5		0.01	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Barium	7440-39-3	244		mg/kg-dry	v	J	5		0.02	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19535	SW6010B	O	Z	Metals	Barium	7440-39-3	232		mg/kg-dry	v		5		0.02	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.00642	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19534	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5		0.01	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		2.09	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.53	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19534	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5		3.57	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.06	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.1	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19534	SW6010B	O	Z	Metals	Cadmium	7440-43-9	1		mg/kg-dry	U		1		0.11	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Chromium	7440-47-3	27		mg/kg-dry	v		5		0.08	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Chromium	7440-47-3	32		mg/kg-dry	v	J	5		0.15	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19535	SW6010B	O	Z	Metals	Chromium	7440-47-3	20		mg/kg-dry	v		5		0.15	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16877	SW7196A	O	Z	Metals	Chromium, Hexavalent - Soluble	18540-29-9	5		mg/kg-dry	U		5		0.19	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg-dry	v		5		0.16	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Cobalt	7440-48-4	6		mg/kg-dry	v		5		0.27	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19535	SW6010B	O	Z	Metals	Cobalt	7440-48-4	5		mg/kg-dry	U		5		0.27	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Copper	7440-50-8	30		mg/kg-dry	v	J	5		0.08	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Copper	7440-50-8	24		mg/kg-dry	v		5		0.13	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19535	SW6010B	O	Z	Metals	Copper	7440-50-8	20		mg/kg-dry	v		5		0.13	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Iron	7439-89-6	11200		mg/kg-dry	v		5		4.89	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Iron	7439-89-6	11600		mg/kg-dry	v		8		8.28	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19535	SW6010B	O	Z	Metals	Iron	7439-89-6	9470		mg/kg-dry	v		8		8.36	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Lead	7439-92-1	10		mg/kg-dry	v		5		0.53	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Lead	7439-92-1	10		mg/kg-dry	v		5		0.9	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19535	SW6010B	O	Z	Metals	Lead	7439-92-1	10		mg/kg-dry	v		5		0.91	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Manganese	7439-96-5	371		mg/kg-dry	v		5		0.02	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Manganese	7439-96-5	245		mg/kg-dry	v	J	5		0.04	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19535	SW6010B	O	Z	Metals	Manganese	7439-96-5	227		mg/kg-dry	v		5		0.04	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16878	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18890	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.2		mg/kg-dry	U		0.2		0.01	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Nickel	7440-02-0	10		mg/kg-dry	v		5		0.18	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Nickel	7440-02-0	13		mg/kg-dry	v		5		0.31	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19535	SW6010B	O	Z	Metals	Nickel	7440-02-0	8		mg/kg-dry	v		5		0.31	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16876	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00125	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18889	SW6020	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		0.00211	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19534	SW6010B	O	Z	Metals	Selenium	7782-49-2	5		mg/kg-dry	U		5		2.47	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.13	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.24	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19534	SW6010B	O	Z	Metals	Silver	7440-22-4	1		mg/kg-dry	U		1		0.22	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16876	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000962	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18889	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.00163	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19536	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6		0.000822	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Vanadium	7440-62-2	21		mg/kg-dry	v		1		0.11	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Vanadium	7440-62-2	20		mg/kg-dry	v		1		0.19	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19535	SW6010B	O	Z	Metals	Vanadium	7440-62-2	18		mg/kg-dry	v		1		0.19	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16875	SW6010B	O	Z	Metals	Zinc	7440-66-6	34		mg/kg-dry	v		5		0.12	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18888	SW6010B	O	Z	Metals	Zinc	7440-66-6	32		mg/kg-dry	v		5		0.2	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19534	SW6010B	O	Z	Metals	Zinc	7440-66-6	28		mg/kg-dry	v		5		0.2	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16871	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		3.52		wt%	v		0.01		0.01	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18884	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		3.58		wt%	v		0.01		0.01	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19533	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		3.04		wt%	v		0.01		0.01	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16867	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	48.8		wt%	v		0.2		0.01	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18880	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	39.5		wt%	v		0.2		0.01	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19531	A2540 G	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	40.1		wt%	v		0.2		0.01	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16868	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.4		s.u.	v		0.1			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18881	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19532	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.2		s.u.	v		0.1			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16867	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	51.2		wt%	v		0.01		0.01	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18880	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	60.5		wt%	v		0.01		0.01	
URC-2	URC-2	IIC	4	P2-01075	Sediment		Field Sample	10/2/2008	19531	A2540 G	O	Z	Sediment/soil quality parameters	Solids, Total	TS	59.9		wt%	v		0.01		0.01	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.65		mg/kg-dry	U		0.65		0.11	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.55		mg/kg-dry	U		0.55		0.09	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.65		mg/kg-dry	U		0.65		0.15	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.55		mg/kg-dry	U		0.55		0.13	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.65		mg/kg-dry	U		0.65		0.11	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.55		mg/kg-dry	U		0.55		0.09	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.65		mg/kg-dry	U		0.65		0.11	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.55		mg/kg-dry	U		0.55		0.09	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.65		mg/kg-dry	U		0.65		0.07	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.55		mg/kg-dry	U		0.55		0.06	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.65		mg/kg-dry	U		0.65		0.15	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.55		mg/kg-dry	U		0.55		0.13	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.65		mg/kg-dry	U		0.65		0.11	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.55		mg/kg-dry	U		0.55		0.09	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.65		mg/kg-dry	U		0.65		0.11	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.55		mg/kg-dry	U		0.55		0.09	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.65		mg/kg-dry	U		0.65		0.15	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.55		mg/kg-dry	U		0.55		0.13	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.65		mg/kg-dry	U		0.65		0.11	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.55		mg/kg-dry	U		0.55		0.09	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.65		mg/kg-dry	U		0.65		0.15	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.55		mg/kg-dry	U		0.55		0.13	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.65		mg/kg-dry	U		0.65		0.15	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.55		mg/kg-dry	U		0.55		0.13	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.65		mg/kg-dry	U		0.65		0.11	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.55		mg/kg-dry	U		0.55		0.09	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.65		mg/kg-dry	U		0.65		0.19	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.55		mg/kg-dry	U		0.55		0.16	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.65		mg/kg-dry	U		0.65		0.15	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.55		mg/kg-dry	U		0.55		0.13	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.65		mg/kg-dry	U		0.65		0.11	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.55		mg/kg-dry	U		0.55		0.09	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16880	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.65		mg/kg-dry	U		0.65		0.11	
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18892	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.55		mg/kg-dry	U		0.55		0.09	
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.12		mg/kg-dry	U	UJ	0.12			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.096		mg/kg-dry	U	UJ	0.096			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		4.6		mg/kg-dry	U	UJ	4.6			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.8		mg/kg-dry	U	UJ	3.8			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		4.6		mg/kg-dry	U	UJ	4.6			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.8		mg/kg-dry	U	UJ	3.8			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		4.6		mg/kg-dry	U	UJ	4.6			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.8		mg/kg-dry	U	UJ	3.8			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.12		mg/kg-dry	U	UJ	0.12			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.096		mg/kg-dry	U	UJ	0.096			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.12		mg/kg-dry	U	UJ	0.12			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.096		mg/kg-dry	U	UJ	0.096			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.23		mg/kg-dry	U	UJ	0.23			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.19		mg/kg-dry	U	UJ	0.19			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.23		mg/kg-dry	U	UJ	0.23			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.19		mg/kg-dry	U	UJ	0.19			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.12		mg/kg-dry	U	UJ	0.12			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.096		mg/kg-dry	U	UJ	0.096			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.12		mg/kg-dry	U	UJ	0.12			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.096		mg/kg-dry	U	UJ	0.096			
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	4.6		mg/kg-dry	U	UJ	4.6			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.8		mg/kg-dry	U	UJ	3.8			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-2	URC-2	IIA	2	P2-00472	Sediment		Field Sample	6/27/2008	16874	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.12		mg/kg-dry	U	UJ	0.12			
URC-2	URC-2	IIA	2	P2-00983	Sediment		Field Sample	9/13/2008	18887	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.096		mg/kg-dry	U	UJ	0.096			
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2589	E300.0	O	Z	Anions	Fluoride, 1:2		1		mg/kg-dry	U		1	mg/kg-dry	0.01	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2590	E365.1	O	Z	Anions	Phosphorus, Total	7723-14-0	1350		mg/kg-dry	v		20	mg/kg-dry	18.11	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2592	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		96		mg/kg-dry	v		18	mg/kg-dry	3.02	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2593	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		124		mg/kg-dry	v		18	mg/kg-dry	1.5	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2593	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		18		mg/kg-dry	U		18	mg/kg-dry	2.69	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2592	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	335		mg/kg-dry	v		18	mg/kg-dry	6.01	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2599	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	612		mg/kg-dry	v		18	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Aluminum	7429-90-5	12300		mg/kg-dry	v		5	mg/kg-dry	0.9	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2597	SW6020	O	Z	Metals	Antimony	7440-36-0	0.3		mg/kg-dry	U	UJ	0.3	mg/kg-dry	0.002009058	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2597	SW6020	O	Z	Metals	Arsenic	7440-38-2	3		mg/kg-dry	v		2	mg/kg-dry	0.01	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Barium	7440-39-3	302		mg/kg-dry	v		5	mg/kg-dry	1.81	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Beryllium	7440-41-7	5		mg/kg-dry	U		5	mg/kg-dry	0.01	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Boron	7440-42-8	5		mg/kg-dry	U		5	mg/kg-dry	3.62	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2597	SW6020	O	Z	Metals	Cadmium	7440-43-9	0.4		mg/kg-dry	U		0.4	mg/kg-dry	0.001775362	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Chromium	7440-47-3	32.8		mg/kg-dry	v	J	0.5	mg/kg-dry	0.54	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Cobalt	7440-48-4	9		mg/kg-dry	v		5	mg/kg-dry	0.54	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Copper	7440-50-8	37		mg/kg-dry	v		5	mg/kg-dry	0.36	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Iron	7439-89-6	17600		mg/kg-dry	v		20	mg/kg-dry	18.11	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Lead	7439-92-1	12		mg/kg-dry	v		5	mg/kg-dry	1.81	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Manganese	7439-96-5	346		mg/kg-dry	v		5	mg/kg-dry	0.07	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2598	SW7471A	O	Z	Metals	Mercury	7439-97-6	0.1		mg/kg-dry	v		0.1	mg/kg-dry	0.01	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Nickel	7440-02-0	14		mg/kg-dry	v		5	mg/kg-dry	0.36	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2597	SW6020	O	Z	Metals	Selenium	7782-49-2	0.5		mg/kg-dry	v		0.5	mg/kg-dry	0.002316123	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Silver	7440-22-4	2		mg/kg-dry	U		2	mg/kg-dry	0.18	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2597	SW6020	O	Z	Metals	Thallium	7440-28-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.001783514	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Vanadium	7440-62-2	39		mg/kg-dry	v		1	mg/kg-dry	0.72	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2596	SW6010B	O	Z	Metals	Zinc	7440-66-6	35		mg/kg-dry	v		5	mg/kg-dry	0.36	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2591	Leco	O	TOT	Sediment/soil quality parameters	Carbon, Organic		2.05		wt%	v		0.01	wt%	0.01	wt%
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2595	SW3550A	O	Z	Sediment/soil quality parameters	Moisture	MOISTURE	45		wt%	v		0.2	wt%	0.01	wt%
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2588	ASAM10-3.2	O	Z	Sediment/soil quality parameters	pH, sat. paste	PH	7.1		s.u.	v		0.1	s.u.		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.07	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.18	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.14	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2600	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	0.6		mg/kg-dry	U		0.6	mg/kg-dry	0.1	mg/kg-dry
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.091		mg/kg-dry	U		0.091	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		3.6		mg/kg-dry	U		3.6	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		3.6		mg/kg-dry	U		3.6	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		3.6		mg/kg-dry	U		3.6	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.091		mg/kg-dry	U		0.091	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.091		mg/kg-dry	U		0.091	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	0.18		mg/kg-dry	U		0.18	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.18		mg/kg-dry	U		0.18	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.091		mg/kg-dry	U		0.091	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.091		mg/kg-dry	U		0.091	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	3.6		mg/kg-dry	U		3.6	mg/kg-dry		
URC-2_SED	URC-2	I	1	P1-00408	Sediment		Field Sample	10/14/2007	2594	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.091		mg/kg-dry	U		0.091	mg/kg-dry		
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19458	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19458	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.00021	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19458	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Calcium	7440-70-2	46		mg/L	v		1		0.21	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19458	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19458	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.13	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19461	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00444	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Potassium	9/7/7440	2		mg/L	v		1		0.06	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19458	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19458	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.18	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19458	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19456	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19459	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19459	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.000258	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19460	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Calcium	7440-70-2	45		mg/L	v		1		0.03	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19459	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.12		mg/L	v		0.03		0.00466	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19459	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.04		mg/L	v		0.02		0.000366	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19462	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19459	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Potassium	9/7/7440	2		mg/L	v		1		0.05	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19459	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19459	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.36	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19457	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19455	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19464	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.2		ug/L	U		0.2		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19464	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.2		ug/L	U		0.2		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19464	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	1		ug/L	U		1		0.04	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.05		ug/L	U		0.05		0.00673	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.05		ug/L	U		0.05		0.00718	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.05		ug/L	U		0.05		0.00732	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.05		ug/L	U		0.05		0.00968	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.05		ug/L	U		0.05		0.0078	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.05		ug/L	U		0.05		0.0081	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.05		ug/L	U		0.05		0.00893	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.5		ug/L	U		0.5		0.28	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19464	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	2.5		ug/L	U		2.5		1.24	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.05		ug/L	U		0.05		0.00854	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19464	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.25		ug/L	U		0.25		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19464	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	1		ug/L	U		1		0.1	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.05		ug/L	U		0.05		0.00656	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.05		ug/L	U		0.05		0.00768	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.05		ug/L	U		0.05		0.0085	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.05		ug/L	U		0.05		0.00809	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.05		ug/L	U		0.05		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.05		ug/L	U		0.05		0.00959	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.05		ug/L	U		0.05		0.00799	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.05		ug/L	U		0.05		0.00865	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.05		ug/L	U		0.05		0.00811	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.05		ug/L	U		0.05		0.00964	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.05		ug/L	U		0.05		0.00851	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.05		ug/L	U		0.05		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19464	SW8151A	O	Z	Pesticides	MCPA	94-74-6	200		ug/L	U		200		34.21	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19464	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	200		ug/L	U		200		37.79	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.05		ug/L	U		0.05		0.0078	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19464	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.1		ug/L	U		0.1		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19463	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.7		ug/L	U		0.7		0.54	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	5		ug/L	U		5		1.26	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	5		ug/L	U		5		0.69	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	5		ug/L	U		5		2.45	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	5		ug/L	U		5		1.48	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	5		ug/L	U		5		1.92	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	5		ug/L	U		5		1.67	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	10		ug/L	U		10		2.15	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	5		ug/L	U		5		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	5		ug/L	U		5		0.67	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	5		ug/L	U		5		1.49	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	5		ug/L	U		5		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	10		ug/L	U		10		1.22	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	5		ug/L	U		5		1.53	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	5		ug/L	U		5		0.00784	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	10		ug/L	U		10		0.96	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	10		ug/L	U		10		2.13	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	5		ug/L	U		5		1.56	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	10		ug/L	U		10		1.2	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	10		ug/L	U		10		1.32	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	5		ug/L	U		5		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	5		ug/L	U		5		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	5		ug/L	U		5		1.67	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	5		ug/L	U		5		4.9	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	5		ug/L	U	UJ	5		2.9	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	5		ug/L	U		5		4.16	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	5		ug/L	U		5		1.41	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	5		ug/L	U		5		1.16	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	5		ug/L	U		5		4.31	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	5		ug/L	U		5		1.33	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	5		ug/L	U	UJ	5		1.6	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	5		ug/L	U		5		1.56	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	5		ug/L	U		5		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	5		ug/L	U		5		0.97	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	5		ug/L	U		5		1.1	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	5		ug/L	U		5		1.21	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	5		ug/L	U		5		1.2	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	5		ug/L	U		5		1.12	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	5		ug/L	U		5		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	5		ug/L	U		5		0.01	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	5		ug/L	U		5		1.72	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	5		ug/L	U		5		1.85	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	5		ug/L	U		5		2.15	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	5		ug/L	U		5		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	5		ug/L	U		5		2.41	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	5		ug/L	U		5		1.98	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	5		ug/L	U		5		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	5		ug/L	U		5		1.87	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	5		ug/L	U		5		1.16	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	5		ug/L	U		5		1.39	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	5		ug/L	U		5		1.39	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	10		ug/L	U		10		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	5		ug/L	U		5		0.02	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	5		ug/L	U		5		2.96	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19465	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	5		ug/L	U		5		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19450	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	190		mg/L	v		4		1	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19450	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	232		mg/L	v		4		1	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19450	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19451	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	185		mg/L	v		1			
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19454	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.4		mg/L	v		0.1		0.03	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19452	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	194		mg/L	v		10		10	
BTT-R1	BTT-R1	IIC	4	P2-01063	Surface Water		Field Sample	10/8/2008	19453	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16705	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	v		1		0.02	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18628	E300.0	O	Z	Anions	Chloride	16887-00-6	2		mg/L	v		1		0.02	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16705	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18629	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16711	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.349		mg/L	v	J	0.005		0.005	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18635	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.286		mg/L	v	J	0.005		0.005	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16705	E300.0	O	Z	Anions	Sulfate	14808-79-8	18		mg/L	v		1		0.05	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18628	E300.0	O	Z	Anions	Sulfate	14808-79-8	21		mg/L	v		1		0.05	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16719	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18645	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16715	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16715	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18639	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.00021	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.002	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18640	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16715	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18639	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Calcium	7440-70-2	79		mg/L	v		1		0.21	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Calcium	7440-70-2	99		mg/L	v		1		0.02	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16715	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U	U	0.002		0.0000211	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18640	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16715	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18639	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	21		mg/L	v		1		0.13	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	29		mg/L	v		1		0.02	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16717	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18643	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16715	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18639	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Potassium	9/7/7440	8		mg/L	v		1		0.06	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.02	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16715	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U	UJ	0.005		0.0000179	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18640	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16715	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18639	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.18	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.02	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16715	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16715	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18639	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16713	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18637	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16716	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18641	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16716	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18641	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.000258	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.000258	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.03	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16716	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18642	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Calcium	7440-70-2	84		mg/L	v		1		0.03	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Calcium	7440-70-2	93		mg/L	v		1		0.03	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16716	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	v	U	0.002		0.000155	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18642	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.06		mg/L	v		0.03		0.00466	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	v		0.03		0.00466	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16716	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18641	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	23		mg/L	v		1		0.03	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	28		mg/L	v		1		0.03	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16718	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18644	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16716	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18641	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.05	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.05	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16716	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18642	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16716	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18641	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Sodium	7440-23-5	10		mg/L	v		1		0.06	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Sodium	7440-23-5	10		mg/L	v		1		0.06	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16714	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18638	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16706	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18630	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16707	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18631	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16710	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.07		mg/L	v		0.01		0.01	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18634	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.11		mg/L	v		0.01		0.01	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16709	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.07		mg/L	v		0.01		0.0016	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18633	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.11		mg/L	v		0.01		0.0016	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16708	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18632	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16712	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18636	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16700	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	296		mg/L	v		4		1	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18623	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	345		mg/L	v		4		1	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16700	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	361		mg/L	v		4		1	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18623	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	415		mg/L	v		4		1	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16700	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18623	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16701	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	285		mg/L	v		1			
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18624	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	366		mg/L	v		1			
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16704	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	5.9		mg/L	v		0.1		0.03	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18627	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.5		mg/L	v		0.1		0.03	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16702	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	353		mg/L	v		10		10	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18625	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	409		mg/L	v		10		10	
CC-1	CC-1	IIA	2	P2-00444	Surface Water		Field Sample	6/28/2008	16703	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CC-1	CC-1	IIA	2	P2-00914	Surface Water		Field Sample	9/14/2008	18626	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	24	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1	mg/L	0.05	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	24	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1	mg/L	0.049	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	26	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.271		mg/L	v		0.002	mg/L	0.002	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	24	E300.0	O	Z	Anions	Sulfate	14808-79-8	24		mg/L	v		1	mg/L	0.046	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	36	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0001752	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00001645	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00001774	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.00001701	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.00001911	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U	UJ	0.01	mg/L	0.001161	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00000493	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	29	SW6010B	O	DIS	Metals	Calcium	7440-70-2	97		mg/L	v		1	mg/L	0.214	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00002355	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.00009027	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00002105	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	28	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	v		0.03	mg/L	0.005	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00002206	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	29	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	27		mg/L	v		1	mg/L	0.1396	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.00002477	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	34	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.00002408	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	29	SW6010B	O	DIS	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.06503	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00001793	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00001781	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	29	SW6010B	O	DIS	Metals	Sodium	7440-23-5	10		mg/L	v		1	mg/L	0.1805	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.0002302	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.0000079	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	31	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.0003171	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.00013	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000041	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00004	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.000026	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0000035	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	30	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.0000028	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	30	SW6010B	O	TOT	Metals	Calcium	7440-70-2	93		mg/L	v		1	mg/L	0.1	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00004	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0000054	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	30	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.05		mg/L	v		0.03	mg/L	0.003	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	32	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0006		mg/L	U		0.0006	mg/L	0.0000167	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	30	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	26		mg/L	v		1	mg/L	0.09	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.000006	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	35	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	30	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.000027	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	30	SW6010B	O	TOT	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.4	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000069	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	30	SW6010B	O	TOT	Metals	Sodium	7440-23-5	10		mg/L	v		1	mg/L	0.5	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00000439	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	33	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.000031	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	30	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	25	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	27	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	20	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	365		mg/L	v		4	mg/L	1	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	20	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	445		mg/L	v		4	mg/L	1	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	20	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	23	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	5.3		mg/L	v		0.1	mg/L	0.023	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	21	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	454		mg/L	v		10	mg/L	10	mg/L
CC-1_SW	CC-1	I	1	P1-00381	Surface Water		Field Sample	10/11/2007	22	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16071	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18094	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
CC-2	CC-2	WT-2015	1	WT-10010	Surface Water		Field Sample	4/15/2015	29309	300.0	O	Z	Anions	Chloride	7782-50-5	2.3		mg/L	v				0.5	mg/L
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16071	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18094	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16077	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.374		mg/L	v	J	0.005		0.005	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18100	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.343		mg/L	v	J	0.005		0.005	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16071	E300.0	O	Z	Anions	Sulfate	14808-79-8	21		mg/L	v		1		0.05	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18094	E300.0	O	Z	Anions	Sulfate	14808-79-8	22		mg/L	v		1		0.05	
CC-2	CC-2	WT-2015	1	WT-10010	Surface Water		Field Sample	4/15/2015	29309	300.0	O	Z	Anions	Sulfate		25		mg/L	v				1.5	mg/L
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16085	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18108	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000876	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.00021	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.7		mg/L	v		0.1		0.002	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U	UJ	0.03		0.00116	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000247	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Calcium	7440-70-2	81		mg/L	v		1		0.21	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Calcium	7440-70-2	105		mg/L	v		1		0.02	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	23		mg/L	v		1		0.13	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	30		mg/L	v		1		0.02	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16083	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18106	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00012	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Potassium	9/7/7440	12		mg/L	v		1		0.06	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Potassium	9/7/7440	14		mg/L	v		1		0.02	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.18	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.02	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18104	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16079	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18102	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16082	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18105	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16082	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18105	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.5		mg/L	v		0.1		0.00026	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.7		mg/L	v		0.1		0.000258	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16081	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00021	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18105	SW6020	O	TOT	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.00195	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16082	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000141	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18105	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Calcium	7440-70-2	85		mg/L	v		1		0.03	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Calcium	7440-70-2	99		mg/L	v		1		0.03	
CC-2	CC-2	WT-2015	1	WT-10010	Surface Water		Field Sample	4/15/2015	29311	6010B	O	TOT	Metals	Calcium	7440-70-2	82000		ug/L	v	J		5000	ug/L
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00288	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00137	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16082	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000157	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18105	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.05		mg/L	v		0.03		0.00471	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	v		0.03		0.00466	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16082	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18105	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	24		mg/L	v		1		0.04	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	29		mg/L	v		1		0.03	
CC-2	CC-2	WT-2015	1	WT-10010	Surface Water		Field Sample	4/15/2015	29311	6010B	O	TOT	Metals	Magnesium	7439-95-4	27000		ug/L	v			1000	ug/L
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.05		mg/L	v		0.02		0.000369	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02		0.000366	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16084	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18107	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16082	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18105	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Potassium	9/7/7440	14		mg/L	v		1		0.05	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Potassium	9/7/7440	15		mg/L	v		1		0.05	
CC-2	CC-2	WT-2015	1	WT-10010	Surface Water		Field Sample	4/15/2015	29311	6010B	O	TOT	Metals	Potassium	7440-09-7	13000		ug/L	v			1000	ug/L
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16082	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18105	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16082	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18105	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Sodium	7440-23-5	11		mg/L	v		1		0.36	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Sodium	7440-23-5	12		mg/L	v		1		0.36	
CC-2	CC-2	WT-2015	1	WT-10010	Surface Water		Field Sample	4/15/2015	29311	6010B	O	TOT	Metals	Sodium	7440-23-5	9300		ug/L	v			1000	ug/L
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00144	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16080	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00217	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18103	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16072	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18095	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16073	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18096	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16076	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.26		mg/L	v		0.01		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18099	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.44		mg/L	v		0.01		0.01	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16075	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.26		mg/L	v		0.01		0.0016	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18098	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.44		mg/L	v		0.01		0.0016	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16074	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18097	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16078	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18101	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16066	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	322		mg/L	v		4		1	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18089	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	370		mg/L	v		4		1	
CC-2	CC-2	WT-2015	1	WT-10010	Surface Water		Field Sample	4/15/2015	29308	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	280		mg/L	v				2	mg/L
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16066	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	358		mg/L	v		4		1	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18089	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	443		mg/L	v		4		1	
CC-2	CC-2	WT-2015	1	WT-10010	Surface Water		Field Sample	4/15/2015	29310	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	280		mg/L	v				2	mg/L
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16066	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	17		mg/L	v		4		1	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18089	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	v		4		1	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16067	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	296		mg/L	v		1			
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18090	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	385		mg/L	v		1			
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16070	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	4.2		mg/L	v		0.1		0.03	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18093	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.8		mg/L	v		0.1		0.03	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16068	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	405		mg/L	v		10		10	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18091	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	435		mg/L	v		10		10	
CC-2	CC-2	IIA	2	P2-00409	Surface Water		Field Sample	6/25/2008	16069	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CC-2	CC-2	IIA	2	P2-00887	Surface Water		Field Sample	9/10/2008	18092	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	8	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1	mg/L	0.05	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	8	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1	mg/L	0.049	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	10	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.323		mg/L	v		0.002	mg/L	0.002	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	8	E300.0	O	Z	Anions	Sulfate	14808-79-8	20		mg/L	v		1	mg/L	0.046	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	19	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0001752	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00001645	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00001774	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Barium	7440-39-3	0.7		mg/L	v		0.1	mg/L	0.00001701	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.00001911	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U	UJ	0.01	mg/L	0.001161	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00000493	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	12	SW6010B	O	DIS	Metals	Calcium	7440-70-2	99		mg/L	v		1	mg/L	0.214	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00002355	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.00009027	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00002105	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	12	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00002206	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	12	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	28		mg/L	v		1	mg/L	0.1396	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.00002477	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	17	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.00002408	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	12	SW6010B	O	DIS	Metals	Potassium	7440-09-7	13		mg/L	v		1	mg/L	0.06503	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00001793	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00001781	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	12	SW6010B	O	DIS	Metals	Sodium	7440-23-5	10		mg/L	v		1	mg/L	0.1805	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.0002302	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.0000079	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	14	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.0003171	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.19		mg/L	v		0.09	mg/L	0.00013	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000041	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00004	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Barium	7440-39-3	0.7		mg/L	v		0.1	mg/L	0.000026	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0000035	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	13	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	15	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	13	SW6010B	O	TOT	Metals	Calcium	7440-70-2	101		mg/L	v		1	mg/L	0.1	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00004	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0000054	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	13	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.28		mg/L	v		0.03	mg/L	0.003	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0009		mg/L	v	U	0.0005	mg/L	0.00000334	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	13	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	26		mg/L	v		1	mg/L	0.09	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Manganese	7439-96-5	0.17		mg/L	v		0.02	mg/L	0.000006	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	18	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.000027	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	13	SW6010B	O	TOT	Metals	Potassium	7440-09-7	12		mg/L	v		1	mg/L	0.4	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000069	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	13	SW6010B	O	TOT	Metals	Sodium	7440-23-5	9		mg/L	v		1	mg/L	0.5	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00000439	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	16	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.000031	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	13	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	9	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	11	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	3	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	375		mg/L	v		4	mg/L	1	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	3	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	435		mg/L	v		4	mg/L	1	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	3	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	11		mg/L	v		4	mg/L	1	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	4	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	361		mg/L	v		1	mg/L		
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	7	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.7		mg/L	v		0.1	mg/L	0.023	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	5	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	449		mg/L	v		10	mg/L	10	mg/L
CC-2_SW	CC-2	I	1	P1-00380	Surface Water		Field Sample	10/11/2007	6	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	36		mg/L	v		10	mg/L	1	mg/L
CC-3A	CC-3A	WT-2015	1	WT-10035	Surface Water		Field Sample	4/17/2015	29421	300.0	O	Z	Anions	Chloride	7782-50-5	1.6		mg/L	v				0.5	mg/L
CC-3A	CC-3A	WT-2015	1	WT-10035	Surface Water		Field Sample	4/17/2015	29421	300.0	O	Z	Anions	Sulfate		12		mg/L	v				0.75	mg/L
CC-3A	CC-3A	WT-2015	1	WT-10035	Surface Water		Field Sample	4/17/2015	29423	6010B	O	TOT	Metals	Calcium	7440-70-2	57000		ug/L	v				5000	ug/L
CC-3A	CC-3A	WT-2015	1	WT-10035	Surface Water		Field Sample	4/17/2015	29423	6010B	O	TOT	Metals	Magnesium	7439-95-4	16000		ug/L	v				1000	ug/L
CC-3A	CC-3A	WT-2015	1	WT-10035	Surface Water		Field Sample	4/17/2015	29423	6010B	O	TOT	Metals	Potassium	7440-09-7	5700		ug/L	v				1000	ug/L
CC-3A	CC-3A	WT-2015	1	WT-10035	Surface Water		Field Sample	4/17/2015	29423	6010B	O	TOT	Metals	Sodium	7440-23-5	6300		ug/L	v				1000	ug/L
CC-3A	CC-3A	WT-2015	1	WT-10035	Surface Water		Field Sample	4/17/2015	29420	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	230		mg/L	v				2	mg/L
CC-3A	CC-3A	WT-2015	1	WT-10035	Surface Water		Field Sample	4/17/2015	29422	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	230		mg/L	v				2	mg/L
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16598	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	v		1		0.02	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18509	E300.0	O	Z	Anions	Chloride	16887-00-6	2		mg/L	v		1		0.02	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16598	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1		0.01	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18510	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16604	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.303		mg/L	v	J	0.005		0.005	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18516	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.456		mg/L	v	J	0.005		0.005	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16598	E300.0	O	Z	Anions	Sulfate	14808-79-8	17		mg/L	v		1		0.05	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18509	E300.0	O	Z	Anions	Sulfate	14808-79-8	19		mg/L	v		1		0.05	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16613	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18526	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16608	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18520	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16608	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18520	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.002	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18521	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16608	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18520	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Calcium	7440-70-2	64		mg/L	v		1		0.21	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Calcium	7440-70-2	80		mg/L	v		1		0.02	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16608	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18521	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16608	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18520	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	20		mg/L	v		1		0.13	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	28		mg/L	v		1		0.02	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02		0.00111	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.1		mg/L	v		0.02		0.002	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16611	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18524	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16608	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18520	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.06	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Potassium	9/7/7440	13		mg/L	v		1		0.02	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16608	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18521	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16608	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18520	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.18	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Sodium	7440-23-5	10		mg/L	v		1		0.02	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16608	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16608	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18520	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16606	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18518	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16609	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18522	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16609	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18522	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.000258	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16610	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18522	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Calcium	7440-70-2	66		mg/L	v		1		0.03	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Calcium	7440-70-2	71		mg/L	v		1		0.03	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.00218	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18523	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.05		mg/L	v		0.03		0.00466	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.05		mg/L	v		0.03		0.00466	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16609	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18522	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	21		mg/L	v		1		0.03	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	25		mg/L	v		1		0.03	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02		0.000366	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.1		mg/L	v		0.02		0.000366	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16612	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18525	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16609	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18522	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Potassium	9/7/7440	14		mg/L	v		1		0.05	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16609	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18523	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16609	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18522	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.06	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Sodium	7440-23-5	11		mg/L	v		1		0.06	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16607	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18519	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16599	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18511	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16600	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18512	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16603	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18515	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16602	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18514	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16601	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18513	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.03		mg/L	v	J	0.01		0.00651	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16605	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18517	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16593	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	255		mg/L	v		4		1	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18504	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	299		mg/L	v		4		1	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16593	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	310		mg/L	v		4		1	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18504	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	364		mg/L	v		4		1	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16593	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18504	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16594	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	240		mg/L	v		1			
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18505	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	313		mg/L	v		1			
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16597	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	7.1		mg/L	v		0.1		0.03	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18508	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	6.4		mg/L	v		0.1		0.03	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16595	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	317		mg/L	v		10		10	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18506	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	344		mg/L	v		10		10	
CC-POND	CC-POND	IIA	2	P2-00439	Surface Water		Field Sample	6/28/2008	16596	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CC-POND	CC-POND	IIA	2	P2-00909	Surface Water		Field Sample	9/13/2008	18507	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16684	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18604	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16684	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18605	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16690	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.131		mg/L	v	J	0.005		0.005	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18611	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.107		mg/L	v	J	0.005		0.005	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16684	E300.0	O	Z	Anions	Sulfate	14808-79-8	44		mg/L	v		1		0.05	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18604	E300.0	O	Z	Anions	Sulfate	14808-79-8	45		mg/L	v		1		0.05	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16699	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18622	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16694	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18615	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16694	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18616	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Barium	7440-39-3	1		mg/L	v		0.1		0.00021	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Barium	7440-39-3	1		mg/L	v		0.1		0.002	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18615	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16694	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18616	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Calcium	7440-70-2	89		mg/L	v		1		0.21	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Calcium	7440-70-2	97		mg/L	v		1		0.02	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16694	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18616	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16694	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18615	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	40		mg/L	v		1		0.13	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	43		mg/L	v		1		0.02	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16697	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18620	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16694	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18616	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Potassium	9/7/7440	13		mg/L	v		1		0.06	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Potassium	9/7/7440	13		mg/L	v		1		0.02	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16694	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U	UJ	0.005		0.0000179	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18616	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16694	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18615	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.18	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.02	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16694	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16694	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01		0.0000079	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18616	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01		0.0000079	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16692	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18613	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.71		mg/L	v		0.09		0.01	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.13		mg/L	v		0.09		0.01	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16695	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18617	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16695	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18618	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Barium	7440-39-3	1		mg/L	v		0.1		0.000258	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.9		mg/L	v		0.1		0.000258	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.03	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16696	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18619	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Calcium	7440-70-2	95		mg/L	v		1		0.03	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Calcium	7440-70-2	92		mg/L	v		1		0.03	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	v		0.01		0.00285	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16696	SW6020	O	TOT	Metals	Copper	7440-50-8	0.003		mg/L	v	U	0.002		0.000031	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18618	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.97		mg/L	v		0.03		0.00466	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.16		mg/L	v		0.03		0.00466	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16696	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0028		mg/L	v		0.0005		0.00000334	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18619	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0008		mg/L	v		0.0005		0.00000334	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	43		mg/L	v		1		0.03	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	42		mg/L	v		1		0.03	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.05		mg/L	v		0.02		0.000366	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16698	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18621	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16695	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18618	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Potassium	9/7/7440	15		mg/L	v		1		0.05	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Potassium	9/7/7440	13		mg/L	v		1		0.05	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16695	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18618	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16695	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18617	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.06	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.06	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01		0.00142	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01		0.00142	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16693	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18614	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16685	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18606	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16686	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18607	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16689	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.24		mg/L	v		0.01		0.01	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18610	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.7		mg/L	v		0.01		0.01	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16688	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.24		mg/L	v		0.01		0.0016	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18609	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.7		mg/L	v		0.01		0.0016	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16687	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18608	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16691	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18612	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16679	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	376		mg/L	v		4		1	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18599	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	360		mg/L	v		4		1	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16679	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	458		mg/L	v		4		1	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18599	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	439		mg/L	v		4		1	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16679	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18599	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16680	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	387		mg/L	v		1			
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18600	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	421		mg/L	v		1			
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16683	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.2		mg/L	v		0.1		0.03	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18603	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.3		mg/L	v		0.1		0.03	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16681	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	446		mg/L	v		10		10	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18601	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	446		mg/L	v		10		10	
CCS-1	CCS-1	IIA	2	P2-00443	Surface Water		Field Sample	6/28/2008	16682	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	14		mg/L	v		10		1	
CCS-1	CCS-1	IIA	2	P2-00913	Surface Water		Field Sample	9/13/2008	18602	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3063	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1	mg/L	0.05	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3063	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1	mg/L	0.049	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3068	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.138		mg/L	v		0.002	mg/L	0.002	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3063	E300.0	O	Z	Anions	Sulfate	14808-79-8	40		mg/L	v		1	mg/L	0.046	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3075	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3072	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0001752	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3072	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00001645	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3072	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00001774	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Barium	7440-39-3	1		mg/L	v		0.1	mg/L	0.00021	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3072	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00000493	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Calcium	7440-70-2	92		mg/L	v		1	mg/L	0.214	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3072	SW6020	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00002355	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3072	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00002105	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	v		0.03	mg/L	0.005155	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3072	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00002206	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	41		mg/L	v		1	mg/L	0.1396	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Potassium	7440-09-7	12		mg/L	v		1	mg/L	0.06503	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3072	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00001793	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3072	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00001781	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Sodium	7440-23-5	8		mg/L	v		1	mg/L	0.1805	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3072	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.0002302	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01	mg/L	0.006217	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3070	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3073	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.31		mg/L	v		0.09	mg/L	0.00013	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3073	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000041	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3073	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00004	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Barium	7440-39-3	1		mg/L	v		0.1	mg/L	0.0005	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3073	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.0000028	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Calcium	7440-70-2	85		mg/L	v		1	mg/L	0.1	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3073	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	v		0.01	mg/L	0.00004	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3073	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.41		mg/L	v		0.03	mg/L	0.003	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3073	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0022		mg/L	v	U	0.0005	mg/L	0.00000334	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	37		mg/L	v		1	mg/L	0.09	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Potassium	7440-09-7	11		mg/L	v		1	mg/L	0.4	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3074	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3073	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000069	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.5	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3073	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00000439	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01	mg/L	0.005	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3071	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3064	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3065	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3062	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	1.16		mg/L	v	UJ	0.01	mg/L	0.01	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3067	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	1.16		mg/L	v		0.01	mg/L	0.0016	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3066	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		30		ug/L	v		20	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	0.64		ug/L	u		1	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	27		ug/L	v		20	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3069	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3058	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	372		mg/L	v		4	mg/L	1	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3058	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	453		mg/L	v		4	mg/L	1	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3058	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3061	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.8		mg/L	v		0.1	mg/L	0.023	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3059	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	472		mg/L	v		10	mg/L	10	mg/L
CCS-1_SW	CCS-1	I	1	P1-00382	Surface Water		Field Sample	10/12/2007	3060	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16767	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18438	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16767	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18439	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16773	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.457		mg/L	v	J	0.005		0.005	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18445	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.454		mg/L	v	J	0.005		0.005	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16767	E300.0	O	Z	Anions	Sulfate	14808-79-8	60		mg/L	v		1		0.05	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18438	E300.0	O	Z	Anions	Sulfate	14808-79-8	64		mg/L	v		1		0.05	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16781	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18455	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16777	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18449	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16777	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18449	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.00021	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.002	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18450	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16777	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18449	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Calcium	7440-70-2	65		mg/L	v		1		0.21	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Calcium	7440-70-2	70		mg/L	v		1		0.02	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16777	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18449	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16777	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18449	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	32		mg/L	v		1		0.13	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	35		mg/L	v		1		0.02	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16779	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18453	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16777	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18449	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Potassium	9/7/7440	27		mg/L	v		1		0.06	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Potassium	9/7/7440	27		mg/L	v		1		0.02	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16777	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18450	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16777	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18449	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.18	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.02	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16777	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16777	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01		0.0000079	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18449	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16775	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18447	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.38		mg/L	v		0.09		0.01	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16778	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18451	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16778	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18451	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.000258	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.000258	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16778	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18452	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Calcium	7440-70-2	69		mg/L	v		1		0.03	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Calcium	7440-70-2	67		mg/L	v		1		0.03	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	v		0.01		0.00285	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16778	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18451	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.36		mg/L	v		0.03		0.00466	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.04		mg/L	v		0.03		0.00466	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16778	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0006		mg/L	v	U	0.0005		0.0000167	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18451	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	33		mg/L	v		1		0.03	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	33		mg/L	v		1		0.03	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16780	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18454	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16778	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18451	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Potassium	9/7/7440	28		mg/L	v		1		0.05	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Potassium	9/7/7440	29		mg/L	v		1		0.05	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18452	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16778	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18451	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Sodium	7440-23-5	7		mg/L	v		1		0.06	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Sodium	7440-23-5	7		mg/L	v		1		0.06	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01		0.00142	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16776	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18448	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16768	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18440	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16769	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18441	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16772	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	1.28		mg/L	v		0.01		0.01	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18444	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	1.51		mg/L	v		0.01		0.01	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16771	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	1.29		mg/L	v		0.01		0.0032	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18443	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	1.51		mg/L	v		0.01		0.0016	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16770	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	v	J	0.01		0.00651	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18442	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16774	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18446	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16762	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	290		mg/L	v		4		1	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18433	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	263		mg/L	v		4		1	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16762	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	354		mg/L	v		4		1	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18433	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	321		mg/L	v		4		1	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16762	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18433	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16763	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	295		mg/L	v		1			
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18434	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	317		mg/L	v		1			
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16766	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.7		mg/L	v		0.1		0.03	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18437	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.7		mg/L	v		0.1		0.03	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16764	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	431		mg/L	v		10		10	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18435	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	415		mg/L	v		10		10	
CCS-11	CCS-11	IIA	2	P2-00447	Surface Water		Field Sample	6/29/2008	16765	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	14		mg/L	v		10		1	
CCS-11	CCS-11	IIA	2	P2-00905	Surface Water		Field Sample	9/12/2008	18436	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3081	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1	mg/L	0.05	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3081	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1	mg/L	0.049	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3083	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.458		mg/L	v		0.002	mg/L	0.002	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3081	E300.0	O	Z	Anions	Sulfate	14808-79-8	58		mg/L	v		1	mg/L	0.046	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3092	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3087	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0001752	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3087	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00001645	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3087	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00001774	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1	mg/L	0.00021	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3087	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00000493	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Calcium	7440-70-2	69		mg/L	v		1	mg/L	0.214	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3087	SW6020	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00002355	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3087	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00002105	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3087	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00002206	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	33		mg/L	v		1	mg/L	0.1396	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3090	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Potassium	7440-09-7	28		mg/L	v		1	mg/L	0.06503	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3087	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00001793	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3087	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00001781	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Sodium	7440-23-5	7		mg/L	v		1	mg/L	0.1805	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3087	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.0002302	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3085	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3088	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.00013	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3088	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000041	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3088	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00004	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1	mg/L	0.0005	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3088	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.0000028	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Calcium	7440-70-2	64		mg/L	v		1	mg/L	0.1	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3088	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00004	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3088	SW6020	O	TOT	Metals	Copper	7440-50-8	0.005		mg/L	v		0.002	mg/L	0.000031	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.06		mg/L	v		0.03	mg/L	0.003	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3088	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00000334	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	31		mg/L	v		1	mg/L	0.09	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3091	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Potassium	7440-09-7	26		mg/L	v		1	mg/L	0.4	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3089	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3088	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000069	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.5	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3088	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00000439	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01	mg/L	0.005	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3086	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.02		mg/L	v		0.01	mg/L	0.008	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3082	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3084	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3076	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	271		mg/L	v		4	mg/L	1	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3076	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	330		mg/L	v		4	mg/L	1	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3076	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3077	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	307		mg/L	v		1	mg/L		
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3080	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.8		mg/L	v		0.1	mg/L	0.023	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3078	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	426		mg/L	v		10	mg/L	10	mg/L
CCS-11_SW	CCS-11	I	1	P1-00383	Surface Water		Field Sample	10/12/2007	3079	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16807	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18461	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16807	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1		0.01	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18462	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16813	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.91		mg/L	v	J	0.05		0.05	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18468	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	1.03		mg/L	v	J	0.05		0.05	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16807	E300.0	O	Z	Anions	Sulfate	14808-79-8	29		mg/L	v		1		0.05	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18461	E300.0	O	Z	Anions	Sulfate	14808-79-8	23		mg/L	v		1		0.05	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16822	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18479	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16817	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18472	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16817	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18473	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.00021	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.002	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18472	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16817	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18473	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Calcium	7440-70-2	60		mg/L	v		1		0.21	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Calcium	7440-70-2	69		mg/L	v		1		0.02	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16817	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18473	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16817	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18472	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	27		mg/L	v		1		0.13	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	30		mg/L	v		1		0.02	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.07		mg/L	v		0.02		0.002	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16820	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18477	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16817	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18473	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Potassium	9/7/7440	21		mg/L	v		1		0.06	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Potassium	9/7/7440	26		mg/L	v		1		0.02	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16817	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U	UJ	0.005		0.0000179	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18473	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16817	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18472	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.18	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.02	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16817	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16817	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18473	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16815	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18470	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.22		mg/L	v		0.09		0.01	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16818	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18474	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16818	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18475	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.5		mg/L	v		0.1		0.000258	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.00026	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00021	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.03	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16819	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18476	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000283	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Calcium	7440-70-2	63		mg/L	v		1		0.03	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Calcium	7440-70-2	68		mg/L	v		1		0.03	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00288	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00137	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16818	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18476	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000313	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.05		mg/L	v		0.03		0.00466	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.3		mg/L	v		0.03		0.00471	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16818	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18474	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	28		mg/L	v		1		0.03	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	30		mg/L	v		1		0.04	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.07		mg/L	v		0.02		0.000369	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16821	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18478	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16818	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18476	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000273	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Potassium	9/7/7440	23		mg/L	v		1		0.05	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Potassium	9/7/7440	26		mg/L	v		1		0.05	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16818	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18475	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16819	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000069	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18474	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.06	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Sodium	7440-23-5	10		mg/L	v		1		0.06	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18475	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	v		0.01		0.000157	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16816	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18471	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00217	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16808	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18463	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16809	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18464	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16812	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18467	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16811	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18466	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16810	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18465	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16814	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18469	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16802	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	277		mg/L	v		4		1	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18456	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	287		mg/L	v		4		1	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16802	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	338		mg/L	v		4		1	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18456	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	351		mg/L	v		4		1	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16802	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18456	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16803	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	260		mg/L	v		1			
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18457	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	296		mg/L	v		1			
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16806	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.8		mg/L	v		0.1		0.03	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18460	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	4.1		mg/L	v		0.1		0.03	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16804	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	349		mg/L	v		10		10	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18458	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	389		mg/L	v		10		10	
CCS-14	CCS-14	IIA	2	P2-00449	Surface Water		Field Sample	6/29/2008	16805	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-14	CCS-14	IIA	2	P2-00906	Surface Water		Field Sample	9/12/2008	18459	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	v		10		1	
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2974	E300.0	O	Z	Anions	Chloride	16887-00-6	2		mg/L	v		1	mg/L	0.05	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2974	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1	mg/L	0.049	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2976	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	1.03		mg/L	v		0.006	mg/L	0.006	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2974	E300.0	O	Z	Anions	Sulfate	14808-79-8	30		mg/L	v		1	mg/L	0.046	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2978	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		0.3		mg/L	U		0.3	mg/L	0.13	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2977	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		0.3		mg/L	U		0.3	mg/L	0.034	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2977	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		0.3		mg/L	U		0.3	mg/L	0.12	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2978	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2987	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.32		mg/L	v		0.3	mg/L	0.038	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2982	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0001752	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2982	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00001645	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2982	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00001774	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.5		mg/L	v		0.1	mg/L	0.00021	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2982	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00000493	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Calcium	7440-70-2	65		mg/L	v		1	mg/L	0.214	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2982	SW6020	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00001357	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2982	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00002105	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2982	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00002206	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	28		mg/L	v		1	mg/L	0.1396	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2985	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Potassium	7440-09-7	26		mg/L	v		1	mg/L	0.06503	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2982	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00001793	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2982	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00001781	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1	mg/L	0.1805	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2982	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.0002302	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2980	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2983	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.33		mg/L	v		0.09	mg/L	0.00013	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2983	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000041	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2983	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00004	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.5		mg/L	v		0.1	mg/L	0.0005	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2983	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.0000056	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Calcium	7440-70-2	63		mg/L	v		1	mg/L	0.1	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2983	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00004	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2983	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.47		mg/L	v		0.03	mg/L	0.003	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2983	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0006		mg/L	U		0.0006	mg/L	0.00000334	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	26		mg/L	v		1	mg/L	0.09	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.04		mg/L	v		0.02	mg/L	0.0006	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2986	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Potassium	7440-09-7	23		mg/L	v		1	mg/L	0.4	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2984	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2983	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000069	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Sodium	7440-23-5	8		mg/L	v		1	mg/L	0.5	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2983	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00000439	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2981	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2975	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	10		ug/L	U		10	ug/L	3.88	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	10		ug/L	U		10	ug/L	3.32	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	10		ug/L	U		10	ug/L	3.7	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	10		ug/L	U		10	ug/L	2.48	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	10		ug/L	U		10	ug/L	2.52	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	10		ug/L	U		10	ug/L	2.4	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	10		ug/L	U		10	ug/L	2.74	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	10		ug/L	U		10	ug/L	2.62	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	10		ug/L	U		10	ug/L	2.68	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	10		ug/L	U		10	ug/L	2.16	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	10		ug/L	U		10	ug/L	2.26	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	10		ug/L	U		10	ug/L	2.44	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	10		ug/L	U		10	ug/L	3.26	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	10		ug/L	U		10	ug/L	2.32	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	10		ug/L	U		10	ug/L	3.92	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	10		ug/L	U		10	ug/L	2.5	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2988	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	10		ug/L	U		10	ug/L	2.46	ug/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.65		ug/L	v		0.5	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		62		ug/L	v		20	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	53		ug/L	v		20	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2979	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2969	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	282		mg/L	v		4	mg/L	1	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2969	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	344		mg/L	v		4	mg/L	1	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2969	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2970	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	278		mg/L	v		1	mg/L		
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2973	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.8		mg/L	v		0.1	mg/L	0.023	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2971	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	386		mg/L	v		10	mg/L	10	mg/L
CCS-14_SW	CCS-14	I	1	P1-00265	Surface Water		Field Sample	10/13/2007	2972	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	13		mg/L	v		10	mg/L	1	mg/L
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16725	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18675	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16725	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18676	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16731	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.409		mg/L	v	J	0.005		0.005	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18682	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.412		mg/L	v	J	0.005		0.005	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16725	E300.0	O	Z	Anions	Sulfate	14808-79-8	13		mg/L	v		1		0.05	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18675	E300.0	O	Z	Anions	Sulfate	14808-79-8	11		mg/L	v		1		0.05	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16739	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18692	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.11		mg/L	v		0.09		0.02	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16735	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18686	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16735	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18687	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Barium	7440-39-3	1		mg/L	v		0.1		0.00021	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Barium	7440-39-3	1		mg/L	v		0.1		0.002	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18686	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16735	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18687	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Calcium	7440-70-2	126		mg/L	v		1		0.21	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Calcium	7440-70-2	153		mg/L	v		1		0.02	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16735	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18687	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Iron	7439-89-6	1.32		mg/L	v		0.03		0.00516	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Iron	7439-89-6	1.41		mg/L	v		0.03		0.01	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16735	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	v		0.0005		0.0000221	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18686	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	31		mg/L	v		1		0.13	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	37		mg/L	v		1		0.02	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.75		mg/L	v		0.02		0.00111	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.98		mg/L	v		0.02		0.002	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16737	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18690	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16735	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18687	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Potassium	9/7/7440	16		mg/L	v		1		0.06	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Potassium	9/7/7440	18		mg/L	v		1		0.02	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16735	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U	UJ	0.005		0.0000179	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18687	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16735	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18686	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Sodium	7440-23-5	10		mg/L	v		1		0.18	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Sodium	7440-23-5	11		mg/L	v		1		0.02	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16735	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16735	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18687	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16733	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18684	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16736	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18688	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16736	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18689	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Barium	7440-39-3	1		mg/L	v		0.1		0.000258	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Barium	7440-39-3	1		mg/L	v		0.1		0.000258	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.03	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16736	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18689	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Calcium	7440-70-2	133		mg/L	v		1		0.03	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Calcium	7440-70-2	141		mg/L	v		1		0.03	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16736	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18689	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Iron	7439-89-6	1.04		mg/L	v		0.03		0.00466	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Iron	7439-89-6	1.83		mg/L	v		0.03		0.00466	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16736	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18688	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	32		mg/L	v		1		0.03	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	36		mg/L	v		1		0.03	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.75		mg/L	v		0.02		0.000366	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.94		mg/L	v		0.02		0.000366	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16738	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18691	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16736	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18689	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Potassium	9/7/7440	17		mg/L	v		1		0.05	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Potassium	9/7/7440	19		mg/L	v		1		0.05	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16736	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18689	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16736	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18688	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Sodium	7440-23-5	12		mg/L	v		1		0.06	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Sodium	7440-23-5	12		mg/L	v		1		0.06	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16734	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18685	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.02		mg/L	v		0.01		0.00215	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16726	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18677	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16727	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18678	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16730	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18681	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16729	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18680	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16728	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18679	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16732	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18683	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16720	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	476		mg/L	v		4		1	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18670	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	516		mg/L	v		4		1	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16720	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	581		mg/L	v		4		1	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18670	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	630		mg/L	v		4		1	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16720	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18670	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16721	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	445		mg/L	v		1			
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18671	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	537		mg/L	v		1			
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16724	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	5.5		mg/L	v		0.1		0.03	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18674	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	5.1		mg/L	v		0.1		0.03	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16722	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	543		mg/L	v		10		10	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18672	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	592		mg/L	v		10		10	
CCS-16	CCS-16	IIA	2	P2-00445	Surface Water		Field Sample	6/28/2008	16723	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-16	CCS-16	IIA	2	P2-00917	Surface Water		Field Sample	9/14/2008	18673	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	650	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1	mg/L	0.05	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	650	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1	mg/L	0.049	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	652	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.512		mg/L	v		0.002	mg/L	0.002	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	650	E300.0	O	Z	Anions	Sulfate	14808-79-8	14		mg/L	v		1	mg/L	0.046	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	661	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	656	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.000876	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	656	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	656	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.9		mg/L	v		0.1	mg/L	0.00021	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	656	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Calcium	7440-70-2	131		mg/L	v		1	mg/L	0.214	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	656	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Iron	7439-89-6	1.34		mg/L	v		0.03	mg/L	0.005155	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	656	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	33		mg/L	v		1	mg/L	0.1396	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.66		mg/L	v		0.02	mg/L	0.001108	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	659	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Potassium	7440-09-7	16		mg/L	v		1	mg/L	0.06503	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	656	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	656	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00008905	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Sodium	7440-23-5	10		mg/L	v		1	mg/L	0.1805	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	656	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	654	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	658	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.00065	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	658	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	658	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Barium	7440-39-3	1		mg/L	v		0.1	mg/L	0.0005	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	658	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Calcium	7440-70-2	128		mg/L	v		1	mg/L	0.1	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Chromium	7440-47-3	-0.01		mg/L	U		-0.01	mg/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	657	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Iron	7439-89-6	1.52		mg/L	v		0.03	mg/L	0.003	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	658	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	33		mg/L	v		1	mg/L	0.09	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.65		mg/L	v		0.02	mg/L	0.0006	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	660	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Potassium	7440-09-7	16		mg/L	v		1	mg/L	0.4	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	658	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	658	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000345	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Sodium	7440-23-5	9		mg/L	v		1	mg/L	0.5	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	658	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	655	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	651	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.00651	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	653	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	645	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	485		mg/L	v		4	mg/L	1	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	645	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	591		mg/L	v		4	mg/L	1	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	645	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	646	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	464		mg/L	v		1	mg/L		
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	649	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	5.6		mg/L	v		0.1	mg/L	0.023	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	647	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	549		mg/L	v		10	mg/L	10	mg/L
CCS-16_SW	CCS-16	I	1	P1-00316	Surface Water		Field Sample	10/17/2007	648	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16664	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18579	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16664	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18580	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16670	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.97		mg/L	v	J	0.05		0.05	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18586	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	1.03		mg/L	v	J	0.05		0.05	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16664	E300.0	O	Z	Anions	Sulfate	14808-79-8	46		mg/L	v		1		0.05	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18579	E300.0	O	Z	Anions	Sulfate	14808-79-8	52		mg/L	v		1		0.05	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16678	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18598	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18591	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000175	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16674	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18591	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16674	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18592	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.00021	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18589	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.00021	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18591	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18589	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16674	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18592	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Calcium	7440-70-2	107		mg/L	v		1		0.21	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18589	SW6010B	O	DIS	Metals	Calcium	7440-70-2	102		mg/L	v		1		0.21	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18588	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18588	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16674	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18592	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18588	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.09		mg/L	v		0.03		0.01	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16674	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18591	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	37		mg/L	v		1		0.13	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18589	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	34		mg/L	v		1		0.13	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.12		mg/L	v		0.02		0.00111	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18588	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.36		mg/L	v		0.02		0.002	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16676	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18596	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16674	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18592	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Potassium	9/7/7440	20		mg/L	v		1		0.06	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18589	SW6010B	O	DIS	Metals	Potassium	9/7/7440	18		mg/L	v		1		0.06	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16674	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18592	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16674	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18591	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Sodium	7440-23-5	10		mg/L	v		1		0.18	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18589	SW6010B	O	DIS	Metals	Sodium	7440-23-5	10		mg/L	v		1		0.18	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16674	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18588	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16674	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18592	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16672	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18592	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.000317	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.18		mg/L	v		0.09		0.01	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.21		mg/L	v		0.09		0.01	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16675	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18593	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16675	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18594	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.000258	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.000258	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16675	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18595	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Calcium	7440-70-2	111		mg/L	v		1		0.03	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Calcium	7440-70-2	104		mg/L	v		1		0.03	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16675	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18594	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.4		mg/L	v		0.03		0.00466	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.45		mg/L	v		0.03		0.00466	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16675	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0008		mg/L	v	U	0.0005		0.0000167	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18593	SW6020	O	TOT	Metals	Lead	7439-92-1	0.001		mg/L	v		0.0005		0.0000167	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	38		mg/L	v		1		0.03	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	35		mg/L	v		1		0.03	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.19		mg/L	v		0.02		0.000366	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.38		mg/L	v		0.02		0.000366	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16677	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18597	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16675	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18594	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Potassium	9/7/7440	21		mg/L	v		1		0.05	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Potassium	9/7/7440	21		mg/L	v		1		0.05	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16675	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18594	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16675	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18593	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Sodium	7440-23-5	11		mg/L	v		1		0.06	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Sodium	7440-23-5	11		mg/L	v		1		0.06	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16673	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18590	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16665	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18581	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16666	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18582	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16669	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18585	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16668	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18584	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16667	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18583	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16671	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18587	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16659	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	418		mg/L	v		4		1	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18574	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	369		mg/L	v		4		1	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16659	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	510		mg/L	v		4		1	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18574	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	451		mg/L	v		4		1	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16659	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18574	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16660	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	420		mg/L	v		1			
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18575	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	434		mg/L	v		1			
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16663	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	7		mg/L	v		0.1		0.03	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18578	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	5.5		mg/L	v		0.1		0.03	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16661	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	516		mg/L	v		10		10	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18576	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	494		mg/L	v		10		10	
CCS-6	CCS-6	IIA	2	P2-00442	Surface Water		Field Sample	6/28/2008	16662	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-6	CCS-6	IIA	2	P2-00912	Surface Water		Field Sample	9/13/2008	18577	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3098	E300.0	O	Z	Anions	Chloride	16887-00-6	6		mg/L	v		1	mg/L	0.05	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3098	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1	mg/L	0.049	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3100	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	1.16		mg/L	v		0.008	mg/L	0.008	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3098	E300.0	O	Z	Anions	Sulfate	14808-79-8	54		mg/L	v		1	mg/L	0.046	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3109	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3104	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0001752	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3104	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00001645	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3104	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00001774	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.5		mg/L	v		0.1	mg/L	0.00021	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3104	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00000493	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Calcium	7440-70-2	97		mg/L	v		1	mg/L	0.214	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3104	SW6020	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00002355	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3104	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00002105	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3104	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00002206	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	33		mg/L	v		1	mg/L	0.1396	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02	mg/L	0.001108	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3107	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Potassium	7440-09-7	23		mg/L	v		1	mg/L	0.06503	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3104	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00001793	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3104	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00001781	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Sodium	7440-23-5	12		mg/L	v		1	mg/L	0.1805	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3104	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.0002302	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3102	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3105	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	v		0.09	mg/L	0.00013	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3105	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000041	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3105	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00004	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1	mg/L	0.0005	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3105	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.0000028	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Calcium	7440-70-2	93		mg/L	v		1	mg/L	0.1	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3105	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00004	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3105	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.31		mg/L	v		0.03	mg/L	0.003	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3106	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0009		mg/L	v	U	0.0006	mg/L	0.0000167	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	32		mg/L	v		1	mg/L	0.09	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.61		mg/L	v		0.02	mg/L	0.0006	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3108	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.006		mg/L	v		0.005	mg/L	0.004	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Potassium	7440-09-7	22		mg/L	v		1	mg/L	0.4	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3106	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3105	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000069	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Sodium	7440-23-5	10		mg/L	v		1	mg/L	0.5	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3105	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00000439	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3103	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3099	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3101	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3093	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	348		mg/L	v		4	mg/L	1	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3093	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	425		mg/L	v		4	mg/L	1	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3093	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3094	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	378		mg/L	v		1	mg/L		
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3097	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	8.8		mg/L	v		0.1	mg/L	0.023	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3095	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	501		mg/L	v		10	mg/L	10	mg/L
CCS-6_SW	CCS-6	I	1	P1-00385	Surface Water		Field Sample	10/12/2007	3096	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	19		mg/L	v		10	mg/L	1	mg/L
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16640	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18555	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1		0.02	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16640	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1		0.01	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18556	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1		0.01	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16646	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.027		mg/L	v	J	0.005		0.005	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18562	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.069		mg/L	v	J	0.005		0.005	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16640	E300.0	O	Z	Anions	Sulfate	14808-79-8	46		mg/L	v		1		0.05	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18555	E300.0	O	Z	Anions	Sulfate	14808-79-8	48		mg/L	v		1		0.05	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16648	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		300		ug/L	U	UJ	300		130	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16647	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		300		ug/L	U	UJ	300		34	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16647	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		300		ug/L	U	UJ	300		120	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16648	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	300		ug/L	U	UJ	300		130	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16657	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	571		ug/L	v	J	300		38	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18573	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16652	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18566	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16652	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18567	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1		0.00021	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.5		mg/L	v		0.1		0.002	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18566	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16652	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18567	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Calcium	7440-70-2	72		mg/L	v		1		0.21	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Calcium	7440-70-2	84		mg/L	v		1		0.02	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16652	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U	U	0.002		0.0000211	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18567	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16652	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18566	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	45		mg/L	v		1		0.13	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	48		mg/L	v		1		0.02	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16655	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18571	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16652	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18567	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Potassium	9/7/7440	32		mg/L	v		1		0.06	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Potassium	9/7/7440	31		mg/L	v		1		0.02	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16652	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U	UJ	0.005		0.0000179	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18567	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16652	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18566	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Sodium	7440-23-5	14		mg/L	v		1		0.18	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Sodium	7440-23-5	13		mg/L	v		1		0.02	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16652	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16652	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18567	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16650	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18564	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16653	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18568	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16653	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18569	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.5		mg/L	v		0.1		0.000258	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.00026	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00021	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.03	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16654	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18570	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000283	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Calcium	7440-70-2	76		mg/L	v		1		0.03	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Calcium	7440-70-2	79		mg/L	v		1		0.03	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00288	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00137	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16653	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	v		0.002		0.000155	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18570	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000313	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00471	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16654	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00000334	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18568	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	46		mg/L	v		1		0.03	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	46		mg/L	v		1		0.04	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000369	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16656	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18572	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16653	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18569	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Potassium	9/7/7440	34		mg/L	v		1		0.05	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Potassium	9/7/7440	31		mg/L	v		1		0.05	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16653	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18569	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16653	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18568	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Sodium	7440-23-5	16		mg/L	v		1		0.06	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Sodium	7440-23-5	14		mg/L	v		1		0.06	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18569	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.000157	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16651	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18565	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00217	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16641	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18557	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16642	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18558	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16645	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18561	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16644	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18560	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16643	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18559	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	v	J	0.01		0.00651	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	10		ug/L	U	UJ	10		3.88	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	10		ug/L	U	UJ	10		3.32	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	10		ug/L	U	UJ	10		3.7	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	10		ug/L	U	UJ	10		2.48	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	10		ug/L	U	UJ	10		2.52	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	10		ug/L	U	UJ	10		2.4	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	10		ug/L	U	UJ	10		2.74	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	10		ug/L	U	UJ	10		2.62	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	10		ug/L	U	UJ	10		2.68	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	10		ug/L	U	UJ	10		2.16	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	10		ug/L	U	UJ	10		2.26	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	10		ug/L	U	UJ	10		2.44	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	10		ug/L	U	UJ	10		3.26	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	10		ug/L	U	UJ	10		2.32	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	10		ug/L	U	UJ	10		3.92	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	10		ug/L	U	UJ	10		2.5	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16658	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	10		ug/L	U	UJ	10		2.46	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16649	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18563	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16635	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	386		mg/L	v		4		1	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18550	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	379		mg/L	v		4		1	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16635	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	470		mg/L	v		4		1	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18550	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	463		mg/L	v		4		1	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16635	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18550	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16636	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	363		mg/L	v		1			
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18551	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	406		mg/L	v		1			
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16639	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	6.1		mg/L	v		0.1		0.03	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18554	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	4.4		mg/L	v		0.1		0.03	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16637	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	468		mg/L	v		10		10	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18552	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	491		mg/L	v		10		10	
CCS-8	CCS-8	IIA	2	P2-00441	Surface Water		Field Sample	6/28/2008	16638	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-8	CCS-8	IIA	2	P2-00911	Surface Water		Field Sample	9/13/2008	18553	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	667	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1	mg/L	0.05	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	667	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1	mg/L	0.049	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	669	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.032		mg/L	v		0.002	mg/L	0.002	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	667	E300.0	O	Z	Anions	Sulfate	14808-79-8	57		mg/L	v		1	mg/L	0.046	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	678	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	673	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.000876	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	673	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	673	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1	mg/L	0.00021	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	673	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Calcium	7440-70-2	83		mg/L	v		1	mg/L	0.214	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	673	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	673	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	49		mg/L	v		1	mg/L	0.1396	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	676	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Potassium	7440-09-7	33		mg/L	v		1	mg/L	0.06503	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	673	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	673	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00008905	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Sodium	7440-23-5	15		mg/L	v		1	mg/L	0.1805	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	673	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	671	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	675	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.00065	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	675	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	675	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.6		mg/L	v		0.1	mg/L	0.0005	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	675	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Calcium	7440-70-2	80		mg/L	v		1	mg/L	0.1	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Chromium	7440-47-3	-0.01		mg/L	U		-0.01	mg/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	674	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.14		mg/L	v		0.03	mg/L	0.003	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	675	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	47		mg/L	v		1	mg/L	0.09	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	677	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.008		mg/L	v		0.005	mg/L	0.004	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Potassium	7440-09-7	31		mg/L	v		1	mg/L	0.4	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	675	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	675	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000345	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Sodium	7440-23-5	13		mg/L	v		1	mg/L	0.5	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	675	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	672	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	668	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.00651	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.48		ug/L	u		0.5	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	670	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	662	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	405		mg/L	v		4	mg/L	1	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	662	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	494		mg/L	v		4	mg/L	1	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	662	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	663	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	409		mg/L	v		1	mg/L		
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	666	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	6.1		mg/L	v		0.1	mg/L	0.023	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	664	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	528		mg/L	v		10	mg/L	10	mg/L
CCS-8_SW	CCS-8	I	1	P1-00317	Surface Water		Field Sample	10/17/2007	665	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16745	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1		0.02	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18485	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1		0.02	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16745	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18486	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v		0.1		0.01	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16751	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.178		mg/L	v	J	0.005		0.005	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18492	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.212		mg/L	v	J	0.005		0.005	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16745	E300.0	O	Z	Anions	Sulfate	14808-79-8	20		mg/L	v		1		0.05	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18485	E300.0	O	Z	Anions	Sulfate	14808-79-8	21		mg/L	v		1		0.05	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16761	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18502	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16755	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18496	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16755	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18497	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.8		mg/L	v		0.1		0.00021	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.8		mg/L	v		0.1		0.002	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18496	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16756	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18497	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Calcium	7440-70-2	101		mg/L	v		1		0.21	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Calcium	7440-70-2	115		mg/L	v		1		0.02	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16755	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18497	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16755	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18496	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	27		mg/L	v		1		0.13	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	30		mg/L	v		1		0.02	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16759	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18500	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16755	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18497	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.06	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.02	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16755	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U	UJ	0.005		0.0000179	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18497	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16755	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18496	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.18	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Sodium	7440-23-5	9		mg/L	v		1		0.02	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16755	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16755	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18497	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16753	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18494	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16757	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18498	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16757	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18499	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.8		mg/L	v		0.1		0.000258	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.8		mg/L	v		0.1		0.000258	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.03	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16758	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18499	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Calcium	7440-70-2	104		mg/L	v		1		0.03	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Calcium	7440-70-2	106		mg/L	v		1		0.03	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16757	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18499	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.06		mg/L	v		0.03		0.00466	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16758	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00000334	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18498	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	27		mg/L	v		1		0.03	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	29		mg/L	v		1		0.03	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16760	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18501	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16757	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18499	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Potassium	9/7/7440	11		mg/L	v		1		0.05	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16757	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18499	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16758	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000069	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18498	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Sodium	7440-23-5	10		mg/L	v		1		0.06	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Sodium	7440-23-5	10		mg/L	v		1		0.06	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16754	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18495	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16746	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18487	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16747	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18488	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16750	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	1.22		mg/L	v		0.01		0.01	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18491	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	1.18		mg/L	v		0.01		0.01	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16749	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	1.22		mg/L	v		0.01		0.0016	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18490	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	1.18		mg/L	v		0.01		0.0016	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16748	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18489	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16752	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18493	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16740	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	373		mg/L	v		4		1	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18480	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	381		mg/L	v		4		1	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16740	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	455		mg/L	v		4		1	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18480	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	465		mg/L	v		4		1	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16740	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18480	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16741	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	361		mg/L	v		1			
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18481	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	409		mg/L	v		1			
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16744	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.9		mg/L	v		0.1		0.03	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18484	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.1		mg/L	v		0.1		0.03	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16742	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	443		mg/L	v		10		10	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18482	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	454		mg/L	v		10		10	
CCS-9	CCS-9	IIA	2	P2-00446	Surface Water		Field Sample	6/29/2008	16743	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-9	CCS-9	IIA	2	P2-00907	Surface Water		Field Sample	9/13/2008	18483	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	633	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1	mg/L	0.05	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	633	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1	mg/L	0.049	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	635	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.217		mg/L	v		0.002	mg/L	0.002	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	633	E300.0	O	Z	Anions	Sulfate	14808-79-8	20		mg/L	v		1	mg/L	0.046	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	644	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	639	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.000876	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	639	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	639	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.8		mg/L	v		0.1	mg/L	0.00021	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	639	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Calcium	7440-70-2	108		mg/L	v		1	mg/L	0.214	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	639	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	639	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	27		mg/L	v		1	mg/L	0.1396	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	642	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.06503	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	639	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	639	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00008905	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Sodium	7440-23-5	10		mg/L	v		1	mg/L	0.1805	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	639	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	637	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	641	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.00065	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	641	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	641	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.9		mg/L	v		0.1	mg/L	0.0005	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	641	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Calcium	7440-70-2	105		mg/L	v		1	mg/L	0.1	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Chromium	7440-47-3	-0.01		mg/L	U		-0.01	mg/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	640	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.003	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	641	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	27		mg/L	v		1	mg/L	0.09	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	643	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.4	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	641	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	641	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000345	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Sodium	7440-23-5	8		mg/L	v		1	mg/L	0.5	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	641	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	638	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	634	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	636	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	628	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	382		mg/L	v		4	mg/L	1	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	628	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	467		mg/L	v		4	mg/L	1	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	628	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	629	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	382		mg/L	v		1	mg/L		
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	632	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.9		mg/L	v		0.1	mg/L	0.023	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	630	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	451		mg/L	v		10	mg/L	10	mg/L
CCS-9_SW	CCS-9	I	1	P1-00315	Surface Water		Field Sample	10/16/2007	631	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
D1	D1	WT-2015	1	WT-10015	Surface Water		Field Sample	4/16/2015	29329	300.0	O	Z	Anions	Chloride	7782-50-5	5.1		mg/L	v				0.5	mg/L
D1	D1	WT-2015	1	WT-10015	Surface Water		Field Sample	4/16/2015	29329	300.0	O	Z	Anions	Sulfate		7.8		mg/L	v				0.75	mg/L
D1	D1	WT-2015	1	WT-10015	Surface Water		Field Sample	4/16/2015	29332	6010B	O	TOT	Metals	Calcium	7440-70-2	110000		ug/L	v	J			5000	ug/L
D1	D1	WT-2015	1	WT-10015	Surface Water		Field Sample	4/16/2015	29331	6010B	O	TOT	Metals	Magnesium	7439-95-4	29000		ug/L	v				1000	ug/L
D1	D1	WT-2015	1	WT-10015	Surface Water		Field Sample	4/16/2015	29331	6010B	O	TOT	Metals	Potassium	7440-09-7	14000		ug/L	v				1000	ug/L
D1	D1	WT-2015	1	WT-10015	Surface Water		Field Sample	4/16/2015	29331	6010B	O	TOT	Metals	Sodium	7440-23-5	6700		ug/L	v				1000	ug/L
D1	D1	WT-2015	1	WT-10015	Surface Water		Field Sample	4/16/2015	29328	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	370		mg/L	v				2	mg/L
D1	D1	WT-2015	1	WT-10015	Surface Water		Field Sample	4/16/2015	29330	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	370		mg/L	v				2	mg/L
D10	D10	WT-2015	1	WT-10024	Surface Water		Field Sample	4/16/2015	29374	300.0	O	Z	Anions	Chloride	7782-50-5	2.5		mg/L	v				0.5	mg/L
D10	D10	WT-2015	1	WT-10024	Surface Water		Field Sample	4/16/2015	29374	300.0	O	Z	Anions	Sulfate		6.8		mg/L	v				0.75	mg/L
D10	D10	WT-2015	1	WT-10024	Surface Water		Field Sample	4/16/2015	29377	6010B	O	TOT	Metals	Calcium	7440-70-2	63000		ug/L	v	J			5000	ug/L
D10	D10	WT-2015	1	WT-10024	Surface Water		Field Sample	4/16/2015	29376	6010B	O	TOT	Metals	Magnesium	7439-95-4	16000		ug/L	v				1000	ug/L
D10	D10	WT-2015	1	WT-10024	Surface Water		Field Sample	4/16/2015	29376	6010B	O	TOT	Metals	Potassium	7440-09-7	7900		ug/L	v				1000	ug/L
D10	D10	WT-2015	1	WT-10024	Surface Water		Field Sample	4/16/2015	29376	6010B	O	TOT	Metals	Sodium	7440-23-5	4000		ug/L	v				1000	ug/L
D10	D10	WT-2015	1	WT-10024	Surface Water		Field Sample	4/16/2015	29373	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	230		mg/L	v				2	mg/L
D10	D10	WT-2015	1	WT-10024	Surface Water		Field Sample	4/16/2015	29375	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	230		mg/L	v				2	mg/L
D11	D11	WT-2015	1	WT-10025	Surface Water		Field Sample	4/16/2015	29379	300.0	O	Z	Anions	Chloride	7782-50-5	2.6		mg/L	v				0.5	mg/L
D11	D11	WT-2015	1	WT-10025	Surface Water		Field Sample	4/16/2015	29379	300.0	O	Z	Anions	Sulfate		6.5		mg/L	v				0.75	mg/L
D11	D11	WT-2015	1	WT-10025	Surface Water		Field Sample	4/16/2015	29382	6010B	O	TOT	Metals	Calcium	7440-70-2	63000		ug/L	v	J			5000	ug/L
D11	D11	WT-2015	1	WT-10025	Surface Water		Field Sample	4/16/2015	29381	6010B	O	TOT	Metals	Magnesium	7439-95-4	16000		ug/L	v				1000	ug/L
D11	D11	WT-2015	1	WT-10025	Surface Water		Field Sample	4/16/2015	29381	6010B	O	TOT	Metals	Potassium	7440-09-7	7800		ug/L	v				1000	ug/L
D11	D11	WT-2015	1	WT-10025	Surface Water		Field Sample	4/16/2015	29381	6010B	O	TOT	Metals	Sodium	7440-23-5	4000		ug/L	v				1000	ug/L
D11	D11	WT-2015	1	WT-10025	Surface Water		Field Sample	4/16/2015	29378	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	230		mg/L	v				2	mg/L
D11	D11	WT-2015	1	WT-10025	Surface Water		Field Sample	4/16/2015	29380	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	230		mg/L	v				2	mg/L
D12	D12	WT-2015	1	WT-10026	Surface Water		Field Sample	4/16/2015	29384	300.0	O	Z	Anions	Chloride	7782-50-5	2.6		mg/L	v				0.5	mg/L
D12	D12	WT-2015	1	WT-10026	Surface Water		Field Sample	4/16/2015	29384	300.0	O	Z	Anions	Sulfate		6.8		mg/L	v				0.75	mg/L
D12	D12	WT-2015	1	WT-10026	Surface Water		Field Sample	4/16/2015	29387	6010B	O	TOT	Metals	Calcium	7440-70-2	63000		ug/L	v	J			5000	ug/L
D12	D12	WT-2015	1	WT-10026	Surface Water		Field Sample	4/16/2015	29386	6010B	O	TOT	Metals	Magnesium	7439-95-4	16000		ug/L	v				1000	ug/L
D12	D12	WT-2015	1	WT-10026	Surface Water		Field Sample	4/16/2015	29386	6010B	O	TOT	Metals	Potassium	7440-09-7	7900		ug/L	v				1000	ug/L
D12	D12	WT-2015	1	WT-10026	Surface Water		Field Sample	4/16/2015	29386	6010B	O	TOT	Metals	Sodium	7440-23-5	4000		ug/L	v				1000	ug/L
D12	D12	WT-2015	1	WT-10026	Surface Water		Field Sample	4/16/2015	29383	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	230		mg/L	v				2	mg/L
D12	D12	WT-2015	1	WT-10026	Surface Water		Field Sample	4/16/2015	29385	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	230		mg/L	v				2	mg/L
D2	D2	WT-2015	1	WT-10017	Surface Water		Field Sample	4/16/2015	29339	300.0	O	Z	Anions	Chloride	7782-50-5	3.4		mg/L	v				0.5	mg/L
D2	D2	WT-2015	1	WT-10017	Surface Water		Field Sample	4/16/2015	29339	300.0	O	Z	Anions	Sulfate		6.7		mg/L	v				0.75	mg/L
D2	D2	WT-2015	1	WT-10017	Surface Water		Field Sample	4/16/2015	29342	6010B	O	TOT	Metals	Calcium	7440-70-2	88000		ug/L	v	J			5000	ug/L
D2	D2	WT-2015	1	WT-10017	Surface Water		Field Sample	4/16/2015	29341	6010B	O	TOT	Metals	Magnesium	7439-95-4	23000		ug/L	v				1000	ug/L
D2	D2	WT-2015	1	WT-10017	Surface Water		Field Sample	4/16/2015	29341	6010B	O	TOT	Metals	Potassium	7440-09-7	12000		ug/L	v				1000	ug/L
D2	D2	WT-2015	1	WT-10017	Surface Water		Field Sample	4/16/2015	29341	6010B	O	TOT	Metals	Sodium	7440-23-5	5400		ug/L	v				1000	ug/L
D2	D2	WT-2015	1	WT-10017	Surface Water		Field Sample	4/16/2015	29338	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	300		mg/L	v				2	mg/L
D2	D2	WT-2015	1	WT-10017	Surface Water		Field Sample	4/16/2015	29340	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	300		mg/L	v				2	mg/L
D3	D3	WT-2015	1	WT-10018	Surface Water		Field Sample	4/16/2015	29344	300.0	O	Z	Anions	Chloride	7782-50-5	3.1		mg/L	v				0.5	mg/L
D3	D3	WT-2015	1	WT-10018	Surface Water		Field Sample	4/16/2015	29344	300.0	O	Z	Anions	Sulfate		6.5		mg/L	v				0.75	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
D3	D3	WT-2015	1	WT-10018	Surface Water		Field Sample	4/16/2015	29347	6010B	O	TOT	Metals	Calcium	7440-70-2	78000		ug/L	v	J			5000	ug/L
D3	D3	WT-2015	1	WT-10018	Surface Water		Field Sample	4/16/2015	29346	6010B	O	TOT	Metals	Magnesium	7439-95-4	22000		ug/L	v				1000	ug/L
D3	D3	WT-2015	1	WT-10018	Surface Water		Field Sample	4/16/2015	29346	6010B	O	TOT	Metals	Potassium	7440-09-7	11000		ug/L	v				1000	ug/L
D3	D3	WT-2015	1	WT-10018	Surface Water		Field Sample	4/16/2015	29346	6010B	O	TOT	Metals	Sodium	7440-23-5	5300		ug/L	v				1000	ug/L
D3	D3	WT-2015	1	WT-10018	Surface Water		Field Sample	4/16/2015	29343	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	280		mg/L	v				2	mg/L
D3	D3	WT-2015	1	WT-10018	Surface Water		Field Sample	4/16/2015	29345	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	280		mg/L	v				2	mg/L
D4	D4	WT-2015	1	WT-10019	Surface Water		Field Sample	4/16/2015	29349	300.0	O	Z	Anions	Chloride	7782-50-5	2.8		mg/L	v				0.5	mg/L
D4	D4	WT-2015	1	WT-10019	Surface Water		Field Sample	4/16/2015	29349	300.0	O	Z	Anions	Sulfate		6.5		mg/L	v				0.75	mg/L
D4	D4	WT-2015	1	WT-10019	Surface Water		Field Sample	4/16/2015	29352	6010B	O	TOT	Metals	Calcium	7440-70-2	71000		ug/L	v	J			5000	ug/L
D4	D4	WT-2015	1	WT-10019	Surface Water		Field Sample	4/16/2015	29351	6010B	O	TOT	Metals	Magnesium	7439-95-4	21000		ug/L	v				1000	ug/L
D4	D4	WT-2015	1	WT-10019	Surface Water		Field Sample	4/16/2015	29351	6010B	O	TOT	Metals	Potassium	7440-09-7	10000		ug/L	v				1000	ug/L
D4	D4	WT-2015	1	WT-10019	Surface Water		Field Sample	4/16/2015	29351	6010B	O	TOT	Metals	Sodium	7440-23-5	5200		ug/L	v				1000	ug/L
D4	D4	WT-2015	1	WT-10019	Surface Water		Field Sample	4/16/2015	29348	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	280		mg/L	v				2	mg/L
D4	D4	WT-2015	1	WT-10019	Surface Water		Field Sample	4/16/2015	29350	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	270		mg/L	v				2	mg/L
D5	D5	WT-2015	1	WT-10020	Surface Water		Field Sample	4/16/2015	29354	300.0	O	Z	Anions	Chloride	7782-50-5	2.7		mg/L	v				0.5	mg/L
D5	D5	WT-2015	1	WT-10020	Surface Water		Field Sample	4/16/2015	29354	300.0	O	Z	Anions	Sulfate		6.5		mg/L	v				0.75	mg/L
D5	D5	WT-2015	1	WT-10020	Surface Water		Field Sample	4/16/2015	29357	6010B	O	TOT	Metals	Calcium	7440-70-2	70000		ug/L	v	J			5000	ug/L
D5	D5	WT-2015	1	WT-10020	Surface Water		Field Sample	4/16/2015	29356	6010B	O	TOT	Metals	Magnesium	7439-95-4	18000		ug/L	v				1000	ug/L
D5	D5	WT-2015	1	WT-10020	Surface Water		Field Sample	4/16/2015	29356	6010B	O	TOT	Metals	Potassium	7440-09-7	8800		ug/L	v				1000	ug/L
D5	D5	WT-2015	1	WT-10020	Surface Water		Field Sample	4/16/2015	29356	6010B	O	TOT	Metals	Sodium	7440-23-5	4500		ug/L	v				1000	ug/L
D5	D5	WT-2015	1	WT-10020	Surface Water		Field Sample	4/16/2015	29353	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	250		mg/L	v				2	mg/L
D5	D5	WT-2015	1	WT-10020	Surface Water		Field Sample	4/16/2015	29355	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	250		mg/L	v				2	mg/L
D6	D6	WT-2015	1	WT-10021	Surface Water		Field Sample	4/16/2015	29359	300.0	O	Z	Anions	Chloride	7782-50-5	1.8		mg/L	v				0.5	mg/L
D6	D6	WT-2015	1	WT-10021	Surface Water		Field Sample	4/16/2015	29359	300.0	O	Z	Anions	Sulfate		6.1		mg/L	v				0.75	mg/L
D6	D6	WT-2015	1	WT-10021	Surface Water		Field Sample	4/16/2015	29362	6010B	O	TOT	Metals	Calcium	7440-70-2	54000		ug/L	v	J			5000	ug/L
D6	D6	WT-2015	1	WT-10021	Surface Water		Field Sample	4/16/2015	29361	6010B	O	TOT	Metals	Magnesium	7439-95-4	13000		ug/L	v				1000	ug/L
D6	D6	WT-2015	1	WT-10021	Surface Water		Field Sample	4/16/2015	29361	6010B	O	TOT	Metals	Potassium	7440-09-7	6100		ug/L	v				1000	ug/L
D6	D6	WT-2015	1	WT-10021	Surface Water		Field Sample	4/16/2015	29361	6010B	O	TOT	Metals	Sodium	7440-23-5	3300		ug/L	v				1000	ug/L
D6	D6	WT-2015	1	WT-10021	Surface Water		Field Sample	4/16/2015	29358	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	200		mg/L	v				2	mg/L
D6	D6	WT-2015	1	WT-10021	Surface Water		Field Sample	4/16/2015	29360	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	200		mg/L	v				2	mg/L
D7	D7	WT-2015	1	WT-10022	Surface Water		Field Sample	4/16/2015	29364	300.0	O	Z	Anions	Chloride	7782-50-5	2.6		mg/L	v				0.5	mg/L
D7	D7	WT-2015	1	WT-10022	Surface Water		Field Sample	4/16/2015	29364	300.0	O	Z	Anions	Sulfate		6.5		mg/L	v				0.75	mg/L
D7	D7	WT-2015	1	WT-10022	Surface Water		Field Sample	4/16/2015	29367	6010B	O	TOT	Metals	Calcium	7440-70-2	66000		ug/L	v	J			5000	ug/L
D7	D7	WT-2015	1	WT-10022	Surface Water		Field Sample	4/16/2015	29366	6010B	O	TOT	Metals	Magnesium	7439-95-4	17000		ug/L	v				1000	ug/L
D7	D7	WT-2015	1	WT-10022	Surface Water		Field Sample	4/16/2015	29366	6010B	O	TOT	Metals	Potassium	7440-09-7	8400		ug/L	v				1000	ug/L
D7	D7	WT-2015	1	WT-10022	Surface Water		Field Sample	4/16/2015	29366	6010B	O	TOT	Metals	Sodium	7440-23-5	4300		ug/L	v				1000	ug/L
D7	D7	WT-2015	1	WT-10022	Surface Water		Field Sample	4/16/2015	29363	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	240		mg/L	v				2	mg/L
D7	D7	WT-2015	1	WT-10022	Surface Water		Field Sample	4/16/2015	29365	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	240		mg/L	v				2	mg/L
D9	D9	WT-2015	1	WT-10023	Surface Water		Field Sample	4/16/2015	29369	300.0	O	Z	Anions	Chloride	7782-50-5	3.2		mg/L	v				0.5	mg/L
D9	D9	WT-2015	1	WT-10023	Surface Water		Field Sample	4/16/2015	29369	300.0	O	Z	Anions	Sulfate		6.6		mg/L	v				0.75	mg/L
D9	D9	WT-2015	1	WT-10023	Surface Water		Field Sample	4/16/2015	29372	6010B	O	TOT	Metals	Calcium	7440-70-2	75000		ug/L	v	J			5000	ug/L
D9	D9	WT-2015	1	WT-10023	Surface Water		Field Sample	4/16/2015	29371	6010B	O	TOT	Metals	Magnesium	7439-95-4	22000		ug/L	v				1000	ug/L
D9	D9	WT-2015	1	WT-10023	Surface Water		Field Sample	4/16/2015	29371	6010B	O	TOT	Metals	Potassium	7440-09-7	11000		ug/L	v				1000	ug/L
D9	D9	WT-2015	1	WT-10023	Surface Water		Field Sample	4/16/2015	29371	6010B	O	TOT	Metals	Sodium	7440-23-5	5100		ug/L	v				1000	ug/L
D9	D9	WT-2015	1	WT-10023	Surface Water		Field Sample	4/16/2015	29368	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	290		mg/L	v				2	mg/L
D9	D9	WT-2015	1	WT-10023	Surface Water		Field Sample	4/16/2015	29370	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	290		mg/L	v				2	mg/L
East-TGC	East-TGC	WT-2015	1	WT-10002	Surface Water		Field Sample	4/14/2015	29277	300.0	O	Z	Anions	Chloride	7782-50-5	5		mg/L	v				0.5	mg/L
East-TGC	East-TGC	WT-2015	1	WT-10002	Surface Water		Field Sample	4/14/2015	29277	300.0	O	Z	Anions	Sulfate		12		mg/L	v				0.75	mg/L
East-TGC	East-TGC	WT-2015	1	WT-10002	Surface Water		Field Sample	4/14/2015	29279	6010B	O	TOT	Metals	Calcium	7440-70-2	78000		ug/L	v	J			5000	ug/L
East-TGC	East-TGC	WT-2015	1	WT-10002	Surface Water		Field Sample	4/14/2015	29279	6010B	O	TOT	Metals	Magnesium	7439-95-4	18000		ug/L	v				1000	ug/L
East-TGC	East-TGC	WT-2015	1	WT-10002	Surface Water		Field Sample	4/14/2015	29279	6010B	O	TOT	Metals	Potassium	7440-09-7	7500		ug/L	v				1000	ug/L
East-TGC	East-TGC	WT-2015	1	WT-10002	Surface Water		Field Sample	4/14/2015	29279	6010B	O	TOT	Metals	Sodium	7440-23-5	7600		ug/L	v				1000	ug/L
East-TGC	East-TGC	WT-2015	1	WT-10002	Surface Water		Field Sample	4/14/2015	29276	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	250		mg/L	v				2	mg/L
East-TGC	East-TGC	WT-2015	1	WT-10002	Surface Water		Field Sample	4/14/2015	29278	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	240		mg/L	v				2	mg/L
East-TGP	East-TGP	WT-2015	1	WT-10003	Surface Water		Field Sample	4/14/2015	29281	300.0	O	Z	Anions	Chloride	7782-50-5	4.1		mg/L	v				0.5	mg/L
East-TGP	East-TGP	WT-2015	1	WT-10003	Surface Water		Field Sample	4/14/2015	29281	300.0	O	Z	Anions	Sulfate		13		mg/L	v				0.75	mg/L
East-TGP	East-TGP	WT-2015	1	WT-10003	Surface Water		Field Sample	4/14/2015	29283	6010B	O	TOT	Metals	Calcium	7440-70-2	83000		ug/L	v	J			5000	ug/L
East-TGP	East-TGP	WT-2015	1	WT-10003	Surface Water		Field Sample	4/14/2015	29283	6010B	O	TOT	Metals	Magnesium	7439-95-4	18000		ug/L	v				1000	ug/L
East-TGP	East-TGP	WT-2015	1	WT-10003	Surface Water		Field Sample	4/14/2015	29283	6010B	O	TOT	Metals	Potassium	7440-09-7	5900		ug/L	v				1000	ug/L
East-TGP	East-TGP	WT-2015	1	WT-10003	Surface Water		Field Sample	4/14/2015	29283	6010B	O	TOT	Metals	Sodium	7440-23-5	6700		ug/L	v				1000	ug/L
East-TGP	East-TGP	WT-2015	1	WT-10003	Surface Water		Field Sample	4/14/2015	29280	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	250		mg/L	v				2	mg/L
East-TGP	East-TGP	WT-2015	1	WT-10003	Surface Water		Field Sample	4/14/2015	29282	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	250		mg/L	v				2	mg/L
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16572	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18416	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
FC-1	FC-1	WT-2015	1	WT-10034	Surface Water		Field Sample	4/17/2015	29417	300.0	O	Z	Anions	Chloride	7782-50-5	4.4		mg/L	v				0.5	mg/L
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16572	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1		0.01	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18416	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16578	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.149		mg/L	v	J	0.005		0.005	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18422	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.138		mg/L	v	J	0.005		0.005	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16572	E300.0	O	Z	Anions	Sulfate	14808-79-8	17		mg/L	v		1		0.05	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18416	E300.0	O	Z	Anions	Sulfate	14808-79-8	18		mg/L	v		1		0.05	
FC-1	FC-1	WT-2015	1	WT-10034	Surface Water		Field Sample	4/17/2015	29417	300.0	O	Z	Anions	Sulfate		16		mg/L	v				0.75	mg/L
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16586	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18432	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000175	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18426	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18427	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.002	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18426	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18427	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Calcium	7440-70-2	76		mg/L	v		1		0.21	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Calcium	7440-70-2	82		mg/L	v		1		0.02	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18427	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18426	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	13		mg/L	v		1		0.13	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	15		mg/L	v		1		0.02	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16584	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18430	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18427	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Potassium	9/7/7440	8		mg/L	v		1		0.06	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.02	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18427	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18426	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.02	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16582	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18427	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16580	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18424	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16583	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18428	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16583	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18429	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.000258	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16583	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18429	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Calcium	7440-70-2	80		mg/L	v		1		0.03	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Calcium	7440-70-2	75		mg/L	v		1		0.03	
FC-1	FC-1	WT-2015	1	WT-10034	Surface Water		Field Sample	4/17/2015	29419	6010B	O	TOT	Metals	Calcium	7440-70-2	69000		ug/L	v				5000	ug/L
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.00218	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18429	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.05		mg/L	v		0.03		0.00466	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16583	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18428	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	14		mg/L	v		1		0.03	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	14		mg/L	v		1		0.03	
FC-1	FC-1	WT-2015	1	WT-10034	Surface Water		Field Sample	4/17/2015	29419	6010B	O	TOT	Metals	Magnesium	7439-95-4	13000		ug/L	v				1000	ug/L
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16585	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18431	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16583	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18429	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.05	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
FC-1	FC-1	WT-2015	1	WT-10034	Surface Water		Field Sample	4/17/2015	29419	6010B	O	TOT	Metals	Potassium	7440-09-7	7300		ug/L	v				1000	ug/L
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16583	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18429	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16583	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18428	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.06	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.06	
FC-1	FC-1	WT-2015	1	WT-10034	Surface Water		Field Sample	4/17/2015	29419	6010B	O	TOT	Metals	Sodium	7440-23-5	5100		ug/L	v				1000	ug/L
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16581	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18425	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16573	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18417	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16574	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18418	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16577	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.02		mg/L	v	U	0.01		0.01	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18421	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.03		mg/L	v		0.01		0.01	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16576	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.02		mg/L	v	U	0.01		0.0016	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18420	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.03		mg/L	v		0.01		0.0016	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16575	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18419	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16579	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18423	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16567	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	248		mg/L	v		4		1	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18411	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	237		mg/L	v		4		1	
FC-1	FC-1	WT-2015	1	WT-10034	Surface Water		Field Sample	4/17/2015	29416	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	220		mg/L	v				2	mg/L
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16567	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	302		mg/L	v		4		1	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18411	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	290		mg/L	v		4		1	
FC-1	FC-1	WT-2015	1	WT-10034	Surface Water		Field Sample	4/17/2015	29418	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	210		mg/L	v				2	mg/L
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16567	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18411	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16568	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	246		mg/L	v		1			
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18412	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	266		mg/L	v		1			
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16571	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	4.1		mg/L	v		0.1		0.03	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18415	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2		mg/L	v		0.1		0.03	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16569	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	307		mg/L	v		10		10	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18413	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	304		mg/L	v		10		10	
FC-1	FC-1	IIA	2	P2-00432	Surface Water		Field Sample	6/27/2008	16570	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
FC-1	FC-1	IIA	2	P2-00904	Surface Water		Field Sample	9/12/2008	18414	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2995	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1	mg/L	0.05	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2995	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1	mg/L	0.049	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3000	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.155		mg/L	v		0.002	mg/L	0.002	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2995	E300.0	O	Z	Anions	Sulfate	14808-79-8	17		mg/L	v		1	mg/L	0.046	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3009	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3004	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0001752	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3004	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00001645	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3004	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00001774	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1	mg/L	0.00021	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3004	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00000493	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Calcium	7440-70-2	77		mg/L	v		1	mg/L	0.214	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3004	SW6020	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00001357	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3004	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00002105	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3004	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00002206	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	15		mg/L	v		1	mg/L	0.1396	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3007	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.06503	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3004	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00001793	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3004	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00001781	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.1805	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3004	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.0002302	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3002	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3005	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.2		mg/L	v		0.09	mg/L	0.00013	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3005	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000041	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3005	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00004	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.0005	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3005	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.0000028	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Calcium	7440-70-2	74		mg/L	v		1	mg/L	0.1	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3005	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00004	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3005	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.19		mg/L	v		0.03	mg/L	0.003	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3005	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0006		mg/L	U		0.0006	mg/L	0.00000334	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	14		mg/L	v		1	mg/L	0.09	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3008	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Potassium	7440-09-7	9		mg/L	v		1	mg/L	0.4	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3006	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3005	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000069	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Sodium	7440-23-5	4		mg/L	v		1	mg/L	0.5	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3005	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00000439	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3003	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2996	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2997	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2994	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U	UJ	0.01	mg/L	0.01	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2999	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.0016	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2998	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	3001	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2989	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	253		mg/L	v		4	mg/L	1	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2989	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	309		mg/L	v		4	mg/L	1	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2989	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2990	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	253		mg/L	v		1	mg/L		
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2993	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.4		mg/L	v		0.1	mg/L	0.023	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2991	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	327		mg/L	v		10	mg/L	10	mg/L
FC-1_SW	FC-1	I	1	P1-00267	Surface Water		Field Sample	10/13/2007	2992	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16492	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18346	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16492	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18347	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16498	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.156		mg/L	v	J	0.005		0.005	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18353	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.139		mg/L	v	J	0.005		0.005	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16492	E300.0	O	Z	Anions	Sulfate	14808-79-8	18		mg/L	v		1		0.05	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18346	E300.0	O	Z	Anions	Sulfate	14808-79-8	18		mg/L	v		1		0.05	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16506	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18364	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16502	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18357	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16502	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18358	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.002	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18357	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16502	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18358	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Calcium	7440-70-2	76		mg/L	v		1		0.21	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Calcium	7440-70-2	80		mg/L	v		1		0.02	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16502	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18358	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16502	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18357	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	13		mg/L	v		1		0.13	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	15		mg/L	v		1		0.02	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16504	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18362	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16502	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18358	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Potassium	9/7/7440	8		mg/L	v		1		0.06	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.02	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16502	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U	UJ	0.005		0.0000179	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18358	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16502	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18357	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.02	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16502	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16502	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18357	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16500	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18355	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16503	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18359	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16503	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18360	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.000258	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.03	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16503	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18361	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Calcium	7440-70-2	79		mg/L	v		1		0.03	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Calcium	7440-70-2	78		mg/L	v		1		0.03	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16503	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18360	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16503	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18359	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	14		mg/L	v		1		0.03	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	14		mg/L	v		1		0.03	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16505	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18363	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16503	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18360	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.05	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16503	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18360	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16503	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18359	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.06	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.06	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16501	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18356	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16493	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18348	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16494	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18349	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16497	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18352	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16496	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18351	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16495	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18350	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16499	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18354	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16487	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	246		mg/L	v		4		1	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18341	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	234		mg/L	v		4		1	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16487	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	301		mg/L	v		4		1	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18341	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	282		mg/L	v		4		1	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16487	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18341	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16488	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	246		mg/L	v		1			
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18342	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	259		mg/L	v		1			
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16491	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.8		mg/L	v		0.1		0.03	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18345	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.1		mg/L	v		0.2		0.03	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16489	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	300		mg/L	v		10		10	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18343	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	299		mg/L	v		10		10	
FC-2	FC-2	IIA	2	P2-00428	Surface Water		Field Sample	6/27/2008	16490	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
FC-2	FC-2	IIA	2	P2-00901	Surface Water		Field Sample	9/12/2008	18344	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3016	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1	mg/L	0.05	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3016	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1	mg/L	0.049	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3021	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.155		mg/L	v		0.002	mg/L	0.002	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3016	E300.0	O	Z	Anions	Sulfate	14808-79-8	17		mg/L	v		1	mg/L	0.046	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3030	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.0383838	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3025	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0001752	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3025	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00001645	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3025	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00001774	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1	mg/L	0.00021	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3025	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00000493	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Calcium	7440-70-2	78		mg/L	v		1	mg/L	0.214	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3025	SW6020	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00002355	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3025	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00002105	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3025	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00002206	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	15		mg/L	v		1	mg/L	0.1396	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3028	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.06503	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3025	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00001793	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3025	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00001781	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1	mg/L	0.1805	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3025	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.0002302	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3023	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3026	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.00013	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3026	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000041	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3026	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.00004	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1	mg/L	0.0005	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3026	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.0000028	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Calcium	7440-70-2	73		mg/L	v		1	mg/L	0.1	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3026	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.00004	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3026	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.003	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3026	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00000334	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	14		mg/L	v		1	mg/L	0.09	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3029	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Potassium	7440-09-7	9		mg/L	v		1	mg/L	0.4	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3027	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3026	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000069	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Sodium	7440-23-5	4		mg/L	v		1	mg/L	0.5	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3026	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00000439	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3024	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3017	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3018	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3015	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U	UJ	0.01	mg/L	0.01	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3020	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.0016	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3019	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		25		ug/L	v	U	20	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	23		ug/L	v	U	20	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3022	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3010	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	253		mg/L	v		4	mg/L	1	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3010	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	309		mg/L	v		4	mg/L	1	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3010	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3011	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	259		mg/L	v		1	mg/L		
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3014	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.3		mg/L	v		0.1	mg/L	0.023	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3012	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	325		mg/L	v		10	mg/L	10	mg/L
FC-2_SW	FC-2	I	1	P1-00268	Surface Water		Field Sample	10/13/2007	3013	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16532	E300.0	O	Z	Anions	Chloride	16887-00-6	6		mg/L	v		1		0.02	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18370	E300.0	O	Z	Anions	Chloride	16887-00-6	9		mg/L	v		1		0.02	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16532	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18370	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1		0.01	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16538	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.021		mg/L	v	J	0.005		0.005	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18376	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.072		mg/L	v	J	0.005		0.005	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16532	E300.0	O	Z	Anions	Sulfate	14808-79-8	14		mg/L	v		1		0.05	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18370	E300.0	O	Z	Anions	Sulfate	14808-79-8	14		mg/L	v		1		0.05	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16546	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18387	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16542	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18380	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16542	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18381	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.00021	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.002	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18380	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16542	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18381	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Calcium	7440-70-2	47		mg/L	v		1		0.21	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Calcium	7440-70-2	41		mg/L	v		1		0.02	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18380	SW6020	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0000136	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16542	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18381	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16542	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18380	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	16		mg/L	v		1		0.13	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	13		mg/L	v		1		0.02	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.08		mg/L	v		0.02		0.002	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16544	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18385	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16542	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18381	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Potassium	9/7/7440	12		mg/L	v		1		0.06	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Potassium	9/7/7440	17		mg/L	v		1		0.02	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16542	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18381	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16542	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18380	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.18	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.02	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16542	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16542	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18381	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16540	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18378	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	1.08		mg/L	v		0.09		0.01	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16543	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18382	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16543	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18383	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.00026	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.000258	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00021	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16543	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000141	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18384	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Calcium	7440-70-2	49		mg/L	v		1		0.03	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Calcium	7440-70-2	39		mg/L	v		1		0.03	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00288	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18382	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	v		0.01		0.0002	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00137	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16543	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000157	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18383	SW6020	O	TOT	Metals	Copper	7440-50-8	0.006		mg/L	v		0.002		0.000155	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.05		mg/L	v		0.03		0.00471	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Iron	7439-89-6	1.76		mg/L	v		0.03		0.00466	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16543	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18382	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0043		mg/L	v		0.0005		0.0000167	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.04	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	14		mg/L	v		1		0.03	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.05		mg/L	v		0.02		0.000369	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.15		mg/L	v		0.02		0.000366	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16545	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18386	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16543	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18383	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Potassium	9/7/7440	13		mg/L	v		1		0.05	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Potassium	9/7/7440	18		mg/L	v		1		0.05	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16543	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18383	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16543	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18382	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.06	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.06	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00144	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16541	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00217	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18379	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16533	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18371	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16534	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.8		mg/L	v		0.5		0.03	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18372	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	1.3		mg/L	v		0.5		0.03	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16537	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18375	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16536	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18374	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16535	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	v	J	0.01		0.00651	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18373	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.05		mg/L	U	UJ	0.05		0.00651	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16539	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18377	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16527	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	187		mg/L	v		4		1	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18365	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	152		mg/L	v		4		1	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16527	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	229		mg/L	v		4		1	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18365	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	185		mg/L	v		4		1	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16527	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18365	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16528	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	181		mg/L	v		1			
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18366	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	157		mg/L	v		1			
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16531	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	8.2		mg/L	v		0.1		0.03	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18369	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	12.1		mg/L	v		0.1		0.03	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16529	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	245		mg/L	v		10		10	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18367	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	239		mg/L	v		10		10	
FC-POND	FC-POND	IIA	2	P2-00430	Surface Water		Field Sample	6/27/2008	16530	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
FC-POND	FC-POND	IIA	2	P2-00902	Surface Water		Field Sample	9/12/2008	18368	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	21		mg/L	v		10		1	
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	793	E300.0	O	Z	Anions	Chloride	16887-00-6	10		mg/L	v		1	mg/L	0.05	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	793	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.3		mg/L	v		0.1	mg/L	0.049	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	798	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.064		mg/L	v		0.002	mg/L	0.002	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	793	E300.0	O	Z	Anions	Sulfate	14808-79-8	12		mg/L	v		1	mg/L	0.046	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	800	MA-EPH	O	Z	Extractable Hydrocarbons	C11 to C22 Aromatics		0.3		mg/L	U		0.3	mg/L	0.131313	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	799	MA-EPH	O	Z	Extractable Hydrocarbons	C19 to C36 Aliphatics		0.3		mg/L	U		0.3	mg/L	0.0343434	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	799	MA-EPH	O	Z	Extractable Hydrocarbons	C9 to C18 Aliphatics		0.3		mg/L	U		0.3	mg/L	0.121212	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	800	MA-EPH	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	DRO	0.3		mg/L	U		0.3	mg/L	0.0383838	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	808	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.47		mg/L	v		0.3	mg/L	0.0383838	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	804	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.000876	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	804	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	804	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1	mg/L	0.00021	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	804	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Calcium	7440-70-2	32		mg/L	v		1	mg/L	0.214	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	804	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	804	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	11		mg/L	v		1	mg/L	0.1396	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	806	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Potassium	7440-09-7	14		mg/L	v		1	mg/L	0.06503	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	804	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	804	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.00008905	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Sodium	7440-23-5	8		mg/L	v		1	mg/L	0.1805	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	804	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	802	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	805	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.21		mg/L	v		0.09	mg/L	0.00065	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	805	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	805	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.0005	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	805	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Calcium	7440-70-2	32		mg/L	v		1	mg/L	0.1	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	805	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	v		0.002	mg/L	0.000155	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.69		mg/L	v		0.03	mg/L	0.003	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	805	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0051		mg/L	v		0.0005	mg/L	0.0000167	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	11		mg/L	v		1	mg/L	0.09	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.21		mg/L	v		0.02	mg/L	0.0006	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	807	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Potassium	7440-09-7	13		mg/L	v		1	mg/L	0.4	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	805	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	805	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.0000345	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Sodium	7440-23-5	7		mg/L	v		1	mg/L	0.5	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	805	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	803	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	794	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	795	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	3.1		mg/L	v		0.5	mg/L	0.03	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	792	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U	UJ	0.01	mg/L	0.01	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	797	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.0016	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	796	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	v	J	0.01	mg/L	0.00651	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	10		ug/L	U		10	ug/L	3.919188	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	10		ug/L	U		10	ug/L	3.353532	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	10		ug/L	U		10	ug/L	3.73737	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	10		ug/L	U		10	ug/L	2.505048	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	10		ug/L	U		10	ug/L	2.545452	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	10		ug/L	U		10	ug/L	2.42424	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	10		ug/L	U		10	ug/L	2.767674	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	10		ug/L	U		10	ug/L	2.646462	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	10		ug/L	U		10	ug/L	2.707068	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	10		ug/L	U		10	ug/L	2.181816	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	10		ug/L	U		10	ug/L	2.282826	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	10		ug/L	U		10	ug/L	2.464644	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	10		ug/L	U		10	ug/L	3.292926	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	10		ug/L	U		10	ug/L	2.343432	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	10		ug/L	U		10	ug/L	3.959592	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	10		ug/L	U		10	ug/L	2.52525	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	809	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	10		ug/L	U		10	ug/L	2.484846	ug/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	801	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	787	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	120		mg/L	v		4	mg/L	1	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	787	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	147		mg/L	v		4	mg/L	1	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	787	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	788	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	124		mg/L	v		1	mg/L		
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	791	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	15.4		mg/L	v		0.1	mg/L	0.023	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	789	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	202		mg/L	v		10	mg/L	10	mg/L
FC-Upper Pond_SW	FC-POND	I	1	P1-00266	Surface Water		Field Sample	10/13/2007	790	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	19		mg/L	v		10	mg/L	1	mg/L
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16091	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18115	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16091	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/L	v		0.1		0.01	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18115	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.9		mg/L	v		0.1		0.01	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16097	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.131		mg/L	v	J	0.005		0.005	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18121	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.042		mg/L	v	J	0.005		0.005	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16091	E300.0	O	Z	Anions	Sulfate	14808-79-8	7		mg/L	v		1		0.05	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18115	E300.0	O	Z	Anions	Sulfate	14808-79-8	8		mg/L	v		1		0.05	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16105	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18129	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16101	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000876	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16101	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16101	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.002	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U	UJ	0.03		0.00116	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16101	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000247	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Calcium	7440-70-2	63		mg/L	v		1		0.21	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Calcium	7440-70-2	57		mg/L	v		1		0.02	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16101	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16101	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	15		mg/L	v		1		0.13	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	20		mg/L	v		1		0.02	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16103	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18127	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16101	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00012	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.06	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.02	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16101	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16101	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.02	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16101	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18125	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16099	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18123	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16102	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18126	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16102	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18126	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18126	SW6020	O	TOT	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.00195	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16102	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18126	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Calcium	7440-70-2	66		mg/L	v		1		0.03	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Calcium	7440-70-2	50		mg/L	v		1		0.03	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16102	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18126	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16102	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18126	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	16		mg/L	v		1		0.03	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	18		mg/L	v		1		0.03	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.07		mg/L	v		0.02		0.000366	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16104	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18128	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16102	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00317	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.05	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16102	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18126	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18126	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.36	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Sodium	7440-23-5	7		mg/L	v		1		0.36	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16100	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18124	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16092	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18116	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16093	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18117	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16096	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18120	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16095	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18119	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16094	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18118	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16098	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18122	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16086	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	241		mg/L	v		4		1	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18110	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	214		mg/L	v		4		1	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16086	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	294		mg/L	v		4		1	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18110	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	261		mg/L	v		4		1	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16086	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18110	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16087	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	222		mg/L	v		1			
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18111	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	225		mg/L	v		1			
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16090	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	4		mg/L	v		0.1		0.03	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18114	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.4		mg/L	v		0.1		0.03	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16088	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	292		mg/L	v		10		10	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18112	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	241		mg/L	v		10		10	
LRC-1	LRC-1	IIA	2	P2-00410	Surface Water		Field Sample	6/25/2008	16089	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-1	LRC-1	IIA	2	P2-00889	Surface Water		Field Sample	9/10/2008	18113	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	896	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1	mg/L	0.05	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	896	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.8		mg/L	v		0.1	mg/L	0.049	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	901	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.094		mg/L	v		0.002	mg/L	0.002	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	896	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1	mg/L	0.046	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	909	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	905	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.000876	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	905	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	905	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1	mg/L	0.00021	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	905	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Calcium	7440-70-2	70		mg/L	v		1	mg/L	0.214	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	905	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	905	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	21		mg/L	v		1	mg/L	0.1396	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	907	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.06503	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	905	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	905	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.00008905	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1	mg/L	0.1805	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	905	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	903	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	906	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.00065	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	906	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	906	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.0005	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	906	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Calcium	7440-70-2	69		mg/L	v		1	mg/L	0.1	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Chromium	7440-47-3	-0.01		mg/L	U		-0.01	mg/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	906	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000155	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	v		0.03	mg/L	0.003	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	906	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	20		mg/L	v		1	mg/L	0.09	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	908	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.4	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	906	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	906	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.0000345	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Sodium	7440-23-5	5		mg/L	v		1	mg/L	0.5	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	906	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	904	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	897	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	898	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	v		0.5	mg/L	0.03	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	895	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.02		mg/L	v	U	0.01	mg/L	0.01	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	900	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.02		mg/L	v	U	0.01	mg/L	0.0016	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	899	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.00651	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	902	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	890	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	261		mg/L	v		4	mg/L	1	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	890	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	318		mg/L	v		4	mg/L	1	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	890	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	891	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	260		mg/L	v		1	mg/L		
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	894	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.6		mg/L	v		0.1	mg/L	0.023	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	892	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	300		mg/L	v		10	mg/L	10	mg/L
LRC-1_SW	LRC-1	I	1	P1-00304	Surface Water		Field Sample	10/15/2007	893	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16165	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17770	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16157	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17762	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
LRC-2	LRC-2	WT-2015	1	WT-10009	Surface Water		Field Sample	4/15/2015	29305	300.0	O	Z	Anions	Chloride	7782-50-5	3.3		mg/L	v				0.5	mg/L
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16157	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/L	v		0.1		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17762	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.8		mg/L	v		0.1		0.01	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16163	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.15		mg/L	v	J	0.005		0.005	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17768	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.072		mg/L	v	J	0.005		0.005	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16157	E300.0	O	Z	Anions	Sulfate	14808-79-8	8		mg/L	v		1		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17762	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1		0.05	
LRC-2	LRC-2	WT-2015	1	WT-10009	Surface Water		Field Sample	4/15/2015	29305	300.0	O	Z	Anions	Sulfate		9.9		mg/L	v				0.75	mg/L
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16174	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	17545	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17779	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16169	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000876	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000175	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16169	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16170	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17772	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.00021	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17772	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16170	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Calcium	7440-70-2	63		mg/L	v		1		0.21	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17772	SW6010B	O	DIS	Metals	Calcium	7440-70-2	61		mg/L	v		1		0.21	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17772	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.0000903	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16169	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17772	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16169	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	16		mg/L	v		1		0.13	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17772	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	20		mg/L	v		1		0.13	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17772	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16172	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17777	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16169	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00012	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.06	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17772	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.06	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16169	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16169	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17772	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.18	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16169	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16167	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17774	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.000317	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.00065	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16171	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16171	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00013	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000175	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17776	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00039	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16171	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Calcium	7440-70-2	68		mg/L	v		1		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17773	SW6010B	O	TOT	Metals	Calcium	7440-70-2	61		mg/L	v		1		0.03	
LRC-2	LRC-2	WT-2015	1	WT-10009	Surface Water		Field Sample	4/15/2015	29307	6010B	O	TOT	Metals	Calcium	7440-70-2	75000		ug/L	v	J			5000	ug/L
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0002	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.000027	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16171	SW6020	O	TOT	Metals	Copper	7440-50-8	0.004		mg/L	v		0.002		0.000155	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.06		mg/L	v		0.03		0.00466	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17773	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16171	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17773	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	20		mg/L	v		1		0.03	
LRC-2	LRC-2	WT-2015	1	WT-10009	Surface Water		Field Sample	4/15/2015	29307	6010B	O	TOT	Metals	Magnesium	7439-95-4	20000		ug/L	v				1000	ug/L
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.06		mg/L	v		0.02		0.000366	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00003	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16173	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17778	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16171	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Potassium	9/7/7440	11		mg/L	v		1		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17773	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	WT-2015	1	WT-10009	Surface Water		Field Sample	4/15/2015	29307	6010B	O	TOT	Metals	Potassium	7440-09-7	9700		ug/L	v				1000	ug/L
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16171	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16171	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.36	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17773	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.06	
LRC-2	LRC-2	WT-2015	1	WT-10009	Surface Water		Field Sample	4/15/2015	29307	6010B	O	TOT	Metals	Sodium	7440-23-5	5300		ug/L	v				1000	ug/L
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.000022	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.000155	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16168	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17775	SW6020	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00017	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16158	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17763	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U	UJ	0.1		0.01	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16159	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17764	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16162	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	v	U	0.01		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17767	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	v	U	0.01		0.01	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16161	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	v	U	0.01		0.0016	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17766	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.02		mg/L	v	U	0.01		0.0016	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16160	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17765	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	v	U	0.01		0.00651	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16176	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.5		ug/L	U	uj	0.5		0.11	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17781	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.5		ug/L	U		0.5		0.11	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16176	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17781	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16176	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17781	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16176	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17781	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16176	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17781	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16176	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.5		ug/L	U		0.5		0.17	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17781	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.5		ug/L	U		0.5		0.17	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16176	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.5		ug/L	U		0.5		0.2	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17781	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.5		ug/L	U		0.5		0.2	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16176	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17781	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16176	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17781	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16177	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.2		ug/L	U		0.2		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17782	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.2		ug/L	U		0.2		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16177	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.2		ug/L	U		0.2		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17782	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.2		ug/L	U		0.2		0.02	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16177	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	1		ug/L	U		1		0.04	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17782	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	1		ug/L	U		1		0.04	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.05		ug/L	U		0.05		0.00673	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.05		ug/L	U		0.05		0.00673	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.05		ug/L	U		0.05		0.00718	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.05		ug/L	U		0.05		0.00718	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.05		ug/L	U		0.05		0.00732	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.05		ug/L	U		0.05		0.00732	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.05		ug/L	U		0.05		0.00968	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.05		ug/L	U		0.05		0.00968	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.05		ug/L	U		0.05		0.0078	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.05		ug/L	U		0.05		0.0078	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.05		ug/L	U		0.05		0.0081	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.05		ug/L	U		0.05		0.0081	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.05		ug/L	U		0.05		0.00893	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.05		ug/L	U		0.05		0.00893	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.5		ug/L	U		0.5		0.28	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.5		ug/L	U		0.5		0.28	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16177	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	2.5		ug/L	U		2.5		1.24	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17782	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	2.5		ug/L	U		2.5		1.24	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.05		ug/L	U		0.05		0.00854	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.05		ug/L	U		0.05		0.00854	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16177	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.25		ug/L	U		0.25		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17782	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.25		ug/L	U		0.25		0.02	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16177	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	1		ug/L	U		1		0.1	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17782	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	1		ug/L	U		1		0.1	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.05		ug/L	U		0.05		0.00656	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.05		ug/L	U		0.05		0.00656	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.05		ug/L	U		0.05		0.00768	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.05		ug/L	U		0.05		0.00768	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.05		ug/L	U		0.05		0.0085	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.05		ug/L	U		0.05		0.0085	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.05		ug/L	U		0.05		0.00809	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.05		ug/L	U		0.05		0.00809	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.05		ug/L	U		0.05		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.05		ug/L	U		0.05		0.01	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.05		ug/L	U		0.05		0.00959	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.05		ug/L	U		0.05		0.00959	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.05		ug/L	U		0.05		0.00799	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.05		ug/L	U		0.05		0.00799	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.05		ug/L	U		0.05		0.00865	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.05		ug/L	U		0.05		0.00865	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.05		ug/L	U		0.05		0.00811	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.05		ug/L	U		0.05		0.00811	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.05		ug/L	U		0.05		0.00964	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.05		ug/L	U		0.05		0.00964	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.05		ug/L	U		0.05		0.00851	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.05		ug/L	U		0.05		0.00851	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.05		ug/L	U		0.05		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.05		ug/L	U		0.05		0.01	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16177	SW8151A	O	Z	Pesticides	MCPA	94-74-6	200		ug/L	U		200		34.21	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17782	SW8151A	O	Z	Pesticides	MCPA	94-74-6	200		ug/L	U		200		34.21	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16178	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	200		ug/L	U		200		37.79	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17782	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	200		ug/L	U		200		37.79	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.05		ug/L	U		0.05		0.0078	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.05		ug/L	U		0.05		0.0078	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16177	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.1		ug/L	U		0.1		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17782	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.1		ug/L	U		0.1		0.02	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16175	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.7		ug/L	U		0.7		0.54	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17780	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.7		ug/L	U		0.7		0.54	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16164	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	2.2		pCi/L	v					
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17769	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	1.2		pCi/L	v					
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16164	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.2		pCi/L	v		0			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17769	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.3		pCi/L	v		0			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16164	E900.0	O	Z	Radionuclides	Gross Beta	BETA	9		pCi/L	v	J				
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17769	E900.0	O	Z	Radionuclides	Gross Beta	BETA	5.4		pCi/L	v					
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16164	E900.0	O	Z	Radionuclides	Gross Beta MDC		3.7		pCi/L	v		0			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17769	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.7		pCi/L	v		0			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	5		ug/L	U		5		1.26	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	5		ug/L	U		5		1.26	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	5		ug/L	U		5		0.69	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	5		ug/L	U		5		0.69	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	5		ug/L	U		5		2.45	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	5		ug/L	U		5		2.45	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	5		ug/L	U		5		1.48	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	5		ug/L	U		5		1.48	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	5		ug/L	U		5		1.92	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	5		ug/L	U		5		1.92	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	5		ug/L	U		5		1.67	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	5		ug/L	U		5		1.67	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	10		ug/L	U		10		2.15	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	10		ug/L	U		10		2.15	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	5		ug/L	U		5		0.67	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	5		ug/L	U		5		0.67	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	5		ug/L	U		5		1.49	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	5		ug/L	U		5		1.49	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	5		ug/L	U		5		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	5		ug/L	U		5		0.01	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	10		ug/L	U	UJ	10		1.22	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	10		ug/L	U		10		1.22	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	5		ug/L	U		5		1.53	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	5		ug/L	U		5		1.53	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	5		ug/L	U		5		0.00784	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	5		ug/L	U		5		0.00784	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	10		ug/L	U		10		0.96	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	10		ug/L	U		10		0.96	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	10		ug/L	U		10		2.13	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	10		ug/L	U		10		2.13	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	5		ug/L	U		5		1.56	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	5		ug/L	U		5		1.56	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	10		ug/L	U		10		1.2	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	10		ug/L	U		10		1.2	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	10		ug/L	U		10		1.32	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	10		ug/L	U		10		1.32	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	5		ug/L	U		5		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	5		ug/L	U		5		0.01	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16181	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	5		ug/L	U		5		1.67	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	5		ug/L	U		5		1.67	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	5		ug/L	U		5		4.9	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	5		ug/L	U		5		4.9	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	5		ug/L	U		5		2.9	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	5		ug/L	U		5		2.9	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	5		ug/L	U		5		4.16	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	5		ug/L	U		5		4.16	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	5		ug/L	U		5		1.41	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	5		ug/L	U		5		1.41	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	5		ug/L	U		5		0.03	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	5		ug/L	U		5		1.16	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	5		ug/L	U		5		1.16	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	5		ug/L	U		5		4.31	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	5		ug/L	U		5		4.31	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	5		ug/L	U		5		1.33	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	5		ug/L	U		5		1.33	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	5		ug/L	U	UJ	5		1.6	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	5		ug/L	U		5		1.6	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	5		ug/L	U		5		1.56	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	5		ug/L	U		5		1.56	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	5		ug/L	U		5		0.97	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	5		ug/L	U		5		0.97	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	5		ug/L	U		5		1.1	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	5		ug/L	U		5		1.1	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	5		ug/L	U		5		1.21	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	5		ug/L	U		5		1.21	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	5		ug/L	U		5		1.2	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	5		ug/L	U		5		1.2	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	5		ug/L	U		5		1.12	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	5		ug/L	U		5		1.12	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	5		ug/L	U		5		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	5		ug/L	U		5		0.01	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	5		ug/L	U		5		1.72	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	5		ug/L	U		5		1.72	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	5		ug/L	U		5		1.85	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	5		ug/L	U		5		1.85	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	5		ug/L	U		5		2.15	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	5		ug/L	U		5		2.15	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	5		ug/L	U		5		2.41	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	5		ug/L	U		5		2.41	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	5		ug/L	U		5		1.98	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	5		ug/L	U		5		1.98	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	5		ug/L	U		5		1.87	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	5		ug/L	U		5		1.87	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	5		ug/L	U		5		1.16	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	5		ug/L	U		5		1.16	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	5		ug/L	U		5		1.39	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	5		ug/L	U		5		1.39	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	5		ug/L	U		5		1.39	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	5		ug/L	U		5		1.39	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	10		ug/L	U		10		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	10		ug/L	U		10		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	5		ug/L	U		5		0.02	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	5		ug/L	U		5		2.96	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	5		ug/L	U		5		2.96	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16180	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17784	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	5		ug/L	U		5		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.5		ug/L	U		0.5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.5		ug/L	U		0.5		0.1	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.5		ug/L	U		0.5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.5		ug/L	U		0.5		0.04	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.5		ug/L	U		0.5		0.09	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.5		ug/L	U		0.5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.5		ug/L	U		0.5		0.09	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.5		ug/L	U		0.5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.5		ug/L	U		0.5		0.1	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.5		ug/L	U		0.5		0.04	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.5		ug/L	U		0.5		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.5		ug/L	U		0.5		0.05	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.5		ug/L	U		0.5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.5		ug/L	U		0.5		0.04	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.5		ug/L	U		0.5		0.09	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.5		ug/L	U		0.5		0.12	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.5		ug/L	U		0.5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.5		ug/L	U		0.5		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.5		ug/L	U		0.5		0.09	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.5		ug/L	U		0.5		0.06	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.5		ug/L	U		0.5		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.5		ug/L	U		0.5		0.06	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.5		ug/L	U		0.5		0.1	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.5		ug/L	U		0.5		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.5		ug/L	U		0.5		0.09	
LRC-2	LRC-2	**IIA**	2	**P2-00451**	**Surface Water**		**Field Sample**	**6/25/2008**	16179	**SW8260B**	O	**Z**	**VOCs**	**1,4-Dioxane**	**123-91-1**	**125**		**ug/L**	**U**	**R**	**125**		**19.6**	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	1,4-Dioxane	123-91-1	125		ug/L	U		125		24	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	10		ug/L	U		10		0.47	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	10		ug/L	U		10		1.15	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Acetone	67-64-1	10		ug/L	U		10		1.94	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Acetone	67-64-1	10		ug/L	U		10		1.49	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.5		ug/L	U		0.5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.5		ug/L	U		0.5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.5		ug/L	U		0.5		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.5		ug/L	U		0.5		0.16	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.5		ug/L	U		0.5		0.21	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.5		ug/L	U		0.5		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.5		ug/L	U		0.5		0.04	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.5		ug/L	U		0.5		0.11	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.5		ug/L	U		0.5		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.5		ug/L	U		0.5		0.04	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.5		ug/L	U		0.5		0.06	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.5		ug/L	U		0.5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.5		ug/L	U		0.5		0.09	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.5		ug/L	U		0.5		0.06	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.5		ug/L	U		0.5		0.1	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.5		ug/L	U		0.5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.5		ug/L	U		0.5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.5		ug/L	U		0.5		0.06	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.5		ug/L	U		0.5		0.06	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.5		ug/L	U		0.5		0.06	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.5		ug/L	U		0.5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.5		ug/L	U		0.5		0.11	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5		0.06	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.5		ug/L	U		0.5		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.5		ug/L	U		0.5		0.1	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5		0.15	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.5		ug/L	U		0.5		0.12	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.5		ug/L	U		0.5		0.12	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	10		ug/L	U		10		0.65	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	10		ug/L	U		10		0.95	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	10		ug/L	U		10		0.51	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	10		ug/L	U		10		1.04	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.5		ug/L	U		0.5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.5		ug/L	U		0.5		0.04	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.5		ug/L	U		0.5		0.11	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.5		ug/L	U		0.5		0.06	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.5		ug/L	U		0.5		0.06	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.5		ug/L	U		0.5		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.5		ug/L	U		0.5		0.08	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.5		ug/L	U		0.5		0.05	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.5		ug/L	U		0.5		0.04	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.5		ug/L	U		0.5		0.07	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.5		ug/L	U		0.5		0.09	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.5		ug/L	U		0.5		0.09	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.5		ug/L	U		0.5		0.02	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.5		ug/L	U		0.5		0.1	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.5		ug/L	U		0.5		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.5		ug/L	U		0.5		0.09	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.5		ug/L	U		0.5		0.04	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.5		ug/L	U		0.5		0.09	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16179	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.5		ug/L	U		0.5		0.01	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17783	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.5		ug/L	U		0.5		0.13	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16166	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17771	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16152	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	246		mg/L	v		4		1	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17757	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	229		mg/L	v	J	4		1	
LRC-2	LRC-2	WT-2015	1	WT-10009	Surface Water		Field Sample	4/15/2015	29304	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	250		mg/L	v				2	mg/L
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16152	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	300		mg/L	v		4		1	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17757	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	271		mg/L	v	J	4		1	
LRC-2	LRC-2	WT-2015	1	WT-10009	Surface Water		Field Sample	4/15/2015	29306	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	240		mg/L	v				2	mg/L
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16152	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17757	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	v	J	4		1	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16153	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	223		mg/L	v		1			
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17758	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	233		mg/L	v		1			
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16156	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.4		mg/L	v		0.1		0.03	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17761	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.6		mg/L	v		0.1		0.03	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16154	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	298		mg/L	v		10		10	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17759	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	259		mg/L	v		10		10	
LRC-2	LRC-2	IIA	2	P2-00451	Surface Water		Field Sample	6/25/2008	16155	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-2	LRC-2	IIA	2	P2-00930	Surface Water		Field Sample	9/9/2008	17760	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	948	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005	mg/L	0.00139	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	940	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1	mg/L	0.05	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	940	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.7		mg/L	v		0.1	mg/L	0.049	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	945	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.099		mg/L	v		0.002	mg/L	0.002	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	940	E300.0	O	Z	Anions	Sulfate	14808-79-8	11		mg/L	v		1	mg/L	0.046	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	957	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.02625	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	953	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	953	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.00021	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	953	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Calcium	7440-70-2	78		mg/L	v		1	mg/L	0.214	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	953	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	953	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	23		mg/L	v		1	mg/L	0.1396	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	955	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Potassium	7440-09-7	12		mg/L	v		1	mg/L	0.06503	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	953	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	953	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.00008905	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Sodium	7440-23-5	7		mg/L	v		1	mg/L	0.1805	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	953	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	951	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.08	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	954	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	954	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.0005	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	954	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Calcium	7440-70-2	75		mg/L	v		1	mg/L	0.1	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	954	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000155	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.04		mg/L	v		0.03	mg/L	0.003	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	954	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	22		mg/L	v		1	mg/L	0.09	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	956	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Potassium	7440-09-7	11		mg/L	v		1	mg/L	0.4	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	954	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	954	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.0000345	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.5	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	954	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	952	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	941	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	942	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	v	U	0.5	mg/L	0.03	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	939	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.04		mg/L	v	J	0.01	mg/L	0.01	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	944	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.04		mg/L	v		0.01	mg/L	0.0016	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	943	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Azinphos-methyl (Guthion)		1		ug/L	U	UJ		ug/L	0.064	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Bolstar (Sulprofos)		0.5		ug/L	U	UJ		ug/L	0.12	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Chlorpyrifos		0.2		ug/L	U	UJ		ug/L	0.11	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Coumaphos		1		ug/L	U	UJ		ug/L	0.053	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Demeton-O,S		2.3		ug/L	U	UJ		ug/L	0.69	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Diazinon		0.2		ug/L	U	UJ		ug/L	0.067	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Dichlorvos		0.5		ug/L	U	UJ		ug/L	0.12	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Dimethoate		0.5		ug/L	U	UJ		ug/L	0.059	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Disulfoton		1		ug/L	U	UJ		ug/L	0.15	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	EPN		0.2		ug/L	U	UJ		ug/L	0.078	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Ethoprop (Prophos)		0.2		ug/L	U	UJ		ug/L	0.16	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Ethyl Parathion		0.5		ug/L	U	UJ		ug/L	0.063	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Fensulfothion		0.5		ug/L	U	UJ		ug/L	0.13	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Fenthion		0.5		ug/L	U	UJ		ug/L	0.082	ug/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Malathion		0.2		ug/L	U	UJ		ug/L	0.043	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Merphos		0.2		ug/L	U	UJ		ug/L	0.052	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Methyl Parathion		0.5		ug/L	U	UJ		ug/L	0.07	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Mevinphos		0.5		ug/L	U	UJ		ug/L	0.056	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Phorate		0.5		ug/L	U	UJ		ug/L	0.12	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Ronnel		0.2		ug/L	U	UJ		ug/L	0.088	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Stirophos (Tetrachlorovinphos)		0.2		ug/L	U	UJ		ug/L	0.06	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Sulfotep		0.2		ug/L	U	UJ		ug/L	0.075	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Tokuthion (Prothiofos)		0.2		ug/L	U	UJ		ug/L	0.14	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	3111	SW8141A	O	Z	Organophosphorus Pesticides	Trichloronate		0.2		ug/L	U	UJ		ug/L	0.11	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	959	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.5		ug/L	U		0.5	ug/L	0.11	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	959	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	959	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	959	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	959	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	959	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.5		ug/L	U		0.5	ug/L	0.17	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	959	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.5		ug/L	U		0.5	ug/L	0.2	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	959	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	959	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	960	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.2		ug/L	U		0.2	ug/L	0.03906	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	960	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.2		ug/L	U		0.2	ug/L	0.02276	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	960	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	1		ug/L	U		1	ug/L	0.04534	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.05		ug/L	U		0.05	ug/L	0.00673	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.05		ug/L	U		0.05	ug/L	0.00718	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.05		ug/L	U		0.05	ug/L	0.00732	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.05		ug/L	U		0.05	ug/L	0.00968	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.05		ug/L	U		0.05	ug/L	0.0078	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.05		ug/L	U		0.05	ug/L	0.0081	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.05		ug/L	U		0.05	ug/L	0.00893	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.5		ug/L	U		0.5	ug/L	0.28	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	960	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	2.5		ug/L	U		2.5	ug/L	1.24849	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.05		ug/L	U		0.05	ug/L	0.00854	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	960	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.25		ug/L	U		0.25	ug/L	0.02877	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	960	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	1		ug/L	U		1	ug/L	0.10487	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.05		ug/L	U		0.05	ug/L	0.00656	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.05		ug/L	U		0.05	ug/L	0.00768	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.05		ug/L	U		0.05	ug/L	0.0085	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.05		ug/L	U		0.05	ug/L	0.00809	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.05		ug/L	U		0.05	ug/L	0.01711	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.05		ug/L	U		0.05	ug/L	0.00959	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.05		ug/L	U		0.05	ug/L	0.00799	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.05		ug/L	U		0.05	ug/L	0.00865	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.05		ug/L	U		0.05	ug/L	0.00811	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.05		ug/L	U		0.05	ug/L	0.00964	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.05		ug/L	U		0.05	ug/L	0.00851	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.05		ug/L	U		0.05	ug/L	0.01571	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	960	SW8151A	O	Z	Pesticides	MCPA	94-74-6	200		ug/L	U		200	ug/L	34.2105	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	960	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	200		ug/L	U		200	ug/L	37.7908	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.05		ug/L	U		0.05	ug/L	0.0078	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	960	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.1		ug/L	U		0.1	ug/L	0.02328	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	958	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.7		ug/L	U		0.7	ug/L	0.54	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	946	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	2.5		pCi/L	v		1	pCi/L	1	pCi/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	947	E903.0	O	Z	Radionuclides	Radium 226	13982-63-3	0.6		pCi/L	U		0.6	pCi/L	0.2	pCi/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	938	A7500-RA	O	Z	Radionuclides	Radium 226 + Radium 228	7440-14-4	1		pCi/L	U		1	pCi/L	0.2	pCi/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	950	RA-05	O	Z	Radionuclides	Radium 228	15262-20-1	1		pCi/L	U		1	pCi/L	1	pCi/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	5		ug/L	U		5	ug/L	1.56	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	963	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	5		ug/L	U		5	ug/L	1.36	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	5		ug/L	U		5	ug/L	1.68	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	5		ug/L	U		5	ug/L	1.93	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	5		ug/L	U		5	ug/L	1.56	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	5		ug/L	U		5	ug/L	1.68	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	10		ug/L	U		10	ug/L	1.77	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	5		ug/L	U		5	ug/L	1.67	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	5		ug/L	U		5	ug/L	1.92	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	5		ug/L	U		5	ug/L	1.31	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	5		ug/L	U		5	ug/L	1.52	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	5		ug/L	U		5	ug/L	1.17	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	10		ug/L	U		10	ug/L	1.12	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	5		ug/L	U		5	ug/L	1.69	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	5		ug/L	U		5	ug/L	1.82	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	10		ug/L	U		10	ug/L	0.955	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	10		ug/L	U		10	ug/L	1.84	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	5		ug/L	U		5	ug/L	1.78	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	5		ug/L	U		5	ug/L	1.94	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	5		ug/L	U		5	ug/L	0.899	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	10		ug/L	U		10	ug/L	1.53	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	10		ug/L	U		10	ug/L	1.14	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	5		ug/L	U		5	ug/L	1.69	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	5		ug/L	U		5	ug/L	1.4	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	5		ug/L	U		5	ug/L	1.31	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	5		ug/L	U		5	ug/L	2.13	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	5		ug/L	U		5	ug/L	4.9	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	5		ug/L	U	UJ	5	ug/L	2.9	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	5		ug/L	U		5	ug/L	2.42	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	5		ug/L	U		5	ug/L	2.3	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	5		ug/L	U		5	ug/L	2.45	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	5		ug/L	U		5	ug/L	2.71	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	5		ug/L	U		5	ug/L	2.75	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	5		ug/L	U		5	ug/L	3.6	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	5		ug/L	U		5	ug/L	1.35	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	5		ug/L	U		5	ug/L	1.8	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	5		ug/L	U		5	ug/L	1.67	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	5		ug/L	U		5	ug/L	3.97	ug/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	5		ug/L	U		5	ug/L	2.55	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	5		ug/L	U	UJ	5	ug/L	1.6	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	5		ug/L	U		5	ug/L	2.37	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	5		ug/L	U		5	ug/L	2.31	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	5		ug/L	U		5	ug/L	2.33	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	5		ug/L	U		5	ug/L	1.11	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	5		ug/L	U		5	ug/L	2.22	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	5		ug/L	U		5	ug/L	1.61	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	5		ug/L	U		5	ug/L	1.8	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	5		ug/L	U		5	ug/L	2.86	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	5		ug/L	U		5	ug/L	1.63	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	5		ug/L	U		5	ug/L	1.44	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	5		ug/L	U		5	ug/L	1.28	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	5		ug/L	U		5	ug/L	2.27	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	5		ug/L	U		5	ug/L	1.92	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	5		ug/L	U		5	ug/L	2.13	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	5		ug/L	U		5	ug/L	3.22	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	5		ug/L	U		5	ug/L	1.76	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	5		ug/L	U		5	ug/L	2.39	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	5		ug/L	U		5	ug/L	1.34	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	5		ug/L	U		5	ug/L	1.87	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	5		ug/L	U		5	ug/L	1.86	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	5		ug/L	U		5	ug/L	1.54	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	5		ug/L	U		5	ug/L	1.71	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	5		ug/L	U		5	ug/L	1.41	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	10		ug/L	U		10	ug/L	2.11	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	5		ug/L	U		5	ug/L	1.29	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	5		ug/L	U		5	ug/L	4.57	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	962	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	5		ug/L	U		5	ug/L	2.05	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.5		ug/L	U		0.5	ug/L	0.0593	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.5		ug/L	U		0.5	ug/L	0.05	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.5		ug/L	U		0.5	ug/L	0.0907	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.5		ug/L	U		0.5	ug/L	0.0463	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.5		ug/L	U		0.5	ug/L	0.0256	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.5		ug/L	U		0.5	ug/L	0.0492	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.5		ug/L	U		0.5	ug/L	0.0829	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.5		ug/L	U		0.5	ug/L	0.0773	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.5		ug/L	U		0.5	ug/L	0.123	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.5		ug/L	U		0.5	ug/L	0.0553	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.5		ug/L	U		0.5	ug/L	0.0362	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.5		ug/L	U		0.5	ug/L	0.0424	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.5		ug/L	U		0.5	ug/L	0.046	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.5		ug/L	U		0.5	ug/L	0.0413	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.5		ug/L	U		0.5	ug/L	0.0425	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	1,4-Dioxane	123-91-1	125		ug/L	U		125	ug/L	16.7	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	10		ug/L	U		10	ug/L	0.417	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Acetone	67-64-1	10		ug/L	U		10	ug/L	1.5	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L	0.0423	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.5		ug/L	U		0.5	ug/L	0.0565	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.5		ug/L	U		0.5	ug/L	0.0582	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.5		ug/L	U		0.5	ug/L	0.0357	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.5		ug/L	U		0.5	ug/L	0.081	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.5		ug/L	U		0.5	ug/L	0.112	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.5		ug/L	U		0.5	ug/L	0.0671	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.5		ug/L	U		0.5	ug/L	0.0501	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.5		ug/L	U		0.5	ug/L	0.0534	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.5		ug/L	U		0.5	ug/L	0.101	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.5		ug/L	U		0.5	ug/L	0.0353	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.5		ug/L	U		0.5	ug/L	0.152	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.5		ug/L	U		0.5	ug/L	0.0486	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.5		ug/L	U		0.5	ug/L	0.0394	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.5		ug/L	U		0.5	ug/L	0.1	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.5		ug/L	U		0.5	ug/L	0.184	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L	0.0419	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.5		ug/L	U		0.5	ug/L	0.0405	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L	0.0882	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.5		ug/L	U		0.5	ug/L	0.1	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	10		ug/L	U		10	ug/L	0.73	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	10		ug/L	U		10	ug/L	0.591	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.5		ug/L	U		0.5	ug/L	0.0662	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.5		ug/L	U		0.5	ug/L	0.1	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.5		ug/L	U		0.5	ug/L	0.125	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L	0.051	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.5		ug/L	U		0.5	ug/L	0.0414	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.5		ug/L	U		0.5	ug/L	0.0511	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L	0.0512	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.5		ug/L	U		0.5	ug/L	0.0581	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.5		ug/L	U		0.5	ug/L	0.0443	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.5		ug/L	U		0.5	ug/L	0.0462	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.5		ug/L	U		0.5	ug/L	0.0649	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	961	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.5		ug/L	U		0.5	ug/L	0.058	ug/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	949	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	933	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	284		mg/L	v		4	mg/L	1	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	933	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	336		mg/L	v		4	mg/L	1	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	933	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	5		mg/L	v		4	mg/L	1	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	934	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	289		mg/L	v		1	mg/L		
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	937	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.6		mg/L	v		0.1	mg/L	0.023	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	935	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	332		mg/L	v		10	mg/L	10	mg/L
LRC-2_SW	LRC-2	I	1	P1-00251	Surface Water		Field Sample	10/15/2007	936	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
LRC-2A	LRC-2A	WT-2015	1	WT-10007	Surface Water		Field Sample	4/15/2015	29297	300.0	O	Z	Anions	Chloride	7782-50-5	3.5		mg/L	v				0.5	mg/L
LRC-2A	LRC-2A	WT-2015	1	WT-10007	Surface Water		Field Sample	4/15/2015	29297	300.0	O	Z	Anions	Sulfate		9.9		mg/L	v				0.75	mg/L
LRC-2A	LRC-2A	WT-2015	1	WT-10007	Surface Water		Field Sample	4/15/2015	29299	6010B	O	TOT	Metals	Calcium	7440-70-2	75000		ug/L	v	J			5000	ug/L
LRC-2A	LRC-2A	WT-2015	1	WT-10007	Surface Water		Field Sample	4/15/2015	29299	6010B	O	TOT	Metals	Magnesium	7439-95-4	20000		ug/L	v				1000	ug/L
LRC-2A	LRC-2A	WT-2015	1	WT-10007	Surface Water		Field Sample	4/15/2015	29299	6010B	O	TOT	Metals	Potassium	7440-09-7	9900		ug/L	v				1000	ug/L
LRC-2A	LRC-2A	WT-2015	1	WT-10007	Surface Water		Field Sample	4/15/2015	29299	6010B	O	TOT	Metals	Sodium	7440-23-5	5500		ug/L	v				1000	ug/L
LRC-2A	LRC-2A	WT-2015	1	WT-10007	Surface Water		Field Sample	4/15/2015	29296	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	250		mg/L	v				2	mg/L
LRC-2A	LRC-2A	WT-2015	1	WT-10007	Surface Water		Field Sample	4/15/2015	29298	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	240		mg/L	v				2	mg/L
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16033	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17739	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1		0.02	
LRC-3	LRC-3	WT-2015	1	WT-10006	Surface Water		Field Sample	4/15/2015	29293	300.0	O	Z	Anions	Chloride	7782-50-5	3.5		mg/L	v				0.5	mg/L
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16033	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/L	v		0.1		0.01	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17739	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.9		mg/L	v		0.1		0.01	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16039	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.236		mg/L	v	J	0.005		0.005	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17745	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.137		mg/L	v	J	0.005		0.005	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16033	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1		0.05	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17739	E300.0	O	Z	Anions	Sulfate	14808-79-8	10		mg/L	v		1		0.05	
LRC-3	LRC-3	WT-2015	1	WT-10006	Surface Water		Field Sample	4/15/2015	29293	300.0	O	Z	Anions	Sulfate		10		mg/L	v				0.75	mg/L
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16048	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17755	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000175	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16043	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16043	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17747	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.00021	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17747	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16044	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Calcium	7440-70-2	68		mg/L	v		1		0.21	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17747	SW6010B	O	DIS	Metals	Calcium	7440-70-2	73		mg/L	v		1		0.21	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17747	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.0000903	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16043	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17747	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16043	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	16		mg/L	v		1		0.13	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17747	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	20		mg/L	v		1		0.13	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17747	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16046	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17753	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16043	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00012	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.06	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17747	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.06	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16043	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16043	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17747	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.18	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16043	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16041	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17749	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.000317	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.18		mg/L	v		0.09		0.01	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.00065	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16045	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16045	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.00013	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000175	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.2		mg/L	U		0.2		0.2	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17752	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00039	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16045	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Calcium	7440-70-2	73		mg/L	v		1		0.03	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17748	SW6010B	O	TOT	Metals	Calcium	7440-70-2	74		mg/L	v		1		0.03	
LRC-3	LRC-3	WT-2015	1	WT-10006	Surface Water		Field Sample	4/15/2015	29295	6010B	O	TOT	Metals	Calcium	7440-70-2	77000		ug/L	v	J			5000	ug/L
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0002	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.000027	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16045	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17751	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000031	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.26		mg/L	v		0.03		0.00466	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17748	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16045	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	18		mg/L	v		1		0.03	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17748	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	21		mg/L	v		1		0.03	
LRC-3	LRC-3	WT-2015	1	WT-10006	Surface Water		Field Sample	4/15/2015	29295	6010B	O	TOT	Metals	Magnesium	7439-95-4	20000		ug/L	v				1000	ug/L
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.05		mg/L	v		0.02		0.000366	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00003	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16047	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17754	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16045	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Potassium	9/7/7440	11		mg/L	v		1		0.05	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17748	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
LRC-3	LRC-3	WT-2015	1	WT-10006	Surface Water		Field Sample	4/15/2015	29295	6010B	O	TOT	Metals	Potassium	7440-09-7	9900		ug/L	v				1000	ug/L
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16045	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16045	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Sodium	7440-23-5	7		mg/L	v		1		0.36	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17748	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.06	
LRC-3	LRC-3	WT-2015	1	WT-10006	Surface Water		Field Sample	4/15/2015	29295	6010B	O	TOT	Metals	Sodium	7440-23-5	5600		ug/L	v				1000	ug/L
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.000022	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.000155	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16042	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17750	SW6020	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00017	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16034	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17740	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U	UJ	0.1		0.01	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16035	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17741	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16038	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.03		mg/L	v		0.01		0.01	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17744	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.07		mg/L	v		0.01		0.01	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16037	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.03		mg/L	v		0.01		0.0016	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17743	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.08		mg/L	v		0.01		0.0016	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16036	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17742	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	v	U	0.01		0.00651	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16040	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17746	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16028	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	261		mg/L	v	J	4		1	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17734	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	253		mg/L	v	J	4		1	
LRC-3	LRC-3	WT-2015	1	WT-10006	Surface Water		Field Sample	4/15/2015	29292	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	250		mg/L	v				2	mg/L
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16028	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	318		mg/L	v	J	4		1	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17734	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	307		mg/L	v	J	4		1	
LRC-3	LRC-3	WT-2015	1	WT-10006	Surface Water		Field Sample	4/15/2015	29294	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	240		mg/L	v				2	mg/L
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16028	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U	UJ	4		1	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17734	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16029	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	258		mg/L	v		1			
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17735	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	265		mg/L	v		1			
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16032	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.1		mg/L	v		0.1		0.03	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17738	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.8		mg/L	v		0.1		0.03	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16030	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	299		mg/L	v		10		10	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17736	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	305		mg/L	v		10		10	
LRC-3	LRC-3	IIA	2	P2-00404	Surface Water		Field Sample	6/24/2008	16031	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	14		mg/L	v		10		1	
LRC-3	LRC-3	IIA	2	P2-00885	Surface Water		Field Sample	9/9/2008	17737	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	876	E300.0	O	Z	Anions	Chloride	16887-00-6	6		mg/L	v		1	mg/L	0.05	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	876	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.8		mg/L	v		0.1	mg/L	0.049	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	881	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.157		mg/L	v		0.002	mg/L	0.002	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	876	E300.0	O	Z	Anions	Sulfate	14808-79-8	11		mg/L	v		1	mg/L	0.046	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	889	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	885	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.000876	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	885	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	885	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.00021	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	885	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Calcium	7440-70-2	84		mg/L	v		1	mg/L	0.214	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	885	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	885	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	22		mg/L	v		1	mg/L	0.1396	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	887	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Potassium	7440-09-7	11		mg/L	v		1	mg/L	0.06503	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	885	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	885	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.00008905	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Sodium	7440-23-5	7		mg/L	v		1	mg/L	0.1805	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	885	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	883	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	886	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.00065	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	886	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	886	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.0005	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	886	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Calcium	7440-70-2	83		mg/L	v		1	mg/L	0.1	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	886	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000155	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.003	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	886	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	21		mg/L	v		1	mg/L	0.09	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	888	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Potassium	7440-09-7	11		mg/L	v		1	mg/L	0.4	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	886	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	886	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.0000345	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.5	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	886	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	884	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	877	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	878	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	875	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.03		mg/L	v	U	0.01	mg/L	0.01	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	880	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.03		mg/L	v	U	0.01	mg/L	0.0016	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	879	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.00651	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	882	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	870	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	295		mg/L	v		4	mg/L	1	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	870	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	360		mg/L	v		4	mg/L	1	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	870	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	871	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	299		mg/L	v		1	mg/L		
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	874	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3		mg/L	v		0.1	mg/L	0.023	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	872	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	343		mg/L	v		10	mg/L	10	mg/L
LRC-3_SW	LRC-3	I	1	P1-00303	Surface Water		Field Sample	10/15/2007	873	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16011	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17716	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1		0.02	
LRC-4	LRC-4	WT-2015	1	WT-10005	Surface Water		Field Sample	4/15/2015	29289	300.0	O	Z	Anions	Chloride	7782-50-5	3.5		mg/L	v				0.5	mg/L
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16011	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/L	v		0.1		0.01	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17716	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.9		mg/L	v		0.1		0.01	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16017	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.202		mg/L	v	J	0.005		0.005	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17722	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.136		mg/L	v	J	0.005		0.005	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16011	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1		0.05	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17716	E300.0	O	Z	Anions	Sulfate	14808-79-8	10		mg/L	v		1		0.05	
LRC-4	LRC-4	WT-2015	1	WT-10005	Surface Water		Field Sample	4/15/2015	29289	300.0	O	Z	Anions	Sulfate		10		mg/L	v				0.75	mg/L
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16027	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17732	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000175	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16021	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16021	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17724	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.00021	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17724	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16022	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Calcium	7440-70-2	69		mg/L	v		1		0.21	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17724	SW6010B	O	DIS	Metals	Calcium	7440-70-2	74		mg/L	v		1		0.21	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17724	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.0000903	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16021	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17724	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16021	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.13	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17724	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	20		mg/L	v		1		0.13	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17724	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16025	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17730	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16021	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00012	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.06	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17724	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.06	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16021	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16021	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17724	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.18	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16021	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16019	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.000317	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.13		mg/L	v		0.09		0.01	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.00065	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16023	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16023	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00013	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17726	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000175	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.2		mg/L	U		0.2		0.2	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17729	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00039	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16024	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000056	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17728	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Calcium	7440-70-2	75		mg/L	v		1		0.03	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17725	SW6010B	O	TOT	Metals	Calcium	7440-70-2	74		mg/L	v		1		0.03	
LRC-4	LRC-4	WT-2015	1	WT-10005	Surface Water		Field Sample	4/15/2015	29291	6010B	O	TOT	Metals	Calcium	7440-70-2	77000		ug/L	v	J			5000	ug/L
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0002	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.000027	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16023	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17728	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000031	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.19		mg/L	v		0.03		0.00466	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17725	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16023	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	18		mg/L	v		1		0.03	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17725	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	20		mg/L	v		1		0.03	
LRC-4	LRC-4	WT-2015	1	WT-10005	Surface Water		Field Sample	4/15/2015	29291	6010B	O	TOT	Metals	Magnesium	7439-95-4	20000		ug/L	v				1000	ug/L
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.05		mg/L	v		0.02		0.000366	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00003	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16026	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17731	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16023	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Potassium	9/7/7440	11		mg/L	v		1		0.05	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17725	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
LRC-4	LRC-4	WT-2015	1	WT-10005	Surface Water		Field Sample	4/15/2015	29291	6010B	O	TOT	Metals	Potassium	7440-09-7	9800		ug/L	v				1000	ug/L
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16023	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16023	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Sodium	7440-23-5	7		mg/L	v		1		0.36	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17725	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.06	
LRC-4	LRC-4	WT-2015	1	WT-10005	Surface Water		Field Sample	4/15/2015	29291	6010B	O	TOT	Metals	Sodium	7440-23-5	5400		ug/L	v				1000	ug/L
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.000022	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.000155	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16020	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17727	SW6020	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00017	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16012	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17717	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U	UJ	0.1		0.01	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16013	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17718	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16016	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.04		mg/L	v		0.01		0.01	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17721	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.07		mg/L	v		0.01		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16015	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.04		mg/L	v		0.01		0.0016	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17720	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.08		mg/L	v		0.01		0.0016	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16014	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17719	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	v	U	0.01		0.00651	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16018	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17723	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16006	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	259		mg/L	v	J	4		1	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17711	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	262		mg/L	v	J	4		1	
LRC-4	LRC-4	WT-2015	1	WT-10005	Surface Water		Field Sample	4/15/2015	29288	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	250		mg/L	v				2	mg/L
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16006	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	316		mg/L	v	J	4		1	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17711	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	316		mg/L	v	J	4		1	
LRC-4	LRC-4	WT-2015	1	WT-10005	Surface Water		Field Sample	4/15/2015	29290	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	240		mg/L	v				2	mg/L
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16006	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U	UJ	4		1	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17711	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16007	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	263		mg/L	v		1			
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17712	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	267		mg/L	v		1			
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16010	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.3		mg/L	v		0.1		0.03	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17715	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.9		mg/L	v		0.1		0.03	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16008	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	298		mg/L	v		10		10	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17713	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	293		mg/L	v		10		10	
LRC-4	LRC-4	IIA	2	P2-00403	Surface Water		Field Sample	6/24/2008	16009	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-4	LRC-4	IIA	2	P2-00883	Surface Water		Field Sample	9/9/2008	17714	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	856	E300.0	O	Z	Anions	Chloride	16887-00-6	6		mg/L	v		1	mg/L	0.05	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	856	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.7		mg/L	v		0.1	mg/L	0.049	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	861	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.154		mg/L	v		0.002	mg/L	0.002	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	856	E300.0	O	Z	Anions	Sulfate	14808-79-8	11		mg/L	v		1	mg/L	0.046	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	869	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	865	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.000876	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	865	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	865	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.00021	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	865	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Calcium	7440-70-2	84		mg/L	v		1	mg/L	0.214	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	865	SW6020	O	DIS	Metals	Copper	7440-50-8	0.004		mg/L	v		0.002	mg/L	0.00010525	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	865	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	22		mg/L	v		1	mg/L	0.1396	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	867	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Potassium	7440-09-7	11		mg/L	v		1	mg/L	0.06503	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	865	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	865	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.00008905	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Sodium	7440-23-5	7		mg/L	v		1	mg/L	0.1805	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	865	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	863	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	866	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.00065	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	866	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	866	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.0005	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	866	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Calcium	7440-70-2	82		mg/L	v		1	mg/L	0.1	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Chromium	7440-47-3	-0.01		mg/L	U		-0.01	mg/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	866	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000155	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.003	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	866	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	21		mg/L	v		1	mg/L	0.09	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	868	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Potassium	7440-09-7	11		mg/L	v		1	mg/L	0.4	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	866	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	866	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.0000345	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.5	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	866	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	864	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	857	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	858	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	855	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.02		mg/L	v	U	0.01	mg/L	0.01	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	860	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.02		mg/L	v	U	0.01	mg/L	0.0016	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	859	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.00651	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	862	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	850	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	294		mg/L	v		4	mg/L	1	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	850	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	359		mg/L	v		4	mg/L	1	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	850	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	851	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	299		mg/L	v		1	mg/L		
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	854	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.1		mg/L	v		0.1	mg/L	0.023	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	852	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	339		mg/L	v		10	mg/L	10	mg/L
LRC-4_SW	LRC-4	I	1	P1-00302	Surface Water		Field Sample	10/15/2007	853	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15989	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17693	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1		0.02	
LRC-5	LRC-5	WT-2015	1	WT-10004	Surface Water		Field Sample	4/14/2015	29285	300.0	O	Z	Anions	Chloride	7782-50-5	3.6		mg/L	v				0.5	mg/L
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15989	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/L	v		0.1		0.01	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17693	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.9		mg/L	v		0.1		0.01	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15995	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.189		mg/L	v	J	0.005		0.005	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17699	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.134		mg/L	v	J	0.005		0.005	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15989	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1		0.05	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17693	E300.0	O	Z	Anions	Sulfate	14808-79-8	10		mg/L	v		1		0.05	
LRC-5	LRC-5	WT-2015	1	WT-10004	Surface Water		Field Sample	4/14/2015	29285	300.0	O	Z	Anions	Sulfate		10		mg/L	v				0.75	mg/L
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16005	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17709	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15999	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000876	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000175	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15999	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15999	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17701	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.00021	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17701	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16000	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Calcium	7440-70-2	69		mg/L	v		1		0.21	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17701	SW6010B	O	DIS	Metals	Calcium	7440-70-2	73		mg/L	v		1		0.21	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17701	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.0000903	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15999	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17701	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15999	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.13	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17701	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	19		mg/L	v		1		0.13	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17701	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16003	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17707	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15999	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00012	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.06	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17701	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.06	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15999	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15999	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17701	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.18	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15999	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15997	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17703	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.000317	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.11		mg/L	v		0.09		0.01	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000657	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16001	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16001	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00026	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000131	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00021	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000177	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.2		mg/L	U		0.2		0.2	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17706	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.000394	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16002	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000566	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000141	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Calcium	7440-70-2	75		mg/L	v		1		0.03	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17702	SW6010B	O	TOT	Metals	Calcium	7440-70-2	74		mg/L	v		1		0.03	
LRC-5	LRC-5	WT-2015	1	WT-10004	Surface Water		Field Sample	4/14/2015	29287	6010B	O	TOT	Metals	Calcium	7440-70-2	76000		ug/L	v	J			5000	ug/L
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00288	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.000202	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00137	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.0000273	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16001	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000157	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17705	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000313	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.16		mg/L	v		0.03		0.00471	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17702	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00471	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16001	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	18		mg/L	v		1		0.04	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17702	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	20		mg/L	v		1		0.04	
LRC-5	LRC-5	WT-2015	1	WT-10004	Surface Water		Field Sample	4/14/2015	29287	6010B	O	TOT	Metals	Magnesium	7439-95-4	20000		ug/L	v				1000	ug/L
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.04		mg/L	v		0.02		0.000369	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.0000303	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16004	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17708	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16001	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Potassium	9/7/7440	11		mg/L	v		1		0.05	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17702	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
LRC-5	LRC-5	WT-2015	1	WT-10004	Surface Water		Field Sample	4/14/2015	29287	6010B	O	TOT	Metals	Potassium	7440-09-7	9900		ug/L	v				1000	ug/L
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16001	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	16002	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.00000697	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.36	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17702	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.06	
LRC-5	LRC-5	WT-2015	1	WT-10004	Surface Water		Field Sample	4/14/2015	29287	6010B	O	TOT	Metals	Sodium	7440-23-5	5700		ug/L	v				1000	ug/L
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.0000222	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17704	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.000157	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15998	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00217	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17705	SW6020	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.0000343	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15990	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17694	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U	UJ	0.1		0.01	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15991	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17695	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15994	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.04		mg/L	v		0.01		0.01	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17698	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.07		mg/L	v		0.01		0.01	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15993	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.04		mg/L	v		0.01		0.0016	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17697	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.08		mg/L	v		0.01		0.0016	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15992	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17696	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	v	U	0.01		0.00651	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15996	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17700	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15984	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	257		mg/L	v	J	4		1	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17688	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	260		mg/L	v	J	4		1	
LRC-5	LRC-5	WT-2015	1	WT-10004	Surface Water		Field Sample	4/14/2015	29284	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	250		mg/L	v				2	mg/L
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15984	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	300		mg/L	v	J	4		1	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17688	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	311		mg/L	v	J	4		1	
LRC-5	LRC-5	WT-2015	1	WT-10004	Surface Water		Field Sample	4/14/2015	29286	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	240		mg/L	v				2	mg/L
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15984	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	6		mg/L	v	J	4		1	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17688	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15985	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	260		mg/L	v		1			
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17689	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	262		mg/L	v		1			
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15988	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.5		mg/L	v		0.1		0.03	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17692	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.6		mg/L	v		0.1		0.03	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15986	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	307		mg/L	v		10		10	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17690	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	308		mg/L	v		10		10	
LRC-5	LRC-5	IIA	2	P2-00402	Surface Water		Field Sample	6/24/2008	15987	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-5	LRC-5	IIA	2	P2-00881	Surface Water		Field Sample	9/9/2008	17691	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	836	E300.0	O	Z	Anions	Chloride	16887-00-6	6		mg/L	v		1	mg/L	0.05	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	836	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.8		mg/L	v		0.1	mg/L	0.049	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	841	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.152		mg/L	v		0.002	mg/L	0.002	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	836	E300.0	O	Z	Anions	Sulfate	14808-79-8	11		mg/L	v		1	mg/L	0.046	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	849	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	845	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.000876	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	845	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	845	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.00021	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	845	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Calcium	7440-70-2	85		mg/L	v		1	mg/L	0.214	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	845	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	845	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	21		mg/L	v		1	mg/L	0.1396	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	847	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Potassium	7440-09-7	11		mg/L	v		1	mg/L	0.06503	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	845	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	845	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.00008905	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Sodium	7440-23-5	7		mg/L	v		1	mg/L	0.1805	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	845	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	843	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	846	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.00065	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	846	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	846	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.0005	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	846	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Calcium	7440-70-2	80		mg/L	v		1	mg/L	0.1	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Chromium	7440-47-3	-0.01		mg/L	U		-0.01	mg/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	846	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000155	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.003	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	846	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	20		mg/L	v		1	mg/L	0.09	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	848	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.4	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	846	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	846	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.0000345	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.5	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	846	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	844	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	837	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	838	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	835	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01	mg/L	0.01	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	840	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.0016	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	839	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.00651	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	842	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	830	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	293		mg/L	v		4	mg/L	1	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	830	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	357		mg/L	v		4	mg/L	1	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	830	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	831	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	299		mg/L	v		1	mg/L		
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	834	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3		mg/L	v		0.1	mg/L	0.023	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	832	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	329		mg/L	v		10	mg/L	10	mg/L
LRC-5_SW	LRC-5	I	1	P1-00301	Surface Water		Field Sample	10/15/2007	833	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15968	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17672	E300.0	O	Z	Anions	Chloride	16887-00-6	6		mg/L	v		1		0.02	
LRC-6	LRC-6	WT-2015	1	WT-10001	Surface Water		Field Sample	4/14/2015	29273	300.0	O	Z	Anions	Chloride	7782-50-5	3.8		mg/L	v				0.5	mg/L
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15968	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.9		mg/L	v		0.1		0.01	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17672	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.7		mg/L	v		0.1		0.01	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15974	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.179		mg/L	v	J	0.005		0.005	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17678	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.138		mg/L	v	J	0.005		0.005	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15968	E300.0	O	Z	Anions	Sulfate	14808-79-8	10		mg/L	v		1		0.05	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17672	E300.0	O	Z	Anions	Sulfate	14808-79-8	11		mg/L	v		1		0.05	
LRC-6	LRC-6	WT-2015	1	WT-10001	Surface Water		Field Sample	4/14/2015	29273	300.0	O	Z	Anions	Sulfate		10		mg/L	v				0.75	mg/L
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15983	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17687	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000175	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15978	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15978	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17680	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.00021	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17680	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15979	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Calcium	7440-70-2	70		mg/L	v		1		0.21	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17680	SW6010B	O	DIS	Metals	Calcium	7440-70-2	77		mg/L	v		1		0.21	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17680	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.0000903	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15978	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17680	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15978	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	16		mg/L	v		1		0.13	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17680	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	18		mg/L	v		1		0.13	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17680	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15981	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17685	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15978	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00012	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.06	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17680	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.06	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15978	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15978	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17680	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.18	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15978	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15976	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17682	SW6020	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.000317	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.11		mg/L	v		0.09		0.01	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000657	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15980	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15980	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00026	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000131	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00021	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000177	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.2		mg/L	U		0.2		0.2	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17684	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.000394	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15980	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000141	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000141	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Calcium	7440-70-2	76		mg/L	v		1		0.03	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17681	SW6010B	O	TOT	Metals	Calcium	7440-70-2	77		mg/L	v		1		0.03	
LRC-6	LRC-6	WT-2015	1	WT-10001	Surface Water		Field Sample	4/14/2015	29275	6010B	O	TOT	Metals	Calcium	7440-70-2	78000		ug/L	v	J			5000	ug/L
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00288	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.000202	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00137	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.0000273	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15980	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000157	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000157	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.16		mg/L	v		0.03		0.00471	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17681	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00471	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15980	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	18		mg/L	v		1		0.04	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17681	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	18		mg/L	v		1		0.04	
LRC-6	LRC-6	WT-2015	1	WT-10001	Surface Water		Field Sample	4/14/2015	29275	6010B	O	TOT	Metals	Magnesium	7439-95-4	20000		ug/L	v				1000	ug/L
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02		0.000369	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.0000303	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15982	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17686	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15980	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17681	SW6010B	O	TOT	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.05	
LRC-6	LRC-6	WT-2015	1	WT-10001	Surface Water		Field Sample	4/14/2015	29275	6010B	O	TOT	Metals	Potassium	7440-09-7	9500		ug/L	v				1000	ug/L
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15980	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15980	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Sodium	7440-23-5	7		mg/L	v		1		0.36	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17681	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.06	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-6	LRC-6	WT-2015	1	WT-10001	Surface Water		Field Sample	4/14/2015	29275	6010B	O	TOT	Metals	Sodium	7440-23-5	5800		ug/L	v				1000	ug/L
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.0000222	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00144	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.000157	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15977	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00217	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17683	SW6020	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.000172	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15969	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17673	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U	UJ	0.1		0.01	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15970	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17674	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15973	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.05		mg/L	v		0.01		0.01	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17677	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.09		mg/L	v		0.01		0.01	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15972	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.05		mg/L	v		0.01		0.0016	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17676	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.09		mg/L	v		0.01		0.0016	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15971	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17675	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.05		mg/L	U		0.05		0.00651	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15975	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17679	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15963	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	263		mg/L	v	J	4		1	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17667	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	253		mg/L	v	J	4		1	
LRC-6	LRC-6	WT-2015	1	WT-10001	Surface Water		Field Sample	4/14/2015	29272	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	250		mg/L	v				2	mg/L
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15963	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	302		mg/L	v	J	4		1	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17667	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	303		mg/L	v	J	4		1	
LRC-6	LRC-6	WT-2015	1	WT-10001	Surface Water		Field Sample	4/14/2015	29274	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	240		mg/L	v				2	mg/L
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15963	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	9		mg/L	v	J	4		1	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17667	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15964	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	263		mg/L	v		1			
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17668	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	267		mg/L	v		1			
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15967	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.2		mg/L	v		0.1		0.03	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17671	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.4		mg/L	v		0.1		0.03	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15965	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	313		mg/L	v		10		10	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17669	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	309		mg/L	v		10		10	
LRC-6	LRC-6	IIA	2	P2-00401	Surface Water		Field Sample	6/24/2008	15966	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-6	LRC-6	IIA	2	P2-00880	Surface Water		Field Sample	9/9/2008	17670	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	816	E300.0	O	Z	Anions	Chloride	16887-00-6	6		mg/L	v		1	mg/L	0.05	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	816	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.6		mg/L	v		0.1	mg/L	0.049	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	821	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.132		mg/L	v		0.002	mg/L	0.002	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	816	E300.0	O	Z	Anions	Sulfate	14808-79-8	11		mg/L	v		1	mg/L	0.046	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	829	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	825	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.000876	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	825	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	825	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.00021	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	825	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Calcium	7440-70-2	85		mg/L	v		1	mg/L	0.214	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	825	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	825	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	19		mg/L	v		1	mg/L	0.1396	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	827	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Potassium	7440-09-7	9		mg/L	v		1	mg/L	0.06503	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	825	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	825	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.00008905	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Sodium	7440-23-5	7		mg/L	v		1	mg/L	0.1805	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	825	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	823	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	826	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0006565	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	826	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.000020705	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	826	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.000202	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.000505	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000202	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.00404	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	826	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00001414	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Calcium	7440-70-2	79		mg/L	v		1	mg/L	0.101	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.000808	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	826	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00015655	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	v		0.03	mg/L	0.00303	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	826	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.000016867	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	17		mg/L	v		1	mg/L	0.0909	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.000606	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	828	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U	UJ	0.0006	mg/L	0.00005	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.00404	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Potassium	7440-09-7	9		mg/L	v		1	mg/L	0.404	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	826	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.0005555	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	826	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U	UJ	0.001	mg/L	0.000034845	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.505	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	826	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	2.21695E-05	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.00505	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	824	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.00808	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	817	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	818	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	815	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.02		mg/L	v	U	0.01	mg/L	0.01	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	820	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.02		mg/L	v	U	0.01	mg/L	0.0016	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	819	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.00651	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	822	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	811	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	279		mg/L	v		4	mg/L	1	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	811	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	339		mg/L	v		4	mg/L	1	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	811	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	812	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	290		mg/L	v		1	mg/L		
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	813	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	332		mg/L	v		10	mg/L	10	mg/L
LRC-6_SW	LRC-6	I	1	P1-00300	Surface Water		Field Sample	10/15/2007	814	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16111	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17931	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
MP	MP	WT-2015	1	WT-10011	Surface Water		Field Sample	4/15/2015	29313	300.0	O	Z	Anions	Chloride	7782-50-5	3.2		mg/L	v				0.5	mg/L
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16111	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/L	v		0.1		0.01	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17931	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.8		mg/L	v		0.1		0.01	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16117	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.13		mg/L	v	J	0.005		0.005	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17937	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.033		mg/L	v	J	0.005		0.005	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16111	E300.0	O	Z	Anions	Sulfate	14808-79-8	7		mg/L	v		1		0.05	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17931	E300.0	O	Z	Anions	Sulfate	14808-79-8	8		mg/L	v		1		0.05	
MP	MP	WT-2015	1	WT-10011	Surface Water		Field Sample	4/15/2015	29313	300.0	O	Z	Anions	Sulfate		7.1		mg/L	v				0.75	mg/L
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16125	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17945	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16121	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000876	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16121	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17941	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16121	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17941	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.002	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17941	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16121	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000247	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17941	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Calcium	7440-70-2	63		mg/L	v		1		0.21	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Calcium	7440-70-2	51		mg/L	v		1		0.02	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16121	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17941	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16121	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17941	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	15		mg/L	v		1		0.13	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	20		mg/L	v		1		0.02	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16123	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17943	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16121	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00012	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17941	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.06	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.02	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16121	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17941	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16121	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17941	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.02	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16121	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16119	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17939	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16122	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.00065	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16122	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17942	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16122	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17942	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17942	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00195	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16122	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17942	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Calcium	7440-70-2	67		mg/L	v		1		0.03	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Calcium	7440-70-2	48		mg/L	v		1		0.03	
MP	MP	WT-2015	1	WT-10011	Surface Water		Field Sample	4/15/2015	29315	6010B	O	TOT	Metals	Calcium	7440-70-2	72000		ug/L	v	J			5000	ug/L
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16122	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17942	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16122	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17942	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	16		mg/L	v		1		0.03	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	18		mg/L	v		1		0.03	
MP	MP	WT-2015	1	WT-10011	Surface Water		Field Sample	4/15/2015	29315	6010B	O	TOT	Metals	Magnesium	7439-95-4	18000		ug/L	v				1000	ug/L
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.07		mg/L	v		0.02		0.000366	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16124	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17944	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16122	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17942	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Potassium	9/7/7440	11		mg/L	v		1		0.05	
MP	MP	WT-2015	1	WT-10011	Surface Water		Field Sample	4/15/2015	29315	6010B	O	TOT	Metals	Potassium	7440-09-7	9400		ug/L	v				1000	ug/L
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16122	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17942	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16122	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17942	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.36	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.36	
MP	MP	WT-2015	1	WT-10011	Surface Water		Field Sample	4/15/2015	29315	6010B	O	TOT	Metals	Sodium	7440-23-5	4700		ug/L	v				1000	ug/L
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16120	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17940	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16112	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17932	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16113	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17933	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16116	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17936	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16115	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17935	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16114	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17934	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U	UJ	0.5			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16118	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17938	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16106	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	241		mg/L	v		4		1	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17926	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	200		mg/L	v		4		1	
MP	MP	WT-2015	1	WT-10011	Surface Water		Field Sample	4/15/2015	29312	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	240		mg/L	v				2	mg/L
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16106	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	294		mg/L	v		4		1	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17926	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	244		mg/L	v		4		1	
MP	MP	WT-2015	1	WT-10011	Surface Water		Field Sample	4/15/2015	29314	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	240		mg/L	v				2	mg/L
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16106	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17926	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16107	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	221		mg/L	v		1			
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17927	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	208		mg/L	v		1			
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16110	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.4		mg/L	v		0.1		0.03	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17930	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.6		mg/L	v		0.1		0.03	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16108	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	290		mg/L	v		10		10	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17928	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	235		mg/L	v		10		10	
MP	MP	IIA	2	P2-00411	Surface Water		Field Sample	6/25/2008	16109	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
MP	MP	IIA	2	P2-00890	Surface Water		Field Sample	9/10/2008	17929	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1052	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1	mg/L	0.05	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1052	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.8		mg/L	v		0.1	mg/L	0.049	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1054	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.095		mg/L	v		0.002	mg/L	0.002	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1052	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1	mg/L	0.046	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1063	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.02625	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1058	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1058	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1	mg/L	0.00021	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1058	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Calcium	7440-70-2	74		mg/L	v		1	mg/L	0.214	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1058	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1058	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	21		mg/L	v		1	mg/L	0.1396	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1061	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Potassium	7440-09-7	11		mg/L	v		1	mg/L	0.06503	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1058	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1058	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00008905	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.1805	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1058	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1056	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	v		0.09	mg/L	0.08	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1059	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1059	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.0005	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1059	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Calcium	7440-70-2	70		mg/L	v		1	mg/L	0.1	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1059	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000155	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.08		mg/L	v		0.03	mg/L	0.003	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1060	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00000334	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	20		mg/L	v		1	mg/L	0.09	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02	mg/L	0.0006	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1062	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.4	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1059	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1059	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000345	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Sodium	7440-23-5	5		mg/L	v		1	mg/L	0.5	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1059	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1057	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1053	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1055	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1047	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	270		mg/L	v		4	mg/L	1	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1047	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	330		mg/L	v		4	mg/L	1	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1047	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1048	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	272		mg/L	v		1	mg/L		
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1051	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.6		mg/L	v		0.1	mg/L	0.023	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1049	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	305		mg/L	v		10	mg/L	10	mg/L
MP_SW	MP	I	1	P1-00313	Surface Water		Field Sample	10/16/2007	1050	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19408	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19408	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	U		0.1		0.00021	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00536	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19408	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0002		mg/L	v		0.0001		0.00000493	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Calcium	7440-70-2	16		mg/L	v		1		0.21	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19408	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19408	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	4		mg/L	v		1		0.13	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19413	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00444	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Potassium	9/7/7440	1		mg/L	v		1		0.06	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19408	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19408	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.18	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19408	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19406	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.00065	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	U		0.1		0.00013	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000175	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19407	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19412	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19407	SW6010B	O	TOT	Metals	Calcium	7440-70-2	17		mg/L	v		1		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0002	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.000027	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19407	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19410	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19407	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	4		mg/L	v		1		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00003	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19414	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19407	SW6010B	O	TOT	Metals	Potassium	9/7/7440	1		mg/L	v		1		0.05	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19407	SW6010B	O	TOT	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.36	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.000022	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19409	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.000155	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19411	SW6020	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.000034	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19405	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19416	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.2		ug/L	U		0.2		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19416	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.2		ug/L	U		0.2		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19416	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	1		ug/L	U		1		0.04	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.05		ug/L	U		0.05		0.00673	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.05		ug/L	U		0.05		0.00718	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.05		ug/L	U		0.05		0.00732	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.05		ug/L	U		0.05		0.00968	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.05		ug/L	U		0.05		0.0078	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.05		ug/L	U		0.05		0.0081	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.05		ug/L	U		0.05		0.00893	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19416	SW8151A	O	Z	Pesticides	Chlordane	57-74-9	0.5		ug/L	U		0.5		0.28	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Dalapon	75-99-0	2.5		ug/L	U		2.5		1.24	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.05		ug/L	U		0.05		0.00854	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19416	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.25		ug/L	U		0.25		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19416	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	1		ug/L	U		1		0.1	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.05		ug/L	U		0.05		0.00656	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.05		ug/L	U		0.05		0.00768	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.05		ug/L	U		0.05		0.0085	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.05		ug/L	U		0.05		0.00809	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.05		ug/L	U		0.05		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.05		ug/L	U		0.05		0.00959	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.05		ug/L	U		0.05		0.00799	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.05		ug/L	U		0.05		0.00865	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.05		ug/L	U		0.05		0.00811	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.05		ug/L	U		0.05		0.00964	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.05		ug/L	U		0.05		0.00851	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.05		ug/L	U		0.05		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19416	SW8151A	O	Z	Pesticides	MCPA	94-74-6	200		ug/L	U		200		34.21	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19416	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	200		ug/L	U		200		37.79	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.05		ug/L	U		0.05		0.0078	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19416	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.1		ug/L	U		0.1		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19415	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.7		ug/L	U		0.7		0.54	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	5		ug/L	U		5		1.26	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	5		ug/L	U		5		0.69	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	5		ug/L	U		5		2.45	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	5		ug/L	U		5		1.48	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	5		ug/L	U		5		1.92	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	5		ug/L	U		5		1.67	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	10		ug/L	U		10		2.15	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	5		ug/L	U		5		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	5		ug/L	U		5		0.67	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	5		ug/L	U		5		1.49	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	5		ug/L	U		5		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	10		ug/L	U		10		1.22	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	5		ug/L	U		5		1.53	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	5		ug/L	U		5		0.00784	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	10		ug/L	U		10		0.96	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	10		ug/L	U		10		2.13	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	5		ug/L	U		5		1.56	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	10		ug/L	U		10		1.2	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	10		ug/L	U		10		1.32	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	5		ug/L	U		5		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	5		ug/L	U		5		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	5		ug/L	U		5		1.67	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	5		ug/L	U		5		4.9	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	5		ug/L	U	UJ	5		2.9	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	5		ug/L	U		5		4.16	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	5		ug/L	U		5		1.41	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	5		ug/L	U		5		1.16	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	5		ug/L	U		5		4.31	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	5		ug/L	U		5		1.33	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	5		ug/L	U	UJ	5		1.6	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	5		ug/L	U		5		1.56	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	5		ug/L	U		5		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	5		ug/L	U		5		0.97	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	5		ug/L	U		5		1.1	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	5		ug/L	U		5		1.21	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	5		ug/L	U		5		1.2	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	5		ug/L	U		5		1.12	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	5		ug/L	U		5		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	5		ug/L	U		5		0.01	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	5		ug/L	U		5		1.72	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	5		ug/L	U		5		1.85	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	5		ug/L	U		5		2.15	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	5		ug/L	U		5		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	5		ug/L	U		5		2.41	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	5		ug/L	U		5		1.98	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	5		ug/L	U		5		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	5		ug/L	U		5		1.87	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	5		ug/L	U		5		1.16	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	5		ug/L	U		5		1.39	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	5		ug/L	U		5		1.39	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	10		ug/L	U		10		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	5		ug/L	U		5		0.02	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	5		ug/L	U		5		2.96	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19417	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	5		ug/L	U		5		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19400	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	65		mg/L	v		4		1	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19400	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	79		mg/L	v		4		1	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19400	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19401	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	57		mg/L	v		1			
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19404	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2		mg/L	v		0.1		0.03	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19402	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	82		mg/L	v		10		10	
NSY-R1	NSY-R1	IIC	4	P2-01060	Surface Water		Field Sample	10/8/2008	19403	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16322	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18135	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
TP	TP	WT-2015	1	WT-10028	Surface Water		Field Sample	4/17/2015	29393	300.0	O	Z	Anions	Chloride	7782-50-5	2.5		mg/L	v				0.5	mg/L
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16322	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v		0.1		0.01	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18135	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16328	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.007		mg/L	v	J	0.005		0.005	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18141	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.024		mg/L	v	J	0.005		0.005	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16322	E300.0	O	Z	Anions	Sulfate	14808-79-8	3		mg/L	v		1		0.05	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18135	E300.0	O	Z	Anions	Sulfate	14808-79-8	4		mg/L	v		1		0.05	
TP	TP	WT-2015	1	WT-10028	Surface Water		Field Sample	4/17/2015	29393	300.0	O	Z	Anions	Sulfate		8		mg/L	v				0.75	mg/L
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16336	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18149	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16332	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16332	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.00021	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.002	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U	UJ	0.03		0.00116	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16332	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000247	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Calcium	7440-70-2	16		mg/L	v		1		0.21	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Calcium	7440-70-2	29		mg/L	v		1		0.02	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16332	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16332	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	7		mg/L	v		1		0.13	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	10		mg/L	v		1		0.02	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16334	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18147	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00444	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Potassium	9/7/7440	3		mg/L	v		1		0.06	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.02	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16332	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16332	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.18	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.02	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16332	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18145	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16330	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18143	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.12		mg/L	v		0.09		0.01	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16333	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18146	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16333	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18146	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.000258	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.000258	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18146	SW6020	O	TOT	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.00195	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16333	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18146	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Calcium	7440-70-2	17		mg/L	v		1		0.03	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Calcium	7440-70-2	26		mg/L	v		1		0.03	
TP	TP	WT-2015	1	WT-10028	Surface Water		Field Sample	4/17/2015	29395	6010B	O	TOT	Metals	Calcium	7440-70-2	42000		ug/L	v				1000	ug/L
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16333	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18146	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.04		mg/L	v		0.03		0.00466	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.25		mg/L	v		0.03		0.00466	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16333	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18146	SW6020	O	TOT	Metals	Lead	7439-92-1	0.001		mg/L	v		0.0005		0.0000167	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	7		mg/L	v		1		0.03	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	9		mg/L	v		1		0.03	
TP	TP	WT-2015	1	WT-10028	Surface Water		Field Sample	4/17/2015	29395	6010B	O	TOT	Metals	Magnesium	7439-95-4	11000		ug/L	v				1000	ug/L
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02		0.000366	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16335	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18148	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16333	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00317	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Potassium	9/7/7440	3		mg/L	v		1		0.05	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.05	
TP	TP	WT-2015	1	WT-10028	Surface Water		Field Sample	4/17/2015	29395	6010B	O	TOT	Metals	Potassium	7440-09-7	6100		ug/L	v				1000	ug/L
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16333	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18146	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16333	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18146	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.06	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.36	
TP	TP	WT-2015	1	WT-10028	Surface Water		Field Sample	4/17/2015	29395	6010B	O	TOT	Metals	Sodium	7440-23-5	4100		ug/L	v				1000	ug/L
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16331	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18144	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16323	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18136	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16324	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18137	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	1.2		mg/L	v		0.5		0.03	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16327	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18140	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16326	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18139	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16325	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18138	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.08		mg/L	v	J	0.01		0.00651	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16329	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18142	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16317	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	77		mg/L	v		4		1	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18130	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	104		mg/L	v		4		1	
TP	TP	WT-2015	1	WT-10028	Surface Water		Field Sample	4/17/2015	29392	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	150		mg/L	v				2	mg/L
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16317	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	75		mg/L	v		4		1	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18130	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	127		mg/L	v		4		1	
TP	TP	WT-2015	1	WT-10028	Surface Water		Field Sample	4/17/2015	29394	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	150		mg/L	v				2	mg/L
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16317	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	10		mg/L	v		4		1	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18130	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16318	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	68		mg/L	v		1			
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18131	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	113		mg/L	v		1			
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16321	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	5.8		mg/L	v		0.1		0.03	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18134	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	12.7		mg/L	v		0.1		0.03	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16319	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	99		mg/L	v		10		10	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18132	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	157		mg/L	v		10		10	
TP	TP	IIA	2	P2-00420	Surface Water		Field Sample	6/26/2008	16320	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
TP	TP	IIA	2	P2-00893	Surface Water		Field Sample	9/11/2008	18133	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1434	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1	mg/L	0.02	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1434	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v		0.1	mg/L	0.01	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1440	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.008		mg/L	v	J	0.005	mg/L	0.005	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1434	E300.0	O	Z	Anions	Sulfate	14808-79-8	8		mg/L	v		1	mg/L	0.05	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1449	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.03	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.005	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1444	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1444	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.001	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.001		mg/L	U		0.001	mg/L	0.001	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1444	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Calcium	7440-70-2	58		mg/L	v		1	mg/L	0.01	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.001	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.001	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.001	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1444	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	14		mg/L	v		1	mg/L	0.01	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.04		mg/L	v		0.02	mg/L	0.001	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1447	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.001	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1	mg/L	0.01	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1444	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1444	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00008905	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1	mg/L	1	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.01	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.001	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1442	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1443	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.01	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.00013	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1443	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002076	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Boron	7440-42-8	0.05		mg/L	U		0.05	mg/L	0.00195	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1443	SW6010B	O	TOT	Metals	Calcium	7440-70-2	48		mg/L	v		1	mg/L	0.03	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.0002	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1443	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.001359	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1445	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000031	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1443	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.07		mg/L	v		0.03	mg/L	0.004664	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1445	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.00000334	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1445	SW6020	O	TOT	Metals	Magnesium	7439-95-4	11		mg/L	v		1	mg/L	0.003	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1443	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.07		mg/L	v		0.02	mg/L	0.0003655	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1448	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.000135	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1443	SW6010B	O	TOT	Metals	Potassium	9/7/7440	9		mg/L	v		1	mg/L	0.05	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000345	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1443	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.36	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.000155	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1446	SW6020	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.00017	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1435	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.01	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1436	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.9		mg/L	v		0.5	mg/L	0.03	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1439	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01	mg/L	0.01	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1438	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.0016	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1437	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.00651	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1441	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1429	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	202		mg/L	v	J	4	mg/L	1	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1429	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	246		mg/L	v		4	mg/L	1	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1429	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1430	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	201		mg/L	v		1	mg/L		
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1433	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	5.1		mg/L	v		0.1	mg/L	0.03	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1431	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	254		mg/L	v		10	mg/L	10	mg/L
TP_SWresample	TP_SWresample	I	1	P1-00750	Surface Water		Field Sample	12/12/2007	1432	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
TP-Overflow-A	TP-Overflow-A	WT-2015	1	WT-10027	Surface Water		Field Sample	4/16/2015	29389	300.0	O	Z	Anions	Chloride	7782-50-5	2.5		mg/L	v				0.5	mg/L
TP-Overflow-A	TP-Overflow-A	WT-2015	1	WT-10027	Surface Water		Field Sample	4/16/2015	29389	300.0	O	Z	Anions	Sulfate		4.3		mg/L	v				0.75	mg/L
TP-Overflow-A	TP-Overflow-A	WT-2015	1	WT-10027	Surface Water		Field Sample	4/16/2015	29391	6010B	O	TOT	Metals	Calcium	7440-70-2	42000		ug/L	v				1000	ug/L
TP-Overflow-A	TP-Overflow-A	WT-2015	1	WT-10027	Surface Water		Field Sample	4/16/2015	29391	6010B	O	TOT	Metals	Magnesium	7439-95-4	10000		ug/L	v				1000	ug/L
TP-Overflow-A	TP-Overflow-A	WT-2015	1	WT-10027	Surface Water		Field Sample	4/16/2015	29391	6010B	O	TOT	Metals	Potassium	7440-09-7	8300		ug/L	v				1000	ug/L
TP-Overflow-A	TP-Overflow-A	WT-2015	1	WT-10027	Surface Water		Field Sample	4/16/2015	29391	6010B	O	TOT	Metals	Sodium	7440-23-5	3500		ug/L	v				1000	ug/L
TP-Overflow-A	TP-Overflow-A	WT-2015	1	WT-10027	Surface Water		Field Sample	4/16/2015	29388	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	140		mg/L	v				2	mg/L
TP-Overflow-A	TP-Overflow-A	WT-2015	1	WT-10027	Surface Water		Field Sample	4/16/2015	29390	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	140		mg/L	v				2	mg/L
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16393	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17980	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005		0.00279	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16385	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17972	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16385	E300.0	O	Z	Anions	Fluoride	16984-48-8	1.1		mg/L	v		0.1		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17972	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.8		mg/L	v		0.1		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16391	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.179		mg/L	v	J	0.005		0.005	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17978	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.189		mg/L	v	J	0.005		0.005	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16385	E300.0	O	Z	Anions	Sulfate	14808-79-8	7		mg/L	v		1		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17972	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16402	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17988	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16397	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17984	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16397	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17984	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.002	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17984	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16397	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000247	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17984	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Calcium	7440-70-2	66		mg/L	v		1		0.21	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Calcium	7440-70-2	89		mg/L	v		1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16397	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17984	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16397	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17984	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	15		mg/L	v		1		0.13	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	20		mg/L	v		1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.1		mg/L	v		0.02		0.00111	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.04		mg/L	v		0.02		0.002	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16400	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17986	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00444	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17984	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Potassium	9/7/7440	9		mg/L	v		1		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16397	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17984	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16397	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17984	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.18	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16397	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16395	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17982	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16399	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17985	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16399	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17985	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00026	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.00026	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00021	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00021	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17985	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00197	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16398	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000141	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17985	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000141	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Calcium	7440-70-2	72		mg/L	v		1		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Calcium	7440-70-2	82		mg/L	v		1		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00288	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00288	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00137	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00137	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16399	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000157	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17985	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000157	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00471	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00471	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16399	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17985	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	17		mg/L	v		1		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	19		mg/L	v		1		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.11		mg/L	v		0.02		0.000369	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.04		mg/L	v		0.02		0.000369	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16401	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17987	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16399	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17985	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16399	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17985	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16399	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17985	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Sodium	7440-23-5	8		mg/L	v		1		0.36	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00144	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00144	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16396	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00217	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17983	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00217	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16386	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17973	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16387	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17974	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16390	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.05		mg/L	v		0.01		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17977	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.07		mg/L	v		0.01		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16389	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.05		mg/L	v		0.01		0.0016	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17976	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.07		mg/L	v		0.01		0.0016	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16388	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17975	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16404	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.5		ug/L	U		0.5		0.11	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17990	SW8082	O	Z	PCBs	Aroclor 1016	12674-11-2	0.5		ug/L	U		0.5		0.11	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16404	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17990	SW8082	O	Z	PCBs	Aroclor 1221	11104-28-2	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16404	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17990	SW8082	O	Z	PCBs	Aroclor 1232	11141-16-5	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16404	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17990	SW8082	O	Z	PCBs	Aroclor 1242	53469-21-9	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16404	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17990	SW8082	O	Z	PCBs	Aroclor 1248	12672-29-6	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16404	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.5		ug/L	U		0.5		0.17	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17990	SW8082	O	Z	PCBs	Aroclor 1254	11097-69-1	0.5		ug/L	U		0.5		0.17	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16404	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.5		ug/L	U		0.5		0.2	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17990	SW8082	O	Z	PCBs	Aroclor 1260	11096-82-5	0.5		ug/L	U		0.5		0.2	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16404	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17990	SW8082	O	Z	PCBs	Aroclor 1262	37324-23-5	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16404	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17990	SW8082	O	Z	PCBs	Aroclor 1268	11100-14-4	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16405	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.2		ug/L	U		0.2		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17991	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.2		ug/L	U		0.2		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16405	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.2		ug/L	U		0.2		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17991	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.2		ug/L	U		0.2		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16405	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	1		ug/L	U		1		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17991	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	1		ug/L	U		1		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.05		ug/L	U		0.05		0.00673	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.05		ug/L	U		0.05		0.00673	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.05		ug/L	U		0.05		0.00718	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.05		ug/L	U		0.05		0.00718	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.05		ug/L	U		0.05		0.00732	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.05		ug/L	U		0.05		0.00732	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.05		ug/L	U		0.05		0.00968	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.05		ug/L	U		0.05		0.00968	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.05		ug/L	U		0.05		0.0078	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.05		ug/L	U		0.05		0.0078	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.05		ug/L	U		0.05		0.0081	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.05		ug/L	U		0.05		0.0081	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.05		ug/L	U		0.05		0.00893	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.05		ug/L	U		0.05		0.00893	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.5		ug/L	U		0.5		0.28	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.5		ug/L	U		0.5		0.28	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16405	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	2.5		ug/L	U		2.5		1.24	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17991	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	2.5		ug/L	U		2.5		1.24	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.05		ug/L	U		0.05		0.00854	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.05		ug/L	U		0.05		0.00854	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16405	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.25		ug/L	U		0.25		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17991	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.25		ug/L	U		0.25		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16405	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	1		ug/L	U		1		0.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17991	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	1		ug/L	U		1		0.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.05		ug/L	U		0.05		0.00656	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.05		ug/L	U		0.05		0.00656	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.05		ug/L	U		0.05		0.00768	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.05		ug/L	U		0.05		0.00768	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.05		ug/L	U		0.05		0.0085	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.05		ug/L	U		0.05		0.0085	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.05		ug/L	U		0.05		0.00809	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.05		ug/L	U		0.05		0.00809	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.05		ug/L	U		0.05		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.05		ug/L	U		0.05		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.05		ug/L	U		0.05		0.00959	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.05		ug/L	U		0.05		0.00959	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.05		ug/L	U		0.05		0.00799	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.05		ug/L	U		0.05		0.00799	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.05		ug/L	U		0.05		0.00865	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.05		ug/L	U		0.05		0.00865	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.05		ug/L	U		0.05		0.00811	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.05		ug/L	U		0.05		0.00811	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.05		ug/L	U		0.05		0.00964	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.05		ug/L	U		0.05		0.00964	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.05		ug/L	U		0.05		0.00851	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.05		ug/L	U		0.05		0.00851	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.05		ug/L	U		0.05		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.05		ug/L	U		0.05		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16405	SW8151A	O	Z	Pesticides	MCPA	94-74-6	200		ug/L	U		200		34.21	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17991	SW8151A	O	Z	Pesticides	MCPA	94-74-6	200		ug/L	U		200		34.21	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16405	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	200		ug/L	U		200		37.79	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17991	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	200		ug/L	U		200		37.79	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.05		ug/L	U		0.05		0.0078	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.05		ug/L	U		0.05		0.0078	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16405	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.1		ug/L	U		0.1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17991	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.1		ug/L	U		0.1		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16403	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.7		ug/L	U		0.7		0.54	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17989	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.7		ug/L	U		0.7		0.54	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16392	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	0.4		pCi/L	v					
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17979	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	2.6		pCi/L	v	J				
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16392	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.1		pCi/L	v		0			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17979	E900.0	O	Z	Radionuclides	Gross Alpha MDC		2.2		pCi/L	v		0			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16392	E900.0	O	Z	Radionuclides	Gross Beta	BETA	7.3		pCi/L	v					
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17979	E900.0	O	Z	Radionuclides	Gross Beta	BETA	4.6		pCi/L	v	J				
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16392	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.7		pCi/L	v		0			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17979	E900.0	O	Z	Radionuclides	Gross Beta MDC		2.8		pCi/L	v		0			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	5		ug/L	U		5		1.26	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	5		ug/L	U		5		1.26	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	5		ug/L	U		5		0.69	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	5		ug/L	U		5		0.69	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	5		ug/L	U		5		2.45	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	5		ug/L	U		5		2.45	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	5		ug/L	U		5		1.48	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	5		ug/L	U		5		1.48	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	5		ug/L	U		5		1.92	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	5		ug/L	U		5		1.92	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	5		ug/L	U		5		1.67	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	5		ug/L	U		5		1.67	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	10		ug/L	U		10		2.15	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	10		ug/L	U		10		2.15	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	5		ug/L	U		5		0.67	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	5		ug/L	U		5		0.67	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	5		ug/L	U		5		1.49	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	5		ug/L	U		5		1.49	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	5		ug/L	U		5		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	5		ug/L	U		5		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	10		ug/L	U		10		1.22	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	10		ug/L	U		10		1.22	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	5		ug/L	U		5		1.53	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	5		ug/L	U		5		1.53	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	5		ug/L	U		5		0.00784	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	3,3'-Dichlorobenzidine	91-94-1	5		ug/L	U		5		0.00784	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	10		ug/L	U		10		0.96	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	10		ug/L	U		10		0.96	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	10		ug/L	U		10		2.13	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	10		ug/L	U		10		2.13	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	5		ug/L	U		5		1.56	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	5		ug/L	U		5		1.56	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	10		ug/L	U		10		1.2	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	10		ug/L	U		10		1.2	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	10		ug/L	U		10		1.32	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	10		ug/L	U		10		1.32	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	5		ug/L	U		5		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	5		ug/L	U		5		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16408	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	5		ug/L	U		5		1.67	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	5		ug/L	U		5		1.67	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	5		ug/L	U		5		4.9	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	5		ug/L	U		5		4.9	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	5		ug/L	U		5		2.9	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	5		ug/L	U	UJ	5		2.9	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	5		ug/L	U		5		4.16	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	5		ug/L	U		5		4.16	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	5		ug/L	U		5		1.41	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	5		ug/L	U		5		1.41	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	5		ug/L	U		5		1.16	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	5		ug/L	U		5		1.16	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	5		ug/L	U		5		4.31	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	5		ug/L	U		5		4.31	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	5		ug/L	U		5		1.33	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	5		ug/L	U		5		1.33	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	5		ug/L	U		5		1.6	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	5		ug/L	U	UJ	5		1.6	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	5		ug/L	U		5		1.56	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	5		ug/L	U		5		1.56	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	5		ug/L	U		5		0.97	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	5		ug/L	U		5		0.97	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	5		ug/L	U		5		1.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	5		ug/L	U		5		1.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	5		ug/L	U		5		1.21	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	5		ug/L	U		5		1.21	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	5		ug/L	U		5		1.2	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	5		ug/L	U		5		1.2	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	5		ug/L	U		5		1.12	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	5		ug/L	U		5		1.12	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	5		ug/L	U		5		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	5		ug/L	U		5		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	5		ug/L	U		5		1.72	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	5		ug/L	U		5		1.72	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	5		ug/L	U		5		1.85	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	5		ug/L	U		5		1.85	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	5		ug/L	U		5		2.15	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	5		ug/L	U		5		2.15	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	5		ug/L	U		5		2.41	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	5		ug/L	U		5		2.41	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	5		ug/L	U		5		1.98	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	5		ug/L	U		5		1.98	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	5		ug/L	U		5		1.87	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	5		ug/L	U		5		1.87	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	5		ug/L	U		5		1.16	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	5		ug/L	U		5		1.16	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	5		ug/L	U		5		1.39	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	5		ug/L	U		5		1.39	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	5		ug/L	U		5		1.39	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	5		ug/L	U		5		1.39	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	10		ug/L	U		10		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	10		ug/L	U		10		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	5		ug/L	U		5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	5		ug/L	U		5		2.96	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	5		ug/L	U		5		2.96	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16407	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17993	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	5		ug/L	U		5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.5		ug/L	U		0.5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.5		ug/L	U		0.5		0.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.5		ug/L	U		0.5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.5		ug/L	U		0.5		0.08	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.5		ug/L	U		0.5		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.5		ug/L	U		0.5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.5		ug/L	U		0.5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.5		ug/L	U		0.5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.5		ug/L	U		0.5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.5		ug/L	U		0.5		0.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.5		ug/L	U		0.5		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.5		ug/L	U		0.5		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.5		ug/L	U		0.5		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.5		ug/L	U		0.5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.5		ug/L	U		0.5		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.5		ug/L	U		0.5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.5		ug/L	U		0.5		0.12	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.5		ug/L	U		0.5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.5		ug/L	U		0.5		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.5		ug/L	U		0.5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.5		ug/L	U		0.5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.5		ug/L	U		0.5		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.5		ug/L	U		0.5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.5		ug/L	U		0.5		0.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.5		ug/L	U		0.5		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.5		ug/L	U		0.5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	1,4-Dioxane	123-91-1	125		ug/L	U		125		19.6	
TP-TOE1	TP-TOE1	**IIA**	**2**	**P2-00933**	**Surface Water**		**Field Sample**	**9/10/2008**	17992	**SW8260B**	**O**	**Z**	**VOCs**	**1,4-Dioxane**	**123-91-1**	**125**		**ug/L**	**U**	**R**	**125**		**24**	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	10		ug/L	U		10		0.47	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	10		ug/L	U		10		1.15	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Acetone	67-64-1	10		ug/L	U		10		1.94	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Acetone	67-64-1	10		ug/L	U		10		1.49	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.5		ug/L	U		0.5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.5		ug/L	U		0.5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.5		ug/L	U		0.5		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.5		ug/L	U		0.5		0.16	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.5		ug/L	U		0.5		0.21	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.5		ug/L	U		0.5		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.5		ug/L	U		0.5		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.5		ug/L	U		0.5		0.11	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.5		ug/L	U		0.5		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.5		ug/L	U		0.5		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.5		ug/L	U		0.5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.5		ug/L	U		0.5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.5		ug/L	U		0.5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.5		ug/L	U		0.5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.5		ug/L	U		0.5		0.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.5		ug/L	U		0.5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.5		ug/L	U		0.5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.5		ug/L	U		0.5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.5		ug/L	U		0.5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.5		ug/L	U		0.5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.5		ug/L	U		0.5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.5		ug/L	U		0.5		0.11	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.5		ug/L	U		0.5		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.5		ug/L	U		0.5		0.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5		0.15	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.5		ug/L	U		0.5		0.12	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.5		ug/L	U		0.5		0.12	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	10		ug/L	U		10		0.65	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	10		ug/L	U		10		0.95	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	10		ug/L	U		10		0.51	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	10		ug/L	U		10		1.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.5		ug/L	U		0.5		0.02	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.5		ug/L	U		0.5		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.5		ug/L	U		0.5		0.11	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.5		ug/L	U		0.5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.5		ug/L	U		0.5		0.06	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.5		ug/L	U		0.5		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.5		ug/L	U		0.5		0.08	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.5		ug/L	U		0.5		0.05	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.5		ug/L	U		0.5		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.5		ug/L	U		0.5		0.07	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.5		ug/L	U		0.5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.5		ug/L	U		0.5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.5		ug/L	U		0.5		0.02	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.5		ug/L	U		0.5		0.1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.5		ug/L	U		0.5		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.5		ug/L	U		0.5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.5		ug/L	U		0.5		0.04	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.5		ug/L	U		0.5		0.09	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16406	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.5		ug/L	U		0.5		0.01	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17992	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.5		ug/L	U		0.5		0.13	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16394	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17981	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16380	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	254		mg/L	v		4		1	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17967	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	282		mg/L	v		4		1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16380	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	310		mg/L	v		4		1	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17967	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	344		mg/L	v		4		1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16380	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17967	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16381	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	228		mg/L	v		1			
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17968	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	306		mg/L	v		1			
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16384	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.8		mg/L	v		0.1		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17971	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.6		mg/L	v		0.1		0.03	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16382	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	301		mg/L	v		10		10	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17969	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	434		mg/L	v		10		10	
TP-TOE1	TP-TOE1	IIA	2	P2-00453	Surface Water		Field Sample	6/26/2008	16383	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
TP-TOE1	TP-TOE1	IIA	2	P2-00933	Surface Water		Field Sample	9/10/2008	17970	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1012	Kelada mod	O	TOT	Anions	Cyanide, Total	57-12-5	0.005		mg/L	U		0.005	mg/L	0.00139	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1004	E300.0	O	Z	Anions	Chloride	16887-00-6	6		mg/L	v		1	mg/L	0.05	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1004	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.9		mg/L	v		0.1	mg/L	0.049	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1009	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.262		mg/L	v		0.002	mg/L	0.002	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1004	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1	mg/L	0.046	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1021	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.02625	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1017	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1017	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.5		mg/L	v		0.1	mg/L	0.00021	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1017	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Calcium	7440-70-2	107		mg/L	v		1	mg/L	0.214	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1017	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1017	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	25		mg/L	v		1	mg/L	0.1396	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.14		mg/L	v		0.02	mg/L	0.001108	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1019	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Potassium	7440-09-7	12		mg/L	v		1	mg/L	0.06503	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1017	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1017	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00008905	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Sodium	7440-23-5	7		mg/L	v		1	mg/L	0.1805	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1017	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1015	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.08	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1018	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1018	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.5		mg/L	v		0.1	mg/L	0.0005	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1018	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Calcium	7440-70-2	105		mg/L	v		1	mg/L	0.1	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1018	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	v	U	0.002	mg/L	0.000155	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.003	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1018	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	25		mg/L	v		1	mg/L	0.09	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.17		mg/L	v		0.02	mg/L	0.0006	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1020	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.4	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1018	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1018	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000345	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Sodium	7440-23-5	5		mg/L	v		1	mg/L	0.5	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1018	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1016	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1005	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1006	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1003	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.03		mg/L	v	UJ	0.01	mg/L	0.01	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1008	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.03		mg/L	v		0.01	mg/L	0.0016	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1007	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Azinphos-methyl (Guthion)		1		ug/L	U	UJ		ug/L	0.064	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Bolstar (Sulprofos)		0.5		ug/L	U	UJ		ug/L	0.12	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Chlorpyrifos		0.2		ug/L	U	UJ		ug/L	0.11	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Coumaphos		1		ug/L	U	UJ		ug/L	0.053	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Demeton-O,S		2.3		ug/L	U	UJ		ug/L	0.69	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Diazinon		0.2		ug/L	U	UJ		ug/L	0.067	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Dichlorvos		0.5		ug/L	U	UJ		ug/L	0.12	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Dimethoate		0.5		ug/L	U	UJ		ug/L	0.059	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Disulfoton		1		ug/L	U	UJ		ug/L	0.15	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	EPN		0.2		ug/L	U	UJ		ug/L	0.078	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Ethoprop (Prophos)		0.2		ug/L	U	UJ		ug/L	0.16	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Ethyl Parathion		0.5		ug/L	U	UJ		ug/L	0.063	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Fensulfothion		0.5		ug/L	U	UJ		ug/L	0.13	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Fenthion		0.5		ug/L	U	UJ		ug/L	0.082	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Malathion		0.2		ug/L	U	UJ		ug/L	0.043	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Merphos		0.2		ug/L	U	UJ		ug/L	0.052	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Methyl Parathion		0.5		ug/L	U	UJ		ug/L	0.07	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Mevinphos		0.5		ug/L	U	UJ		ug/L	0.056	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Phorate		0.5		ug/L	U	UJ		ug/L	0.12	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Ronnel		0.2		ug/L	U	UJ		ug/L	0.088	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Stirophos (Tetrachlorovinphos)		0.2		ug/L	U	UJ		ug/L	0.06	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Sulfotep		0.2		ug/L	U	UJ		ug/L	0.075	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Tokuthion (Prothiofos)		0.2		ug/L	U	UJ		ug/L	0.14	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	3110	SW8141A	O	Z	Organophosphorus Pesticides	Trichloronate		0.2		ug/L	U	UJ		ug/L	0.11	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1023	SW8151A	O	Z	Pesticides	2,4,5-T	93-76-5	0.2		ug/L	U		0.2	ug/L	0.03906	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1023	SW8151A	O	Z	Pesticides	2,4,5-TP (Silvex)	93-72-1	0.2		ug/L	U		0.2	ug/L	0.02276	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1023	SW8151A	O	Z	Pesticides	2,4-D	94-75-7	1		ug/L	U		1	ug/L	0.04534	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	4,4´-DDD	72-54-8	0.05		ug/L	U		0.05	ug/L	0.00673	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	4,4´-DDE	72-55-9	0.05		ug/L	U		0.05	ug/L	0.00718	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	4,4´-DDT	50-29-3	0.05		ug/L	U		0.05	ug/L	0.00732	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Aldrin	309-00-2	0.05		ug/L	U		0.05	ug/L	0.00968	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	alpha-BHC	319-84-6	0.05		ug/L	U		0.05	ug/L	0.0078	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	alpha-Chlordane	5103-71-9	0.05		ug/L	U		0.05	ug/L	0.0081	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	beta-BHC	319-85-7	0.05		ug/L	U		0.05	ug/L	0.00893	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Chlordane	57-74-9	0.5		ug/L	U		0.5	ug/L	0.28	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1023	SW8151A	O	Z	Pesticides	Dalapon	75-99-0	2.5		ug/L	U		2.5	ug/L	1.24849	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	delta-BHC	319-86-8	0.05		ug/L	U		0.05	ug/L	0.00854	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1023	SW8151A	O	Z	Pesticides	Dicamba	1918-00-9	0.25		ug/L	U		0.25	ug/L	0.02877	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1023	SW8151A	O	Z	Pesticides	Dichlorprop	120-36-5	1		ug/L	U		1	ug/L	0.10487	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Dieldrin	60-57-1	0.05		ug/L	U		0.05	ug/L	0.00656	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Endosulfan I	959-98-8	0.05		ug/L	U		0.05	ug/L	0.00768	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Endosulfan II	33213-65-9	0.05		ug/L	U		0.05	ug/L	0.0085	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Endosulfan sulfate	1031-07-8	0.05		ug/L	U		0.05	ug/L	0.00809	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Endrin	72-20-8	0.05		ug/L	U		0.05	ug/L	0.01711	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Endrin aldehyde	7421-93-4	0.05		ug/L	U		0.05	ug/L	0.00959	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Endrin ketone	53494-70-5	0.05		ug/L	U		0.05	ug/L	0.00799	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	gamma-BHC (Lindane)	58-89-9	0.05		ug/L	U		0.05	ug/L	0.00865	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	gamma-Chlordane	5103-74-2	0.05		ug/L	U		0.05	ug/L	0.00811	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Heptachlor	76-44-8	0.05		ug/L	U		0.05	ug/L	0.00964	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Heptachlor epoxide	1024-57-3	0.05		ug/L	U		0.05	ug/L	0.00851	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Isodrin	465-73-6	0.05		ug/L	U		0.05	ug/L	0.01571	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1023	SW8151A	O	Z	Pesticides	MCPA	94-74-6	200		ug/L	U		200	ug/L	34.2105	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1023	SW8151A	O	Z	Pesticides	MCPP	7085-19-0	200		ug/L	U		200	ug/L	37.7908	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Methoxychlor	72-43-5	0.05		ug/L	U		0.05	ug/L	0.0078	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1023	SW8151A	O	Z	Pesticides	Pentachlorophenol	87-86-5	0.1		ug/L	U		0.1	ug/L	0.02328	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1022	SW8081A	O	Z	Pesticides	Toxaphene	8001-35-2	0.7		ug/L	U		0.7	ug/L	0.54	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1010	E900.0	O	Z	Radionuclides	Gross Alpha	ALPHA	1.7		pCi/L	v		1	pCi/L	1	pCi/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1011	E903.0	O	Z	Radionuclides	Radium 226	13982-63-3	1		pCi/L	U		1	pCi/L	0.2	pCi/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1002	A7500-RA	O	Z	Radionuclides	Radium 226 + Radium 228	7440-14-4	1		pCi/L	U		1	pCi/L	0.2	pCi/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1014	RA-05	O	Z	Radionuclides	Radium 228	15262-20-1	1		pCi/L	U		1	pCi/L	1	pCi/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	1,2,4,5-Tetrachlorobenzene	95-94-3	5		ug/L	U		5	ug/L	1.56	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1026	SW8270C	O	Z	SVOCs or PAHs	2,3,4,6-Tetrachlorophenol	58-90-2	5		ug/L	U		5	ug/L	1.36	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2,4,5-Trichlorophenol	95-95-4	5		ug/L	U		5	ug/L	1.68	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2,4,6-Trichlorophenol	88-06-2	5		ug/L	U		5	ug/L	1.93	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2,4-Dichlorophenol	120-83-2	5		ug/L	U		5	ug/L	1.56	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2,4-Dimethylphenol	105-67-9	5		ug/L	U		5	ug/L	1.68	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrophenol	51-28-5	10		ug/L	U		10	ug/L	1.77	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2,4-Dinitrotoluene	121-14-2	5		ug/L	U		5	ug/L	1.67	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2,6-Dinitrotoluene	606-20-2	5		ug/L	U		5	ug/L	1.92	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2-Chloronaphthalene	91-58-7	5		ug/L	U		5	ug/L	1.31	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2-Chlorophenol	95-57-8	5		ug/L	U		5	ug/L	1.52	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2-Methylnaphthalene	91-57-6	5		ug/L	U		5	ug/L	1.17	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2-Nitroaniline	88-74-4	10		ug/L	U		10	ug/L	1.12	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	2-Nitrophenol	88-75-5	5		ug/L	U		5	ug/L	1.69	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	3,3´-Dichlorobenzidine	91-94-1	5		ug/L	U		5	ug/L	1.82	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	3-Nitroaniline	99-09-2	10		ug/L	U		10	ug/L	0.955	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	4,6-Dinitro-2-methylphenol	534-52-1	10		ug/L	U		10	ug/L	1.84	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	4-Bromophenyl phenyl ether	101-55-3	5		ug/L	U		5	ug/L	1.78	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	4-Chloro-3-methylphenol	59-50-7	5		ug/L	U		5	ug/L	1.94	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	4-Chlorophenyl phenyl ether	7005-72-3	5		ug/L	U		5	ug/L	0.899	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	4-Nitroaniline	100-01-6	10		ug/L	U		10	ug/L	1.53	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	4-Nitrophenol	100-02-7	10		ug/L	U		10	ug/L	1.14	ug/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Acenaphthene	83-32-9	5		ug/L	U		5	ug/L	1.69	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Acenaphthylene	208-96-8	5		ug/L	U		5	ug/L	1.4	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Acetophenone	98-86-2	5		ug/L	U		5	ug/L	1.31	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Anthracene	120-12-7	5		ug/L	U		5	ug/L	2.13	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Atrazine	1912-24-9	5		ug/L	U		5	ug/L	4.9	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Benzaldehyde	100-52-7	5		ug/L	U	UJ	5	ug/L	2.9	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)anthracene	56-55-3	5		ug/L	U		5	ug/L	2.42	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Benzo(a)pyrene	50-32-8	5		ug/L	U		5	ug/L	2.3	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Benzo(b)fluoranthene	205-99-2	5		ug/L	U		5	ug/L	2.45	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Benzo(g,h,i)perylene	191-24-2	5		ug/L	U		5	ug/L	2.71	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Benzo(k)fluoranthene	207-08-9	5		ug/L	U		5	ug/L	2.75	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Biphenyl	92-52-4	5		ug/L	U		5	ug/L	3.6	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethoxy)Methane	111-91-1	5		ug/L	U		5	ug/L	1.35	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	bis(-2-chloroethyl)Ether	111-44-4	5		ug/L	U		5	ug/L	1.8	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	bis(2-chloroisopropyl)Ether	108-60-1	5		ug/L	U		5	ug/L	1.67	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	bis(2-ethylhexyl)Phthalate	117-81-7	5		ug/L	U		5	ug/L	3.97	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Butylbenzylphthalate	85-68-7	5		ug/L	U		5	ug/L	2.55	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Caprolactam	105-60-2	5		ug/L	U	UJ	5	ug/L	1.6	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Carbazole	86-74-8	5		ug/L	U		5	ug/L	2.37	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Chrysene	218-01-9	5		ug/L	U		5	ug/L	2.31	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Dibenzo(a,h)anthracene	53-70-3	5		ug/L	U		5	ug/L	2.33	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Dibenzofuran	132-64-9	5		ug/L	U		5	ug/L	1.11	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Diethyl phthalate	84-66-2	5		ug/L	U		5	ug/L	2.22	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Dimethyl phthalate	131-11-3	5		ug/L	U		5	ug/L	1.61	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Di-n-butyl phthalate	84-74-2	5		ug/L	U		5	ug/L	1.8	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Di-n-octyl phthalate	117-84-0	5		ug/L	U		5	ug/L	2.86	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Fluoranthene	206-44-0	5		ug/L	U		5	ug/L	1.63	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Fluorene	86-73-7	5		ug/L	U		5	ug/L	1.44	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobenzene	118-74-1	5		ug/L	U		5	ug/L	1.28	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Hexachlorobutadiene	87-68-3	5		ug/L	U		5	ug/L	2.27	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Hexachlorocyclopentadiene	77-47-4	5		ug/L	U		5	ug/L	1.92	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Hexachloroethane	67-72-1	5		ug/L	U		5	ug/L	2.13	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	5		ug/L	U		5	ug/L	3.22	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Isophorone	78-59-1	5		ug/L	U		5	ug/L	1.76	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	m+p-Cresols	108-39-4/106-44-5	5		ug/L	U		5	ug/L	2.39	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Naphthalene	91-20-3	5		ug/L	U		5	ug/L	1.34	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Nitrobenzene	98-95-3	5		ug/L	U		5	ug/L	1.87	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	n-Nitroso-di-n-propylamine	621-64-7	5		ug/L	U		5	ug/L	1.86	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	n-Nitrosodiphenylamine	86-30-6	5		ug/L	U		5	ug/L	1.54	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	o-Cresol	95-48-7	5		ug/L	U		5	ug/L	1.71	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	p-Chloroaniline	106-47-8	5		ug/L	U		5	ug/L	1.41	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Pentachlorophenol	87-86-5	10		ug/L	U		10	ug/L	2.11	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Phenanthrene	85-01-8	5		ug/L	U		5	ug/L	1.29	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Phenol	108-95-2	5		ug/L	U		5	ug/L	4.57	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1025	SW8270C	O	Z	SVOCs or PAHs	Pyrene	129-00-0	5		ug/L	U		5	ug/L	2.05	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,1,1-Trichloroethane	71-55-6	0.5		ug/L	U		0.5	ug/L	0.0593	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,1,2,2-Tetrachloroethane	79-34-5	0.5		ug/L	U		0.5	ug/L	0.05	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.5		ug/L	U		0.5	ug/L	0.0907	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,1,2-Trichloroethane	79-00-5	0.5		ug/L	U		0.5	ug/L	0.0463	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,1-Dichloroethane	75-34-3	0.5		ug/L	U		0.5	ug/L	0.0256	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,1-Dichloroethene	75-35-4	0.5		ug/L	U		0.5	ug/L	0.0492	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,2,3-Trichlorobenzene	87-61-6	0.5		ug/L	U		0.5	ug/L	0.0829	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,2,4-Trichlorobenzene	120-82-1	0.5		ug/L	U		0.5	ug/L	0.0773	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,2-Dibromo-3-chloropropane	96-12-8	0.5		ug/L	U		0.5	ug/L	0.123	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,2-Dibromoethane	106-93-4	0.5		ug/L	U		0.5	ug/L	0.0553	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,2-Dichlorobenzene	95-50-1	0.5		ug/L	U		0.5	ug/L	0.0362	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,2-Dichloroethane	107-06-2	0.5		ug/L	U		0.5	ug/L	0.0424	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,2-Dichloropropane	78-87-5	0.5		ug/L	U		0.5	ug/L	0.046	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,3-Dichlorobenzene	541-73-1	0.5		ug/L	U		0.5	ug/L	0.0413	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,4-Dichlorobenzene	106-46-7	0.5		ug/L	U		0.5	ug/L	0.0425	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	1,4-Dioxane	123-91-1	125		ug/L	U		125	ug/L	16.7	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	2-Hexanone	591-78-6	10		ug/L	U		10	ug/L	0.417	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Acetone	67-64-1	10		ug/L	U		10	ug/L	1.5	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L	0.0423	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Bromochloromethane	74-97-5	0.5		ug/L	U		0.5	ug/L	0.0565	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Bromodichloromethane	75-27-4	0.5		ug/L	U		0.5	ug/L	0.0582	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Bromoform	75-25-2	0.5		ug/L	U		0.5	ug/L	0.0357	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Bromomethane	74-83-9	0.5		ug/L	U		0.5	ug/L	0.081	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Carbon disulfide	75-15-0	0.5		ug/L	U		0.5	ug/L	0.112	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Carbon tetrachloride	56-23-5	0.5		ug/L	U		0.5	ug/L	0.0671	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Chlorobenzene	108-90-7	0.5		ug/L	U		0.5	ug/L	0.0501	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Chlorodibromomethane	124-48-1	0.5		ug/L	U		0.5	ug/L	0.0534	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Chloroethane	75-00-3	0.5		ug/L	U		0.5	ug/L	0.101	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Chloroform	67-66-3	0.5		ug/L	U		0.5	ug/L	0.0353	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Chloromethane	74-87-3	0.5		ug/L	U		0.5	ug/L	0.152	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	cis-1,2-Dichloroethene	156-59-2	0.5		ug/L	U		0.5	ug/L	0.0486	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	cis-1,3-Dichloropropene	10061-01-5	0.5		ug/L	U		0.5	ug/L	0.0394	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Cyclohexane	110-82-7	0.5		ug/L	U		0.5	ug/L	0.1	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Dichlorodifluoromethane	75-71-8	0.5		ug/L	U		0.5	ug/L	0.184	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L	0.0419	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Isopropylbenzene	98-82-8	0.5		ug/L	U		0.5	ug/L	0.0405	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L	0.0882	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Methyl acetate	79-20-9	0.5		ug/L	U		0.5	ug/L	0.1	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Methyl ethyl ketone	78-93-3	10		ug/L	U		10	ug/L	0.73	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Methyl isobutyl ketone	108-10-1	10		ug/L	U		10	ug/L	0.591	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Methyl tert-butyl ether (MTBE)	1634-04-4	0.5		ug/L	U		0.5	ug/L	0.0662	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Methylcyclohexane	108-87-2	0.5		ug/L	U		0.5	ug/L	0.1	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Methylene chloride	75-09-2	0.5		ug/L	U		0.5	ug/L	0.125	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L	0.051	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Styrene	100-42-5	0.5		ug/L	U		0.5	ug/L	0.0414	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Tetrachloroethene	127-18-4	0.5		ug/L	U		0.5	ug/L	0.0511	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L	0.0512	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	trans-1,2-Dichloroethene	156-60-5	0.5		ug/L	U		0.5	ug/L	0.0581	ug/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	trans-1,3-Dichloropropene	10061-02-6	0.5		ug/L	U		0.5	ug/L	0.0443	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Trichloroethene	79-01-6	0.5		ug/L	U		0.5	ug/L	0.0462	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Trichlorofluoromethane	75-69-4	0.5		ug/L	U		0.5	ug/L	0.0649	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1024	SW8260B	O	Z	VOCs	Vinyl chloride	75-01-4	0.5		ug/L	U		0.5	ug/L	0.058	ug/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1013	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	997	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	376		mg/L	v		4	mg/L	1	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	997	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	459		mg/L	v		4	mg/L	1	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	997	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	998	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	372		mg/L	v		1	mg/L		
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1001	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3.8		mg/L	v		0.1	mg/L	0.023	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	999	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	432		mg/L	v		10	mg/L	10	mg/L
TP-TOE1_SW	TP-TOE1	I	1	P1-00254	Surface Water		Field Sample	10/16/2007	1000	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
TP-TOE1A	TP-TOE1A	WT-2015	1	WT-10012	Surface Water		Field Sample	4/15/2015	29317	300.0	O	Z	Anions	Chloride	7782-50-5	2.5		mg/L	v				0.5	mg/L
TP-TOE1A	TP-TOE1A	WT-2015	1	WT-10012	Surface Water		Field Sample	4/15/2015	29317	300.0	O	Z	Anions	Sulfate		6.4		mg/L	v				0.75	mg/L
TP-TOE1A	TP-TOE1A	WT-2015	1	WT-10012	Surface Water		Field Sample	4/15/2015	29319	6010B	O	TOT	Metals	Calcium	7440-70-2	75000		ug/L	v	J			5000	ug/L
TP-TOE1A	TP-TOE1A	WT-2015	1	WT-10012	Surface Water		Field Sample	4/15/2015	29319	6010B	O	TOT	Metals	Magnesium	7439-95-4	18000		ug/L	v				1000	ug/L
TP-TOE1A	TP-TOE1A	WT-2015	1	WT-10012	Surface Water		Field Sample	4/15/2015	29319	6010B	O	TOT	Metals	Potassium	7440-09-7	8900		ug/L	v				1000	ug/L
TP-TOE1A	TP-TOE1A	WT-2015	1	WT-10012	Surface Water		Field Sample	4/15/2015	29319	6010B	O	TOT	Metals	Sodium	7440-23-5	4500		ug/L	v				1000	ug/L
TP-TOE1A	TP-TOE1A	WT-2015	1	WT-10012	Surface Water		Field Sample	4/15/2015	29316	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	230		mg/L	v				2	mg/L
TP-TOE1A	TP-TOE1A	WT-2015	1	WT-10012	Surface Water		Field Sample	4/15/2015	29318	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	230		mg/L	v				2	mg/L
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16131	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17952	E300.0	O	Z	Anions	Chloride	16887-00-6	4		mg/L	v		1		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16131	E300.0	O	Z	Anions	Fluoride	16984-48-8	1		mg/L	v		0.1		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17952	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.9		mg/L	v		0.1		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16137	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.177		mg/L	v	J	0.005		0.005	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17958	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.202		mg/L	v	J	0.005		0.005	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16131	E300.0	O	Z	Anions	Sulfate	14808-79-8	7		mg/L	v		1		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17952	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16145	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17966	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16141	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.000876	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16141	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17962	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16141	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17962	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.00021	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.002	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17962	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16141	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000247	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17962	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Calcium	7440-70-2	66		mg/L	v		1		0.21	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Calcium	7440-70-2	92		mg/L	v		1		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16141	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17962	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16141	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17962	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	15		mg/L	v		1		0.13	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	21		mg/L	v		1		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.07		mg/L	v		0.02		0.00111	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16143	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17964	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16141	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00012	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17962	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.06	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Potassium	9/7/7440	11		mg/L	v		1		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16141	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17962	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16141	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17962	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.18	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Sodium	7440-23-5	5		mg/L	v		1		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16141	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.002	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16139	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17960	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16142	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17963	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16142	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17963	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.3		mg/L	v		0.1		0.000258	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1		0.000258	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17963	SW6020	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.00195	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16142	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17963	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Calcium	7440-70-2	70		mg/L	v		1		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Calcium	7440-70-2	81		mg/L	v		1		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16142	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17963	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16142	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17963	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	16		mg/L	v		1		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	18		mg/L	v		1		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.1		mg/L	v		0.02		0.000366	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02		0.000366	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16144	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17965	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16142	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17963	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Potassium	9/7/7440	10		mg/L	v		1		0.05	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16142	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17963	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16142	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17963	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.36	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Sodium	7440-23-5	7		mg/L	v		1		0.36	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17961	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16140	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16132	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17953	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16133	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17954	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16136	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.05		mg/L	v		0.01		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17957	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.06		mg/L	v		0.01		0.01	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16135	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.05		mg/L	v		0.01		0.0016	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17956	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.06		mg/L	v		0.01		0.0016	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16134	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17955	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.00651	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16138	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U	UJ	0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17959	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16126	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	252		mg/L	v		4		1	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17947	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	288		mg/L	v		4		1	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16126	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	307		mg/L	v		4		1	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17947	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	352		mg/L	v		4		1	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16126	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17947	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16127	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	228		mg/L	v		1			
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17948	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	318		mg/L	v		1			
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16130	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.8		mg/L	v		0.1		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17951	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.9		mg/L	v		0.1		0.03	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16128	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	302		mg/L	v		10		10	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17949	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	343		mg/L	v		10		10	
TP-TOE2	TP-TOE2	IIA	2	P2-00412	Surface Water		Field Sample	6/25/2008	16129	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
TP-TOE2	TP-TOE2	IIA	2	P2-00892	Surface Water		Field Sample	9/10/2008	17950	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1033	E300.0	O	Z	Anions	Chloride	16887-00-6	5		mg/L	v		1	mg/L	0.05	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1033	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.8		mg/L	v		0.1	mg/L	0.049	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1038	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.223		mg/L	v		0.002	mg/L	0.002	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1033	E300.0	O	Z	Anions	Sulfate	14808-79-8	9		mg/L	v		1	mg/L	0.046	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1046	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.31		mg/L	U		0.31	mg/L	0.03877558	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.02625	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1042	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1042	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.4		mg/L	v		0.1	mg/L	0.00021	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1042	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00002465	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Calcium	7440-70-2	100		mg/L	v		1	mg/L	0.214	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1042	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1042	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	23		mg/L	v		1	mg/L	0.1396	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.03		mg/L	v		0.02	mg/L	0.001108	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1044	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Potassium	7440-09-7	11		mg/L	v		1	mg/L	0.06503	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1042	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1042	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00008905	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Sodium	7440-23-5	6		mg/L	v		1	mg/L	0.1805	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1042	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1040	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.08	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1043	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1043	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.5		mg/L	v		0.1	mg/L	0.0005	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1043	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.000014	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Calcium	7440-70-2	95		mg/L	v		1	mg/L	0.1	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Chromium	7440-47-3	-0.01		mg/L	U		-0.01	mg/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1043	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000155	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	v		0.03	mg/L	0.003	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1043	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	22		mg/L	v		1	mg/L	0.09	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.04		mg/L	v		0.02	mg/L	0.0006	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1045	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Potassium	7440-09-7	10		mg/L	v		1	mg/L	0.4	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1043	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1043	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000345	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Sodium	7440-23-5	5		mg/L	v		1	mg/L	0.5	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1043	SW6020	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.00002195	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1041	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1034	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1035	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1032	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.07		mg/L	v	UJ	0.01	mg/L	0.01	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1037	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.07		mg/L	v		0.01	mg/L	0.0016	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1036	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01	mg/L	0.00651	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1039	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1027	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	341		mg/L	v		4	mg/L	1	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1027	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	416		mg/L	v		4	mg/L	1	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1027	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1028	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	344		mg/L	v		1	mg/L		
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1031	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	3		mg/L	v		0.1	mg/L	0.023	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1029	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	391		mg/L	v		10	mg/L	10	mg/L
TP-TOE2_SW	TP-TOE2	I	1	P1-00312	Surface Water		Field Sample	10/16/2007	1030	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16472	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18197	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
URC-1	URC-1	WT-2015	1	WT-10032	Surface Water		Field Sample	4/17/2015	29409	300.0	O	Z	Anions	Chloride	7782-50-5	0.5	ND	mg/L	U				0.5	mg/L
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16472	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	U		0.1		0.01	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18197	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	U		0.1		0.01	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16478	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.008		mg/L	v	J	0.005		0.005	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18203	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.014		mg/L	v	J	0.005		0.005	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16472	E300.0	O	Z	Anions	Sulfate	14808-79-8	4		mg/L	v		1		0.05	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18197	E300.0	O	Z	Anions	Sulfate	14808-79-8	5		mg/L	v		1		0.05	
URC-1	URC-1	WT-2015	1	WT-10032	Surface Water		Field Sample	4/17/2015	29409	300.0	O	Z	Anions	Sulfate		3.5		mg/L	v				0.75	mg/L
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16486	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18211	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16482	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16482	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.00021	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.002	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U	UJ	0.03		0.00116	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16482	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Calcium	7440-70-2	46		mg/L	v		1		0.21	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Calcium	7440-70-2	62		mg/L	v		1		0.02	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16482	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U	U	0.002		0.0000211	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16482	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	8		mg/L	v		1		0.13	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	10		mg/L	v		1		0.02	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16484	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18209	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16482	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Potassium	9/7/7440	2		mg/L	v		1		0.06	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Potassium	9/7/7440	4		mg/L	v		1		0.02	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16482	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U	UJ	0.005		0.0000179	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16482	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Sodium	7440-23-5	2		mg/L	v		1		0.18	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.02	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16482	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16482	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18207	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16480	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18205	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16483	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18208	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16483	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18208	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.000258	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.000258	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.03	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18208	SW6020	O	TOT	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.00195	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16483	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18208	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Calcium	7440-70-2	50		mg/L	v		1		0.03	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Calcium	7440-70-2	58		mg/L	v		1		0.03	
URC-1	URC-1	WT-2015	1	WT-10032	Surface Water		Field Sample	4/17/2015	29411	6010B	O	TOT	Metals	Calcium	7440-70-2	48000		ug/L	v				1000	ug/L
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16483	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	v	U	0.002		0.000155	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18208	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16483	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18208	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	9		mg/L	v		1		0.03	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	10		mg/L	v		1		0.03	
URC-1	URC-1	WT-2015	1	WT-10032	Surface Water		Field Sample	4/17/2015	29411	6010B	O	TOT	Metals	Magnesium	7439-95-4	9100		ug/L	v				1000	ug/L
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16485	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18210	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16483	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00317	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Potassium	9/7/7440	3		mg/L	v		1		0.05	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Potassium	9/7/7440	4		mg/L	v		1		0.05	
URC-1	URC-1	WT-2015	1	WT-10032	Surface Water		Field Sample	4/17/2015	29411	6010B	O	TOT	Metals	Potassium	7440-09-7	2700		ug/L	v				1000	ug/L
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16483	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18208	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16483	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18208	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.06	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.36	
URC-1	URC-1	WT-2015	1	WT-10032	Surface Water		Field Sample	4/17/2015	29411	6010B	O	TOT	Metals	Sodium	7440-23-5	2800		ug/L	v				1000	ug/L
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16481	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18206	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16473	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18198	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16474	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18199	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16477	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.02		mg/L	v	U	0.01		0.01	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18202	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.3		mg/L	v		0.01		0.01	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16476	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.02		mg/L	v	U	0.01		0.0016	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18201	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.3		mg/L	v		0.01		0.0016	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16475	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18200	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16479	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18204	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16467	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	159		mg/L	v		4		1	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18192	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	190		mg/L	v		4		1	
URC-1	URC-1	WT-2015	1	WT-10032	Surface Water		Field Sample	4/17/2015	29408	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	160		mg/L	v				2	mg/L
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16467	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	193		mg/L	v		4		1	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18192	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	230		mg/L	v		4		1	
URC-1	URC-1	WT-2015	1	WT-10032	Surface Water		Field Sample	4/17/2015	29410	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	150		mg/L	v				2	mg/L
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16467	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18192	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16468	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	148		mg/L	v		1			
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18193	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	197		mg/L	v		1			
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16471	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2		mg/L	v		0.1		0.03	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18196	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.5		mg/L	v		0.2		0.03	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16469	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	160		mg/L	v		10		10	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18194	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	201		mg/L	v		10		10	
URC-1	URC-1	IIA	2	P2-00427	Surface Water		Field Sample	6/27/2008	16470	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
URC-1	URC-1	IIA	2	P2-00897	Surface Water		Field Sample	9/11/2008	18195	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	122	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1	mg/L	0.05	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	122	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1	mg/L	0.049	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	127	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.006		mg/L	v		0.002	mg/L	0.002	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	122	E300.0	O	Z	Anions	Sulfate	14808-79-8	8		mg/L	v		1	mg/L	0.046	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	137	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	132	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0001752	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	131	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	131	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1	mg/L	0.00021	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	132	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00000493	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Calcium	7440-70-2	59		mg/L	v		1	mg/L	0.214	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	131	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	131	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	9		mg/L	v		1	mg/L	0.1396	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	135	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Potassium	7440-09-7	4		mg/L	v		1	mg/L	0.06503	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	131	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	131	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00008905	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1	mg/L	0.1805	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	131	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	129	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.08	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	133	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	133	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1	mg/L	0.0005	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	134	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.0000028	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Calcium	7440-70-2	54		mg/L	v		1	mg/L	0.1	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	133	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.0002	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	133	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000155	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.003	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	133	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0000167	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	9		mg/L	v		1	mg/L	0.09	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	136	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Potassium	7440-09-7	3		mg/L	v		1	mg/L	0.4	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	133	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	133	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000345	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Sodium	7440-23-5	3		mg/L	v		1	mg/L	0.5	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.05	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	130	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	123	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	124	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	121	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.02		mg/L	v		0.01	mg/L	0.01	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	126	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.02		mg/L	v		0.01	mg/L	0.0016	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	125	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.00651	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	128	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	117	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	193		mg/L	v		4	mg/L	1	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	117	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	235		mg/L	v		4	mg/L	1	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	117	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	mg/L	1	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	120	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.2		mg/L	v		0.1	mg/L	0.023	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	118	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	224		mg/L	v		10	mg/L	10	mg/L
URC-1_SW	URC-1	I	1	P1-00391	Surface Water		Field Sample	10/14/2007	119	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16362	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18176	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16362	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v		0.1		0.01	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18176	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v		0.1		0.01	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16368	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.008		mg/L	v	J	0.005		0.005	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18182	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.018		mg/L	v	J	0.005		0.005	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16362	E300.0	O	Z	Anions	Sulfate	14808-79-8	4		mg/L	v		1		0.05	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18176	E300.0	O	Z	Anions	Sulfate	14808-79-8	6		mg/L	v		1		0.05	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18176	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16372	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16372	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.00021	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.002	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U	UJ	0.03		0.00116	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16372	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000247	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Calcium	7440-70-2	45		mg/L	v		1		0.21	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Calcium	7440-70-2	61		mg/L	v		1		0.02	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16372	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16372	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	7		mg/L	v		1		0.13	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	10		mg/L	v		1		0.02	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16374	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18189	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00444	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Potassium	9/7/7440	3		mg/L	v		1		0.06	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Potassium	9/7/7440	4		mg/L	v		1		0.02	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16372	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16372	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.18	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.02	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16372	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18186	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16370	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18184	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16373	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18187	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16373	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18187	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.000258	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.000258	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18187	SW6020	O	TOT	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.00195	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16373	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18188	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Calcium	7440-70-2	49		mg/L	v		1		0.03	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Calcium	7440-70-2	57		mg/L	v		1		0.03	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16373	SW6020	O	TOT	Metals	Copper	7440-50-8	0.016		mg/L	v		0.002		0.000155	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18187	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16373	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18187	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	8		mg/L	v		1		0.03	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	10		mg/L	v		1		0.03	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16375	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18190	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16373	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00317	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Potassium	9/7/7440	3		mg/L	v		1		0.05	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Potassium	9/7/7440	5		mg/L	v		1		0.05	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16373	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18187	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16373	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18187	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.06	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.36	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16371	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18185	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16363	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18177	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16364	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18178	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16367	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	v	U	0.01		0.01	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18181	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.02		mg/L	v		0.01		0.01	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16366	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	v	U	0.01		0.0016	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18180	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.02		mg/L	v		0.01		0.0016	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16365	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18179	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16369	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18183	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16357	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	157		mg/L	v		4		1	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18171	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	184		mg/L	v		4		1	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16357	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	191		mg/L	v		4		1	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18171	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	225		mg/L	v		4		1	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16357	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18171	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16358	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	144		mg/L	v		1			
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18172	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	194		mg/L	v		1			
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16361	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.9		mg/L	v		0.1		0.03	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18175	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.4		mg/L	v		0.2		0.03	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16359	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	181		mg/L	v		10		10	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18173	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	203		mg/L	v		10		10	
URC-1A	URC-1A	IIA	2	P2-00422	Surface Water		Field Sample	6/26/2008	16360	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
URC-1A	URC-1A	IIA	2	P2-00896	Surface Water		Field Sample	9/11/2008	18174	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16342	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18156	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16342	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v		0.1		0.01	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18156	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v		0.1		0.01	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16348	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.009		mg/L	v	J	0.005		0.005	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18162	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.018		mg/L	v	J	0.005		0.005	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16342	E300.0	O	Z	Anions	Sulfate	14808-79-8	4		mg/L	v		1		0.05	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18156	E300.0	O	Z	Anions	Sulfate	14808-79-8	6		mg/L	v		1		0.05	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16356	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18170	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U		300		38	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16352	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000823	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16352	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000887	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.00021	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.002	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U	UJ	0.03		0.00116	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16352	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000247	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Calcium	7440-70-2	45		mg/L	v		1		0.21	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Calcium	7440-70-2	62		mg/L	v		1		0.02	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16352	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000105	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16352	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00011	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	7		mg/L	v		1		0.13	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	10		mg/L	v		1		0.02	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16354	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18168	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00444	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Potassium	9/7/7440	3		mg/L	v		1		0.06	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Potassium	9/7/7440	4		mg/L	v		1		0.02	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16352	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000897	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16352	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000891	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.18	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.02	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16352	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00115	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00622	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18166	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16350	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18164	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16353	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18167	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16353	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18167	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.000258	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.000258	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18167	SW6020	O	TOT	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.00195	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16353	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18167	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Calcium	7440-70-2	50		mg/L	v		1		0.03	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Calcium	7440-70-2	59		mg/L	v		1		0.03	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16353	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18167	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16353	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18167	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	8		mg/L	v		1		0.03	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	10		mg/L	v		1		0.03	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16355	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18169	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16353	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.00317	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Potassium	9/7/7440	3		mg/L	v		1		0.05	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Potassium	9/7/7440	4		mg/L	v		1		0.05	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16353	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18167	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16353	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18167	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.06	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Sodium	7440-23-5	6		mg/L	v		1		0.36	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16351	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18165	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16343	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18157	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16344	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18158	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16347	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	v	U	0.01		0.01	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18161	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.02		mg/L	v		0.01		0.01	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16346	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	v	U	0.01		0.0016	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18160	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.02		mg/L	v		0.01		0.0016	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16345	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18159	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16349	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18163	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16337	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	157		mg/L	v		4		1	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18151	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	187		mg/L	v		4		1	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16337	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	191		mg/L	v		4		1	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18151	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	228		mg/L	v		4		1	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16337	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18151	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4		1	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16338	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	143		mg/L	v		1			
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18152	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	197		mg/L	v		1			
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16341	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.2		mg/L	v		0.1		0.03	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18155	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.2		mg/L	v		0.2		0.03	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16339	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	195		mg/L	v		10		10	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18153	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	211		mg/L	v		10		10	
URC-2	URC-2	IIA	2	P2-00421	Surface Water		Field Sample	6/26/2008	16340	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
URC-2	URC-2	IIA	2	P2-00895	Surface Water		Field Sample	9/11/2008	18154	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10		1	
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	101	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1	mg/L	0.05	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	101	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1	mg/L	0.049	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	106	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.011		mg/L	v		0.002	mg/L	0.002	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	101	E300.0	O	Z	Anions	Sulfate	14808-79-8	8		mg/L	v		1	mg/L	0.046	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	116	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	0.3		mg/L	U		0.3	mg/L	0.038	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	111	SW6020	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09	mg/L	0.0001752	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	110	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.00008225	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	110	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0000887	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1	mg/L	0.00021	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.000242	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.005356	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	111	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.00000493	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Calcium	7440-70-2	62		mg/L	v		1	mg/L	0.214	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.004095	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.002855	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	110	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.00010525	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03	mg/L	0.005155	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	110	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005	mg/L	0.0001103	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	10		mg/L	v		1	mg/L	0.1396	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.001108	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	114	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004438	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Potassium	7440-09-7	5		mg/L	v		1	mg/L	0.06503	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	110	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00008965	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	110	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.00008905	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Sodium	7440-23-5	4		mg/L	v		1	mg/L	0.1805	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	110	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.001151	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.006217	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	108	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.001253	mg/L

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.26		mg/L	v		0.09	mg/L	0.08	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	112	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005	mg/L	0.0000205	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	112	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005	mg/L	0.0002	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1	mg/L	0.0005	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005	mg/L	0.0002	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01	mg/L	0.004	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	113	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001	mg/L	0.0000028	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Calcium	7440-70-2	60		mg/L	v		1	mg/L	0.1	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	112	SW6020	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01	mg/L	0.0002	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01	mg/L	0.0008	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	112	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002	mg/L	0.000155	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.25		mg/L	v		0.03	mg/L	0.003	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	112	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0006		mg/L	U		0.0006	mg/L	0.0000167	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	10		mg/L	v		1	mg/L	0.09	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02	mg/L	0.0006	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	115	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006	mg/L	0.00005	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005	mg/L	0.004	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Potassium	7440-09-7	5		mg/L	v		1	mg/L	0.4	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	112	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005	mg/L	0.00055	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	112	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001	mg/L	0.0000345	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Sodium	7440-23-5	3		mg/L	v		1	mg/L	0.5	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1	mg/L	0.05	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01	mg/L	0.005	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	109	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01	mg/L	0.008	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	102	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1	mg/L	0.0189	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	103	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5	mg/L	0.03	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	100	Calculation	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	v	U	0.01	mg/L	0.01	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	105	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	v	U	0.01	mg/L	0.0016	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	104	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U		0.01	mg/L	0.00651	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	107	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5	ug/L		
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	96	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	205		mg/L	v		4	mg/L	1	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	96	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	251		mg/L	v		4	mg/L	1	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	99	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	1.5		mg/L	v		0.1	mg/L	0.023	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	97	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	242		mg/L	v		10	mg/L	10	mg/L
URC-2_SW	URC-2	I	1	P1-00390	Surface Water		Field Sample	10/14/2007	98	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	mg/L	1	mg/L
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16828	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16849	E300.0	O	Z	Anions	Chloride	16887-00-6	1		mg/L	U		1		0.02	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18299	E300.0	O	Z	Anions	Chloride	16887-00-6	3		mg/L	v		1		0.02	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18322	E300.0	O	Z	Anions	Chloride	16887-00-6	2		mg/L	v		1		0.02	
UTP	UTP	WT-2015	1	WT-10031	Surface Water		Field Sample	4/17/2015	29405	300.0	O	Z	Anions	Chloride	7782-50-5	1		mg/L	v				0.5	mg/L
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16828	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v		0.1		0.01	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16849	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.1		mg/L	v		0.1		0.01	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18300	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18323	E300.0	O	Z	Anions	Fluoride	16984-48-8	0.2		mg/L	v		0.1		0.01	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16834	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.007		mg/L	v	J	0.005		0.005	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16855	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.009		mg/L	v	J	0.005		0.005	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18306	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.011		mg/L	v	J	0.005		0.005	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18329	E365.1	O	Z	Anions	Phosphorus, Orthophosphate as P	7723-14-0	0.008		mg/L	v	J	0.005		0.005	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16828	E300.0	O	Z	Anions	Sulfate	14808-79-8	4		mg/L	v		1		0.05	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16849	E300.0	O	Z	Anions	Sulfate	14808-79-8	4		mg/L	v		1		0.05	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18299	E300.0	O	Z	Anions	Sulfate	14808-79-8	5		mg/L	v		1		0.05	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18322	E300.0	O	Z	Anions	Sulfate	14808-79-8	3		mg/L	v		1		0.05	
UTP	UTP	WT-2015	1	WT-10031	Surface Water		Field Sample	4/17/2015	29405	300.0	O	Z	Anions	Sulfate		4.5		mg/L	v				0.75	mg/L
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16843	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	303		ug/L	U	UJ	303		38.38	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16864	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	306		ug/L	U	UJ	306		38.77	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18316	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18339	SW8015M	O	Z	Extractable Hydrocarbons	Total Extractable Hydrocarbons	TEH	300		ug/L	U	UJ	300		38	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.02	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16838	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16859	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18310	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18333	SW6020	O	DIS	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000165	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16838	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16859	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18310	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18333	SW6020	O	DIS	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0000177	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.00021	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.00021	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.002	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.002	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000242	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18311	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18334	SW6020	O	DIS	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.0000191	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.03		mg/L	U		0.03		0.03	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Boron	7440-42-8	0.01		mg/L	U		0.01		0.01	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16838	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16859	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18310	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18333	SW6020	O	DIS	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000493	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Calcium	7440-70-2	40		mg/L	v		1		0.21	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Calcium	7440-70-2	43		mg/L	v		1		0.21	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Calcium	7440-70-2	47		mg/L	v		1		0.02	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Calcium	7440-70-2	44		mg/L	v		1		0.02	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.0041	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.002	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00286	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.002	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16838	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16859	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18310	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18333	SW6020	O	DIS	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000211	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00516	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.01	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16838	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16859	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18310	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18333	SW6020	O	DIS	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000221	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	8		mg/L	v		1		0.13	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	8		mg/L	v		1		0.13	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	11		mg/L	v		1		0.02	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Magnesium	7439-95-4	11		mg/L	v		1		0.02	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.00111	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.002	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16841	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16862	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18314	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18337	SW7470A	O	DIS	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16838	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16859	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18310	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18333	SW6020	O	DIS	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.0000241	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Potassium	9/7/7440	3		mg/L	v		1		0.06	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Potassium	9/7/7440	3		mg/L	v		1		0.06	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Potassium	9/7/7440	6		mg/L	v		1		0.02	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Potassium	9/7/7440	6		mg/L	v		1		0.02	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16838	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U	UJ	0.005		0.0000179	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16859	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U	UJ	0.005		0.0000179	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18311	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18334	SW6020	O	DIS	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.0000179	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16838	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16859	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18310	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18333	SW6020	O	DIS	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000178	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.18	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.18	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.02	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.02	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16838	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16859	SW6020	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.00023	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16838	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16859	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18310	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18333	SW6020	O	DIS	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.0000079	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16836	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16857	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00125	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18308	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18331	SW6010B	O	DIS	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.002	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Aluminum	7429-90-5	0.09		mg/L	U		0.09		0.01	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16839	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16860	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18312	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000207	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18335	SW6020	O	TOT	Metals	Antimony	7440-36-0	0.005		mg/L	U		0.005		0.0000205	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16839	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16860	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18312	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.000202	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18335	SW6020	O	TOT	Metals	Arsenic	7440-38-2	0.005		mg/L	U		0.005		0.0002	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.000258	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.1		mg/L	v		0.1		0.00026	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.00026	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Barium	7440-39-3	0.2		mg/L	v		0.1		0.000258	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00021	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.00021	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Beryllium	7440-41-7	0.0005		mg/L	U		0.0005		0.000208	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.03	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.03	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Boron	7440-42-8	0.06		mg/L	U		0.06		0.05	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16840	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000028	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16861	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.00000283	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18312	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.0000141	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18336	SW6020	O	TOT	Metals	Cadmium	7440-43-9	0.0001		mg/L	U		0.0001		0.000014	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Calcium	7440-70-2	43		mg/L	v		1		0.03	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Calcium	7440-70-2	46		mg/L	v		1		0.03	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Calcium	7440-70-2	46		mg/L	v		1		0.03	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Calcium	7440-70-2	41		mg/L	v		1		0.03	
UTP	UTP	WT-2015	1	WT-10031	Surface Water		Field Sample	4/17/2015	29407	6010B	O	TOT	Metals	Calcium	7440-70-2	48000		ug/L	v				1000	ug/L
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00288	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00288	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Chromium	7440-47-3	0.01		mg/L	U		0.01		0.00285	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00137	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00137	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Cobalt	7440-48-4	0.01		mg/L	U		0.01		0.00136	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16839	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16861	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.0000313	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18312	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000157	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18335	SW6020	O	TOT	Metals	Copper	7440-50-8	0.002		mg/L	U		0.002		0.000155	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.03		mg/L	U		0.03		0.00466	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.04		mg/L	v		0.03		0.00471	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.06		mg/L	v		0.03		0.00471	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Iron	7439-89-6	0.05		mg/L	v		0.03		0.00466	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16840	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00000334	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16861	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.00000337	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18312	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000169	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18335	SW6020	O	TOT	Metals	Lead	7439-92-1	0.0005		mg/L	U		0.0005		0.0000167	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	8		mg/L	v		1		0.03	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	8		mg/L	v		1		0.04	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	11		mg/L	v		1		0.04	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Magnesium	7439-95-4	11		mg/L	v		1		0.03	
UTP	UTP	WT-2015	1	WT-10031	Surface Water		Field Sample	4/17/2015	29407	6010B	O	TOT	Metals	Magnesium	7439-95-4	9500		ug/L	v				1000	ug/L
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000369	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000369	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Manganese	7439-96-5	0.02		mg/L	U		0.02		0.000366	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16842	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16863	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18315	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18338	SW7470A	O	TOT	Metals	Mercury	7439-97-6	0.0006		mg/L	U		0.0006		0.00005	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16839	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16860	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18312	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000136	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18335	SW6020	O	TOT	Metals	Nickel	7440-02-0	0.005		mg/L	U		0.005		0.000135	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Potassium	9/7/7440	4		mg/L	v		1		0.05	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Potassium	9/7/7440	4		mg/L	v		1		0.05	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Potassium	9/7/7440	6		mg/L	v		1		0.05	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Potassium	9/7/7440	6		mg/L	v		1		0.05	
UTP	UTP	WT-2015	1	WT-10031	Surface Water		Field Sample	4/17/2015	29407	6010B	O	TOT	Metals	Potassium	7440-09-7	3700		ug/L	v				1000	ug/L
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16839	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16860	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18313	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.000556	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18336	SW6020	O	TOT	Metals	Selenium	7782-49-2	0.005		mg/L	U		0.005		0.00055	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16839	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16860	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18312	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000348	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18335	SW6020	O	TOT	Metals	Silver	7440-22-4	0.001		mg/L	U		0.001		0.0000345	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.06	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Sodium	7440-23-5	3		mg/L	v		1		0.06	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.06	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Sodium	7440-23-5	4		mg/L	v		1		0.06	
UTP	UTP	WT-2015	1	WT-10031	Surface Water		Field Sample	4/17/2015	29407	6010B	O	TOT	Metals	Sodium	7440-23-5	3200		ug/L	v				1000	ug/L
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.02	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Thallium	7440-28-0	0.1		mg/L	U		0.1		0.01	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00144	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00144	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Vanadium	7440-62-2	0.01		mg/L	U		0.01		0.00142	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16837	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16858	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00217	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18309	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00217	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18332	SW6010B	O	TOT	Metals	Zinc	7440-66-6	0.01		mg/L	U		0.01		0.00215	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16829	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16850	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18301	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18324	E350.1	O	Z	Nitrogen compounds	Nitrogen, Ammonia as N	7664-41-7	0.1		mg/L	U		0.1		0.01	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16830	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16851	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18302	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	U		0.5		0.03	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18325	E351.2	O	Z	Nitrogen compounds	Nitrogen, Kjeldahl, Total as N	7727-37-9	0.5		mg/L	v		0.5		0.03	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16833	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16854	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18305	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18328	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate as N	14797-55-8	0.01		mg/L	U		0.01		0.01	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16832	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16853	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	

Table E-3b: Summary of Non-Asbestos Results for Surface Water, Groundwater, Sediment, Soil/Mine Waste, and Forest Soil

Libby Asbestos Superfund Site, OU3 Study Area

Station ID	Station ID Alias	Phase	sort	Index ID	Media	Matrix	Field QC Type	Sample Date	intID_Analysis	Analysis Method	LabQCType	Filtered	Analyte Group	Analyte	CAS Number	Result	ResultTxt	Result Units	Lab Qualifier	Validation Qualifier	PQL	PQL Units	MDL	MDL Units
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18304	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18327	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrate+Nitrite as N	7727-37-9	0.01		mg/L	U		0.01		0.0016	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16831	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16852	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18303	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18326	E353.2	O	Z	Nitrogen compounds	Nitrogen, Nitrite as N	7727-37-9	0.01		mg/L	U	UJ	0.01		0.00651	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	Benzene	71-43-2	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	C5 to C8 Aliphatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C10 Aromatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	C9 to C12 Aliphatics		20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	Ethylbenzene	100-41-4	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	m+p-Xylenes	1330-20-7	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	Methyl tert-butyl ether (MTBE)	1634-04-4	1		ug/L	U		1			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	Naphthalene	91-20-3	1		ug/L	U		1			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	o-Xylene	95-47-6	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	Toluene	108-88-3	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	Total Purgeable Hydrocarbons	TVH1	20		ug/L	U		20			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16835	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16856	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18307	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18330	MA-VPH	O	Z	Volatile Hydrocarbons	Xylenes, Total	1330-20-7	0.5		ug/L	U		0.5			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16823	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	142		mg/L	v		4	1		
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16844	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	149		mg/L	v		4	1		
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18294	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	154		mg/L	v		4	1		
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18317	A2320 B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	471-34-1	143		mg/L	v		4	1		
UTP	UTP	WT-2015	1	WT-10031	Surface Water		Field Sample	4/17/2015	29404	2320B	O	Z	Water quality parameters	Alkalinity, Total as CaCO3	SRP 48	160		mg/L	v			2	mg/L	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16823	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	173		mg/L	v		4	1		
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16844	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	182		mg/L	v		4	1		
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18294	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	188		mg/L	v		4	1		
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18317	A2320 B	O	Z	Water quality parameters	Bicarbonate as HCO3	71-52-3	174		mg/L	v		4	1		
UTP	UTP	WT-2015	1	WT-10031	Surface Water		Field Sample	4/17/2015	29406	310.1	O	Z	Water quality parameters	Bicarbonate as HCO3	SRP 48	160		mg/L	v			2	mg/L	
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16823	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	1		
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16844	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	1		
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18294	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	1		
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18317	A2320 B	O	Z	Water quality parameters	Carbonate as CO3	ALKC	4		mg/L	U		4	1		
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16824	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	133		mg/L	v		1			
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16845	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	140		mg/L	v		1			
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18295	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	164		mg/L	v		1			
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18318	A2340 B	O	Z	Water quality parameters	Hardness as CaCO3	471-34-1	155		mg/L	v		1			
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16827	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.8		mg/L	v		0.1	0.03		
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16848	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.6		mg/L	v		0.1	0.03		
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18298	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.8		mg/L	v		0.1	0.03		
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18321	A5310 C	O	Z	Water quality parameters	Organic Carbon, Dissolved (DOC)	7440-44-0	2.9		mg/L	v		0.1	0.03		
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16825	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	157		mg/L	v		10	10		
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16846	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	168		mg/L	v		10	10		
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18296	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	184		mg/L	v		10	10		
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18319	A2540 C	O	Z	Water quality parameters	Solids, Total Dissolved TDS @ 180 C	TDS	180		mg/L	v		10	10		
UTP	UTP	IIA	2	P2-00450	Surface Water		Field Sample	6/29/2008	16826	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	1		
UTP	UTP	IIA	2	P2-00456	Surface Water		Field Sample	6/29/2008	16847	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	1		
UTP	UTP	IIA	2	P2-00898	Surface Water		Field Sample	9/12/2008	18297	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	1		
UTP	UTP	IIA	2	P2-00899	Surface Water		Field Sample	9/12/2008	18320	A2540 D	O	Z	Water quality parameters	Solids, Total Suspended TSS @ 105 C	TSS	10		mg/L	U		10	1		

Notes

* R flagged (rejected data) results are bold

J - Estimated

R - rejected

U - non-detect

Ui - confirmed from lab documentation, but could be typo (interpret as U)

UJ - non-detect estimated

v - detect

ID - identification

QC - quality control

MDL - minimum detection limit

PQL - practical quantitation limit

%-as rcvd - percent as received

mg/kg - milligrams per kilogram

mg/kg-dry - milligrams per kilogram dry weight

mg/L - milligrams per liter

pCi/L - picocuries per liter

s.u. - standard unit

ug/L - micrograms per liter

wt% - percent weight

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
BH-01A-1	BH-01A-1	Well	Impoundment	WT-10074	17-Apr-15	16:42	12.45	7.38	441.2	-0.05	1.1	-69	0	0	53			0.25	
BH-01A-1	BH-01A-1	Well	Impoundment	WT-10235	21-May-15	13:30	11.64	7.57	401.02	-0.03	0.5	-35	0	0	12.88			0.07	water clear, water level 103.78 ft below MP
BH-01A-2	BH-01A-2	Well	Impoundment	WT-10078	19-Apr-15	12:35	13.64	7.44	303.4	3.62	-1	66	0	0	3.06			0.11	
BH-01A-2	BH-01A-2	Well	Impoundment	WT-10234	21-May-15	10:04	12.53	7.67	258.9	4.13	1.73	131	0	0	4.23			0.13	clear, water level 93.65 ft below MP
BH-03A-1	BH-03A-1	Well	KDID Crest	WT-10076	19-Apr-15	10:21	10.59	7.53	258	7.39	-2.24	129	0	0	1.59			0.08	
BH-03A-1	BH-03A-1	Well	KDID Crest	WT-10229	19-May-15	10:34	13.14	7.71	285.19	5.05	6.1	90	0	0	2.64			0.11	CLEAR, water level 117.72 ft below MP
BH-05A-1	BH-05A-1	Well	KDID, Mid-Slope Bench	WT-10073	17-Apr-15	10:50	11.03	7.57	484.2	-0.06	1.55	-119	0	0	40.5			0.3	
BH-05A-1	BH-05A-1	Well	KDID, Mid-Slope Bench	WT-10231	20-May-15	10:40	11.69	7.75	444.6	-0.06	4.24	-123	0	0	36.8			0.35	water clear, tiny micro bubbles trickeling in flow cell, water level 78.68 ft below MP
BH-05A-2	BH-05A-2	Well	KDID, Mid-Slope Bench	WT-10077	19-Apr-15	11:30	11.84	7.23	370.1	2.12	-0.54	92	0	0	3.49			0.11	
BH-05A-2	BH-05A-2	Well	KDID, Mid-Slope Bench	WT-10233	21-May-15	8:53	11.58	7.24	466.04	0.11	2.6	183	0	0	1.27			0.11	Water clear, water level 49.18 ft below MP
BH-07A-1	BH-07A-1	Well	Downstream Toe, Center	WT-10064	15-Apr-15	12:45	10.79	7.7	462.5	-0.06	-0.28	-92	0	0	41.15			0.25	
BH-07A-1	BH-07A-1	Well	Downstream Toe, Center	WT-10223	18-May-15	12:12	10.69	7.66	454.32	-0.06	-0.1	-121	0	0	39			0.6	very clear. Water level 44.28 ft. below MP
BH-07A-2	BH-07A-2	Well	Downstream Toe, Center	WT-10065	15-Apr-15	13:35	12.37	7.55	374.2	0	4.03	-58	0	0	2.54			0.11	
BH-07A-2	BH-07A-2	Well	Downstream Toe, Center	WT-10226	19-May-15	8:50	11.69	7.48	366.3	0.21	3.06	0	0	0	1.98			0.079	Water level 49.82 ft. below MP
BH-07B-1	BH-07B-1	Well	Downstream Toe, Center	WT-10067	15-Apr-15	14:26	8.85	7.74	297.4	5.14	1.08	-33	0	0	2.11			0.26	
BH-07B-1	BH-07B-1	Well	Downstream Toe, Center	WT-10228	19-May-15	9:10	9.66	7.68	276.32	5.99	2.2	90	0	0	1.32			0.13	clear, water level 7.12 ft below MP
BH-09-1	BH-09-1	Well	Downstream	WT-10062	14-Apr-15	14:35	10.23	7.44	337.4	4.95	4.17	62	0	0	1			0.05	
BH-09-1	BH-09-1	Well	Downstream	WT-10222	18-May-15	10:45	11.52	7.54	327.5	3.9	2.96	178	0	0	0.95			0.079	Water is clear. Water level 9.90 ft below MP.
BTT-R1	BTT-R1	Stream	Bobtail Pond		03-Oct-08	12:27	9.5	8.25	326	11.6	0	172	0	0	0			0	
BTT-R1	BTT-R1	Stream	Bobtail Pond		04-Oct-09	14:35	12.8		336	10	9.9		0	0	0			0	
CC-1	CC-1	Stream	Carney Creek		28-Jun-08	11:25	9.46	8.17	584	8.17	7.2	160	0.25	0	0	28-Jun-08	11:50	29.49	
CC-1	CC-1	Stream	Carney Creek		14-Sep-08	10:10	6.62	7.85	580	7.9	0.6	153	0.2	0	0	14-Sep-08	10:30	11.63	
CC-1_SED	CC-1	Stream	Carney Creek		11-Oct-07	12:15	7.01	7.94	693	9.32	23.1					18-Oct-07	10:15	30.4	ORP = 297 mv
CC-1_SW	CC-1	Stream	Carney Creek		11-Oct-07	12:15	7.01	7.94	693	9.32	23.1					18-Oct-07	10:15	30.4	ORP = 297 mv
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		07-Apr-08	15:00	3.22	8.25	666	11.95	10.5	88	0.17	0.33	0	07-Apr-08	14:00	171	Dissolved O2 106.8%
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		14-Apr-08	10:30	2.48	8.24	600	15.08	66.2	43	0.17	0.42	0	14-Apr-08	10:54	368	Dissolved O2 120.9%
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		21-Apr-08	10:45	1.99	8.34	564	11.94	14.9	150	0.2	0.58	0	21-Apr-08	10:34	248.6	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		28-Apr-08	11:30	4.41	8.83	547	11.9	40.9	51	0.5	0	0	28-Apr-08	11:30	321.8	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		05-May-08	13:05	8.24	7.97	505	9.15	64	166	0.35	0.72	0	05-May-08	13:05	408	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		12-May-08	12:30	8.36	6.68	415	6.69	26.7	254	0.71	0.71	0	12-May-08	12:35	394.9	Sample collected with Isco, parameters from flume
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		19-May-08	11:47	12.8	8.3	427	6.89	26.5	236	0	0	0	19-May-08	11:50	321.8	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		02-Jun-08	11:40	11.36	8.11	508	9.76	10.2	74	0.25	0	0	02-Jun-08	11:40	155.7	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		26-May-08	10:45	10.15	8.36	443	11.04	20.9	92	0.5	0	0	26-May-08	10:38	278.7	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		09-Jun-08	10:25	9.36	8.28	548	7.64	0	108	0.2	0	0	09-Jun-08	10:25	155.7	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		30-Jun-08	8:45	11.04	8.51	669	10.71	4.7	92	0.5	0	0	30-Jun-08	8:48	67.77	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		25-Jun-08	9:45	9.84	8.37	630	8.68	13.4	99	0.5	0	0	25-Jun-08	9:50	82.13	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		16-Jun-08	11:27	10.34	8.5	578	7.6	33.6	99	0.2	0	0	16-Jun-08	11:30	121.6	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		10-Sep-08	9:05	7.97	8.47	677	7.68	4.4	89	0.5	0	0	10-Sep-08	9:07	53.75	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50004	19-Apr-11	9:32	2.13	7.13	452	3.62	15.3	260	0	0	0				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50025	26-Apr-11	11:30	4.64	7.24	390	5.02	25.4	220	0	0	2.351				

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50037	03-May-11	9:40	5.94	7.81	367	3.66	15.6	165	0	0.76	2.02				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50055	10-May-11	9:42	6.4	7.01	288	5.82	19.3	378	0	0	2.44				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50067	17-May-11	9:20	7.61	6.96	249	5.97	25.8	76	0	0	3.36				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50085	24-May-11	8:00	10.73	6.69	303	5.08	11.1	482	0	0	1.74				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50097	31-May-11	9:25	8.65	6.9	350	6.05	12.8	360	0	0	1.48				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50133	14-Jun-11	8:59	11.15	7.14	344	2.8	9.7	380	0	0	1.26				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50115	07-Jun-11	8:50	12.31	6.98	385	2.01	8.4	519	0	0	1.26				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50145	28-Jun-11	8:52	11.99	7.14	514	2.78	5.8	552	0	0	0.67				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50163	05-Jul-11	10:14	12.24	6.92	557	2.04	6.5	406	0	0	0.51				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50175	12-Jul-11	9:03	12.6	7.38	607	3.4	9.5	508	0	0	0.37				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50193	19-Jul-11	9:04	12.9	7.31	622	2.28	5.7	345	0	0	0.37				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50205	26-Jul-11	9:00	11.91	6.95	633	1.9	19.4	127	0	0	0.39				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50253	06-Sep-11	9:23	8.44	7.24	698	1.43	15.5	107	0	0	0.22				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50271	20-Sep-11	7:34	7.04	8.1	671	1.32	9.1	171	0	0	0.2				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50223	09-Aug-11	8:46	10.29	6.91	718	1.87	9.3	221	0	0	0.26				Flume reading = 0.20' = 0.26 cfs, clear ~ 60 F
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	P4-50235	23-Aug-11	9:04	10.75	7.77	688	1.61	45.1	179	0	0	0.22				
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	WT-10010	15-Apr-15	13:13	5.8	8.36	573.3	12.43	1.38	98.4						301	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	WT-10046	21-Apr-15	10:15	6.8	8.24	566.4	13.26	1.14	66.4						241	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	WT-10094	27-Apr-15	13:45	7.8	8.54	559.6	14.13	1.29	145.2						230	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	WT-10125	04-May-15	12:12	8.2	8.55	564.5	11.96	0.82	101.1						218	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	WT-10156	12-May-15	13:02	9.4	8.58	622.2	11.07	1.01	99.6						186	
CC-2	CC-2	Stream	Carney Creek just above confluence with Rainy Creek	WT-10187	18-May-15	12:59	9.4	8.6	569.7	10.02	0.57	72.5						186	
CC-2_SED	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		12-Oct-07	11:00	7.8	6.67	715	9.06	2.1		0.33			18-Oct-07	10:00	84.4	ORP = 337 mv
CC-2_SW	CC-2	Stream	Carney Creek just above confluence with Rainy Creek		11-Oct-07	11:00	7.8	6.67	715	9.06	2.1		0.33			18-Oct-07	10:00	84.4	ORP = 337 mv
CC-3A	CC-3A		Upstream Carney Creek location where a number of springs confluence.	WT-10035	17-Apr-15	14:05	5.6	7.92	403.5	11.62	5.18	58						25.34	
CC-3A	CC-3A		Upstream Carney Creek location where a number of springs confluence.	WT-10185	14-May-15	12:52	7.2	7.99	708.1	10.93	1.58	66.7						20.5	
CC-3A	CC-3A		Upstream Carney Creek location where a number of springs confluence.	WT-10145	06-May-15	11:30	6	7.99	603.8	12.76	2.17	150.3						23.4	
CC-3A	CC-3A		Upstream Carney Creek location where a number of springs confluence.	WT-10205	20-May-15	10:15	6.7	7.63	749.9	10.21	1.22	65.3						20.5	

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
CC-3B	CC-3B		Upstream Carney Creek location, in upper where a number of springs confluence.	WT-10085	22-Apr-15	12:57	5.2	7.64	108.8	10.82	10.7	84.2						3.5	
CC-3B	CC-3B		Upstream Carney Creek location, in upper where a number of springs confluence.	WT-10095	28-Apr-15	9:15	4.6	8.83	425.3	10.92	7.48	22.9						1.3	
CC-POND	CC-POND	Pond	Pond on lower Carney Creek		06-May-08	9:25	7.89	6.84	393	8.68	50.3	271	0.5	0	0				Sampling depth 0.5 feet below surface; total depth unknown for pond--sampling point in 4 feet
CC-POND	CC-POND	Pond	Pond on lower Carney Creek		12-May-08	10:55	8.06	8.07	354	5.95	8.3	291	0.5	6	0				Collected from pond with extendable pole
CC-POND	CC-POND	Pond	Pond on lower Carney Creek		19-May-08	10:30	13.23	7.89	355	6.6	10.4	288	0	0	0				
CC-POND	CC-POND	Pond	Pond on lower Carney Creek		03-Jun-08	10:00	13.32	6.07	421	7.2	21	214	0.5	0	0				
CC-POND	CC-POND	Pond	Pond on lower Carney Creek		27-May-08	9:36	11.48	6.61	366	9.45	33	146	0.5	0	0				
CC-POND	CC-POND	Pond	Pond on lower Carney Creek		10-Jun-08	10:05	11.15	7.21	463	7.29	0	94	0.5	0	0				
CC-POND	CC-POND	Pond	Pond on lower Carney Creek		28-Jun-08	8:10	17.86	8.03	507	9.62	1.9	108	0.5	0	0				
CC-POND	CC-POND	Pond	Pond on lower Carney Creek		17-Jun-08	9:05	15.14	7.19	466	7.39	4.5	165	0.5	0	0				
CC-POND	CC-POND	Pond	Pond on lower Carney Creek		13-Sep-08	11:14	14.44	7.64	588	6.14	1.6	97	0.5	0	0				
CCS-1	CCS-1	Seep	Spring from base of west waste rock pile		28-Jun-08	10:25	11.31	8	772	5.97	18.4	162	0.04	0	0	28-Jun-08	10:30	0.521	
CCS-1	CCS-1	Seep	Spring from base of west waste rock pile		13-Sep-08	12:53	11.13	7.55	744	6.38	6.8	82	0.2	0	0	13-Sep-08	12:55	1.16	
CCS-1_SED	CCS-1	Seep	Spring from base of west waste rock pile		12-Oct-07	12:47	8.77	8.23	746	8.28	225					18-Oct-07	12:47		Trubidity disturbed ORP= 266 mv
CCS-1_SW	CCS-1	Seep	Spring from base of west waste rock pile		12-Oct-07	12:47	8.77	8.23	746	8.28	225					18-Oct-07	12:47		Turbidity disturbed ORP= 266 mv
CCS-11	CCS-11	Seep	Spring below central waste rock pile		29-Jun-08	9:30	9.14	8.28	668	3.9	7.3	124	0.1	0	0	29-Jun-08	9:33	0	
CCS-11	CCS-11	Seep	Spring below central waste rock pile		12-Sep-08	14:35	16.3	7.48	659	4.19	3.9	118	0.1	0	0				
CCS-11_SED	CCS-11	Seep	Spring below central waste rock pile		13-Oct-07	15:30	8.78	8.09	654	11.51	12.7					18-Oct-07	15:30		ORP=1.06 mv
CCS-11_SW	CCS-11	Seep	Spring below central waste rock pile		12-Oct-07	15:30	8.78	8.09	654	11.51	12.7					18-Oct-07	15:30		ORP=1.06 mv
CCS-14	CCS-14	Seep	Spring between central and east waste rock piles		29-Jun-08	10:27	10.92	8.55	596	7.82	11.5	141	0.1	0	0	29-Jun-08	10:30	0.789	
CCS-14	CCS-14	Seep	Spring between central and east waste rock piles		12-Sep-08	15:12	16.71	6.87	624	5.47	8	121	0.1	0	0				
CCS-14_SED	CCS-14	Seep	Spring between central and east waste rock piles		13-Oct-07	10:00	7.12	8.41	590	30.5	24.1					18-Oct-07	10:00		ORP= 283 mv
CCS-14_SW	CCS-14	Seep	Spring between central and east waste rock piles		13-Oct-07	10:00	7.12	8.41	590	30.5	24.1					18-Oct-07	10:00		ORP= 283 mv
CCS-16	CCS-16	Seep	Spring below east waste rock pile		28-Jun-08	13:25	13.3	8.37	913	6.8	4.8	156	0.08	0	0	28-Jun-08	13:25	0.332	
CCS-16	CCS-16	Seep	Spring below east waste rock pile		14-Sep-08	11:35	10.53	7.43	853	7.54	3.7	64	0.2	0	0	14-Sep-08	11:40	0.28	
CCS-16_SED	CCS-16	Seep	Spring below east waste rock pile		15-Oct-07	10:15	7.44	8.04	904	30.79	6.4					18-Oct-07	10:15		ORP= 188 mv
CCS-16_SW	CCS-16	Seep	Spring below east waste rock pile		17-Oct-07	10:15	7.44	8.04	904	30.79	6.4					18-Oct-07	10:15		ORP= 188 mv
CCS-6	CCS-6	Seep	Spring below west waste rock pile		28-Jun-08	9:25	11.68	5.97	845	7.47	3.1	140	0.04	0	0	28-Jun-08	9:30	0.753	
CCS-6	CCS-6	Seep	Spring below west waste rock pile		13-Sep-08	12:13	9.18	7.65	783	6.4	7.3	82	0.1	0	0	13-Sep-08	12:18	0.211	
CCS-6_SED	CCS-6	Seep	Spring below west waste rock pile		12-Oct-07	9:30	5.73	7.89	767	7.2	5999					18-Oct-07	9:30		ORP= 1.92 mv
CCS-6_SW	CCS-6	Seep	Spring below west waste rock pile		12-Oct-07	9:30	5.73	7.89	767	7.2	5999					18-Oct-07	9:30		ORP= 1.92 mv
CCS-8	CCS-8	Seep	Spring below west waste rock pile		28-Jun-08	8:30	12.61	8.63	810	9.94	1.5	155	0.21	0	0	28-Jun-08	8:40	0.1	

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
CCS-8	CCS-8	Seep	Spring below west waste rock pile		13-Sep-08	11:29	12.16	7.64	810	4.97	0.6	94	0.1	0	0				
CCS-8_SED	CCS-8	Seep	Spring below west waste rock pile		12-Oct-07	11:45	7.27	8.2	750	8.84	2.5					18-Oct-07	11:45		ORP= 292 mv
CCS-8_SW	CCS-8	Seep	Spring below west waste rock pile		17-Oct-07	11:45	7.27	8.2	750	8.84	2.5					18-Oct-07	11:45		ORP= 292 mv
CCS-9	CCS-9	Seep	Spring discharging to lower Carney Creek		29-Jun-08	8:10	8.36	7.67	778	5.58	1.9	170	0.14	0	0	29-Jun-08	11:45	120	
CCS-9	CCS-9	Seep	Spring discharging to lower Carney Creek		13-Sep-08	9:20	8.52	6.87	741	7.28	1.2	129	0.2	0	0	13-Sep-08	9:30	14.18	
CCS-9_SED	CCS-9	Seep	Spring discharging to lower Carney Creek		12-Oct-07	11:00	8.39	8.16	746	24.05	3.8					18-Oct-07	11:00		ORP= 323 mv
CCS-9_SW	CCS-9	Seep	Spring discharging to lower Carney Creek		16-Oct-07	11:00	8.39	8.16	746	24.05	3.8					18-Oct-07	11:00		ORP= 323 mv
D1	D1	Pond	Eastern flank of embankment	WT-10015	16-Apr-15	13:00	8.5	6.63	730.1	4.65	0.06	118.9						82.2	
D1	D1	Pond	Eastern flank of embankment	WT-10047	21-Apr-15	10:40	8.5	6.69	699.3	5.33	0.14	114.6						66.4	
D1	D1	Pond	Eastern flank of embankment	WT-10098	28-Apr-15	11:10	8.5	6.73	694.9	4.07	0.39	163.8						49.6	
D1	D1	Pond	Eastern flank of embankment	WT-10159	13-May-15	10:25	8.6	6.88	785	5.02	0.16	127.5						21	
D1	D1	Pond	Eastern flank of embankment	WT-10128	05-May-15	9:26	8.5	6.74	709.4	6.77	0.09	155.3						39.8	
D1	D1	Pond	Eastern flank of embankment	WT-10190	19-May-15	8:20	8.6	6.72	799	6.45	0.11	97.2						12.3	
D10	D10	Pond	Western half of embankment	WT-10024	16-Apr-15	15:54	8.1	7.14	485.6	6.94	6.4	86.7						29.4	
D10	D10	Pond	Western half of embankment	WT-10055	21-Apr-15	13:20	8.1	7.32	507.6	5.63	0.07	68						24.3	
D10	D10	Pond	Western half of embankment	WT-10108	28-Apr-15	13:10	8.2	7.3	446.3	9.39	0.06	156.9						33	
D10	D10	Pond	Western half of embankment	WT-10169	13-May-15	12:35	8.1	7.13	428.2	6.04	0.09	171.3						28	
D10	D10	Pond	Western half of embankment	WT-10138	05-May-15	11:20	8	7.18	409.3	6.64	0.52	185.5						33.8	
D10	D10	Pond	Western half of embankment	WT-10201	19-May-15	10:18	8.2	7.21	411	5.63	0.09	139.4						28.2	
D11	D11	Pond	Western half of embankment	WT-10025	16-Apr-15	16:10	8.3	7.17	495.1	6.05	0.77	71.8						11.7	
D11	D11	Pond	Western half of embankment	WT-10056	21-Apr-15	13:34	8.1	7.19	498.5	8.05	0.13	77.7						10.8	
D11	D11	Pond	Western half of embankment	WT-10109	28-Apr-15	13:18	8.4	7.1	442.9	6.13	0.34	114.9						10.1	
D11	D11	Pond	Western half of embankment	WT-10170	13-May-15	12:47	8.1	7.1	428.3	7	0.11	215.8						9	
D11	D11	Pond	Western half of embankment	WT-10139	05-May-15	11:30	8.1	7.22	409.1	6.33	0.29	189						9.98	
D11	D11	Pond	Western half of embankment	WT-10202	19-May-15	10:29	8.2	7.15	413.6	6.6	0.13	141.8						7.7	
D12	D12	Pond	Western flank of embankment	WT-10026	16-Apr-15	16:28	8.3	6.87	493	5.84	0.17	123						188.6	
D12	D12	Pond	Western flank of embankment	WT-10057	21-Apr-15	13:51	8.3	7.03	504.5	6.63	0.2	80.6						159.3	
D12	D12	Pond	Western flank of embankment	WT-10110	28-Apr-15	13:29	8.3	7.04	461.5	5.16	0.34	128.9						150.7	
D12	D12	Pond	Western flank of embankment	WT-10140	05-May-15	11:42	8.4	7.27	447.7	5.22	0.22	167.9						137.6	
D12	D12	Pond	Western flank of embankment	WT-10171	13-May-15	12:55	8.3	7.04	477.3	5.42	0.12	198.8						126	
D12	D12	Pond	Western flank of embankment	WT-10203	19-May-15	10:45	8.4	7	473.3	5.29	0.09	137.4						153.2	
D2	D2	Pond	Eastern flank of embankment	WT-10017	16-Apr-15	13:37	8.4	6.88	615.1	4.31	0.28	120.4						7.2	
D2	D2	Pond	Eastern flank of embankment	WT-10048	21-Apr-15	10:58	8.4	6.86	342.5	3.85	0.12	118.9						4	
D2	D2	Pond	Eastern flank of embankment	WT-10100	28-Apr-15	11:27	8.4	6.84	608.6	2.81	0.2	155.1						5.5	
D2	D2	Pond	Eastern flank of embankment	WT-10160	13-May-15	10:39	8.6	6.81	750	1.55	0.26	137						7	
D2	D2	Pond	Eastern flank of embankment	WT-10130	05-May-15	9:35	9	6.98	677.8	3.34	0.12	176						11.9	
D2	D2	Pond	Eastern flank of embankment	WT-10191	19-May-15	8:31	8.5	6.83	773	1.56	0.13	107.3						6.9	
D3	D3	Pond	Eastern half of embankment	WT-10018	16-Apr-15	13:47	8.8	6.88	579.3	3.53	0.11	91.8						79.3	
D3	D3	Pond	Eastern half of embankment	WT-10049	21-Apr-15	11:20	8.6	6.99	565.4	4.76	0.24	106.3						68.8	
D3	D3	Pond	Eastern half of embankment	WT-10101	28-Apr-15	11:38	8.6	6.96	569	3.5	0.32	166.1						53.5	
D3	D3	Pond	Eastern half of embankment	WT-10161	13-May-15	10:50	8.6	6.87	701.7	1.87	0.2	117.1						43	
D3	D3	Pond	Eastern half of embankment	WT-10131	05-May-15	9:49	8.6	6.84	616.2	2.02	0.35	140.4						47.1	
D3	D3	Pond	Eastern half of embankment	WT-10192	19-May-15	8:42	8.6	6.93	736	1.41	0.17	111						39.2	
D4	D4	Pond	Eastern half of embankment	WT-10019	16-Apr-15	14:07	9.3	7.06	565.7	3.04	0.26	78.8						7.7	
D4	D4	Pond	Eastern half of embankment	WT-10050	21-Apr-15	11:35	8.7	7.13	560	2.2	0.27	85.7						7.3	
D4	D4	Pond	Eastern half of embankment	WT-10102	28-Apr-15	11:52	8.7	7.11	558.3	3.1	0.14	150.6						7.5	
D4	D4	Pond	Eastern half of embankment	WT-10162	13-May-15	11:03	8.7	6.92	657.3	1.76	0.13	109						6.1	
D4	D4	Pond	Eastern half of embankment	WT-10132	05-May-15	9:59	8.7	7.02	578.8	2.63	0.08	186.3						6.4	
D4	D4	Pond	Eastern half of embankment	WT-10193	19-May-15	8:54	8.7	6.89	700.6	2.36	0.11	124						5.8	
D5	D5	Pond	Eastern half of embankment	WT-10020	16-Apr-15	14:28	9.1	7.03	517.7	3.93	0.81	86.6						32.2	

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
D5	D5	Pond	Eastern half of embankment	WT-10051	21-Apr-15	11:55	9	7.1	546.2	5.6	0.33	93.3						29.8	
D5	D5	Pond	Eastern half of embankment	WT-10103	28-Apr-15	12:06	9	7.12	488.4	4.86	0.29	139.5						30.9	
D5	D5	Pond	Eastern half of embankment	WT-10163	13-May-15	11:26	8.9	6.99	532.3	3.1	0.08	132.7						20	
D5	D5	Pond	Eastern half of embankment	WT-10133	05-May-15	10:12	8.9	7.18	479.9	4.28	0.11	197.9						23.5	
D5	D5	Pond	Eastern half of embankment	WT-10195	19-May-15	9:11	8.8	6.95	569.7	3.28	0.09	175.1						20	
D6	D6	Pond	Majority of the flow; central embankment	WT-10021	16-Apr-15	14:52	8.8	7.38	424.3	7.08	0.41	53.8						585	
D6	D6	Pond	Majority of the flow; central embankment	WT-10052	21-Apr-15	12:12	8.3	7.21	433.9	9.56	1.48	105.4						469.8	
D6	D6	Pond	Majority of the flow; central embankment	WT-10104	28-Apr-15	12:20	8.2	7.13	389.5	8.06	0.7	137.7						410.2	
D6	D6	Pond	Majority of the flow; central embankment	WT-10165	13-May-15	11:39	8.2	7.16	454.3	6.33	0.07	134.1						354.2	
D6	D6	Pond	Majority of the flow; central embankment	WT-10134	05-May-15	10:25	8.2	7.25	404.8	7.97	0.38	186.6						410	
D6	D6	Pond	Majority of the flow; central embankment	WT-10196	19-May-15	9:21	8.3	7.06	476.7	6.36	0.17	145.6						340.8	
D7	D7	Pond	Eastern half of embankment	WT-10022	16-Apr-15	15:07	9.2	7.02	497.9	6.86	0.32	106.3						6.7	
D7	D7	Pond	Eastern half of embankment	WT-10053	21-Apr-15	12:33	9.1	7.09	500.5	8.1	0.08	95.3						6.5	
D7	D7	Pond	Eastern half of embankment	WT-10105	28-Apr-15	12:32	9.2	7.18	455.8	7.35	0.22	134.2						5.2	
D7	D7	Pond	Eastern half of embankment	WT-10166	13-May-15	11:53	8.9	7.23	507.7	6.5	0.13	145.1						2.9	
D7	D7	Pond	Eastern half of embankment	WT-10135	05-May-15	10:39	9.1	7.3	447.1	7.76	0.22	197						3.81	
D7	D7	Pond	Eastern half of embankment	WT-10197	19-May-15	9:33	8.9	7.07	565.9	6.55	0.06	165.3						2.02	
D8	D8	Pond	Eastern half of embankment		21-Apr-15	12:50	9.3	7.41	527.4	6.23	0.32	86.3	0	0	0			0.42	
D8	D8	Pond	Eastern half of embankment	WT-10106	28-Apr-15	12:44	9.4	7.57	490.4	8.52	0.52	120.7						0.4	
D8	D8	Pond	Eastern half of embankment	WT-10167	13-May-15	12:09	9.3	7.55	507.4	7.35	0.34	113.5						0.21	
D8	D8	Pond	Eastern half of embankment	WT-10136	05-May-15	10:53	9.7	7.55	470.1	7.73	0.58	117.3						0.23	
D8	D8	Pond	Eastern half of embankment	WT-10198	19-May-15	9:48	9.4	7.41	449	8.25	0.16	152.3						0.2	
D9	D9	Pond	Western half of embankment	WT-10023	16-Apr-15	15:33	8.6	7.16	582.2	4.77	0.4	163						40.8	
D9	D9	Pond	Western half of embankment	WT-10054	21-Apr-15	13:05	8.5	7.06	603.1	5.81	0.17	90.6						38.1	
D9	D9	Pond	Western half of embankment	WT-10107	28-Apr-15	12:54	8.6	6.88	577.2	3.81	0.47	132.5						32	
D9	D9	Pond	Western half of embankment	WT-10168	13-May-15	12:22	8.7	6.87	689.4	2.43	0.09	138.9						30	
D9	D9	Pond	Western half of embankment	WT-10137	05-May-15	11:09	8.6	6.86	623.8	3.46	0.23	167.8						29.39	
D9	D9	Pond	Western half of embankment	WT-10199	19-May-15	10:05	8.6	6.88	702.5	2.79	0.15	158.5						28.37	
East-TGC	East-TGC	Stream	Downstream end of culvert where it enters LRC; downstream of East Tub Gulch Pond outlet to ditch; culvert is located where the ditch crosses under the forest service road.	WT-10002	14-Apr-15	14:11	8.7	7.9	502	11.8	1	75.2						5	
East-TGC	East-TGC	Stream	Downstream end of culvert where it enters LRC; downstream of East Tub Gulch Pond outlet to ditch; culvert is located where the ditch crosses under the forest service road.	WT-10086	27-Apr-15	10:10	5.7	7.91	475.5	14.19	1.05	121.4						5.6	
East-TGC	East-TGC	Stream	Downstream end of culvert where it enters LRC; downstream of East Tub Gulch Pond outlet to ditch; culvert is located where the ditch crosses under the forest service road.	WT-10038	20-Apr-15	11:34	8.5	7.94	397.8	12.41	0.72	50.8						5.4	
East-TGC	East-TGC	Stream	Downstream end of culvert where it enters LRC; downstream of East Tub Gulch Pond outlet to ditch; culvert is located where the ditch crosses under the forest service road.	WT-10148	12-May-15	9:34	10.2	8.21	530	10.58	0.48	125						1	

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
East-TGC	East-TGC	Stream	Downstream end of culvert where it enters LRC; downstream of East Tub Gulch Pond outlet to ditch; culvert is located where the ditch crosses under the forest service road.	WT-10117	04-May-15	9:16	6.9	7.99	468.1	10.82	6.72	121.6						6.5	
East-TGC	East-TGC	Stream	Downstream end of culvert where it enters LRC; downstream of East Tub Gulch Pond outlet to ditch; culvert is located where the ditch crosses under the forest service road.	WT-10209	21-May-15	7:08	10.8	8.06	511	10.42	0.39	56.7						5.8	
East-TGP	East-TGP	Stream	Near LRC-5; At the downstream end of East Tub Gulch; Pond outflows to ditch adjacent to forest service road	WT-10003	14-Apr-15	14:56	9.3	7.54	524.3	12.65	1.28	117.3							
East-TGP	East-TGP	Stream	Near LRC-5; At the downstream end of East Tub Gulch; Pond outflows to ditch adjacent to forest service road	WT-10039	20-Apr-15	12:15	10.1	7.65	429	11.94	1.23	181							no flow; pond
East-TGP	East-TGP	Stream	Near LRC-5; At the downstream end of East Tub Gulch; Pond outflows to ditch adjacent to forest service road	WT-10087	27-Apr-15	10:35	7.9	7.5	493.4	11.1	0.56	172.6							
East-TGP	East-TGP	Stream	Near LRC-5; At the downstream end of East Tub Gulch; Pond outflows to ditch adjacent to forest service road	WT-10149	12-May-15	9:57	9.2	7.64	530.5	10.21	1.48	146.7							
East-TGP	East-TGP	Stream	Near LRC-5; At the downstream end of East Tub Gulch; Pond outflows to ditch adjacent to forest service road	WT-10118	04-May-15	9:42	7.5	7.6	491.4	9.9	0.53	157.1							
East-TGP	East-TGP	Stream	Near LRC-5; At the downstream end of East Tub Gulch; Pond outflows to ditch adjacent to forest service road	WT-10210	21-May-15	7:18	8.2	8.05	537.7	9.39	0.38	46							
FC-1	FC-1	Stream	Fleetwood Creek above Mine Area		27-Jun-08	11:05	8.06	9.81	249	10.62	6.5	137	0.17	0	0	27-Jun-08	11:10	31	
FC-1	FC-1	Stream	Fleetwood Creek above Mine Area		12-Sep-08	13:18	12.15	8.19	503	5.12	8.6	96	0.08	0	0	12-Sep-08	13:20	27	
FC-1	FC-1	Stream	Fleetwood Creek above Mine Area	WT-10034	17-Apr-15	12:37	4.8	8.11	458.9	12.13	4.8	85.3						161.6	
FC-1	FC-1	Stream	Fleetwood Creek above Mine Area	WT-10083	22-Apr-15	11:50	5.4	8.04	470.8	12.95	1.36	105.5						160.87	
FC-1	FC-1	Stream	Fleetwood Creek above Mine Area	WT-10115	29-Apr-15	10:44	5.9	8.1	446.4	13.65	1.17	150.6						106.17	
FC-1	FC-1	Stream	Fleetwood Creek above Mine Area	WT-10144	06-May-15	10:17	4.6	8.11	445.3	12.93	1.6	127						229.98	

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
FC-1	FC-1	Stream	Fleetwood Creek above Mine Area	WT-10184	14-May-15	12:06	6.5	8.01	478.8	11.99	1.71	111.1						123.11	
FC-1	FC-1	Stream	Fleetwood Creek above Mine Area	WT-10206	20-May-15	10:57	6.4	8.02	484.4	11.91	1.72	84						119.4	
FC-1_SED	FC-1	Stream	Fleetwood Creek above Mine Area		13-Oct-07	11:30	6.5	8.76	11.17	10.65	8.5					18-Oct-07	10:45	64.8	ORP = 287 mv
FC-1_SW	FC-1	Stream	Fleetwood Creek above Mine Area		13-Oct-07	11:30	6.5	8.76	11.17	10.65	8.5					18-Oct-07	10:45	64.8	ORP = 287 mv
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		08-Apr-08	9:00	1.51	7.45	506	14	7.8	81	0.17	0.25	0	08-Apr-08	10:30	139	Dissolved O2 113.5%
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		14-Apr-08	12:30	3.11	8.02	482	11.63	16.3	47	0.25	0.5	0	14-Apr-08	11:45	534	Dissolved O2 103.6%
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		22-Apr-08	11:20	3.15	8.32	490	14.74	15.8	93	0.5	1	0	22-Apr-08	11:39	220	DO 107.7%
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		28-Apr-08	13:12	6.87	8.47	471	12.87	21.5	46	0.5	0	0	28-Apr-08	13:12	554	Flow data also collected 4/30/08, 10:10am, gpm: 554
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		07-May-08	11:55	6.52	8.47	453	10.81	109	158	0.5	1	0	07-May-08	12:25	405	Collected from flume
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		13-May-08	12:10	6.08	8.36	446	8	20.9	294	0.4	1	0	13-May-08	12:20	309.7	
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		20-May-08	13:50	8.77	7.83	465	10.64	15.4	280	0	0	0	20-May-08	13:55	184	
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		03-Jun-08	12:46	9.37	8.26	481	8.25	27.8	161	0.2	0	0	03-Jun-08	12:50	121.6	
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		27-May-08	11:53	8.2	8.43	463	10.71	28.9	85	0.5	0	0	27-May-08	11:55	155.7	
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		10-Jun-08	12:30	5.54	8.3	479	8.33	0	78	0.25	0	0	10-Jun-08	12:35	163.1	
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		27-Jun-08	9:18	8.43	9.25	513	12.37	4.4	109	0.15	0	0	27-Jun-08	9:20	51.12	
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		17-Jun-08	11:25	9	8.33	488	8.49	36.1	95	0.2	0	0	17-Jun-08	11:30	97.39	
FC-2	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		12-Sep-08	11:41	9.35	7.81	493	5.62	7	69	0.04	0	0				
FC-2_SED	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		13-Oct-07	12:45	7.08	8.69	7.12	10.84	2.4					18-Oct-07	11:10	0	ORP = 259 mv
FC-2_SW	FC-2	Stream	Fleetwood Creek above Tailings Impoundment		13-Oct-07	12:45	7.08	8.69	7.12	10.84	2.4					18-Oct-07	11:10	0	ORP = 259 mv
FC-POND	FC-POND	Pond	Fleetwood Creek Upper Pond		08-Apr-08	10:15	0.29	8.34	514	7.85	8.5	99	0.25	0.42	0				Dissolved O2 63.2%
FC-POND	FC-POND	Pond	Fleetwood Creek Upper Pond		14-Apr-08	12:50	3.15	8.2	473	9.07	10.2	69	0.25	0.42	0				Dissolved O2 79.2%
FC-POND	FC-POND	Pond	Fleetwood Creek Upper Pond		22-Apr-08	12:00	5.69	7.91	490	10.93	12.4	113	0.5	1	0				DO 104.3%
FC-POND	FC-POND	Pond	Fleetwood Creek Upper Pond		28-Apr-08	13:30	10.52	8.43	491	8.43	8.9	57	0.5	0	0				
FC-POND	FC-POND	Pond	Fleetwood Creek Upper Pond		06-May-08	14:50	13.72	7.74	485	9.4	61.6	166	0.5	3	0				Sampling depth 0.5 ft from surface
FC-POND	FC-POND	Pond	Fleetwood Creek Upper Pond		27-Jun-08	10:05	20.14	8.89	412	10.62	3.7	123	0.5	0	0				
FC-POND	FC-POND	Pond	Fleetwood Creek Upper Pond		12-Sep-08	12:47	16.36	8.15	356	5.32	77.4	74	0.33	0	0				
FC-Upper Pond_SED	FC-Upper Pond	Pond	Fleetwood Creek Upper Pond		13-Oct-07	11:15	9.34	8.8	295	11.7	37.2					18-Oct-07	11:15		ORP = 263 mv
FC-Upper Pond_SW	FC-Upper Pond	Pond	Fleetwood Creek Upper Pond		13-Oct-07	11:15	9.34	8.8	295	11.7	37.2					18-Oct-07	11:15		ORP = 263 mv
KR-1	KR-1	River	Kootenai River parallel to the northern river bank downstream of the mouth of Rainy Creek		19-Aug-08	17:00	15.16	7.24	242	7.86	2	200	0	8	0				
KR-2	KR-2	River	Kootenai River parallel to the northern river bank downstream of the mouth of Rainy Creek		19-Aug-08	16:26	14.52	7.32	243	8.43	2.2	197	0	9	0				
KR-3	KR-3	River	Kootenai River parallel to the northern river bank downstream of the mouth of Rainy Creek		19-Aug-08	16:09	14.86	7.17	242	8.7	2.1	189	0	12	0				

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
KR-4	KR-4	River	Kootenai River along a perpendicular transect downstream of Rainy Creek		19-Aug-08	14:30	13.99	8.57	243	8.66	2.3	126	0	7	0				
KR-5	KR-5	River	Kootenai River along a perpendicular transect downstream of Rainy Creek		19-Aug-08	14:55	14.15	8.33	244	8.56	1.6	136	0	12	0				
KR-6	KR-6	River	Kootenai River along a perpendicular transect downstream of Rainy Creek		19-Aug-08	15:10	14.18	8.2	241	8.52	1.6	144	0	8	0				
KR-7	KR-7	River	Kootenai River along a perpendicular transect downstream of Rainy Creek		19-Aug-08	15:23	14.02	8.11	240	8.73	2.6	150	0	6	0				
KR-8	KR-8	River	Kootenai River along a perpendicular transect downstream of Rainy Creek		19-Aug-08	15:50	15.02	7.25	243	8.7	10.4	163	0	5	0				
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		07-Apr-08	13:30	7.37	7.97	649	12.28	9.5	105	0.3	0.5	0	08-Apr-08	13:00	593	Dissolved O2 124.2%
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		14-Apr-08	10:10	10.25	7.79	647	11.04	8	63	0.25	0.5	0	14-Apr-08	10:20	494	Dissolved O2 117.5%
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		21-Apr-08	11:05	6.77	8.17	654	11.36	14.8	127	0.3	0.78	0	21-Apr-08	10:56	491.9	DO 111.2%
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		28-Apr-08	11:45	10.23	8.44	653	12.55	40.5	57	0.5	0	0	28-Apr-08	11:45	601.4	
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		05-May-08	13:30	12.4	7.65	633	11.29	77.7	186	0.5	0.96	0	05-May-08	13:35	798.9	
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		12-May-08	12:55	10.59	7.95	524	7.78	20.4	285	0.5	1.3	0	12-May-08	13:15	2297.56	Collected from flume
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		19-May-08	12:10	13.98	7.84	484	7.43	30.4	272	0	0	0	19-May-08	12:15	2882	
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		02-Jun-08	12:15	12.57	7.85	473	11.48	4.4	92	0.5	0	0	02-Jun-08	12:20	1944	
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		26-May-08	11:05	11.38	7.85	475	11.85	14.8	107	0.5	0	0	26-May-08	11:10	2752	
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		09-Jun-08	10:50	11.97	7.9	474	8.32	6	115	0.5	0	0	09-Jun-08	10:55	1472	
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		25-Jun-08	10:08	14.93	7.74	487	8.92	0	127	0.5	0	0	25-Jun-08	10:10	875	
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		16-Jun-08	12:00	14.2	8.01	475	9.04	45.1	120	0.6	0	0	16-Jun-08	12:05	1189	
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		10-Sep-08	9:38	13.59	8.03	445	5.63	1.1	114	0.3	0	0	10-Sep-08	9:48	287	
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		01-Oct-08	10:15	11.1	7.87	310	11.1	3.7		0	0	0			0	
LRC-1	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		29-Sep-09	13:15	13		453	10.5	1.96		0	0	0			0	
LRC-1_SED	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		17-Oct-07	13:45	8.93	8.73	520	12.1	3.6					18-Oct-07	12:15	184.02	ORP = 262 mv

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
LRC-1_SW	LRC-1	Stream	Lower Rainy Creek above confluence with Carney Creek		15-Oct-07	13:45	8.93	8.73	520	12.1	3.6					18-Oct-07	12:15	184.02	ORP = 262 mv
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		07-Apr-08	13:45	6.72	8.26	651	11.39	8.4	83	0.25	0.42	0	07-Apr-08	13:00	596	Dissolved O2 111.4%
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		14-Apr-08	10:48	6.77	8.15	628	10.93	11.2	37	0.3	1	0	14-Apr-08	11:12	1067	Dissolved O2 106.1%
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		21-Apr-08	10:20	4.95	8.33	621	11.31	15.6	106	0.4	0.92	0	21-Apr-08	10:14	722.6	DO 105.3%
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		28-Apr-08	11:58	8.6	8.5	617	11.97	8.8	52	0.5	0	0	28-Apr-08	11:58	972.51	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		05-May-08	11:55	10.75	7.79	589	9.22	61.5	165	0.5	1	0	05-May-08	12:45	1732	Also collected flow record on 5/7/08, 10:00am, gpm: 1610
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		12-May-08	11:40	10.1	8.12	508	6.81	12.6	301	0.5	1	0	12-May-08	11:50	2638.7	Sample collected with Isco from flume. Parameters in flume.
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		19-May-08	11:08	14.05	7.86	477	6.89	18.6	274	0	0	0	19-May-08	11:15	3452	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		02-Jun-08	11:05	12.83	7.99	469	10.24	8.8	80	0.5	0	0	02-Jun-08	11:10	2020	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		26-May-08	10:00	10.95	7.92	474	10.74	0.2	124	0.5	0	0	26-May-08	10:05	3043	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		09-Jun-08	9:50	11.87	7.99	479	8.04	12	124	0.5	0	0	09-Jun-08	9:55	1656	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		30-Jun-08	8:20	17.27	8.18	495	8.98	1.3	88	0.5	0	0	30-Jun-08	8:23	884.1	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		25-Jun-08	8:45	14.62	7.4	493	8.46	0	111	0.5	0	0	25-Jun-08	9:00	1131	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		01-Jul-08	8:15	18	7.92	415	6.97	1.7	94	0.5	0	0				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		15-Jul-08	0:00							0.35	0	0	15-Jul-08	11:05	434.9	No parameter meter available.
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		16-Jun-08	10:51	13.86	8.07	483	8.17	14.3	148	0.6	0	0	16-Jun-08	10:55	1414	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		09-Sep-08	13:15	14.47	8.58	476	9.61	3.6	32	0.2	0	0	09-Sep-08	13:20	301.9	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		18-Aug-08	10:50	18.68	8.42	524	9.24	0.5	138	1.5	0	0	18-Aug-08	10:55	0	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		29-Jul-08	10:05	17.2	8.6	549	8.71	1.5	160	0.25	0	194.8				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		30-Sep-08	13:30	10.4	8.48	505	9.8	2.57		0	0	0			0	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		29-Sep-09	8:15	12.4		459	9.2	0.01		0	0	0			0	

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50007	19-Apr-11	10:06	6.34	7.26	509	3.55	7.4	241	0	0	0				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50022	26-Apr-11	10:43	8.3	7.02	486	3.46	10.3	226	0	0	6.914				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50034	03-May-11	9:07	8.21	7.3	474	3.12	7.5	167	0	1.84	10.16				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50052	10-May-11	9:21	8.26	6.79	400	2.58	9.7	386	0	0	14.36				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50064	17-May-11	9:00	9.1	6.87	299	5	8.5	84	0	0	26.74				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50082	24-May-11	7:48	11.64	6.73	338	2.33	5.4	495	0	0	19.5				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50094	31-May-11	9:00	9.56	6.79	356	2.01	6.6	359	0	0	15.41				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50124	14-Jun-11	8:46	10.99	6.98	331	4.21	5.6	396	0	0	11.3				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50112	07-Jun-11	8:36	12.02	6.69	393	3.96	6.3	571	0	0	10.94				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50142	28-Jun-11	8:40	12.1	7.03	409	3.28	4.1	622	0	0	7.87				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50160	05-Jul-11	9:52	13.26	6.58	421	1.66	5	407	0	0	5.89				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50172	12-Jul-11	8:45	14.31	7.12	427	3.93	8.1	507	0	0	4.95				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50190	19-Jul-11	8:50	14.71	7.01	445	2.87	6	352	0	0	3.89				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50202	26-Jul-11	8:47	14.14	6.49	450	1.65	5.2	129	0	0	3.41				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50250	06-Sep-11	9:13	12.68	6.79	457	1.17	5.8	103	0	0	1.39				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50262	20-Sep-11	7:22	10.46	7.68	472	1.3	9.8	174	0	0	1.27				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50220	09-Aug-11	8:30	15.05	6.51	473	2.08	7	232	0	0	2.53				Flume reading = 0.75' = 2.53 cfs, clear ~ 60 F
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	P4-50232	23-Aug-11	8:41	15.81	7.37	446	0.88	8	178	0	0	1.79				
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	WT-10009	15-Apr-15	12:45	8.8	8.26	495.3	12.29	1.53	86.8						1740.6	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	WT-10044	20-Apr-15	14:35	11.5	8.5	413.6	12.57	0.91	37.5						1741	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	WT-10093	27-Apr-15	13:29	10.4	8.62	462.2	13.16	0.82	126.9						1581	

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	WT-10124	04-May-15	11:58	11.6	8.45	456.5	12.18	1.14	107.9						1452	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	WT-10155	12-May-15	12:41	12.3	8.43	487.4	11.5	0.9	96.1						1254	
LRC-2	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek	WT-10186	18-May-15	12:43	12.8	8.42	465.8	10.13	1.54	54.5						1182	
LRC-2_SED	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		17-Oct-07	12:35	7.85	8.68	522	11.52	3.2					18-Oct-07	11:55	224.42	ORP= 310 mv
LRC-2_SW	LRC-2	Stream	Lower Rainy Creek below confluence with Carney Creek		15-Oct-07	12:35	7.85	8.68	522	11.52	3.2					18-Oct-07	11:55	224.42	ORP= 310 mv
LRC-2A	LRC-2A	Stream	Lower Rainy Creek location between LRC-2 and LRC-3.	WT-10007	15-Apr-15	11:55	8.5	8.07	504.6	11.6	1.71	97.5						1641.3	
LRC-2A	LRC-2A	Stream	Lower Rainy Creek location between LRC-2 and LRC-3.	WT-10043	20-Apr-15	14:03	11.6	8.37	425.3	11.25	1.23	61.3						1593.24	
LRC-2A	LRC-2A	Stream	Lower Rainy Creek location between LRC-2 and LRC-3.	WT-10092	27-Apr-15	12:58	10.5	8.04	474.4	12.36	1.58	91.3						1425.55	
LRC-2A	LRC-2A	Stream	Lower Rainy Creek location between LRC-2 and LRC-3.	WT-10123	04-May-15	11:32	10.9	8.33	468.4	10.6	1.14	123.1						1345.71	
LRC-2A	LRC-2A	Stream	Lower Rainy Creek location between LRC-2 and LRC-3.	WT-10154	12-May-15	12:06	11.6	8.31	505.3	10.5	1.07	116.1						1021.82	
LRC-2A	LRC-2A	Stream	Lower Rainy Creek location between LRC-2 and LRC-3.	WT-10180	18-May-15	12:07	11.7	8.28	455.5	9.49	1.46	97						913.58	
LRC-3	LRC-3	Stream	Lower Rainy Creek		24-Jun-08	11:35	14.56	8.12	514	7.87	14.6	79	0.5	0	0	24-Jun-08	11:45	1279	
LRC-3	LRC-3	Stream	Lower Rainy Creek		09-Sep-08	11:35	10.86	8.14	545	9.26	1.3	58	0.4	0	0	09-Sep-08	11:39	355	
LRC-3	LRC-3	Stream	Lower Rainy Creek		30-Sep-08	9:45	8	8.42	546	10.5	2.77		0	0	0			0	
LRC-3	LRC-3	Stream	Lower Rainy Creek		30-Sep-09	9:50	10.1		457	8.1	0.32		0	0	0			0	
LRC-3	LRC-3	Stream	Lower Rainy Creek	WT-10006	15-Apr-15	11:16	7.9	8.05	502.3	12.58	1.75	99.2						1655.24	
LRC-3	LRC-3	Stream	Lower Rainy Creek	WT-10042	20-Apr-15	13:32	11.6	8.42	414.3	11.4	1.36	60.7						1622.53	
LRC-3	LRC-3	Stream	Lower Rainy Creek	WT-10091	27-Apr-15	12:20	10	8.27	467.7	12.21	1.08	139						1380.68	
LRC-3	LRC-3	Stream	Lower Rainy Creek	WT-10122	04-May-15	11:00	10.3	8.2	465.1	11.08	1.71	150.6						1560.26	
LRC-3	LRC-3	Stream	Lower Rainy Creek	WT-10153	12-May-15	11:28	11.3	8.3	505.9	10.68	1.59	101.1						1212.5	
LRC-3	LRC-3	Stream	Lower Rainy Creek	WT-10178	18-May-15	11:36	10.9	8.29	454.1	9.93	1.12	123.3						1043.67	
LRC-3_SED	LRC-3	Stream	Lower Rainy Creek		16-Oct-07	11:45	6.18	8.71	573	9.69	4.5					18-Oct-07	11:33	341.11	ORP= 297 mv
LRC-3_SW	LRC-3	Stream	Lower Rainy Creek		15-Oct-07	11:45	6.18	8.71	573	9.69	4.5					18-Oct-07	11:33	341.11	ORP= 297 mv
LRC-4	LRC-4	Stream	Lower Rainy Creek		24-Jun-08	9:55	13.83	8.55	514	8.14	7.3	65	0.4	0	0	24-Jun-08	10:10	1064	
LRC-4	LRC-4	Stream	Lower Rainy Creek		09-Sep-08	10:45	9.93	8.31	544	5.56	1.4	82	0.3	0	0	09-Sep-08	10:48	404	
LRC-4	LRC-4	Stream	Lower Rainy Creek	WT-10005	15-Apr-15	10:30	7.1	8.15	503.1	12.78	1.22	39.1						1715.46	
LRC-4	LRC-4	Stream	Lower Rainy Creek	WT-10041	20-Apr-15	12:59	10.8	8.43	407.6	11.83	1.33	69.4						1628.76	
LRC-4	LRC-4	Stream	Lower Rainy Creek	WT-10089	27-Apr-15	11:27	8.7	8.2	465	12.83	1.08	197.6						1274.39	
LRC-4	LRC-4	Stream	Lower Rainy Creek	WT-10152	12-May-15	10:47	11.1	8.33	504.4	11.13	1.16	104.4						943.45	
LRC-4	LRC-4	Stream	Lower Rainy Creek	WT-10121	05-May-15	10:28	9.5	8.27	462.6	11.45	0.92	144.5						1490.92	
LRC-4	LRC-4	Stream	Lower Rainy Creek	WT-10177	18-May-15	11:01	10.1	8.32	452.3	10.06	1.38	127						899.2	
LRC-4_SED	LRC-4	Stream	Lower Rainy Creek		16-Oct-07	11:00	5.04	8.72	573	12.37	4.7					18-Oct-07	11:12	152.6	ORP= 319 mv
LRC-4_SW	LRC-4	Stream	Lower Rainy Creek		15-Oct-07	11:00	5.04	8.72	573	12.37	4.7					18-Oct-07	11:12	152.6	ORP= 319 mv
LRC-5	LRC-5	Stream	Lower Rainy Creek		24-Jun-08	8:38	13.48	8.65	513	8.06	0	88	0.4	0	0	24-Jun-08	8:45	1073	
LRC-5	LRC-5	Stream	Lower Rainy Creek		09-Sep-08	9:50	9.29	8.36	538	6.11	4.5	48	0.2	0	0	09-Sep-08	10:10	233	
LRC-5	LRC-5	Stream	Lower Rainy Creek		29-Sep-08	16:25	10.3	8.58	369	10.4	4.12		0	0	0			0	
LRC-5	LRC-5	Stream	Lower Rainy Creek		30-Sep-09	15:06	11.1		475	17.6	0.09		0	0	0			0	
LRC-5	LRC-5	Stream	Lower Rainy Creek	WT-10004	14-Apr-15	15:31	8.9	8.28	495.4	12.31	2.95	109						1770.72	
LRC-5	LRC-5	Stream	Lower Rainy Creek	WT-10040	20-Apr-15	12:26	9.7	8.52	392	11.87	1.99	74.8						1442.24	
LRC-5	LRC-5	Stream	Lower Rainy Creek	WT-10088	27-Apr-15	10:50	7.6	8.29	463.7	13.01	1.23	187.1						1210.79	
LRC-5	LRC-5	Stream	Lower Rainy Creek	WT-10150	12-May-15	10:13	10.7	8.39	501	10.94	1.57	134						1114.02	
LRC-5	LRC-5	Stream	Lower Rainy Creek	WT-10119	04-May-15	9:54	8.8	8.26	462.1	10.74	1.4	158.2						1083.64	
LRC-5	LRC-5	Stream	Lower Rainy Creek	WT-10176	18-May-15	10:12	9.2	8.32	450.2	10.57	1.69	108						842.58	
LRC-5_SED	LRC-5	Stream	Lower Rainy Creek		16-Oct-07	10:30	4.79	8.83	570	13.34	3.7					18-Oct-07	10:50	282.76	ORP= 332 mv
LRC-5_SW	LRC-5	Stream	Lower Rainy Creek		15-Oct-07	10:30	4.79	8.83	570	13.34	3.7					18-Oct-07	10:50	282.76	ORP= 332 mv

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StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		08-Apr-08	14:30	5.67	7.91	604	11.86	8.6	90	0.25	1	0	07-Apr-08	12:00	1350	Dissolved O2 115.1%
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		14-Apr-08	9:00	6.35	6.57	604	11.56	10.9	104	0.3	1	0	14-Apr-08	14:05	1231	Dissolved O2 112.4%
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		21-Apr-08	9:00	2.88	8.48	599	12.07	14.3	109	0.4	0.91	0	21-Apr-08	9:30	821.3	DO 107%
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		28-Apr-08	10:44	6.08	8.52	599	11.53	10.6	42	0.5	0	0	28-Apr-08		1055	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		05-May-08	11:00	8.87	7.64	582	9.1	40.6	199	0.6	1.13	0	05-May-08	10:45	1328	DO = 84.6%
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		12-May-08	9:45	9.36	8.7	509	6.38	26.1	260	0.5	1.54	0	12-May-08	9:55	2697	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		19-May-08	9:30	13.46	8.54	483	6.46	17.6	266	0	0	0	19-May-08	9:30	3218	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		02-Jun-08	10:10	12.04	8.24	483	10.25	9.6	55	0.5	0	0	02-Jun-08	10:10	2347	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		26-May-08	9:20	10.21	8.15	479	10.36	11.1	109	0.5	0	0	26-May-08	9:30	3128	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		09-Jun-08	9:20	10.47	8.34	496	7.94	11.4	104	0.5	0	0	09-Jun-08	9:20	2127	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		30-Jun-08	7:40	13.96	7.9	528	9.95	3.9	69	0.5	0	0	30-Jun-08	7:45	1077	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		24-Jun-08	7:50	12.94	8.73	508	8.32	0	37	0.5	0	0	24-Jun-08	7:55	1302	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		15-Jul-08	0:00							0.4	0	0	15-Jul-08	10:12	637.3	No parameter meter available.
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		18-Aug-08	10:15	12.2	8.23	563	10.36	3	152	0.2	0	0	18-Aug-08	10:17	411.6	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		16-Jun-08	10:15	10.88	7.6	508	7.93	13	167	0.6	0	0	16-Jun-08	10:18	1696	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		09-Sep-08	9:13	8.85	7.86	5.4	5.81	1.9	141	1.2	0	0	09-Sep-08	9:14	445	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		29-Jul-08	9:06	11.16	8.92	566	10.61	2.7	160	0.32	0	395.8				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50001	19-Apr-11	9:00	5.48	6.89	516	2.34	12.7	255	0	0	0				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50013	26-Apr-11	9:45	7.93	6.85	495	2.99	20.5	247	0	0	8.336				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50031	03-May-11	8:45	7.94	7.05	531	2.82	13.9	160	0	1.73	9.24				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50043	10-May-11	8:53	7.65	6.44	421	4.07	24.7	410	0	0	13.69				

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StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50061	17-May-11	8:32	9.16	6.62	324	4.66	29.2	124	0	0	24.51				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50079	24-May-11	7:27	11.67	6.71	362	4.51	14.5	507	0	0	17.8				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50091	31-May-11	8:40	9.03	6.12	374	5.2	12.1	386	0	0	14.27				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50121	14-Jun-11	8:23	10.74	6.71	345	4.32	8.7	407	0	0	10.68				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50109	07-Jun-11	8:20	11.81	6.22	414	4.74	12.7	636	0	0	10.42				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50139	28-Jun-11	8:23	11.72	7.01	432	4.11	11.9	520	0	0	7.7				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50151	05-Jul-11	9:34	12.01	5.73	446	3.11	11	413	0	0	5.96				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50169	12-Jul-11	8:24	14.01	6.52	459	4.88	11.4	512	0	0	5.15				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50181	19-Jul-11	8:33	13.88	6.76	477	4.11	10.6	389	0	0	4.14				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50199	26-Jul-11	8:28	13.45	5.92	480	1.87	11.1	157	0	0	3.59				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50247	06-Sep-11	8:56	9.86	6.22	489	2.11	6.7	122	0	0	1.74				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50259	20-Sep-11	6:56	8.25	6.99	499	1.9	12.7	194	0	0	1.7				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50217	09-Aug-11	8:16	12.89	5.35	504	2.64	10.3	343	0	0	2.8				Flume reading = 0.80' = 2.80 cfs, clear ~ 60 F
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	P4-50229	23-Aug-11	8:28	13.58	6.69	478	2.61	12.9	192	0	0	2.17				
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	WT-10001	14-Apr-15	13:10	8.4	8.22	498.2	11.2	2.41	80						1877.6	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	WT-10037	20-Apr-15	11:08	7.8	8.37	381.6	13.08	1.78	56.2						1741	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	WT-10080	27-Apr-15	9:26	6.5	8.06	478.9	14.08	1.5	82.5						1607	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	WT-10116	04-May-15	8:55	7.8	8.07	466.4	12.49	1.41	-103						1427	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	WT-10147	12-May-15	9:03	9.9	8.25	509.1	11.24	1.86	177.1						1303	
LRC-6	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River	WT-10173	18-May-15	8:51	8.3	8.03	449.7	10.96	1.62	118.4						1182	
LRC-6_SED	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		16-Oct-07	9:45	5.73	8.74	546	11.92	7.5					18-Oct-07	10:44	184.02	ORP= 311 mv

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
LRC-6_SW	LRC-6	Stream	Lower Rainy Creek just above confluence with the Kootenai River		15-Oct-07	9:45	5.73	8.74	546	11.92	7.5					18-Oct-07	10:44	184.02	ORP= 311 mv
MP	MP	Pond	Mill Pond		07-Apr-08	13:00	7.03	7.34	660	13	29	113	0.5	1	0				Dissolved O2 120%
MP	MP	Pond	Mill Pond		14-Apr-08	9:50	9.97	7.48	646	11.06	32.5	127	0.25	1	0				Dissolved O2 114.1%
MP	MP	Pond	Mill Pond		21-Apr-08	11:20	6.79	8.1	659	11.04	11.5	131	0.3	0.7	0				DO 108%
MP	MP	Pond	Mill Pond		28-Apr-08	14:25	12.17	8.47	642	12.95	65.2	42	0.5	0	0				
MP	MP	Pond	Mill Pond		29-Apr-08	11:52	10.77	7.24	658	12.2	87.4	103	0.5	0	0				
MP	MP	Pond	Mill Pond		06-May-08	10:35	11.92	7.17	617	11.46	22.1	202	0.5	2.5	0				Rapid turn around sample; Sampling depth 0.5 feet below surface
MP	MP	Pond	Mill Pond		12-May-08	13:50	10.97	7.72	524	7.74	19.6	280	0.5	2.5	0				Collected with extendable pole
MP	MP	Pond	Mill Pond		19-May-08	13:05	14.82	7.4	485	7.14	15.6	314	0	0	0				
MP	MP	Pond	Mill Pond		02-Jun-08	12:50	13.34	7.73	466	13.18	0	140	0.5	0	0				
MP	MP	Pond	Mill Pond		26-May-08	11:35	11.71	7.75	475	12.57	22.1	111	0.5	0	0				
MP	MP	Pond	Mill Pond		09-Jun-08	11:20	12.07	7.67	474	8.69	6.4	112	0.5	0	0				
MP	MP	Pond	Mill Pond		25-Jun-08	10:55	15.28	7.31	487	10.63	1.8	135	0.5	0	0				
MP	MP	Pond	Mill Pond		16-Jun-08	12:30	15.23	7.98	473	8.03	19.9	110	0.5	0	0				
MP	MP	Pond	Mill Pond		10-Sep-08	10:25	14.38	8.05	427	11.13	0.8	67	0.5	0	0				
MP	MP	Pond	Mill Pond	WT-10011	15-Apr-15	13:40	9.3	8.19	486	14.68	0.88	98.8							
MP	MP	Pond	Mill Pond	WT-10045	20-Apr-15	14:51	11.9	8.33	402.3	17.4	1	47.8							
MP	MP	Pond	Mill Pond	WT-10096	28-Apr-15	10:01	10.8	7.67	440.9	15.72	0.58	157.9							
MP	MP	Pond	Mill Pond	WT-10126	04-May-15	12:21	11.9	8.2	441.8	15.36	0.88	116.9							
MP	MP	Pond	Mill Pond	WT-10157	13-May-15	9:23	11.2	8	495.1	11.6	0.82	52.5							
MP	MP	Pond	Mill Pond	WT-10188	18-May-15	13:15	13	8.23	442.8	14.04	0.65	95							
MP_SED	MP	Pond	Mill Pond		15-Oct-07	13:30	8.73	8.05	526	9.94	60.5					18-Oct-07	13:30		ORP= 312 mv Turbidity probe slightly in pond mud
MP_SW	MP	Pond	Mill Pond		16-Oct-07	13:30	8.73	8.05	526	9.94	60.5					18-Oct-07	13:30		ORP= 312 mv Turbidity probe slightly in pond mud
NSY-R1	NSY-R1	Stream	Noisy Creek		04-Oct-08	14:50	4.5		141	11.4	0	230	0	0	0			0	
NSY-R1	NSY-R1	Stream	Noisy Creek		02-Oct-09	9:30	6.7		167	10.5	0.16		0	0	0			0	
TP	TP	Pond	Tailings Impoundment		08-Apr-08	12:00	2.07	8.37	112	10.02	10.5	76	0.5	0.83	0				Pond has ~1" ice. Broke out ~2" from bank. Dissolved O2 87.8%
TP	TP	Pond	Tailings Impoundment		14-Apr-08	11:30	9.91	8.06	218	9.32	35.1	8	0.33	0.75	0				Dissolved O2 94.3%
TP	TP	Pond	Tailings Impoundment		21-Apr-08	12:05	5.62	8.21	322	10.82	14.7	124	0.25	0.5	0				DO 103.2%
TP	TP	Pond	Tailings Impoundment		28-Apr-08	12:27	11.25	7.98	329	12.27	7	31	0.5	0	0				
TP	TP	Pond	Tailings Impoundment		29-Apr-08	12:53	11.37	5.9	340	11.58	82.3	112	0.5	0	0				
TP	TP	Pond	Tailings Impoundment		06-May-08	11:55	13.43	7.51	343	8.33	44.4	166	0.33	4	0				Pond height gauge reading = 14 5/8 inches. Sampling depth 4 inches below surface
TP	TP	Pond	Tailings Impoundment		13-May-08	10:20	10.03	8.08	264	7.06	6.7	301	0.5	3.7	0				Collected from pond with extendable pole
TP	TP	Pond	Tailings Impoundment		20-May-08	11:56	15.35	7.3	228	10.78	0	297	0	0	0				
TP	TP	Pond	Tailings Impoundment		03-Jun-08	11:06	15.95	7.83	212	8.05	0	189	0.5	0	0				
TP	TP	Pond	Tailings Impoundment		26-May-08	13:22	13.14	8.08	207	11.57	22.9	105	0.5	0	0				
TP	TP	Pond	Tailings Impoundment		09-Jun-08	12:47	14.38	8.25	201	8.49	0	74	0.5	0	0				
TP	TP	Pond	Tailings Impoundment		26-Jun-08	9:55	20.64	8.12	148	9.06	11.6	103	0.5	0	0				
TP	TP	Pond	Tailings Impoundment		16-Jun-08	13:57	19.31	8.82	190	9.48	57.2	64	0.5	0	0				
TP	TP	Pond	Tailings Impoundment		11-Sep-08	9:38	9.88	7.12	245	5.27	7.3	183	0.5	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50010	19-Apr-11	10:34	7.03	7.48	397	3.38	16.2	228	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50028	26-Apr-11	12:15	10.36	7.35	388	3.77	8.9	217	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50040	03-May-11	10:05	8.11	7.87	353	3.2	9.5	159	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50058	10-May-11	10:00	8.5	7.21	292	5.51	6.4	372	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50070	17-May-11	9:48	7.8	7.15	209	7.46	6.6	71	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50088	24-May-11	8:15	12.28	6.91	224	4.36	4.2	475	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50106	31-May-11	10:38	10.99	7.26	237	6.36	6.2	347	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50136	14-Jun-11	9:12	13.64	6.99	204	2.35	5.4	365	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50118	07-Jun-11	9:05	14.95	7.26	247	4.26	6.2	484	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50148	28-Jun-11	9:04	16.7	7.31	183	2.28	3.1	489	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50166	05-Jul-11	10:38	19.53	7.73	183	1.48	7	378	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50178	12-Jul-11	9:19	20.16	7.91	174	2.11	11.9	482	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50196	19-Jul-11	9:20	21.95	7.7	171	2.03	10.2	328	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50208	26-Jul-11	9:28	19.65	7.66	164	1.52	15.3	115	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50256	06-Sep-11	9:38	15.91	7.9	163	1.04	8.5	63	0	0	0				

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
TP	TP	Pond	Tailings Impoundment	P4-50274	20-Sep-11	7:47	11.78	8.26	196	1.57	16.9	161	0	0	0				
TP	TP	Pond	Tailings Impoundment	P4-50226	09-Aug-11	9:00	21.17	7.36	156	1.48	21	182	0	0	0				Flume reading NA, clear ~ 65 F
TP	TP	Pond	Tailings Impoundment	P4-50244	23-Aug-11	9:17	20.35	8.55	151	1.18	8.7	147	0	0	0				
TP	TP	Pond	Tailings Impoundment	WT-10028	17-Apr-15	10:00	10	7.85	333.6	11.54	1.87	54.7							
TP	TP	Pond	Tailings Impoundment	WT-10060	22-Apr-15	10:10	14.1	7.59	325.3	11.28	1.88	104.3							
TP	TP	Pond	Tailings Impoundment	WT-10111	29-Apr-15	9:20	14.2	7.52	298.2	11.44	1.48	117.1							
TP	TP	Pond	Tailings Impoundment	WT-10141	05-May-15	12:04	15.7	8.33	251	12.25	1.5	112.4							
TP	TP	Pond	Tailings Impoundment	WT-10172	13-May-15	13:24	13	8.39	231	10.73	1.12	172.2							
TP	TP	Pond	Tailings Impoundment	WT-10204	19-May-15	11:08	15	8.66	224.4	11.69	1.09	122.3							
TP_SED	TP	Pond	Tailings Impoundment		14-Oct-07	13:30	13.1	8.77	302	9.04	11.3					18-Oct-07	15:20		ORP=285 mv
TP_SW	TP	Pond	Tailings Impoundment		13-Oct-07	13:30	13.1	8.77	302	9.04	11.3					18-Oct-07	15:20		ORP=285 mv
TP_SWresample	TP_SWresample	Pond	Tailings Impoundment		12-Dec-07	15:20	1	8.14	508	12.74	10.3		2						ORP= 342 mv
TP-OVERFLOW	TP-OVERFLOW	Stream	In the overflow ditch from tailings impoundment		07-May-08	10:40	12.15	7.52	357	8.16	6.6	213	0.5	1	0	07-May-08	10:55	661	
TP-OVERFLOW	TP-OVERFLOW	Stream	In the overflow ditch from tailings impoundment		13-May-08	9:30	9.9	7.55	293	6.08	11.4	290	0.4	0.6	0	13-May-08	9:50	1067	
TP-OVERFLOW	TP-OVERFLOW	Stream	In the overflow ditch from tailings impoundment		20-May-08	11:04	16.08	6.84	253	9.76	12.2	299	0	0	0	20-May-08	11:12	1333	
TP-OVERFLOW	TP-OVERFLOW	Stream	In the overflow ditch from tailings impoundment		02-Jun-08	14:34	16.52	7.44	236	9.28	22.1	75	0.1	0	0	02-Jun-08	14:40	86.98	
TP-OVERFLOW	TP-OVERFLOW	Stream	In the overflow ditch from tailings impoundment		26-May-08	12:40	13.47	7.96	221	10.84	7.6	96	0.5	0	0	26-May-08	12:45	368	
TP-OVERFLOW	TP-OVERFLOW	Stream	In the overflow ditch from tailings impoundment		09-Jun-08	12:18	12.42	7.87	262	7.66	0	87	0.2	0	0	09-Jun-08	12:20	17.28	
TP-OVERFLOW	TP-OVERFLOW	Stream	In the overflow ditch from tailings impoundment		16-Jun-08	13:33	20.14	8.29	237	7.63	23.1	82	0.075	0	0	16-Jun-08	13:33	11.98	
TP-Overflow-A	TP-Overflow-A	Stream	Tailings Pond overflow; KDID spillway; where overflow enters box culvert. Location moved closer to existing transducer and within close proximity to the existing TP-OVERFLOW location.	WT-10027	16-Apr-15	16:57	7.1	7.44	350	7.53	1.05	106							
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		07-Apr-08	15:40	9.06	7.06	764	6.1	0	126	0.17	0.33	0	08-Apr-08	12:30	456	Crystal clear. Dissolved O2 63.4%
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		14-Apr-08	11:15	8.6	7.7	773	6.37	4.5	80	0.3	0.7	0	14-Apr-08	13:10	438	Dissolved O2 61.8%
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		21-Apr-08	11:40	8.65	7.79	762	5.63	7.2	159	0	0	0	21-Apr-08	11:37	494	DO 57.1%; flow data also collected on 4/23/08, 10:10am, gpm: 506.25
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		28-Apr-08	12:11	8.99	7.96	709	6.16	36.2	85	0.5	0	0	28-Apr-08	12:11	583.4	
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		06-May-08	10:55	9.16	6.9	648	4.8	46.8	180	0.5	1	0	06-May-08	11:00	798.9	Used Quanta meter
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		12-May-08	14:15	9.12	7.33	606	3.94	16.4	282	0.5	1.1	0	12-May-08	14:35	1525	
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		20-May-08	9:45	9.22	6.78	562	5.48	32.6	283	0	0	0	20-May-08	9:50	2285	
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		02-Jun-08	13:10	9.81	7.12	441	6.87	14.5	148	0.5	0	0	02-Jun-08	13:15	1674	
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		26-May-08	11:57	9.47	7.38	483	6.48	24.9	114	0.6	0	0	26-May-08	12:00	2455	
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		09-Jun-08	11:37	9.82	7.37	453	4.36	0	118	0.5	0	0	09-Jun-08	11:48	1311	
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		26-Jun-08	9:10	9.67	6.71	463	6.22	31.5	146	0.5	0	0	26-Jun-08	9:20	1131	
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		16-Jun-08	13:00	10	7.7	457	6.41	29.6	129	0.5	0	0	16-Jun-08	13:05	1517	
TP-TOE1	TP-TOE1	Stream	Toe drain of impoundment		10-Sep-08	13:10	10.33	7.67	566	6.35	3.6	59	0.2	0	0	10-Sep-08	13:15	248.6	
TP-TOE1_SED	TP-TOE1	Stream	Toe drain of impoundment		15-Oct-07	12:00	8.73	7.71	703	6.08	1.9					18-Oct-07	12:20	132.2	ORP= 299 mv
TP-TOE1_SW	TP-TOE1	Stream	Toe drain of impoundment		16-Oct-07	12:00	8.73	7.71	703	6.08	1.9					18-Oct-07	12:20	132.2	ORP= 299 mv

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
TP-TOE1A	TP-TOE1A	Stream	Immediately downstream of KDID and all toe drain weirs; confluence point of all toe drains; between KDID and Mill Pond; Kurt's Flume (LRC-01 location) south of the toe drains.	WT-10012	15-Apr-15	14:05	8.7	7.2	485.3	8.66	1.38	98.3						1157.18	
TP-TOE1A	TP-TOE1A	Stream	Immediately downstream of KDID and all toe drain weirs; confluence point of all toe drains; between KDID and Mill Pond; Kurt's Flume (LRC-01 location) south of the toe drains.	WT-10059	22-Apr-15	9:26	8.4	6.86	492.1	9.3	0.27	112						1151.7	
TP-TOE1A	TP-TOE1A	Stream	Immediately downstream of KDID and all toe drain weirs; confluence point of all toe drains; between KDID and Mill Pond; Kurt's Flume (LRC-01 location) south of the toe drains.	WT-10097	28-Apr-15	10:18	8.4	7.04	463.2	9.05	0.2	167.4						1071.19	
TP-TOE1A	TP-TOE1A	Stream	Immediately downstream of KDID and all toe drain weirs; confluence point of all toe drains; between KDID and Mill Pond; Kurt's Flume (LRC-01 location) south of the toe drains.	WT-10158	13-May-15	9:48	8.3	7.16	502.3	7.53	0.23	116.4						1087.75	
TP-TOE1A	TP-TOE1A	Stream	Immediately downstream of KDID and all toe drain weirs; confluence point of all toe drains; between KDID and Mill Pond; Kurt's Flume (LRC-01 location) south of the toe drains.	WT-10127	05-May-15	8:45	8.2	7.34	463.2	9.23	0.18	74						1214.19	
TP-TOE1A	TP-TOE1A	Stream	Immediately downstream of KDID and all toe drain weirs; confluence point of all toe drains; between KDID and Mill Pond; Kurt's Flume (LRC-01 location) south of the toe drains.	WT-10189	18-May-15	14:12	8.9	7.33	467.4	7.92	0.25	76.5						1029.2	
TP-TOE2	TP-TOE2	Stream	Toe drain flow to Rainy Creek below diversion		25-Jun-08	11:25	9.91	7.13	510	7.21	15.5	133	0.5	0	0	25-Jun-08	11:30	1145	
TP-TOE2	TP-TOE2	Stream	Toe drain flow to Rainy Creek below diversion		10-Sep-08	11:07	9.76	7.59	604	15.93	0.2	75	0.2	0	0	10-Sep-08	11:15	287	
TP-TOE2	TP-TOE2	Stream	Toe drain flow to Rainy Creek below diversion		30-Sep-08	15:01	11.2	7.58	615	9.1	3.17		0	0	0			0	
TP-TOE2	TP-TOE2	Stream	Toe drain flow to Rainy Creek below diversion		28-Sep-09	15:50	9		553	8.6	0.98		0	0	0			0	
TP-TOE2_SED	TP-TOE2	Stream	Toe drain flow to Rainy Creek below diversion		15-Oct-07	12:45	9.04	7.96	648	10.89	25.1					18-Oct-07	12:35	258.9	ORP=294 mv
TP-TOE2_SW	TP-TOE2	Stream	Toe drain flow to Rainy Creek below diversion		16-Oct-07	12:45	9.04	7.96	648	10.89	25.1					18-Oct-07	12:35	258.9	ORP=294 mv
UKR	UKR	River	Kootenai River upstream of Rainy Creek		19-Aug-08	17:35	15.23	7.69	241	8.79	1.8	173	0	10	0				

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
URC-1	URC-1	Stream	Upper Rainy Creek above Mine Area		27-Jun-08	7:50	8.52	8.11	317	11.89	2	160	0.25	0	0	27-Jun-08	7:55	278	
URC-1	URC-1	Stream	Upper Rainy Creek above Mine Area		11-Sep-08	11:15	6.66	8.28	345	9.97	0.5	62	0.15	0	0	11-Sep-08	12:05	27	
URC-1	URC-1	Stream	Upper Rainy Creek above Mine Area	WT-10032	17-Apr-15	11:20	3.3	8.25	319.9	14.19	0.36	87						535.76	
URC-1	URC-1	Stream	Upper Rainy Creek above Mine Area	WT-10082	22-Apr-15	10:56	5	8.07	337.8	13.94	0.73	85.7						541.58	
URC-1	URC-1	Stream	Upper Rainy Creek above Mine Area	WT-10114	29-Apr-15	10:00	5.7	8.02	307.2	13.36	0.58	157						537.45	
URC-1	URC-1	Stream	Upper Rainy Creek above Mine Area	WT-10143	06-May-15	9:35	4.2	8.41	307.6	12.84	0.8	42.8						793.82	
URC-1	URC-1	Stream	Upper Rainy Creek above Mine Area	WT-10183	14-May-15	11:17	5.8	8.24	332.3	11.7	0.93	96.7						362.88	
URC-1	URC-1	Stream	Upper Rainy Creek above Mine Area	WT-10208	20-May-15	12:12	6.5	8.34	353.7	12.56	0.62	75.5						275.95	
URC-1_SED	URC-1	Stream	Upper Rainy Creek above Mine Area		14-Oct-07	10:45	4.68	8.46	377	12.21	4.2					18-Oct-07	12:00	39.2	ORP= 295 mv
URC-1_SW	URC-1	Stream	Upper Rainy Creek above Mine Area		14-Oct-07	10:45	4.68	8.46	377	12.21	4.2					18-Oct-07	12:00	39.2	ORP= 295 mv
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		08-Apr-08	11:00	3.68	8.02	366	108.3	4.9	72	0.17	0.25	0	08-Apr-08	11:30	149	
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		14-Apr-08	12:10	2.69	7.95	343	11.47	8.4	54	0.17	0.33	0	14-Apr-08	12:10	803	Dissolved O2 101.3%
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		22-Apr-08	10:38	2.54	8.22	349	11.62	12.5	111	0.5	1	0	22-Apr-08	11:02	319	
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		28-Apr-08	12:57	4	8.6	342	14.36	8.8	51	0.5	0	0	28-Apr-08	12:57	1164	
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		06-May-08	13:35	4.67	8.27	244	10.26	82.5	118	0.5	1.2	0	06-May-08	14:05	4475	Sampling depth 0.5 ft from surface
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		13-May-08	11:15	4.18	8.29	223	7.53	13.1	275	0.4	1	0	13-May-08	11:25	2680	Collected in stream, no flume presently installed
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		20-May-08	13:10	7.14	7.3	177	11.51	22.2	290	0	0	0	20-May-08	13:15	3568	
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		03-Jun-08	12:12	7.07	8.07	253	8.37	24.3	173	0.5	0	0	03-Jun-08	12:15	938	
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		27-May-08	11:15	6.41	7.81	215	10.95	22	117	0.5	0	0	27-May-08	11:18	1584	
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		10-Jun-08	11:55	5.35	7.9	271	9.19	0	109	0.33	0	0	10-Jun-08	12:00	1037	
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		26-Jun-08	11:25	7.83	8.35	221	12.92	36	77	0.25	0	0	26-Jun-08	11:28	386	
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		17-Jun-08	10:40	7.06	7.96	287	8.67	17.5	146	0.3	0	0	17-Jun-08	10:47	543	
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		11-Sep-08	10:58	6.57	7.9	373	6.57	0.3	85	0.2	0	0	11-Sep-08	11:08	67	
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		01-Oct-08	11:06	7	7.97	405	10.9	3.85		0	0	0			0	

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
URC-1A	URC-1A	Stream	Upper Rainy Creek above Mine Area 100 yards north of Rainy Creek Rd.		28-Sep-09	8:56	7.1		265	11.2	0.68		0	0	0			0	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		08-Apr-08	11:20	3.73	7.97	366	11.45	5.2	79	0.17	0.25	0	08-Apr-08	11:15	160	Dissolved O2 103.9%
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		14-Apr-08	11:50	2.45	7.4	339	13.27	10.2	114	0.25	0.67	0	14-Apr-08	12:35	728	Dissolved O2 115.3%
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		22-Apr-08	10:05	2.34	8.96	347	11.88	10.2	98	0.5	1	0	22-Apr-08	10:12	456	DO 103.8%
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		28-Apr-08	12:43	3.97	8.64	342	14.09	33.8	49	0.5	0	0	28-Apr-08	12:43	1266	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		06-May-08	12:20	4.59	7.98	245	10.34	89.4	165	0.5	1	0	06-May-08	12:45	3283	Rapid turn around
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		13-May-08	10:50	4.13	8.28	224	7.23	14	295	0.5	1.5	0	13-May-08	11:00	2738	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		20-May-08	12:15	6.99	7.29	178	11.43	26.8	287	0	0	0	20-May-08	12:22	3784	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		03-Jun-08	11:28	6.96	7.86	252	8.64	18.6	177	0.5	0	0	03-Jun-08	11:34	979	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		27-May-08	10:33	6.37	7.82	216	11.33	25.9	106	0.5	0	0	27-May-08	10:35	1903	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		10-Jun-08	11:15	5.41	7.86	271	8.8	0	109	0.33	0	0	10-Jun-08	11:25	1064	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		26-Jun-08	10:30	7.69	8.03	292	10.23	32.7	106	0.25	0	0	26-Jun-08	10:40	359	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		17-Jun-08	10:07	6.94	8.11	288	8.87	16.7	134	0.2	0	0	17-Jun-08	10:10	633	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		11-Sep-08	10:18	6.12	7.88	371	9.6	0.8	102	0.15	0	0	11-Sep-08	10:25	45	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		30-Sep-08	16:10	10.1	8.15	377	10.2	3.83		0	0	0			0	
URC-2	URC-2	Stream	Upper Rainy Creek above Mine Area		29-Sep-09	1:30	7.2		365	10.2	0.44		0	0	0			0	
URC-2_SED	URC-2	Stream	Upper Rainy Creek above Mine Area		14-Oct-07	9:15	3.89	8.43	402	37.72	6.8					18-Oct-07	11:30	20	ORP= 278 mv; flow was observed at less than 0.19 gpm with 5% leakage. After adjusting for leakage 0.2 gpm was estimated. (MWH Sampling Report)
URC-2_SW	URC-2	Stream	Upper Rainy Creek above Mine Area		14-Oct-07	9:15	3.89	8.43	402	37.72	6.8					18-Oct-07	11:30	20	ORP= 278 mv; flow was observed at less than 0.19 gpm with 5% leakage. After adjusting for leakage 0.2 gpm was estimated. (MWH Sampling Report)
UTP	UTP	Pond	Upper tailings pond; upstream of inflow from Fleetwood Creek; downstream from inflow from Upper Rainy Creek		29-Jun-08	12:00	11.84	8.45	295	12.22	0.4	137	2	14	0				
UTP	UTP	Pond	Upper tailings pond; upstream of inflow from Fleetwood Creek; downstream from inflow from Upper Rainy Creek		29-Jun-08	12:10	14.73	8.79	305	10.17	1.2	134	11	14	0				
UTP	UTP	Pond	Upper tailings pond; upstream of inflow from Fleetwood Creek; downstream from inflow from Upper Rainy Creek		12-Sep-08	10:08	14.12	7.2	321	5.39	7.7	100	10	0	0				

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments
UTP	UTP	Pond	Upper tailings pond; upstream of inflow from Fleetwood Creek; downstream from inflow from Upper Rainy Creek		12-Sep-08	10:29	14.8	7.83	311	6.41	3.1	110	2	0	0				
UTP	UTP	Pond	Upper tailings pond; upstream of inflow from Fleetwood Creek; downstream from inflow from Upper Rainy Creek	WT-10031	17-Apr-15	10:25	8.1	7.92	341.3	13.36	0.78	89.3							
UTP	UTP	Pond	Upper tailings pond; upstream of inflow from Fleetwood Creek; downstream from inflow from Upper Rainy Creek	WT-10081	22-Apr-15	10:33	11.1	7.87	353.1	13.3	1.25	85.8							
UTP	UTP	Pond	Upper tailings pond; upstream of inflow from Fleetwood Creek; downstream from inflow from Upper Rainy Creek	WT-10113	29-Apr-15	9:38	11.5	7.88	315	13.28	0.64	155.9							
UTP	UTP	Pond	Upper tailings pond; upstream of inflow from Fleetwood Creek; downstream from inflow from Upper Rainy Creek	WT-10142	05-May-15	12:18	12.9	8.3	304.4	12.89	0.97	134.4							
UTP	UTP	Pond	Upper tailings pond; upstream of inflow from Fleetwood Creek; downstream from inflow from Upper Rainy Creek	WT-10182	14-May-15	10:21	11.2	7.91	316.5	13.17	1.72	72.2							
UTP	UTP	Pond	Upper tailings pond; upstream of inflow from Fleetwood Creek; downstream from inflow from Upper Rainy Creek	WT-10207	20-May-15	11:42	13.3	8.09	316.7	14.88	1	91							
Well A	Well A	Well			24-Jul-08	8:27	9.23	9.55	661	1.61	2000	25	0	0	0			0	
WELL A	WELL A	Well			30-Sep-08	12:20	8.95	6.71	456	6.63	41.3		0	0	0			0	Bailed out well 9/29/08 and recharged 24 hours
Well C	Well C	Well	Adjacent to Rainy Creek; downgradient from KDID		22-Jul-08	15:01	10.06	7.89	465	5.76	1	170	0	0	0			0.3	
WELL C	WELL C	Well	Adjacent to Rainy Creek; downgradient from KDID		29-Sep-08	14:05	10.21	7.1	618	3.29	1.8		0	0	0			0.3	Clear
Well C	Well C	Well	Adjacent to Rainy Creek; downgradient from KDID	WT-10061	14-Apr-15	13:23	7.7	7.05	378.53	5.09	-0.2	70	0	0	1.45			0.13	
Well C	Well C	Well	Adjacent to Rainy Creek; downgradient from KDID	WT-10221	18-May-15	10:05	7.8	7.11	407.3	5.53	-0.1	215	0	0	0.48			0.079	Water very clear. Water level 22.51 ft below MP
Well D	Well D	Well			23-Jul-08	15:08	11.05	9.79		2.31	149	155	0	0	0			0.75	
WELL D	WELL D	Well			30-Sep-08	16:10	10.65	8.5	375	0.41	66.7		0	0	0			0.3	Purged approx 210 gallons prior to low flow sampling; water light brown color
Well E	Well E	Well			23-Jul-08	17:11	11.31	8.13	813	6.33	4.3	161	0	0	0			0.5	
WELL E	WELL E	Well			30-Sep-08	13:45	13.58	7.77	783	2.61	15.9		0	0	0			0.25	Clear
Well H	Well H	Well			24-Jul-08	14:51	13.61	7.21	336	7.86	739	193	0	0	0			0	

Notes

(a) parameter units were not populated in the OU3 database version 12/2015

Table E-4: Summary of Water Quality Parameters and Manual Flow Data, Libby Asbestos Superfund Site,OU3 Study Area

StationID	StationID Alias	StationType	StationDesc	IndexID	Date	Time	Temp (°C)	pH	SC (µs/cm)*	DO (mg/L)	Turbidity (NTU)	ORP (mv)	Sample Depth (a)	Total Depth (a)	Discharge (a)	Flow Date	Flow Time	Flow (gpm)	Comments

Results in **ORANGE** are questionable.

°C - degrees Celcius

* Values colored orange represent specific conductivity (SC) at ambient temperature. All other SC values are at 25 degrees Celcius

µs/cm - microsiemens per centimeter

DO - dissolved oxygen

mg/L - milligrams per liter

NTU - Nephelometric Turbidity Units

ORP - oxidation reduction potential

mv - millivolts

gpm - gallons per minute

Table E-5a: Non-Detect Chemicals in Surface Water vs. DEQ-7 Standard Value

Analyte Group	Non-Detect Analytes	Units	Mean PQL	DEQ-7 Human Health Standards[a]	DEQ-7 Aquatic Life ACUTE Standards[a]	DEQ-7 Aquatic Life CHRONIC Standards[a]
Metals (Dissolved)	Antimony	µg/L	5.0	NE	NE	NE
	Arsenic	µg/L	5.0	NE	NE	NE
	Beryllium	µg/L	0.51	NE	NE	NE
	Boron	µg/L	18	NE	NE	NE
	Chromium	µg/L	10	NE	NE	NE
	Cobalt	µg/L	10	NE	NE	NE
	Mercury	µg/L	0.60	NE	NE	NE
	Nickel	µg/L	5.0	NE	NE	NE
	Nickel	µg/L	5.0	NE	NE	NE
	Selenium	µg/L	5.0	NE	NE	NE
	Silver	µg/L	1.0	NE	NE	NE
	Silver	µg/L	1.0	NE	NE	NE
	Thallium	µg/L	100	NE	NE	NE
	Zinc	µg/L	10	NE	NE	NE
	Zinc	µg/L	10	NE	NE	NE
Metals (Total)	Antimony	µg/L	5.0	5.6	NE	NE
	Arsenic	µg/L	5.0	10	340	150
	Beryllium	µg/L	0.50	4	NE	NE
	Boron	µg/L	46	NE	NE	NE
	Cadmium	µg/L	0.10	5	1.2	0.2
	Cadmium	µg/L	0.10	5	1.4	0.2
	Cadmium	µg/L	0.10	5	2.4	0.3
	Cadmium	µg/L	0.10	5	2.7	0.3
	Cadmium	µg/L	0.10	5	2.8	0.3
	Cadmium	µg/L	0.10	5	3.1	0.4
	Cadmium	µg/L	0.10	5	3.2	0.4
	Cadmium	µg/L	0.10	5	3.3	0.4
	Cadmium	µg/L	0.10	5	3.4	0.4
	Cadmium	µg/L	0.10	5	3.9	0.4
	Cadmium	µg/L	0.10	5	4	0.4
	Cadmium	µg/L	0.10	5	4.2	0.4
	Cadmium	µg/L	0.10	5	4.3	0.5
	Cadmium	µg/L	0.10	5	4.5	0.5
	Cadmium	µg/L	0.10	5	4.8	0.5
	Cadmium	µg/L	0.10	5	4.9	0.5
	Cadmium	µg/L	0.10	5	5	0.5
	Cadmium	µg/L	0.10	5	5.2	0.5
	Cadmium	µg/L	0.10	5	5.4	0.5
	Cadmium	µg/L	0.10	5	5.5	0.5
	Cadmium	µg/L	0.10	5	5.6	0.5
	Cadmium	µg/L	0.10	5	5.7	0.6
	Cadmium	µg/L	0.10	5	5.8	0.6
	Cadmium	µg/L	0.10	5	5.9	0.6
	Cadmium	µg/L	0.10	5	6.2	0.6
	Cadmium	µg/L	0.10	5	6.3	0.6
	Cadmium	µg/L	0.10	5	6.4	0.6
	Cadmium	µg/L	0.10	5	6.5	0.6
	Cadmium	µg/L	0.10	5	6.6	0.6
	Cadmium	µg/L	0.10	5	6.8	0.6
	Cadmium	µg/L	0.10	5	6.9	0.6
	Cadmium	µg/L	0.10	5	7.5	0.7
	Cadmium	µg/L	0.10	5	7.9	0.7
	Cadmium	µg/L	0.10	5	8	0.7
	Cadmium	µg/L	0.10	5	8.1	0.7
	Cadmium	µg/L	0.10	5	8.2	0.7
	Cadmium	µg/L	0.10	5	8.4	0.7
	Cadmium	µg/L	0.10	5	8.5	0.7
	Cadmium	µg/L	0.10	5	8.7	0.8
	Cadmium	µg/L	0.10	5	6.7	0.6
	Cadmium	µg/L	0.10	5	6	0.6
	Silver	µg/L	1.0	100	1.5	NE
	Silver	µg/L	1.0	100	2.1	NE
	Silver	µg/L	1.0	100	5	NE
	Silver	µg/L	1.0	100	5.9	NE

Table E-5a: Non-Detect Chemicals in Surface Water vs. DEQ-7 Standard Value

Analyte Group	Non-Detect Analytes	Units	Mean PQL	DEQ-7 Human Health Standards[a]	DEQ-7 Aquatic Life ACUTE Standards[a]	DEQ-7 Aquatic Life CHRONIC Standards[a]
Metals (Total) (cont.)	Silver	µg/L	1.0	100	6.6	NE
	Silver	µg/L	1.0	100	7.5	NE
	Silver	µg/L	1.0	100	7.6	NE
	Silver	µg/L	1.0	100	8	NE
	Silver	µg/L	1.0	100	8.6	NE
	Silver	µg/L	1.0	100	8.9	NE
	Silver	µg/L	1.0	100	11.3	NE
	Silver	µg/L	1.0	100	11.7	NE
	Silver	µg/L	1.0	100	12.7	NE
	Silver	µg/L	1.0	100	13	NE
	Silver	µg/L	1.0	100	13.4	NE
	Silver	µg/L	1.0	100	14.4	NE
	Silver	µg/L	1.0	100	15.9	NE
	Silver	µg/L	1.0	100	16.2	NE
	Silver	µg/L	1.0	100	16.5	NE
	Silver	µg/L	1.0	100	16.8	NE
	Silver	µg/L	1.0	100	17.4	NE
	Silver	µg/L	1.0	100	18.3	NE
	Silver	µg/L	1.0	100	19.2	NE
	Silver	µg/L	1.0	100	19.9	NE
	Silver	µg/L	1.0	100	20.6	NE
	Silver	µg/L	1.0	100	21	NE
	Silver	µg/L	1.0	100	21.3	NE
	Silver	µg/L	1.0	100	21.7	NE
	Silver	µg/L	1.0	100	22.1	NE
	Silver	µg/L	1.0	100	22.9	NE
	Silver	µg/L	1.0	100	24.5	NE
	Silver	µg/L	1.0	100	25.3	NE
	Silver	µg/L	1.0	100	26.2	NE
	Silver	µg/L	1.0	100	26.7	NE
	Silver	µg/L	1.0	100	27.6	NE
	Silver	µg/L	1.0	100	29.1	NE
	Silver	µg/L	1.0	100	29.6	NE
	Silver	µg/L	1.0	100	33.9	NE
	Silver	µg/L	1.0	100	37	NE
	Silver	µg/L	1.0	100	37.6	NE
	Silver	µg/L	1.0	100	39	NE
	Silver	µg/L	1.0	100	41	NE
	Silver	µg/L	1.0	100	41.7	NE
	Silver	µg/L	1.0	100	43.9	NE
	Silver	µg/L	1.0	100	39.6	NE
	Silver	µg/L	1.0	100	28.1	NE
	Silver	µg/L	1.0	100	23.7	NE
	Cobalt	µg/L	10	NE	NE	NE
	Mercury	µg/L	**0.60**	**0.05**	1.7	0.91
	Selenium	µg/L	5.0	50	20	5
	Thallium	µg/L	**100**	**0.24**	NE	NE
Anions	Cyanide, Total	µg/L	5.0	140	22	5.2
Nitrogen Compounds	Nitrogen, Ammonia as N	µg/L	100	NE	NE	NE
Organophosphorus Pesticides	Azinphos-methyl (Guthion)	µg/L	**1.0**	NE	NE	**0.01**
	Bolstar (Sulprofos)	µg/L	0.50	NE	NE	NE
	Chlorpyrifos	µg/L	**0.20**	20	**0.083**	**0.041**
	Coumaphos	µg/L	1.0	NE	NE	NE
	Demeton-O,S	µg/L	**2.3**	**1.4**	NE	**0.1**
	Diazinon	µg/L	**0.20**	0.6	**0.17**	**0.17**
	Dichlorvos	µg/L	0.50	NE	NE	NE
	Dimethoate	µg/L	0.50	7	NE	NE
	Disulfoton	µg/L	**1.0**	**0.3**	NE	NE
	EPN	µg/L	0.20	NE	NE	NE
	Ethoprop (Prophos)	µg/L	0.20	NE	NE	NE
	Ethyl Parathion	µg/L	**0.50**	NE	**0.065**	**0.013**
	Fensulfothion	µg/L	0.50	NE	NE	NE
	Fenthion	µg/L	0.50	NE	NE	NE
	Malathion	µg/L	**0.20**	100	NE	**0.1**
	Merphos	µg/L	0.20	NE	NE	NE
	Methyl Parathion	µg/L	0.50	NE	NE	NE
	Mevinphos	µg/L	0.50	NE	NE	NE
	Phorate	µg/L	0.50	NE	NE	NE

Table E-5a: Non-Detect Chemicals in Surface Water vs. DEQ-7 Standard Value

Analyte Group	Non-Detect Analytes	Units	Mean PQL	DEQ-7 Human Health Standards[a]	DEQ-7 Aquatic Life ACUTE Standards[a]	DEQ-7 Aquatic Life CHRONIC Standards[a]
Organophosphorus Pesticides (cont.)	Ronnel	µg/L	0.20	NE	NE	NE
	Stirophos (Tetrachlorovinphos)	µg/L	0.20	NE	NE	NE
	Sulfotep	µg/L	0.20	NE	NE	NE
	Tokuthion (Prothiofos)	µg/L	0.20	NE	NE	NE
	Trichloronate	µg/L	0.20	NE	NE	NE
Pesticides	4,4´-DDD	µg/L	**0.05**	**0.0031**	NE	NE
	4,4´-DDE	µg/L	**0.05**	**0.0022**	NE	NE
	4,4´-DDT	µg/L	**0.05**	**0.0022**	0.5	**0.001**
	Aldrin	µg/L	**0.05**	**0.00049**	1.5	NE
	alpha-BHC	µg/L	**0.05**	**0.026**	NE	NE
	alpha-Chlordane	µg/L	**0.05**	**0.008**	NE	NE
	beta-BHC	µg/L	0.05	0.091	NE	NE
	Chlordane	µg/L	**0.50**	**0.008**	1.2	**0.0043**
	delta-BHC	µg/L	0.05	NE	NE	NE
	Dieldrin	µg/L	**0.05**	**0.00052**	0.24	0.056
	Endosulfan I	µg/L	0.05	62	0.11	0.056
	Endosulfan II	µg/L	0.05	62	0.11	0.056
	Endosulfan sulfate	µg/L	0.05	62	NE	NE
	Endrin	µg/L	0.05	0.059	NE	NE
	Endrin aldehyde	µg/L	0.05	0.29	NE	NE
	Endrin ketone	µg/L	0.05	NE	NE	NE
	gamma-BHC (Lindane)	µg/L	0.05	0.2	0.95	NE
	gamma-Chlordane	µg/L	**0.05**	**0.008**	NE	NE
	Heptachlor	µg/L	**0.05**	**0.00079**	0.26	**0.0038**
	Heptachlor epoxide	µg/L	**0.05**	**0.00039**	0.26	**0.0038**
	Isodrin	µg/L	0.05	NE	NE	NE
	Methoxychlor	µg/L	**0.05**	40	NE	**0.03**
	Toxaphene	µg/L	**0.70**	**0.0028**	0.73	**0.0002**
Polychlorinated Biphenyls (PCBs)	Aroclor 1016	µg/L	0.50	NE	NE	NE
	Aroclor 1221	µg/L	0.50	NE	NE	NE
	Aroclor 1232	µg/L	0.50	NE	NE	NE
	Aroclor 1242	µg/L	0.50	NE	NE	NE
	Aroclor 1248	µg/L	0.50	NE	NE	NE
	Aroclor 1254	µg/L	0.50	NE	NE	NE
	Aroclor 1260	µg/L	0.50	NE	NE	NE
	Aroclor 1262	µg/L	0.50	NE	NE	NE
	Aroclor 1268	µg/L	0.50	NE	NE	NE
	PCBs (Aroclor combined)	µg/L	**0.50**	**0.00064**	NE	**0.014**
Radionuclides	Radium 226	pCi/L	0.80	NE	NE	NE
	Radium 226 + Radium 228	pCi/L	1.0	5	NE	NE
	Radium 228	pCi/L	1.0	NE	NE	NE
Semi-Volatile Organic Compounds (SVOCs) / Polycyclic Aromatic Hydrocarbons (PAHs)	1,2,4,5-Tetrachlorobenzene	µg/L	**5.0**	**0.97**	NE	NE
	2,3,4,6-Tetrachlorophenol	µg/L	5.0	NE	NE	NE
	2,4,5-T	µg/L	0.20	70	NE	NE
	2,4,5-TP (Silvex)	µg/L	0.20	10	NE	NE
	2,4,5-Trichlorophenol	µg/L	5.0	1800	NE	NE
	2,4,6-Trichlorophenol	µg/L	5.0	14	NE	NE
	2,4-D	µg/L	1.0	70	NE	NE
	2,4-Dichlorophenol	µg/L	5.0	77	NE	NE
	2,4-Dimethylphenol	µg/L	5.0	380	NE	NE
	2,4-Dinitrophenol	µg/L	10	69	NE	NE
	2,4-Dinitrotoluene	µg/L	**5.0**	**1.1**	NE	NE
	2,6-Dinitrotoluene	µg/L	**5.0**	**0.5**	NE	NE
	2-Chloronaphthalene	µg/L	5.0	1000	NE	NE
	2-Chlorophenol	µg/L	5.0	81	NE	NE
	2-Methylnaphthalene	µg/L	6.4	NE	NE	NE
	2-Nitroaniline	µg/L	10	NE	NE	NE
	2-Nitrophenol	µg/L	5.0	NE	NE	NE
	3,3´-Dichlorobenzidine	µg/L	**5.0**	**0.21**	NE	NE
	3-Nitroaniline	µg/L	10	NE	NE	NE
	4,6-Dinitro-2-methylphenol	µg/L	10	13	NE	NE
	4-Bromophenyl phenyl ether	µg/L	5.0	NE	NE	NE
	4-Chloro-3-methylphenol	µg/L	5.0	3000	NE	NE
	4-Chlorophenyl phenyl ether	µg/L	5.0	NE	NE	NE
	4-Nitroaniline	µg/L	10	NE	NE	NE
	4-Nitrophenol	µg/L	10	60	NE	NE
	Acenaphthene	µg/L	6.4	670	NE	NE
	Acenaphthylene	µg/L	6.4	NE	NE	NE

Table E-5a: Non-Detect Chemicals in Surface Water vs. DEQ-7 Standard Value

Analyte Group	Non-Detect Analytes	Units	Mean PQL	DEQ-7 Human Health Standards[a]	DEQ-7 Aquatic Life ACUTE Standards[a]	DEQ-7 Aquatic Life CHRONIC Standards[a]
Semi-Volatile Organic Compounds (SVOCs) / Polycyclic Aromatic Hydrocarbons (PAHs) (cont.)	Acetophenone	µg/L	5.0	NE	NE	NE
	Anthracene	µg/L	6.4	8300	NE	NE
	Atrazine	µg/L	**5.0**	**3**	NE	NE
	Benzaldehyde	µg/L	5.0	NE	NE	NE
	Benzo(a)anthracene	µg/L	**6.4**	**0.038**	NE	NE
	Benzo(a)pyrene	µg/L	**6.4**	**0.038**	NE	NE
	Benzo(b)fluoranthene	µg/L	**6.4**	**0.038**	NE	NE
	Benzo(g,h,i)perylene	µg/L	6.4	NE	NE	NE
	Benzo(k)fluoranthene	µg/L	**6.4**	**0.038**	NE	NE
	Biphenyl	µg/L	5.0	NE	NE	NE
	bis(-2-chloroethoxy)Methane	µg/L	5.0	NE	NE	NE
	bis(-2-chloroethyl)Ether	µg/L	**5.0**	**0.3**	NE	NE
	bis(2-chloroisopropyl)Ether	µg/L	5.0	1400	NE	NE
	bis(2-ethylhexyl)Phthalate	µg/L	5.0	6	NE	NE
	Butylbenzylphthalate	µg/L	5.0	1500	NE	NE
	Caprolactam	µg/L	5.0	NE	NE	NE
	Carbazole	µg/L	5.0	NE	NE	NE
	Chrysene	µg/L	**6.4**	**0.038**	NE	NE
	Dalapon	µg/L	2.5	200	NE	NE
	Dibenzo(a,h)anthracene	µg/L	**6.4**	**0.038**	NE	NE
	Dibenzofuran	µg/L	5.0	NE	NE	NE
	Dicamba	µg/L	0.25	200	NE	NE
	Dichlorprop	µg/L	1.0	300	NE	NE
	Diethyl phthalate	µg/L	5.0	17000	NE	NE
	Dimethyl phthalate	µg/L	5.0	270000	NE	NE
	Di-n-butyl phthalate	µg/L	5.0	2000	NE	NE
	Di-n-octyl phthalate	µg/L	5.0	NE	NE	NE
	Fluoranthene	µg/L	6.4	130	NE	NE
	Fluorene	µg/L	6.4	1100	NE	NE
	Hexachlorobenzene	µg/L	**5.0**	**0.0028**	NE	NE
	Hexachlorobutadiene	µg/L	**5.0**	**4.4**	NE	NE
	Hexachlorocyclopentadiene	µg/L	5.0	40	NE	NE
	Hexachloroethane	µg/L	5.0	14	NE	NE
	Indeno(1,2,3-cd)pyrene	µg/L	**6.4**	**0.038**	NE	NE
	Isophorone	µg/L	5.0	350	NE	NE
	m+p-Cresols	µg/L	5.0	3000	NE	NE
	MCPA	µg/L	**200**	**4**	NE	NE
	MCPP	µg/L	200	300	NE	NE
	Naphthalene	µg/L	6.4	100	NE	NE
	Nitrobenzene	µg/L	5.0	17	NE	NE
	n-Nitroso-di-n-propylamine	µg/L	**5.0**	**0.05**	NE	NE
	n-Nitrosodiphenylamine	µg/L	5.0	33	NE	NE
	o-Cresol	µg/L	5.0	NE	NE	NE
	p-Chloroaniline	µg/L	5.0	NE	NE	NE
	Pentachlorophenol	µg/L	**5.1**	**1**	5.3 @ pH of 6.5*	4 @ pH of 6.5
	Phenanthrene	µg/L	6.4	NE	NE	NE
	Phenol	µg/L	5.0	300	NE	NE
	Pyrene	µg/L	6.4	830	NE	NE
Volatile Organic Compounds (VOCs) / Hydrocarbons	1,1,1-Trichloroethane	µg/L	0.5	200	NE	NE
	1,1,2,2-Tetrachloroethane	µg/L	0.5	1.7	NE	NE
	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	0.5	NE	NE	NE
	1,1,2-Trichloroethane	µg/L	0.5	3	NE	NE
	1,1-Dichloroethane	µg/L	0.5	NE	NE	NE
	1,1-Dichloroethene	µg/L	0.5	7	NE	NE
	1,2,3-Trichlorobenzene	µg/L	0.5	NE	NE	NE
	1,2,4-Trichlorobenzene	µg/L	0.5	35	NE	NE
	1,2-Dibromo-3-chloropropane	µg/L	**0.5**	**0.2**	NE	NE
	1,2-Dibromoethane	µg/L	**0.5**	**0.004**	NE	NE
	1,2-Dichlorobenzene	µg/L	0.5	420	NE	NE
	1,2-Dichloroethane	µg/L	0.5	3.8	NE	NE
	1,2-Dichloropropane	µg/L	0.5	5	NE	NE
	1,3-Dichlorobenzene	µg/L	0.5	320	NE	NE
	1,4-Dichlorobenzene	µg/L	0.5	75	NE	NE
	1,4-Dioxane	µg/L	125	NE	NE	NE
	2-Hexanone	µg/L	10	NE	NE	NE
	Acetone	µg/L	10	NE	NE	NE
	Bromochloromethane	µg/L	0.5	NE	NE	NE
	Bromodichloromethane	µg/L	0.5	5.5	NE	NE

Table E-5a: Non-Detect Chemicals in Surface Water vs. DEQ-7 Standard Value

Analyte Group	Non-Detect Analytes	Units	Mean PQL	DEQ-7 Human Health Standards[a]	DEQ-7 Aquatic Life ACUTE Standards[a]	DEQ-7 Aquatic Life CHRONIC Standards[a]
Volatile Organic Compounds (VOCs) / Hydrocarbons (cont.)	Bromoform	µg/L	0.5	43	NE	NE
	Bromomethane	µg/L	0.5	47	NE	NE
	C11 to C22 Aromatics	µg/L	300	NE	NE	NE
	C19 to C36 Aliphatics	µg/L	300	NE	NE	NE
	C9 to C10 Aromatics	µg/L	20	NE	NE	NE
	C9 to C12 Aliphatics	µg/L	20	NE	NE	NE
	C9 to C18 Aliphatics	µg/L	300	NE	NE	NE
	Carbon disulfide	µg/L	0.5	NE	NE	NE
	Carbon tetrachloride	µg/L	0.5	2.3	NE	NE
	Chlorobenzene	µg/L	0.5	100	NE	NE
	Chlorodibromomethane	µg/L	0.5	4	NE	NE
	Chloroethane	µg/L	0.5	NE	NE	NE
	Chloroform	µg/L	0.5	57	NE	NE
	Chloromethane	µg/L	0.5	30	NE	NE
	cis-1,2-Dichloroethene	µg/L	0.5	70	NE	NE
	cis-1,3-Dichloropropene	µg/L	0.5	3.4	NE	NE
	Cyclohexane	µg/L	0.5	NE	NE	NE
	Dichlorodifluoromethane	µg/L	0.5	1000	NE	NE
	Ethylbenzene	µg/L	0.5	530	NE	NE
	Isopropylbenzene	µg/L	0.5	NE	NE	NE
	m+p-Xylenes	µg/L	0.5	10000	NE	NE
	Methyl acetate	µg/L	0.5	NE	NE	NE
	Methyl ethyl ketone	µg/L	10	NE	NE	NE
	Methyl isobutyl ketone	µg/L	10	NE	NE	NE
	Methyl tert-butyl ether (MTBE)	µg/L	0.97	30	NE	NE
	Methylcyclohexane	µg/L	0.5	NE	NE	NE
	Methylene chloride	µg/L	0.5	5	NE	NE
	Naphthalene	µg/L	1.0	100	NE	NE
	o-Xylene	µg/L	0.5	10000	NE	NE
	Styrene	µg/L	0.5	100	NE	NE
	Tetrachloroethene	µg/L	0.5	5	NE	NE
	Toluene	µg/L	0.5	1000	NE	NE
	trans-1,2-Dichloroethene	µg/L	0.5	100	NE	NE
	trans-1,3-Dichloropropene	µg/L	0.5	2	NE	NE
	Trichloroethene	µg/L	0.5	5	NE	NE
	Trichlorofluoromethane	µg/L	0.5	10000	NE	NE
	Vinyl chloride	µg/L	**0.5**	**0.25**	NE	NE
	Xylenes, Total	µg/L	0.5	10000	NE	NE

Notes:

Mean PQL non-detect value exceeded the applicable DEQ-7 standard.

[a] Source: Circular DEQ-7 Montana Numeric Water Quality Standards. Water Quality Planning Bureau, Water Quality Standards Section. October 2012.

* pH was > 6.5 at all locations (LRC-2 and TP-TOE1) where Pentachlorophenol was analyzed for the corresponding sample date.

Aquatic Life Standards were calculated using location- and date-specific hardness results, where available, for Total Metals Cd, Cu, Cr III, Pb, Ni, Ag, and Zn. Ag and Cd were not detected in any samples and Cr III was not reported.

Only analytes where all samples are non-detect are shown on this table.

Field and lab quality control samples are not included in this data.

NE - Not Established

µg/L - micrograms per Liter

pCi/L - picocuries per Liter

Table E-5b: Non-Detect Chemicals in Groundwater vs. DEQ-7 Standard Value

Analyte Group	Non-Detect Analytes	Units	Mean PQL	DEQ-7 Human Health Standards[a]
Metals (Dissolved)	Aluminum	µg/L	90.0	NE
	Antimony	µg/L	5	NE
	Arsenic	µg/L	5	NE
	Beryllium	µg/L	1	NE
	Boron	µg/L	12	NE
	Chromium	µg/L	10	NE
	Cobalt	µg/L	10	NE
	Lead	µg/L	0.5	NE
	Mercury	µg/L	0.6	NE
	Nickel	µg/L	5	NE
	Selenium	µg/L	5	NE
	Silver	µg/L	1	NE
	Thallium	µg/L	100	NE
Metals (Total)	Antimony	µg/L	5	6
	Arsenic	µg/L	5	10
	Beryllium	µg/L	0.5	4
	Boron	µg/L	44	NE
	Cobalt	µg/L	10	NE
	Mercury	µg/L	1	2
	Silver	µg/L	1	100
	Thallium	µg/L	**100**	**2**
Anions	Cyanide, Total	µg/L	5	200
Semi-Volatile Organic Compounds (SVOCs) / Polycyclic Aromatic Hydrocarbons (PAHs)	2-Methylnaphthalene	µg/L	10	NE
	Acenaphthene	µg/L	10	670
	Acenaphthylene	µg/L	10	NE
	Anthracene	µg/L	10	2100
	Benzo(a)anthracene	µg/L	**10**	**0.5**
	Benzo(a)pyrene	µg/L	**10**	**0.05**
	Benzo(b)fluoranthene	µg/L	**10**	**0.5**
	Benzo(g,h,i)perylene	µg/L	10	NE
	Benzo(k)fluoranthene	µg/L	**10**	**5**
	Chrysene	µg/L	10	50
	Dibenzo(a,h)anthracene	µg/L	**10**	**0.05**
	Fluoranthene	µg/L	10	130
	Fluorene	µg/L	10	1100
	Indeno(1,2,3-cd)pyrene	µg/L	**10**	**0.5**
	Naphthalene	µg/L	10	100
	Phenanthrene	µg/L	10	NE
	Pyrene	µg/L	10	830
Volatile Organic Compounds (VOCs) / Hydrocarbons	Benzene	µg/L	0.5	5
	C11 to C22 Aromatics	µg/L	225	NE
	C19 to C36 Aliphatics	µg/L	225	NE
	C5 to C8 Aliphatics	µg/L	20	NE
	C9 to C10 Aromatics	µg/L	20	NE
	C9 to C12 Aliphatics	µg/L	20	NE
	C9 to C18 Aliphatics	µg/L	225	NE
	Ethylbenzene	µg/L	0.5	700
	m+p-Xylenes	µg/L	0.5	10000
	Methyl tert-butyl ether (MTBE)	µg/L	1	30
	Naphthalene	µg/L	1	100
	o-Xylene	µg/L	0.5	10000
	Total Purgeable Hydrocarbons	µg/L	20	NE
	Xylenes, Total	µg/L	0.5	10000
Water Quality Parameters	Carbonate as CO3	µg/L	4000	NE

Notes:

Mean PQL non-detect value exceeded the applicable DEQ-7 standard.

[a] Source: Circular DEQ-7 Montana Numeric Water Quality Standards. Water Quality Planning Bureau, Water Quality Standards Section. October 2012.

Only analytes where all samples are non-detect are shown on this table.

Field and lab quality control samples are not included in this data.

NE - Not Established

µg/L - micrograms per Liter

Table E-5c: Non-Detect Chemicals in Soil/Mine Waste vs. Montana Background Threshold Value

Analyte Group	Non-Detect Analytes	Units	Mean PQL	Montana Soil Background Threshold[a]
Metals	Beryllium	mg/kg-dry	**5.00**	**1.1**
	Selenium	mg/kg-dry	**1.6**	**0.7**
	Silver	mg/kg-dry	**2.7**	**0.3**
Cyanide	Cyanide, Total	mg/kg-dry	0.5	NE
Organophosphorus Pesticides	Azinphos-methyl (Guthion)	mg/kg	0	NE
	Bolstar (Sulprofos)	mg/kg	0	NE
	Chlorpyrifos	mg/kg	0	NE
	Coumaphos	mg/kg	0.1	NE
	Demeton-O,S	mg/kg	0.1	NE
	Diazinon	mg/kg	0.07	NE
	Dichlorvos	mg/kg	0	NE
	Dimethoate	mg/kg	0.07	NE
	Disulfoton	mg/kg	0.07	NE
	EPN	mg/kg	0.07	NE
	Ethoprop (Prophos)	mg/kg	0.07	NE
	Ethyl Parathion	mg/kg	0.07	NE
	Fensulfothion	mg/kg	0.07	NE
	Fenthion	mg/kg	0.07	NE
	Malathion	mg/kg	0.07	NE
	Merphos	mg/kg	0.07	NE
	Methyl Parathion	mg/kg	0.07	NE
	Mevinphos	mg/kg	0.07	NE
	Phorate	mg/kg	0.07	NE
	Ronnel	mg/kg	0.07	NE
	Stirophos (Tetrachlorovinphos)	mg/kg	0.07	NE
	Sulfotep	mg/kg	0.07	NE
	Tokuthion (Prothiofos)	mg/kg	0.07	NE
	Trichloronate	mg/kg	0.07	NE
Pesticides	4,4´-DDD	mg/kg-dry	0.00	NE
	4,4´-DDE	mg/kg-dry	0.00	NE
	4,4´-DDT	mg/kg-dry	0.01	NE
	Aldrin	mg/kg-dry	0.00	NE
	alpha-BHC	mg/kg-dry	0.00	NE
	alpha-Chlordane	mg/kg-dry	0.00	NE
	beta-BHC	mg/kg-dry	0.00	NE
	Chlordane	mg/kg-dry	0.02	NE
	delta-BHC	mg/kg-dry	0.00	NE
	Dieldrin	mg/kg-dry	0.00	NE
	Endosulfan I	mg/kg-dry	0.00	NE
	Endosulfan II	mg/kg-dry	0.00235	NE
	Endosulfan sulfate	mg/kg-dry	0.00235	NE
	Endrin	mg/kg-dry	0.00235	NE
	Endrin aldehyde	mg/kg-dry	0.00235	NE
	Endrin ketone	mg/kg-dry	0.00235	NE
	gamma-BHC (Lindane)	mg/kg-dry	0.00235	NE
	gamma-Chlordane	mg/kg-dry	0.00235	NE
	Heptachlor	mg/kg-dry	0.00235	NE
	Heptachlor epoxide	mg/kg-dry	0.00235	NE
	Isodrin	mg/kg-dry	0.0028	NE
	Methoxychlor	mg/kg-dry	0.00235	NE
	Toxaphene	mg/kg-dry	0.23	NE
Polychlorinated Biphenyls (PCBs)	Aroclor 1016	mg/kg-dry	0.02	NE
	Aroclor 1221	mg/kg-dry	0.02	NE
	Aroclor 1232	mg/kg-dry	0.02	NE
	Aroclor 1242	mg/kg-dry	0.02	NE
	Aroclor 1248	mg/kg-dry	0.02	NE
	Aroclor 1254	mg/kg-dry	0.02	NE
	Aroclor 1260	mg/kg-dry	0.02	NE
	Aroclor 1262	mg/kg-dry	0.02	NE
	Aroclor 1268	mg/kg-dry	0.02	NE

Table E-5c: Non-Detect Chemicals in Soil/Mine Waste vs. Montana Background Threshold Value

Analyte Group	Non-Detect Analytes	Units	Mean PQL	Montana Soil Background Threshold[a]
Semi-Volatile Organic Compounds (SVOCs) / Polycyclic Aromatic Hydrocarbons (PAHs)	1,2,4,5-Tetrachlorobenzene	mg/kg-dry	0.23	NE
	2,3,4,6-Tetrachlorophenol	mg/kg-dry	0.23	NE
	2,4,5-T	mg/kg-dry	0.00555	NE
	2,4,5-TP (Silvex)	mg/kg-dry	0.00555	NE
	2,4,5-Trichlorophenol	mg/kg-dry	0.23	NE
	2,4,6-Trichlorophenol	mg/kg-dry	0.23	NE
	2,4-D	mg/kg-dry	0.028	NE
	2,4-Dichlorophenol	mg/kg-dry	0.23	NE
	2,4-Dimethylphenol	mg/kg-dry	0.23	NE
	2,4-Dinitrophenol	mg/kg-dry	0.465	NE
	2,4-Dinitrotoluene	mg/kg-dry	0.23	NE
	2,6-Dinitrotoluene	mg/kg-dry	0.23	NE
	2-Chloronaphthalene	mg/kg-dry	0.23	NE
	2-Chlorophenol	mg/kg-dry	0.23	NE
	2-Methylnaphthalene	mg/kg-dry	0.248216667	NE
	2-Nitroaniline	mg/kg-dry	0.465	NE
	2-Nitrophenol	mg/kg-dry	0.23	NE
	3,3´-Dichlorobenzidine	mg/kg-dry	0.92	NE
	3-Nitroaniline	mg/kg-dry	0.465	NE
	4,6-Dinitro-2-methylphenol	mg/kg-dry	0.465	NE
	4-Bromophenyl phenyl ether	mg/kg-dry	0.23	NE
	4-Chloro-3-methylphenol	mg/kg-dry	0.23	NE
	4-Chlorophenyl phenyl ether	mg/kg-dry	0.23	NE
	4-Nitroaniline	mg/kg-dry	0.465	NE
	4-Nitrophenol	mg/kg-dry	0.465	NE
	Acenaphthene	mg/kg-dry	0.248216667	NE
	Acenaphthylene	mg/kg-dry	0.248216667	NE
	Acetophenone	mg/kg-dry	0.23	NE
	Anthracene	mg/kg-dry	0.248216667	NE
	Atrazine	mg/kg-dry	0.23	NE
	Benzaldehyde	mg/kg-dry	0.23	NE
	Biphenyl	mg/kg-dry	0.23	NE
	bis(-2-chloroethoxy)Methane	mg/kg-dry	0.23	NE
	bis(-2-chloroethyl)Ether	mg/kg-dry	0.23	NE
	bis(2-chloroisopropyl)Ether	mg/kg-dry	0.23	NE
	bis(2-ethylhexyl)Phthalate	mg/kg-dry	0.23	NE
	Butylbenzylphthalate	mg/kg-dry	0.23	NE
	Caprolactam	mg/kg-dry	0.23	NE
	Carbazole	mg/kg-dry	0.23	NE
	Dalapon	mg/kg-dry	0.069	NE
	Dibenzo(a,h)anthracene	mg/kg-dry	0.248216667	NE
	Dibenzofuran	mg/kg-dry	0.23	NE
	Dicamba	mg/kg-dry	0.0069	NE
	Dichlorprop	mg/kg-dry	0.028	NE
	Diethyl phthalate	mg/kg-dry	0.23	NE
	Dimethyl phthalate	mg/kg-dry	0.23	NE
	Di-n-butyl phthalate	mg/kg-dry	0.23	NE
	Di-n-octyl phthalate	mg/kg-dry	0.23	NE
	Fluoranthene	mg/kg-dry	0.248216667	NE
	Fluorene	mg/kg-dry	0.248216667	NE
	Hexachlorobenzene	mg/kg-dry	0.23	NE
	Hexachlorobutadiene	mg/kg-dry	0.23	NE
	Hexachlorocyclopentadiene	mg/kg-dry	0.465	NE
	Hexachloroethane	mg/kg-dry	0.23	NE
	Isophorone	mg/kg-dry	0.23	NE
	m+p-Cresols	mg/kg-dry	0.23	NE
	MCPA	mg/kg-dry	5.55	NE
	MCPP	mg/kg-dry	5.55	NE
	Naphthalene	mg/kg-dry	0.248216667	NE
	Nitrobenzene	mg/kg-dry	0.23	NE
	n-Nitroso-di-n-propylamine	mg/kg-dry	0.23	NE
	n-Nitrosodiphenylamine	mg/kg-dry	0.23	NE
	o-Cresol	mg/kg-dry	0.23	NE
	p-Chloroaniline	mg/kg-dry	0.23	NE
	Phenanthrene	mg/kg-dry	0.248216667	NE
	Phenol	mg/kg-dry	0.23	NE

Table E-5c: Non-Detect Chemicals in Soil/Mine Waste vs. Montana Background Threshold Value

Analyte Group	Non-Detect Analytes	Units	Mean PQL	Montana Soil Background Threshold[a]
Volatile Organic Compounds (VOCs) / Hydrocarbons	1,1,1-Trichloroethane	mg/kg-dry	0.043	NE
	1,1,2,2-Tetrachloroethane	mg/kg-dry	0.043	NE
	1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg-dry	0.043	NE
	1,1,2-Trichloroethane	mg/kg-dry	0.043	NE
	1,1-Dichloroethane	mg/kg-dry	0.043	NE
	1,1-Dichloroethene	mg/kg-dry	0.043	NE
	1,2,3-Trichlorobenzene	mg/kg-dry	0.043	NE
	1,2,4-Trichlorobenzene	mg/kg-dry	0.043	NE
	1,2-Dibromo-3-chloropropane	mg/kg-dry	0.043	NE
	1,2-Dibromoethane	mg/kg-dry	0.043	NE
	1,2-Dichlorobenzene	mg/kg-dry	0.043	NE
	1,2-Dichloroethane	mg/kg-dry	0.043	NE
	1,2-Dichloropropane	mg/kg-dry	0.043	NE
	1,3-Dichlorobenzene	mg/kg-dry	0.043	NE
	1,4-Dichlorobenzene	mg/kg-dry	0.043	NE
	1,4-Dioxane	mg/kg-dry	2.15	NE
	2-Hexanone	mg/kg-dry	0.43	NE
	Acetone	mg/kg-dry	0.43	NE
	Benzene	mg/kg-dry	0.04146875	NE
	Bromochloromethane	mg/kg-dry	0.043	NE
	Bromodichloromethane	mg/kg-dry	0.043	NE
	Bromoform	mg/kg-dry	0.043	NE
	Bromomethane	mg/kg-dry	0.043	NE
	C9 to C12 Aliphatics	mg/kg-dry	1.646666667	NE
	Carbon disulfide	mg/kg-dry	0.043	NE
	Carbon tetrachloride	mg/kg-dry	0.043	NE
	Chlorobenzene	mg/kg-dry	0.043	NE
	Chlorodibromomethane	mg/kg-dry	0.043	NE
	Chloroethane	mg/kg-dry	0.043	NE
	Chloroform	mg/kg-dry	0.043	NE
	Chloromethane	mg/kg-dry	0.043	NE
	cis-1,2-Dichloroethene	mg/kg-dry	0.043	NE
	cis-1,3-Dichloropropene	mg/kg-dry	0.043	NE
	Cyclohexane	mg/kg-dry	0.043	NE
	Dichlorodifluoromethane	mg/kg-dry	0.043	NE
	Ethylbenzene	mg/kg-dry	0.04146875	NE
	Isopropylbenzene	mg/kg-dry	0.043	NE
	m+p-Xylenes	mg/kg-dry	0.04146875	NE
	Methyl ethyl ketone	mg/kg-dry	0.43	NE
	Methyl isobutyl ketone	mg/kg-dry	0.43	NE
	Methyl tert-butyl ether (MTBE)	mg/kg-dry	0.08025	NE
	Methylcyclohexane	mg/kg-dry	0.043	NE
	Methylene chloride	mg/kg-dry	0.043	NE
	Naphthalene	mg/kg-dry	0.082733333	NE
	o-Xylene	mg/kg-dry	0.04146875	NE
	Styrene	mg/kg-dry	0.043	NE
	Tetrachloroethene	mg/kg-dry	0.043	NE
	trans-1,2-Dichloroethene	mg/kg-dry	0.043	NE
	trans-1,3-Dichloropropene	mg/kg-dry	0.043	NE
	Trichloroethene	mg/kg-dry	0.043	NE
	Trichlorofluoromethane	mg/kg-dry	0.043	NE
	Vinyl chloride	mg/kg-dry	0.043	NE
	Xylenes, Total	mg/kg-dry	0.041366667	NE

Notes:

Mean PQL non-detect value exceeded the background threshold value.

[a] Source: Hydrometrics, Inc. 2013. Background Concentrations of Inorganic Constituents In Montana Surface Soils. Prepared for MDEQ, Remediation Division. September 2012.

Only analytes where all samples are non-detect are shown on this table.

Field and lab quality control samples are not included in this data.

NE - Not Established

mg/kg-dry - milligrams per kilogram dry weight

mg/kg - milligrams per kilogram



Appendix F

Libby Standard Operating Procedures (SOPs)

SOP ISSI-LIBBY-01
SOP SRC-LIBBY-01
SOP SRC- LIBBY-03
SOP EPA-LIBBY-08
SOP ESAT-LIBBY-01
SOP CDM-LIBBY-06
SOP SRC-LIBBY-03
SOP TREE-LIBBY-OU3
SOP DUFF MATERIAL-LIBBY-OU3
SOP EPA-LIBBY-2012-12
SOP EPA-LIBBY-2012-11
SOP CDMLIBBY-06
SOP 16-ASB-06.02
SOP No. 3, Surface Water Sampling
SOP No. 5, Sediment Sampling

The most recent versions of field SOPs are provided electronically in the OU3 eRoom (https://team.cdm.com/eRoom/mt/LibbyOU3).

The most recent versions of laboratory and data verification SOPs are provided electronically in the Libby Lab eRoom (https://team.cdm.com/eRoom/mt/LibbyLab).

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Appendix G

CB&I QA/QC Summary Reports and Data Verification for RI/FS Activities at OU3 Study Area

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SUMMARY OF VALIDATED DATA

DATE: April 29, 2013

SUBJECT: Summary of Non-Asbestos Validation Data

FROM: Quality Assurance Technical Support Program (QATS),
CB& I, Las Vegas, NV

TO: Dania Zinner, Region 8, U. S. Environmental Protection Agency (USEPA)

QATS has reviewed the validated data for the following project:

SITE Name: Libby OU3 Site, Libby, Montana

CONTRACTOR: Syracuse Research Corporation, North Syracuse, New York

VALIDATORS: TLI Solutions, Inc., Billings, Montana

LABORATORIES: Energy Laboratories, Inc., Helena, Montana and Columbia Analytical Services, Kelso, Washington

Listed in the table are the SDGs associated with this Summary Validation Report

SDG Number	SDG Number	SDG Number	SDG Number
B07101204	B07101207	B07101308	B07101308
B07101308	B07101308	B07101308	B07101319
B07101333	B07101427	B07101430	B07101433
B07101570	B07101573	B07101638	B07101640
B07101713	B07101719	B07121132,	B08062851
B08063082	B08070103	B08070218	B08070416
B08070430	B08072624	B08091341	B08091472
B08091056	B08091572	B08101040	B08091056
B08101173			

VALIDATION SUMMARY

Introduction: This report summarizes the qualified non-asbestos results from fifty-nine (59) Inorganic, Organic, and Radiochemistry Data Validation Reports submitted by TLI Solutions, Inc., Billings, MT to Syracuse Research Corporation, North Syracuse, NY in 2008 and 2009 for the Libby OU3 Site, Libby, MT. This summary report was prepared by CB&I Quality Assurance Technical Support Program (QATS) under Task Order 2021.

Analysis data for 651 water and soil samples in twenty-nine (29) SDGs (SDGs B07101204, B07101207, B07101308, B07101319, B07101333, B07101427, B07101430, B07101433, B07101570, B07101573, B07101638, B07101640, B07101713, B07101719, B07121132, B08062851, B08063082, B08070103, B08070218, B08070416, B08070430, B08072624, B08091341, B08091472, B08091056, B08091572, B08101040, B08091056, and B08101173) were validated by TLI Solutions, Inc. Fifty-nine (59) inorganic, organic, and radiochemistry data validation reports were submitted to Syracuse Research Corporation from TLI Solutions, Inc. on 02/08/2008, 04/22-23/2009, and 04/28-29/2009.

The 651 samples were analyzed by Energy Laboratories Inc., Helena, MT and Columbia Analytical Services, Kelso, WA in 2008 and 2009 for the following inorganic, organic, and radiochemical analyses: Alkalinity, Total as CaCO3; Anions (Chloride, Sulfate, Fluoride); Bicarbonate as HCO3; Carbonate as CO3; Chlorinated Herbicides; Dissolved Metals and Mercury; Dissolved Organic Carbon; Extractable Petroleum Hydrocarbons; Fluoride; Gross Alpha; Gross Beta; Hardness as CaCO3; Hexavalent Chromium; Nitrogen, Ammonia as N; Nitrogen, Nitrate+Nitrite as N; Nitrogen, Nitrite as N; Nitrogen, Nitrate as N; Nitrogen, Total Kjeldahl as N; Organic Carbon; Organochlorine Pesticides; Organophosphorus Pesticides; pH, saturated paste; Phosphorus, Orthophosphate as Total P; Polychlorinated Biphenyls; Polycyclic Aromatic Hydrocarbons; Radium 226; Radium 228; Semivolatile Organic Compounds; Total Cyanide; Total Metals and Mercury; Total Organic Carbon; Total Phosphorus; Total Suspended Solids; Total Dissolved Solids; Volatile Organic Compounds; and Volatile Petroleum Hydrocarbons.

As reported by TLI Solutions, Inc. in the data validation reports, the data were validated in accordance with the USEPA CLP National Functional Guidelines for Evaluating Organic Analyses and the USEPA CLP National Functional Guidelines for Evaluating Inorganic Analyses, modified for the methods used. Cursory or full validation was conducted on the sample and QC analysis data. The data were evaluated based on the following parameters as applicable to the analyses and validation level: Data Completeness; Holding Times; Calibrations; Blanks; Surrogate Recovery; Matrix Spike/Matrix Spike Duplicates; Laboratory Control Samples; Internal Standards; Field Duplicates; Inductively Coupled Plasma (ICP) Serial Dilution; Other Laboratory QC Specified by the Method; Analyte Identification and Reporting Limits; Compound Quantitation and Reporting Limits; Compound Identification; Sample Results Verification; Gas Chromatography/Mass Spectroscopy Instrument Tune; System Performance; and Overall Assessment of Data. The following qualifiers were applied to the sample results by TLI Solutions, Inc.:

R Reported value is “rejected.” Resampling or reanalysis may be necessary to verify presence or absence of the compound.

U The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

J The associated numerical value is an estimated quantity because the Quality Control criteria were not met.

UJ The reported quantitation limit is estimated because Quality Control criteria were not met. Element or compound was not detected.

Summary of Data Validation for Inorganic Analyses

Inorganic data validation was conducted by TLI Solutions, Inc. for analysis data from 292 water and soil samples (including one field blank) in 28 SDGs (SDGs B07101204, B07101207, B07101308, B07101319, B07101333, B07101427, B07101430, B07101433, B07101570, B07101573, B07101638, B07101640, B07101713, B07101719, B07121132, B08062851, B08063082, B08070103, B08070218, B08070416, , B08072624, B08091341, B08091472, B08091056, B08091572, B08101040, B08091056, and B08101173) from the Libby OU3 site. Twenty-eight (28) inorganic data validation reports were submitted to Syracuse Research Corporation on 02/08/2008, 04/22-23/2009, and 04/28-29/2009. A total of 1267 data qualifiers were applied to the inorganic analysis data.

Inorganic Analysis Validation Results for Water Samples: Analysis data from 111 water samples analyzed by up to 10 methods and 39 different analytes were validated and qualifiers were applied to results for various inorganic analyses. A total of 370 qualifiers were applied to the inorganic analyses results for water samples. The following data qualifiers were applied:

- Results in 19 samples were qualified as "J/R" for grossly exceeding analysis holding time. Note that the inorganic data validation report did not differentiate between the detected results (J) and the and non-detected results (R) for these 19 results.
- Results for dissolved lead in three samples were qualified as "R" for extremely low MS/MSD recoveries.
- Results for 56 inorganic analytes were qualified as "U" due to detection of the analyte in the associated method blanks.
- Results for 181 inorganic analytes were qualified as "J/UJ". Note that detected (J) and non-detected (UJ) sample results for these 181 analytes were not differentiated in the inorganic data validation reports.
- Results for 80 inorganic analytes were qualified "UJ".
- Results for 31 inorganic analytes were qualified as "J".

Most of the 292 "J" and "UJ" qualifiers were applied due to exceeding holding time criteria; exceeding MS/MSD percent recovery criteria; and ICP serial dilutions exceeding 10%. Analysis results were predominantly qualified for metals, phosphorus, orthophosphate as Total P, and various nitrogen compounds.

A detailed list of qualifiers assigned to inorganic analysis results in water samples is provided in Table 1, Attachment 1.

Inorganic Analysis Validation Results for Soil Samples: Analysis data from 181 soil samples analyzed by up to five methods and 35 different analytes were validated, and qualifiers were applied to results for various inorganic analyses. A total of 889 qualifiers were applied to the inorganic soil analyses results. The following data qualifiers were applied:

- Results for total antimony, selenium, and/or total selenium in 35 analyses were qualified as "R" for extremely low recoveries in the associated MS/MSD.
- Results for nine inorganic analytes were qualified as "U" due to detection of the analyte in the associated method blanks.

- Results for 633 inorganic analytes were qualified as “J/UJ”. Note that detected (J) and non-detected (UJ) sample results for these analytes were not differentiated in the inorganic data validation reports.
- Results for 19 inorganic analytes were qualified “UJ”.
- Results for 193 inorganic analytes were qualified as “J”.

All of the 845 “J” and “UJ” qualifiers were assigned due to exceeding MS/MSD percent recovery criteria and for ICP serial dilutions exceeding 10%. Analysis results were predominantly qualified for metals.

A detailed list of qualifiers assigned to inorganic analysis results in soil samples is provided in Table 2, Attachment 2.

Summary of Data Validation for Organic Analyses

Organic data validation was conducted by TLI Solutions, Inc. for analysis data from 359 water and soil samples (including 55 trip blanks and 1 field blank) in 29 SDGs (SDGs B07101204, B07101207, B07101308, B07101319, B07101333, B07101427, B07101430, B07101433, B07101570, B07101573, B07101638, B07101640, B07101713, B07101719, B07121132, B08062851, B08063082, B08070103, B08070218, B08070416, B08070430, B08072624, B08091341, B08091472, B08091056, B08091572, B08101040, B08091056, and B08101173) from the Libby OU3 Site. Twenty-nine (29) organic data validation reports were submitted to Syracuse Research Corporation on 02/08/2008, 04/22-23/2009, and 04/28-29/2009. A total of 2458 data qualifiers were applied to the organic analysis data. Note that the total is an approximate amount; the organic validation reports do not include specific analytes for various methods when all analytes were qualified. EPA Methods were sometimes referenced in the organic reports and were used by QATS in determining total analytes for a specific method.

Organic Analysis Validation Results for Water Samples: Results from 191 water samples analyzed by six different methods were validated, and qualifiers were applied to results for various organic analyses. A total of 256 qualifiers were assigned to the organic analyses results for water samples. The following data qualifiers were applied:

- Results for 1,4-Dioxane in two trip blanks were qualified as “R” due to an extremely low RRF in the associated initial calibration.
- Results for volatile petroleum hydrocarbons in two samples were qualified as “U” due to detection of the analyte in the trip blank.
- Results for 155 organic analytes were qualified as “J/UJ”. Note that detected (J) and non-detected (UJ) sample results for these analytes were not differentiated in the organic validation reports.
- Results for 97 organic analytes were qualified “UJ”.

Most of the 252 “J” and “UJ” qualifiers were applied due to exceeding holding time criteria. Result qualifiers were predominantly applied to analyses for Extractable Petroleum Hydrocarbons (EPH), Volatile Petroleum Hydrocarbons (VPH), Organophosphorus Pesticides (OPP), Polycyclic Aromatic Hydrocarbons (PAH), and Semivolatile Organic Compounds (SVOC).

A detailed list of qualifiers assigned to organic analysis results in water samples is provided in Table 3, Attachment 3.

Organic Analysis Validation Results for Soil Samples: Results from 168 soil samples analyzed by nine different methods were validated, and qualifiers were applied to results for various organic

analyses. A total of 2202 qualifiers were applied to organic analyses results. The following data qualifiers were applied:

- Results for various organophosphorus pesticides were qualified "R" in 19 samples due to extremely low recoveries in the associated laboratory control sample (LCS).
- Results for 2094 organic analytes were qualified as "J/UJ". Note that detected (J) and non-detected (UJ) sample results for these analytes were not differentiated in the organic data validation reports.
- Results for 89 organic analytes were qualified "UJ".

All 2183 "J" and "UJ" qualifiers were assigned due to exceeding holding time criteria, low LCS percent recovery, and low surrogate recovery. Result qualifiers were predominantly applied to analyses for Extractable Petroleum Hydrocarbons (EPH), Volatile Petroleum Hydrocarbons (VPH), Organophosphorus Pesticides (OPP), Polycyclic Aromatic Hydrocarbons (PAH), and Semivolatile Organic Compounds (SVOC).

A detailed list of qualifiers assigned to organic analysis results in soil samples is provided in Table 4, Attachment 4.

Summary of Data Validation for Radiochemical Analyses

Radiochemistry data validation was conducted by TLI Solutions, Inc. for analysis data for four water samples including one field blank in three SDGs (SDGs B07101433, B07101570, and B07101713) from the Libby OU3 Site. Three radiochemistry data validation reports were submitted to Syracuse Research Corporation on 02/08/2008. A total of 13 data qualifiers were applied to the radiochemical analysis data. Note that the qualifiers applied to radiochemical analyses were observed in the inorganic data validation report for B08100204 submitted by TLI Solutions Inc. to Syracuse Research Corporation on 04/29/2009. No qualifiers were applied to the radiochemical analyses from the 2008 radiochemistry data validation reports. The following data qualifiers were applied to the 2009 data:

- Results for gross alpha in three samples were qualified as "J" for exceeding RPD criteria in the associated MS/MSD analysis.
- Results for gross alpha in ten samples were qualified as "UJ" for exceeding MS/MS percent recovery criteria in the associated MS/MSD analysis.

A detailed list of qualifiers assigned to radiochemical analysis results is provided in Table 5, Attachment 5.

Summary of Field Duplicate Sample Precision

Field duplicate sample pairs were identified in 24 of the 59 data validation reports. Field duplicate RPD criteria was exceeded in 14 sample/field duplicate pairs in the inorganic, organic, and radiochemical analyses. No qualification of data was applied for exceeding field duplicate RPD criteria.

A detailed list of field duplicate results is provided in Table 6. Attachment 5.

Table 1. Validation Qualification of Non-Asbestos Results in Water
Inorganic Analyses

Method	Analyte	Qualifier	Field Sample Nos.	Reason for Qualification
Alkalinity, Total as CaCO3	Alkalinity, Total as CaCO3	J/UJ	P1-00750, P1-00751, P2-00401TB, P2-00402, P2-00403, P2-00404, P2-00880, P2-00881, P2-00885, P2-00930, P2-00931,	Outside % Recovery Criteria for MS/MSD
Anions (Chloride, Sulfate, Fluoride)	Fluoride	U	P2-01045, P2-01047, P2-01048, P2-01050	Detected in Method Blank
Bicarbonate as HCO3	Bicarbonate as HCO3	J/UJ	P2-00401TB, P2-00402, P2-00403, P2-00404, P2-00930, P2-00931, P2-00880, P2-00881, P2-00885	Outside % Recovery Criteria for MS/MSD
Carbonate as CO3	Carbonate as CO3	J/UJ	P2-00401TB, P2-00402, P2-00403, P2-00404	Outside % Recovery Criteria for MS/MSD
Dissolved Metals and Mercury	Dissolved Lead	R	P2-00784, P2-00787, P2-00789	Extremely Low % Recovery for MS/MSD
	Dissolved Boron	J/UJ	P1-00380, P1-00381, P2-00887, P2-00889, P2-00893, P2-00895, P2-00896, P2-00897, P2-00910	Outside % Recovery Limits for MS/MSD
	Total Mercury	UJ	P1-00265, P1-00266, P1-00267, P1-00268, P1-00269, P1-00300, P1-00301, P1-00302, P1-00303, P1-00304, P1-00380, P1-00381, P1-00382, P1-00383, P1-00385	Outside % Recovery Limits for MS/MSD
	Dissolved Mercury	UJ	P1-00265, P1-00266, P1-00267, P1-00268, P1-00269, P1-00300, P1-00301, P1-00302, P1-00303, P1-00304, P1-00380, P1-00381, P1-00382, P1-00383, P1-00385	Outside % Recovery Limits for MS/MSD
	Total Silver	UJ	P1-00251FD, P1-00252FD, P1-00266, P1-00300, P1-00301, P1-00302, P1-00303, P1-00304	Outside % Recovery Criteria for MS/MSD
	Dissolved Silver	UJ	P1-00251FD, P1-0025FD, P1-00266, P1-00300, P1-00301, P1-00302, P1-00303, P1-00304, P2-00787, P2-00789	Outside % Recovery Criteria for MS/MSD
	Dissolved Calcium	UJ	P2-00789	Outside % Recovery Criteria for MS/MSD
	Dissolved Calcium	J/UJ	P2-00784, P2-00795	ICP Serial Dilution % Difference > 10%
Dissolved Organic Carbon	Dissolved Organic Carbon	U	P2-01062	Detected in Method Blank
Nitrogen Compounds	Nitrogen, Nitrite as N	J/UJ	P1-00257FB, P1-00266, P1-00380, P1-00381, P2-00401TB, P2-00402, P2-00403, P2-00404, P2-00887, P2-00889, P2-00893, P2-00895, P2-00896, P2-00897, P2-00898, P2-00899, P2-00901, P2-00902, P2-00903, P2-00904, P2-00905, P2-00906, P2-00907, P2-00909, P2-00910, P2-00911, P2-00912, P2-00913, P2-00914, P2-00915, P2-00917, P2-01041, P2-01044	Outside Holding Time
	Nitrogen, Nitrate as N	J/UJ	P1-00266, P1-00257FB, P2-00420, P2-00421, P2-00422, P2-00427, P2-00428, P2-00429, P2-00430, P2-00431, P2-00432, P2-00439, P2-00440, P2-00441, P2-00442, P2-00443, P2-00444, P2-00445, P2-00446, P2-00447, P2-00448, P2-00449, P2-00450, P2-00453, P2-00454, P2-00456	Outside Holding Time
	Nitrogen, Nitrite as N	U	P1-00390FD, P2-00427, P2-00431, P2-00432, P2-00448, P2-00880, P2-00881, P2-00885, P2-00930, P2-00931, P2-00932	Detected in Method Blank

Table 1. Validation Qualification of Non-Asbestos Results in Water
Inorganic Analyses (cont.)

Method	Analyte	Qualifier	Field Sample Nos.	Reason for Qualification
Nitrogen Compounds (cont.)	Nitrogen, Nitrate as N	U	P1-00300, P1-00302, P1-00303, P1-00304, P1-00319FB, P2-00454, P2-00421, P2-00422, P2-00431, P2-00427, P2-00432, P2-00448, P2-00931	Detected in Method Blank
	Nitrogen, Nitrate+Nitrite as N	U	P1-00300, P1-00302, P1-00303, P1-00304, P1-00390FD, P2-00421, P2-00422, P2-00454, P2-00930	Detected in Method Blank
	Nitrogen as Nitrite	J/UJ	P1-00251FD, P1-00252FD, P1-00254, P1-00265, P1-00267, P1-00268, P1-00269, P1-00382, P1-00383, P1-00385, P1-00312, P1-00313FD, P1-00314FD, P1-00315	Outside Holding Time
	Nitrogen as Nitrate	J/UJ	P1-00251FD, P1-00252FD, P1-00254, P1-00265, P1-00267, P1-00268, P1-00269, P1-00312, P1-00382, P1-00383, P1-00385	Outside Holding Time
	Total Kjeldahl Nitrogen	U	P1-00251FD	Detected in Method Blank
	Nitrogen, Ammonia as N	UJ	P2-00880, P2-00881, P2-00885, P2-00930, P2-00931, P2-00932	Outside % Recovery Criteria for MS/MSD
Phosphorus, Orthophosphate as P	Phosphorus, Orthophosphate as P	J/R*	P2-00427, P2-00428, P2-00429, P2-00430, P2-00431, P2-00432, P2-00439, P2-00440, P2-00441, P2-00442, P2-00443, P2-00444, P2-00445, P2-00446, P2-00447, P2-00448, P2-00449, P2-00450, P2-00456	Grossly Outside Holding Time
	Phosphorus, Orthophosphate as P	J/UJ	P2-00427, P2-00428, P2-00429, P2-00430, P2-00431, P2-00432, P2-00439, P2-00440, P2-00441, P2-00443, P2-00445, P2-00446, P2-00447, P2-00448, P2-00450, P2-00456	Outside % Recovery Criteria for MS/MSD
	Phosphorus, Orthophosphate as P	J/UJ	P2-00420, P2-00421, P2-00422, P2-00453, P2-00454, P2-00880, P2-00881, P2-00883, P2-00885, P2-00887, P2-00889, P2-00893, P2-00895, P2-00896, P2-00897, P2-00898, P2-00899, P2-00903, P2-00905, P2-00906, P2-00907, P2-00909, P2-00910, P2-00911, P2-00914, P2-00915, P2-00917, P2-00930, P2-00931, P2-00932	Outside Holding Time
	Orthophosphate as P	J	P1-00750FD, P1-00751FD	Outside % Recovery Criteria for MS/MSD
	Orthophosphate as P	J	P2-00401TB, P2-00402, P2-00403, P2-00404	Outside Holding Time
* Report does not differentiate qualifiers	Phosphorus	J	P1-00750FD, P1-00751FD	Outside % Recovery Criteria for MS/MSD
Total Metals and Mercury	Antimony	J/UJ	P2-01070, P2-01071, P2-01072, P2-01073, P2-01074, P2-01075, P2-01076, P2-01077, P2-01078	Outside % Recovery Criteria for MS/MSD
	Barium	J/UJ	P2-01070, P2-01071, P2-01072, P2-01073, P2-01074, P2-01075, P2-01076, P2-01077, P2-01078	Outside % Recovery Criteria for MS/MSD
	Manganese	J/UJ	P2-01070, P2-01071, P2-01072, P2-01073, P2-01074, P2-01075, P2-01076, P2-01077, P2-01078	ICP Serial Dilution % Difference > 10%
	Total Lead	U	P1-00254, P1-00269, P1-00380, P1-00382, P1-00385, P2-00447, P2-00442, P2-01048	Detected in Method Blank

Table 1. Validation Qualification of Non-Asbestos Results in Water
Inorganic Analyses (cont.)

Method	Analyte	Qualifier	Field Sample Nos.	Reason for Qualification
Total Metals and Mercury (cont.)	Total Silver	J	P2-00419	Outside % Recovery Criteria for MS/MSD
	Total Zinc	J	P2-00419	Outside % Recovery Criteria for MS/MSD
	Total Copper	U	P2-00443, P2-01047, P2-01048, P2-01045, P2-01050	Detected in Method Blank
	Selenium	J/UJ	P2-01070, P2-01071, P2-01072, P2-01073, P2-01074, P2-01075, P2-01076, P2-01077, P2-01078	Outside % Recovery Criteria for MS/MSD
	Total Selenium	J/UJ	P2-00450, P2-00446, P2-00443, P2-00456, P2-00441, P2-00429, P2-00445, P2-00431, P2-00427, P2-00428	ICP Serial Dilution % Difference > 10%
	Total Cadmium	U	P2-00787, P2-00793	Detected in Method Blank
	Vanadium	UJ	P2-00784, P2-00787	Outside % Recovery Criteria for MS/MSD

Table 2. Validation Qualification of Non-Asbestos Results in Soil
Inorganic Analyses

Method	Analyte	Qualifier	Field Sample No.	Reason for Qualification
Anions (Chloride, Sulfate, Fluoride)	Fluoride	U	P2-00504	Detected in Method Blank
Phosphorus, Orthophosphate as P	Phosphorus, Orthophosphate as P	J/UJ	P2-00444	Outside % Recovery Criteria for MS/MSD
Total Cyanide	Total Cyanide	J	P2-00469	Outside % Recovery Criteria for MS/MSD
Total Metals and Mercury	Total Lead	U	P2-00994, P2-00995, P2-01003	Detected in Method Blank
	Aluminum	J/UJ	P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00510, P2-00511, P2-00512, P2-00513, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00525, P2-00526, P2-00961, P2-00963, P2-00964, P2-00965, P2-00962, P2-00966, P2-00968, P2-00969, P2-00970, P2-00971, P2-00972, P2-00973, P2-00974, P2-00975, P2-00991, P2-00992, P2-00997, P2-00978, P2-00979, P2-00980, P2-00981, P2-00982, P2-00983, P2-01013, P2-01016, P2-01017, P2-01079, P2-01080, P2-01078, P2-01082	ICP Serial Dilution % Difference > 10%
	Antimony	J/UJ	P1-00289, P1-00296, P1-00298, P1-00299, P1-00290FD, P1-00291FD, P1-00328, P1-00329, P1-00340, P1-00341, P1-00342, P1-00343, P1-00344, P1-00345, P1-00347, P1-00350, P1-00351, P1-00352, P1-00353, P1-00378, P1-00379, P1-00389, P1-00292, P1-00348, P1-00325, P1-00326, P1-00349, P1-00335, P1-00327, P1-00330, P1-00332FD, P1-00333FD, P1-00335, P1-00357, P1-00394TB, P1-00356TB, P1-00362, P1-00363, P1-00364, P1-00365, P1-00366, P1-00367, P1-00368, P1-00369, P1-00370, P1-00371, P1-00372, P1-00373, P1-00375, P1-00376, P1-00377, P1-00395, P1-00396, P1-00397, P1-00398, P1-00399, P1-00400, P1-00402, P1-00403, P1-00404, P1-00405, P1-00406, P1-00407, P1-00408, P1-00409, P2-01070, P2-01071, P2-01072, P2-01073, P2-01074, P2-01077, P2-01078	Outside % Recovery Criteria for MS/MSD
	Antimony	R	P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00511, P2-00512, P2-00513, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526	Outside % Recovery Criteria for MS/MSD <30%
	Barium	J/UJ	P1-00402, P1-00403, P1-00404, P1-00405, P1-00406, P1-00350, P1-00351, P1-00352, P1-00353, P1-00378, P1-00379, P1-00389, P1-00340, P1-00341, P1-00342, P1-00343, P1-00344, P1-00345, P1-00296	Outside % Recovery Criteria for MS/MSD

Table 2. Validation Qualification of Non-Asbestos Results in Soil
Inorganic Analyses (cont.)

Method	Analyte	Qualifier	Field Sample No.	Reason for Qualification
Total Metals and Mercury (cont.)	Barium	J/UJ	P2-00484, P2-00496, P2-00497, P2-00498, P2-00499, P2-00500, P2-00502, P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00511, P2-00512, P2-00513, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526, P2-00536, P2-00537, P2-00961, P2-00963, P2-00966, P2-00964, P2-00962, P2-00965, P2-00997, P2-00977, P2-00978, P2-00979, P2-00980, P2-00981, P2-00982, P2-00983, P2-01070, P2-01071, P2-01072, P2-01073, P2-01074, P2-01075, P2-01076, P2-01077, P2-01078	ICP Serial Dilution % Difference > 10%
	Beryllium	J/UJ	P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00511, P2-00513, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526	Outside % Recovery Criteria for MS/MSD
	Boron	J/UJ	P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00512, P2-00513, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526	Outside % Recovery Criteria for MS/MSD
	Chromium	J/UJ	P1-00205, P1-00206, P1-00289, P1-00290FD, P1-00291FD, P1-00292, P1-00296, P1-00298, P1-00299, P1-00407, P1-00408, P1-00409,P1-00325, P1-00326, P1-00335, P1-00336, P1-00337, P1-00338, P1-00340, P1-00341, P1-00342, P1-00343, P1-00344, P1-00345, P1-00347, P1-00348, P1-00349, P1-00350, P1-00351, P1-00352, P1-00353, P1-00378, P1-00379, P1-00389, P1-00396, P1-00397, P1-00398, P1-00399, P1-00400, P1-00365, P1-00366, P1-00367, P1-00368, P1-00369, P1-00362, P1-00363, P1-00364, P1-00375, P1-00376, P1-00377, P1-00402, P1-00403, P1-00404, P1-00405, P1-00406, P1-00408	Outside % Recovery Criteria for MS/MSD
	Chromium	J/UJ	P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00511, P2-00512, P2-00513, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526, P2-00961, P2-00963, P2-00964, P2-00965, P2-00962, P2-00966, P2-00997, P2-00978, P2-00979, P2-00980, P2-00981, P2-00982, P2-00983	ICP Serial Dilution % Difference > 10%
	Cobalt	J/UJ	P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00512, P2-00513, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526	Outside % Recovery Criteria for MS/MSD
	Copper	J/UJ	P1-00370, P1-00371, P1-00372FD, P1-00373FD, P1-00395, P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00512, P2-00513, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522	Outside % Recovery Limits for MS/MSD

Table 2. Validation Qualification of Non-Asbestos Results in Soil
Inorganic Analyses (cont.)

Method	Analyte	Qualifier	Field Sample No.	Reason for Qualification
Total Metals and Mercury (cont.)	Iron	J/UJ	P2-00484, P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00511, P2-00512, P2-00513, P2-00514, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526, P2-00961, P2-00963, P2-00964, P2-00965, P2-00962, P2-00966	ICP Serial Dilution % Difference > 10%
	Lead	J/UJ	P1-00370, P1-00371, P1-00372, P1-00373, P1-00395, P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00511, P2-00512, P2-00513, P2-00536, P2-00537, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526	Outside % Recovery Criteria for MS/MSD
	Manganese	J/UJ	P1-00205, P1-00206, P1-00289, P1-00290FD, P1-00291FD, P1-00292, P1-00299 ,P1-00325, P2-00326, P1-00327, P1-00328, P1-00329, P1-00335, P1-00336, P1-00337, P1-00338, P1-00348, P1-00349, P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00512, P2-00513, P2-00536, P2-00537, P2-00524, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526	Outside % Recovery Criteria for MS/MSD
	Manganese	J/UJ	P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00511, P2-00512, P2-00513, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526, P2-00961, P2-00963, P2-00964, P2-00965, P2-00962, P2-00966, P2-00997, P2-00978, P2-00979, P2-00980, P2-00981, P2-00982, P2-00983, P2-01070, P2-01071, P2-01072, P2-01073, P2-01074, P2-01075, P2-01076, P2-01077, P2-01078, P2-01079, P2-01080, P2-01081, P2-01082	ICP Serial Dilution % Difference > 10%
	Nickel	J/UJ	P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00512, P2-00513, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526 P2-00536, P2-00537	Outside % Recovery Criteria for MS/MSD
	Selenium	R	P2-00484	Outside % Recovery Criteria for MS/MSD <30%
	Selenium	J/UJ	P2-01070, P2-01071, P2-01072, P2-01073, P2-01074, P2-01075, P2-01076, P2-01077, P2-01078	Outside % Recovery Criteria for MS/MSD
	Silver	J/UJ	P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00512, P2-00513, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520 P2-00522,	Outside % Recovery Criteria for MS/MSD
	Total Antimony	R	P2-00469, P2-00470, P2-00987, P2-00989	Outside % Recovery Criteria for MS/MSD < 30%

Table 2. Validation Qualification of Non-Asbestos Results in Soil
Inorganic Analyses (cont.)

Method	Analyte	Qualifier	Field Sample No.	Reason for Qualification
Total Metals and Mercury (cont.)	Total Antimony	J/UJ	P2-00461, P2-00941, P2-00942, P2-00943, P2-00944, P2-00945, P2-00946, P2-00961, P2-00962, P2-00963, P2-00964, P2-00965, P2-00966, P2-00968, P2-00969, P2-00970, P2-00971, P2-00972, P2-00973, P2-00974, P2-00975, P2-00981, P2-00982, P2-00990, P2-00995, P2-00986, P2-01002, P2-00999, P2-01007, P2-00994, P2-01009, P2-01008	Outside % Recovery Criteria for MS/MSD
	Total Arsenic	UJ	P2-00469, P2-00470	Outside % Recovery Criteria for MS/MSD
	Total Barium	J	P2-00941, P2-00942, P2-00943, P2-00944, P2-00945, P2-00946	Outside % Recovery Criteria for MS/MSD
	Total Cadmium	UJ	P2-00469, P2-00470	Outside % Recovery Criteria for MS/MSD
	Total Chromium	J/UJ	P2-00941, P2-00942, P2-00943, P2-00944, P2-00945, P2-00946	Outside % Recovery Criteria for MS/MSD
	Total Chromium	J/UJ	P2-01078, P2-01079, P2-01080, P2-01081, P2-01082	Outside % Recovery Criteria for MS/MSD
	Total Copper	U	P2-00444	Detected in Method Blank
	Total Copper	J	P2-00474, P2-00475, P2-00476, P2-00478, P2-00485, P2-00486, P2-00489, P2-00491, P2-00492, P2-00493, P2-00494, P2-00472, P2-00473, P2-00477, P2-00481, P2-00482, P2-00483	Outside % Recovery Criteria for MS/MSD
	Total Iron	J	P1-00296, P1-00350, P1-00351, P1-00352, P1-00353, P1-00378, P1-00379, P1-00389, P1-00340, P1-00341, P1-00342, P1-00343, P1-00344, P1-00345, P2-00402, P2-00403, P2-00404, P2-00405, P2-00406, P2-00496, P2-00497, P2-00498, P2-00499, P2-00500, P2-00502	ICP Serial Dilution % Difference > 10%
	Total Lead	UJ	P2-00469, P2-00470	Outside % Recovery Criteria for MS/MSD
	Total Manganese	J	P2-00941, P2-00942, P2-00943, P2-00944, P2-00945, P2-00946, P2-00991, P2-00992	Outside % Recovery Criteria for MS/MSD
	Total Selenium	R	P2-00496, P2-00497, P2-00498, P2-00499, P2-00500, P2-00502	Outside % Recovery Criteria for MS/MSD <30%
	Total Selenium	J/UJ	P2-00962, P2-00964, P2-00965, P2-00461, P2-00469, P2-00470, P2-00941, P2-00942, P2-00943, P2-00944, P2-00945, P2-00946, P2-00968, P2-00969, P2-00970, P2-00971, P2-00973, P2-00975, P2-00987 ,P2-00988, P2-00989, P2-00988, P2-00990, P2-00995, P2-00986, P2-01001, P2-00999, P2-01007, P2-00994, P2-01009, P2-01008, P2-00996, P2-01011, P2-00998	Outside % Recovery Criteria for MS/MSD
	Total Selenium	J/UJ	P2-00444	ICP Serial Dilution % Difference > 10%
Total Metals and	Total Thallium	J/UJ	P2-00484, P2-00961, P2-00963, P2-00964, P2-00962, P2-00965	Outside % Recovery

Table 2. Validation Qualification of Non-Asbestos Results in Soil
Inorganic Analyses (cont.)

Method	Analyte	Qualifier	Field Sample No.	Reason for Qualification
Mercury (cont.)				Criteria for MS/MSD
	Total Vanadium	J	P2-00941, P2-00943, P2-00944, P2-00945, P2-00946, P2-00991	Outside % Recovery Criteria for MS/MSD
	Vanadium	J/UJ	P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00512, P2-00513, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526, P2-00991, P2-00992	Outside % Recovery Criteria for MS/MSD
	Zinc	J/UJ	P1-00370, P1-00371, P1-00372, P1-00373, P1-00395, P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00512, P2-00513, P2-00536, P2-00537, P2-00514, P2-00515, P2-00516, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526	Outside % Recovery Limits for MS/MSD
	Zinc	U	P2-00486	Detected in Method Blank
Total Phosphorus	Total Phosphorus	J	P2-00474, P2-00475, P2-00476, P2-00478, P2-00485, P2-00486, P2-00487, P2-00489, P2-00490, P2-00491, P2-00492, P2-00493, P2-00494, P2-00472, P2-00473, P2-00477, P2-00481, P2-00482, P2-00483, P2-00484, P2-00968, P2-00969, P2-00470, P2-00941, P2-00942, P2-00943, P2-00944, P2-00945, P2-00946, P2-00968, P2-00969, P2-00970, P2-00971, P2-00972, P2-00973, P2-00975, P2-00987, P2-00988, P2-00989, P2-00988, P2-00990, P2-00991FD, P2-00992FD, P2-00995, P2-00986, P2-01001, P2-01002, P2-01003, P2-01008, P2-00999, P2-01007, P2-00994, P2-01009, P2-00996, P2-01011, P2-00998, P2-00997, P2-00977, P2-00978	Outside % Recovery Criteria for MS/MSD

Table 3. Validation Qualification of Non-Asbestos Results in Water
Organic Analyses

Method	Analyte	Qualifier	Field Sample No.	Reason for Qualification
Extractable Petroleum Hydrocarbons (EPH)	Total Extractable Hydrocarbons	J/UJ	P2-00420, P2-00421, P2-00422, P2-00427, P2-00428, P2-00429, P2-00430, P2-00431, P2-00432, P2-00439, P2-00440, P2-00441, P2-00442, P2-00443, P2-00444, P2-00445, P2-00446, P2-00447, P2-00448, P2-00449 P2-00456, P2-00795, P2-00880, P2-00881, P2-00885, P2-00887, P2-00889, P2-00898, P2-00899, P2-00902, P2-00903, P2-00904, P2-00905, P2-00906, P2-00907, P2-00909, P2-00910, P2-00911, P2-00912, P2-00914, P2-00915, P2-00917, P2-00930, P2-00931, P2-00932, P2-01041, P2-01045, P2-01046, P2-01047, P2-01048, P2-01050	Outside Holding Time
	C9-C18 Aliphatics	J/UJ	P2-00450, P2-00795, P2-01047, P2-01048	Outside Holding Time
	C19-C36 Aliphatics	J/UJ	P2-00453, P2-00795, P2-01047, P2-01048, P2-01049	Outside Holding Time
	C11-C22 Aromatics	J/UJ	P2-00454, P2-00795, P2-01047, P2-01048, P2-01050	Outside Holding Time
Organophosphorus Pesticides (OPP)	All OPP Results	UJ	P1-00251FD, P1-00252FD	Outside Holding Time
	Azinphos-methyl (Guthion)	UJ	P2-00930, P2-00931	CCV Exceeded %D Criteria
	Demeton-O,S	UJ	P1-00251FD, P1-00252FD, P1-00254, P1-00257FB,	Low LCS % Recovery
Polycyclic Aromatic Hydrocarbons (PAH)	All PAH Results	J/UJ	P2-00441, P2-01047, P2-01048, P2-01045	Outside Holding Time
Semivolatile Organic Compounds	Benzaldehyde	UJ	P1-00251FD, P1-00252FD, P1-00254, P1-00257FB	Low LCS % Recovery
	Caprolactam	UJ	P1-00251FD, P1-00252FD, P1-00254, P1-00257FB	Low LCS % Recovery
Volatile Organic Compounds	1,4-Dioxane	R	P1-00293TB, P1-00331TB	Extremely Low RRF in Initial Calibration
	1,2,4-Trichlorobenzene	UJ	P1-00293TB, P1-00331TB	CCV Exceeded %D Criteria
Volatile Petroleum Hydrocarbons (VPH)	Total Purgeable Hydrocarbons	U	P1-00268	Detected in Trip Blank
	C5 to C8 Aliphatics	U	P1-00268	Detected in Trip Blank
	All VPH results	J/UJ	P2-00540TB	Outside Holding Time

Table 4. Validation Qualification of Non-Asbestos Results in Soil
Organic Analyses

Method	Analyte	Qualifier	Field Sample No.	Reason for Qualification
Extractable Petroleum Hydrocarbons (EPH)	C9-C18 Aliphatics C19-C36 Aliphatics C11-C22 Aromatics	J/UJ	P1-00327, P1-00335, P2-00498, P2-00499, P2-00500, P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00511, P2-00512, P2-00513, P2-00514, P2-00515, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526, P2-00961, P2-00963, P2-00966, P2-00969, P2-00970, P2-00972FD, P2-00973FD, P2-00974, P2-00975, P2-00977, P2-00978, P2-00979, P2-00980, P2-00981, P2-00982, P2-00983, P2-00990, P2-00992, P2-00995, P2-00996, P2-00997, P2-00998, P2-00999, P2-01003, P2-01007, P2-01008, P2-01009, P2-01011, P2-01015, P2-01016, P2-01017	Outside Holding Time
	Total Extractable Hydrocarbons	J/UJ	P1-00327, P1-00335, P2-00472, P2-00475, P2-00476, P2-00481, P2-00482, P2-00484, P2-00486, P2-00493, P2-00498, P2-00499, P2-00500, P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00511, P2-00512, P2-00513, P2-00514, P2-00515, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526, P2-00961, P2-00963, P2-00966 P2-00961, P2-00963, P2-00966, P2-00969, P2-00970, P2-00972FD, P2-00973FD, P2-00974, P2-00975, P2-00977, P2-00978, P2-00979, P2-00980, P2-00981, P2-00982, P2-00983, P2-00990, P2-00992, P2-00995, P2-00996, P2-00997, P2-00998, P2-00999, P2-01003, P2-01007, P2-01008, P2-01009, P2-01011, P2-01015, P2-01016, P2-01017	Outside Holding Time
Organochlorine Pesticides	4,4'-DDT , Methoxyclor	UJ	P1-00327, P1-00328, P1-00329, P1-00335, P1-00327, P1-00328, P1-00329, P1-00335	CCV Exceeded %D Criteria
	Isodrin	UJ	P2-00945, P2-00946	Low LCS % Recovery
Organophosphorus Pesticides (OPP)	All OPP Results	UJ	P1-00325	Outside Holding Time
	Demeton-O,S, Phorate, Disulfoton	R	P1-00325, P1-00332, P1-00333, P1-00336, P1-00337, P1-00357	LCS Recoveries < 10%
	Fenthion, Bolstar	UJ	P1-00325, P1-00332, P1-00333, P1-00336, P1-00337, P1-00357	Low LCS % Recovery
	Phorate, Disulfoton, Dimethoate, Chlorpyrifos, Coumaphos, Trichloronate	UJ	P2-00945, P2-00946	CCV Exceeded %D Criteria
Polycyclic Aromatic Hydrocarbons (PAH)	All PAH Results	J/UJ	P2-00996, P2-00997, P2-00998, P2-01007, P2-01008, P2-01009, P2-01011	Outside Holding Time
Polycyclic Aromatic Hydrocarbons (PAH)	Napthalene	UJ	P2-00990, P2-00992, P2-00995, P2-00996, P2-00997, P2-00998, P2-00999, P2-01002, P2-01003, P2-01007, P2-01008 ,P2-01011	Low LCS % Recovery

Table 4. Validation Qualification of Non-Asbestos Results in Soil Organic Analyses (cont.)

Method	Analyte	Qualifier	Field Sample No.	Reason for Qualification
Semivolatile Organic Compounds (SVOC)	Benzaldehyde	UJ	P2-00535, P2-01060, P2-01061, P2-01062, P2-01063, P2-01078, P2-01082	Low LCS % Recovery
Volatile Organic Compounds	Caprolactam	UJ	P2-01060, P2-01061, P2-01062, P2-01063, P2-01078, P2-01082	Low LCS % Recovery
	1,4-Dioxane	R	P1-00325	Extremely Low RRF in Initial Calibration
	1,2,4-Trichlorobenzene	UJ	P1-00325	CCV Exceeded %D Criteria
	Chloroethane	UJ	P1-00325, P1-00332, P1-00333, P1-00336, P1-00337, P1-00357	Low LCS % Recovery
Volatile Petroleum Hydrocarbons (VPH)	All VPH Results	J/UJ	P2-00461, P2-00462, P2-00471, P2-00472, P2-00473, P2-00474, P2-00475, P2-00476, P2-00477, P2-00481, P2-00482, P2-00483, P2-00484, P2-00485, P2-00486, P2-00487, P2-00489, P2-00490, P2-00491, P2-00492, P2-00493, P2-00494, P2-00496, P2-00497, P2-00498, P2-00499, P2-00500, P2-00502, P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00511, P2-00512, P2-00513, P2-00514, P2-00515, P2-00517, P2-00518, P2-00519, P2-00520, P2-00522, P2-00523, P2-00524, P2-00525, P2-00526, P2-00529, P2-00530, P2-00531, P2-00537, P2-00539, P2-00971, P2-00972FD, P2-00973FD, P2-00974, P2-00975, P2-00976, P2-00977, P2-00978, P2-00979, P2-00980, P2-00981, P2-00982, P2-00983, P2-00984, P2-00985, P2-00986, P2-00987, P2-00988, P2-00989, P2-00990, P2-00991, P2-00992, P2-00994, P2-00995, P2-00996, P2-00997, P2-00998, P2-00999, P2-01000, P2-01001, P2-01002, P2-01003, P2-01007, P2-01008, P2-01009, P2-01011	Outside Holding Time
	All VPH Results	J/UJ	P2-00493, P2-00486, P2-00498, P2-00499, P2-00500, P2-00503, P2-00504, P2-00505, P2-00506, P2-00507, P2-00509, P2-00510, P2-00512, P2-00513, P2-00514, P2-00515, P2-00515, P2-00516, P2-00517, P2-00518, P2-00536, P2-00537, P2-00520, P2-00522, P2-00963, P2-00961, P2-00962, P2-00963, P2-00964, P2-00966, P2-00971, P2-00975, P2-00978, P2-00979, P2-00980, P2-00981, P2-00982, P2-00900, P2-00992, P2-01002 P2-01011	Low Surrogate Recovery
	C5 to C8 Aliphatics	J/UJ	P2-00972FD, P2-00973FD	Low Surrogate Recovery
	C9 to C12 Alphatics	J/UJ	P2-00972FD, P2-00973FD	Low Surrogate Recovery
Volatile Organic Compounds (VOCs)	All VOC Results	J/UJ	P2-00945, P2-00946	Low Surrogate Recovery

Table 5. Validation Qualification of Non-Asbestos Results
Radiochemistry Analyses

Method	Analyte	Qualifier	Field Sample Nos.	Reason for Qualification
Gross Alpha/Gross Beta*	Gross Alpha	UJ	P2-01041, P2-01042, P2-01043, P2-01045, P2-01047, P2-01048, P2-01044, P2-01046, P2-01049, P2-01050	Outside % RPD Criteria for MS/MSD
	Gross Alpha	J	P2-01045, P2-01047, P2-01048	Outside % Recovery Criteria for MS/MSD

*The qualifiers applied to radiochemical analyses listed above were observed in inorganic data validation reports.

Table 6. Validation of Non-Asbestos Results
Field Duplicates Exceeding QC Limit

Method	Analyte	Field Sample No. Pairs	Matrix	RPD	Comment
Nitrogen Compounds	Nitrogen, Nitrate+Nitrite as N, Nitrogen, Nitrite as N	P1-00390FD/P1-00390392FD	Water	>20%	No Qualification for Field Dup > QC limit
Organic Carbon	Organic Carbon	P1-00347FD/P1-00409FD, P1-00290FD/P1-00291FD, P1-00336FD/P1-00337FD	Soil	>35%	No Qualification for Field Dup > QC limit
Total Metals and Mercury	Arsenic, Copper, Chromium, Copper, Iron, Manganese	P1-00372FD/P1-00373FD	Soil	>35%	No Qualification for Field Dup > QC limit
	Aluminum, Barium, Nickel, Vanadium, Zinc	P1-00336FD/P1-00337FD	Soil	>35%	No Qualification for Field Dup > QC limit
	Iron	P1-00347FD/P1-0409FD	Soil	>35%	No Qualification for Field Dup > QC limit
	Mercury	P1-00290FD/P1-00291FD	Soil	>35%	No Qualification for Field Dup > QC limit
Total Phosphorus	Total Phosphorus	P1-00391FD/P1-00392FD	Soil	>35%	No Qualification for Field Dup > QC limit
Extractable Petroleum Hydrocarbons (EPH)	C19 to C36 Aliphatics, C11 to C22 Aromatics, Total Extractable Hydrocarbons (TEH) Total Extractable Hydrocarbons (DRO)	P1-00372FD/P1-00373FD	Soil	>35%	No Qualification for Field Dup > QC limit
	Total Extractable Hydrocarbons	P1-00367FD/P1-00368FD, P1-00290FD/P1-00291FD	Soil	>35%	No Qualification for Field Dup > QC limit
Volatile Petroleum Hydrocarbons (VPH)	Total Purgeable Hydrocarbons	P1-00290FD/P1-00291FD	Soil	>35%	No Qualification for Field Dup > QC limit
Gross Alpha	Gross Alpha	P1-00251FD/P1-00252FD	Water	>20	No qualification for Field Dup > QC limit

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September 5, 2013

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Document ID #: 2021-09052013-1

EPA CONTRACT NUMBER EP-W-10-033
TASK ORDER NUMBER 2021
QA SUPPORT FOR RI/FS AT THE LIBBY ASBESTOS SITE OU3

Dear Ms. Zinner:

Enclosed please find the finalized Annual QA/QC Summary Report (2007-2012). This report is a deliverable under Task 9 of Task Order 2021.

If you have any questions, please feel free to contact me.

Sincerely,

Timothy L. Vonnahme

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ANNUAL QA/QC SUMMARY REPORT (2007-2012) (FINAL)

FOR TASK ORDER 2021 QUALITY ASSURANCE (QA) SUPPORT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) AT SITE OU3

Prepared by:

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September 5, 2013

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OFFICE OF SUPERFUND REMEDIATION AND TECHNOLOGY INNOVATION
U. S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

The Quality Assurance Technical Support (QATS) contract is operated by Shaw Environmental, Inc., a CB&I Company. The QATS Program's Quality Management System is certified to the ISO 9001:2008 International Standard

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ATTACHMENT

Attachment 1 - EMSL Analytical (Libby, MT) Issues and Concerns

Acronym List

<	Less Than
≥	Greater Than or Equal To
%	Percent
AHERA	Asbestos Hazard Emergency Response Act
AOC	Administrative Order on Consent
ASTM	American Society for Testing and Materials
COC	Chain-Of-Custody
CSF	Close Support Facility
EDD	Electronic Data Deliverable
EPA	Environmental Protection Agency
ESAT	Environmental Services Assistance Team
f/cc	Fibers per Cubic Centimeter
f/mm2	Fibers per Square Millimeter
FB	Field Blank
ISO	International Organization for Standardization
ISSI	ISSI Consulting Group, Inc.
LA	Libby Amphibole
LDC	Laboratory Duplicate Cross-check
LDS	Laboratory Duplicate Self-check
MAS	Material Analytical Services, LLC
MFL	Million Fibers per Liter
ND	Non-Detect
NVLAP	National Voluntary Laboratory Accreditation Program
OU3	Libby Operable Unit 3
PCM	Phase Contrast Microscopy
PCME	PCM-Equivalent
PES	Performance Evaluation Sample
PLM	Polarized Light Microscopy
PLM-GRAV	Polarized Light Microscopy Gravimetric
PLM-VE	Polarized Light Microscopy-Visual Area Estimation
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
QATS	Quality Assurance Technical Support
RD	Recount Different
RI/FS	Remedial Investigation/Feasibility Study
RS	Recount Same
SAED	Selected Area Electron Diffraction
SAP	Sampling and Analysis Plan
s/cc	Structures per Cubic Centimeter
SOP	Standard Operating Procedure
SPF	Soil Preparation Facility
SRM	Solid Reference Material
TEM	Transmission Electron Microscopy
VA	Verified Analysis

1.0 Introduction

1.1 Purpose of this Report

This Annual Summary Report is a requirement of Task 9 of Task Order 2-021, *Quality Assurance/Quality Control (QA/QC) Support for Remedial Investigation/Feasibility Study (RI/FS) at the Libby Asbestos Site OU3*, issued to Shaw Environmental, Inc. (a CB&I Company) on November 14, 2012 by the U.S. Environmental Protection Agency (EPA) Region 8. The purpose of this report is to provide an updated summary of the QA activities conducted on analyses from the OU3 site from 2007 through 2012. Operable Unit 3 (OU3) is one of eight Operable Units designated by EPA for the Libby RI/FS, which encompasses the mine property itself and areas impacted by releases from the mine, such as creeks, the Kootenai River, settling ponds, the surrounding forest, and Rainy Creek Road. The Libby RI/FS at OU3 is being conducted through an Administrative Order on Consent (AOC) entered into by EPA with respondents W.R. Grace & Co. and Kootenai Development Corporation (KDC).

1.2 Report Outline

The elements provided in this report are as defined in the Task Order, and include:

- Data Management QA
- QC Data Evaluated
- Asbestos Data Validation
- Laboratory Audits
- Laboratory Mentoring Program
- Development and Review of Standard Operating Procedures (SOPs) and Other Quality Documents
- Conclusions and Recommendations

The primary contaminant at OU3 is Libby Amphibole (LA) which is a form of asbestos present in the vermiculite that had been mined at the site from 1919 to 1990. The QC data summarized in the report includes data from the preparation and analysis of LA from OU3. The data evaluated for some of the above elements span multiple years. For example, the QC data evaluated includes data collected from 2007 through 2012; asbestos data validation of samples collected from 2007 through 2012; and laboratory audits performed on OU3 support laboratories in 2008, 2011, and 2012. Where possible, QA/QC trends (e.g., year-over-year performance in on-site laboratory audits, data validation results) are discussed in the report.

2.0 Data Management QA

This section will be completed by CDM Smith.

3.0 QC Data Evaluated

The QC data described in this section were collected from the OU3 site between 2007 and 2012, and are categorized in the tables by investigation phases performed to support specific types of studies. The approximate dates and titles of the ten investigation phases performed at the Libby OU3 Superfund Site during this time period include:

Phase I - Sampling and Analysis Plan, September 2007
Phase II, Part A - Surface Water and Sediment, May 2008
Phase II, Part B - Air and Groundwater, July 2008
Phase II, Part C - Ecological Data, September 2008
Phase III - Sampling and Analysis Plan, May 2009
Phase IV, Part A - Data to Support Human Health Risk Assessment, June 2010
Phase IV, Part B - Surface Water Study, April 2011
Phase V, Part A - Surface Water, Sediment, and Activity-Based Sampling, October 2012
Phase V, Part B - Ecological Investigations, May 2012
Phase CL - Commercial Logging, August 2012

This section summarizes the result summaries by the following categories:

- Field Quality Control
- Preparation Quality Control
- Laboratory Analysis Quality Control
- Performance Evaluation Sample (PES) Results

3.1 Field Quality Control

Field-based QC samples are samples collected in the field and submitted to the laboratory along with the regular field samples for analysis. Four types of field QC samples were collected from OU3 between 2007 and 2012:

- Field Blank
- Rinsate Blank
- Lot Blank
- Field Duplicate/Split

Field QC samples were collected with samples to be analyzed by PLM-Visual Estimation (VE), PLM-Gravimetric (GRAV), and TEM. Field QC samples for PLM-VE analyses include field duplicates of forest soil, mine waste, and sediment samples collected for Phase I in 2007, and field duplicates of sediment and soil samples collected for Phases II and V in 2008 and 2012. A total of 31 PLM-VE field duplicate samples of 437 field samples were collected, which represent an overall field QC to sample ratio of 7.1%. **Table 1** provides a summary of the PLM-VE field QC collected by Phase.

Table 1 - PLM-VE Field QC

			Field Duplicates	
Investigation	**Media**	**Field Samples**	**No. of Analyses**	**%**
Phase I	Forest Soil	82	8	9.8%
	Mine Waste	42	4	9.5%
	Sediment	27	3	11.1%
	Soil	23	0	0.0%
Phase IIA	Sediment	128	12	9.4%
	Soil	48	0	0.0%
Phase IIC	Sediment	13	1	7.7%
	Soil	3	0	0.0%
Phase VA	Sediment	6	1	16.7%

Table 1 - PLM-VE Field QC

			Field Duplicates	
Investigation	**Media**	**Field Samples**	**No. of Analyses**	**%**
Phase VB	Sediment	65	2	3.1%
	Totals	**437**	**31**	**7.1%**

Field QC samples for PLM-GRAV analyses include field duplicates of forest soil, mine waste, and sediment samples collected for Phase I in 2007, and to sediment samples from Phases II and V in 2008 and 2012. PLM-GRAV field QC includes 17 field duplicate samples for 194 field samples collected, which represents 8.8% of the total. **Table 2** provides a summary of the PLM Field QC collected by investigation.

Table 2 - PLM-GRAV Field QC

			Field Duplicates	
Investigation	**Media**	**Field Samples**	**No. of Analyses**	**%**
Phase I	Forest Soil	73	6	8.2%
	Mine waste	42	4	9.5%
	Sediment	19	2	10.5%
	Soil	12	0	0.0%
Phase IIA	Sediment	24	3	12.5%
	Soil	3	0	0.0%
Phase IIC	Sediment	9	0	0.0%
Phase VB	Sediment	12	2	16.7%
	Totals	**194**	**17**	**8.8%**

Field QC samples for TEM analyses were applied to air, duff, water, and tree bark samples analyzed from 2007 through 2012 for investigation phases I-V. TEM field QC samples include field duplicate samples, equipment rinsate blanks, field blanks, sample splits, and lot blanks. Of the 1,551 total samples collected from the OU3 site for TEM analysis during this period, 193 various field QC samples were applied, which represents 12.4% of the total. **Table 3** shows the type, number, and frequency of TEM Field QC samples by investigation.

Table 3 - TEM Field QC, Phases I-CL

			Field Duplicates		Rinsate Blanks		Field Blanks		Lot Blanks		Sample Splits	
Investigation	**Media**	**Field Samples**	**No. of Analyses**	**%**	**No. of Analyses**	**%**	**No. of Analyses**	**%**	**No. of Analyses**	**%**	**No. of Analyses**	**%**
Phase I	Air	49	4	8.2%	---	---	8	16.3%	5	10.2%	---	---
	Duff	81	8	9.9%	---	---	---	---	---	---	0	0.0%
	Surface Water	30	3	10.0%	---	---	3	10.0%	---	---	0	0.0%
	Tree Bark	82	8	9.8%	---	---	---	---	---	---	0	0.0%
Phase IIA	Surface Water	290	19	6.6%	---	---	23	7.9%	---	---	2	0.7%
Phase IIB	Air	82	8	9.8%	---	---	8	9.8%	1	1.2%	---	---
	Groundwater	28	1	3.6%	5	17.9%	0	0.0%	---	---	2	7.1%
Phase IIC	Surface Water	4	1	25.0%	---	---	1	25.0%	---	---	0	0.0%
Phase III	Air (ABS)	241	---	--	---	---	7	2.9%	4	1.7%	---	---
Phase IVA	Air (ABS)	262	---	---	---	---	6	2.3%	4	1.5%	---	---
	Tree Bark	5	---	----	---	----	0	0.0%	----	---	0	0.0%
Phase IVB	Surface Water	104	11	10.6%	---	---	11	10.6%	---	---	0	0.0%

Table 3 - TEM Field QC, Phases I-CL

			Field Duplicates		Rinsate Blanks		Field Blanks		Lot Blanks		Sample Splits	
Investigation	**Media**	**Field Samples**	**No. of Analyses**	**%**	**No. of Analyses**	**%**	**No. of Analyses**	**%**	**No. of Analyses**	**%**	**No. of Analyses**	**%**
Phase VA	Air (ABS)	3	--	---	---	----	1	33.3%	0	0.0%	---	---
	Surface Water	88	10	11.4%	---	---	6	6.8%	---	---	0	0.0%
Phase VB	Pore Water	49	2	4.1%	---	---	1	2.0%	---	---	0	0.0%
	Surface Water	124	7	5.6%	---	---	8	6.5%	---	---	0	0.0%
CL	Air (ABS)	17	---	---	---	---	3	17.6%	0	0.0%	---	---
	Duff	6	1	16.7%	---	---	---	---	---	---	0	0.0%
	Tree Bark	6	1	16.7%	---	---	---	---	---	---	0	0.0%
	Totals	**1551**	**84**	**5.4%**	**5**	**0.3%**	**86**	**5.5%**	**14**	**0.9%**	**4**	**0.3%**

3.1.1 Field Blanks

A field blank is a sample of the same medium as the associated field samples used to determine if cross-contamination is occurring during sample collection and/or analysis. Field blank collection frequency requirements are specified in the associated Sampling and Analysis Plans (SAPs). Field blanks for OU3 were collected for water and air samples, but not for sediments, tree bark, duff, and other solid media types. With the exception of the following, field blanks were collected at the frequencies specified in the applicable SAP:

- Phase IIA Surface Water - The SAP specifies a collection frequency of 10%; however, field blanks were only collected at a frequency of 7.9%.
- Phase III ABS Air – Field blanks were only collected on 8 of the 10 days samples were collected.
- Phase VB Pore Water - The SAP specifies a collection frequency of 5%; however, field blanks were only collected at a frequency of 2.0%.

As shown in **Table 3** above, a total of 86 field blanks were collected across all investigation phases from 2007 through 2012. There were four field blanks in which at least one LA fiber was observed, as summarized in **Table 4A** below. One LA fiber was observed in each of the Field Blanks P1-00257 and P5-20103, suggesting that there may have been potential contamination introduced during sample collection and/or analysis. Field blank P1-00257 was collected on 10/18/2007; however, there are no field samples associated with this blank. Field blank P5-20103 was collected on 6/4/2012 along with the pore water samples listed in **Table 4B** below, which should be FB-qualified to alert potential data users. The LA contamination reported in Field Blanks P5-10028 and P5-10014, in which 3 LA fibers and 25 LA fibers were observed, respectively, is part of an investigation described in a technical memorandum to EPA on August 30, 2013 (**see Attachment 1**) and appears to be due to possible mislabeling in the field or misidentification by the laboratory. No LA fibers were observed in any of the other 82 field blanks collected.

Table 4A - TEM Field Blanks with Structures Reported

Index ID	Investigation	Date Collected	Analysis	Media	Structures	Concentration (MFL)
P1-00257	Phase I	18-Oct-07	TEM	Surface Water	1	4.98E-02
P5-10028	Phase VA	16-May-12	TEM	Surface Water	3	4.74E-02
P5-10014		09-May-12	TEM	Surface Water	25	9.23E-01
P5-20103	Phase VB	04-Jun-12	TEM	Pore Water	1	4.43E-02

Table 4B – Samples Associated With Contaminated Field Blanks

Index ID	Field QC Type	Media	Sample Date
P5-20094	Field Sample	Surface Water	6/4/2012
P5-20095	Field Sample	Surface Water	6/4/2012
P5-20096	Field Sample	Surface Water	6/4/2012
P5-20097	Field Sample	Pore Water (In)	6/4/2012
P5-20098	Field Sample	Surface Water	6/4/2012
P5-20099	Field Sample	Pore Water (In)	6/4/2012
P5-20100	Field Sample	Surface Water	6/4/2012
P5-20101	Field Sample	Pore Water (In)	6/4/2012
P5-20102	Field Duplicate	Pore Water (In)	6/4/2012

3.1.2 Rinsate Blanks

Rinsate blanks, which were only applied to groundwater in Phase IIB, are used to determine whether the decontamination procedures applied to field equipment are adequate to prevent cross-contamination of samples during sample collection. Rinsate blanks are prepared by rinsing decontaminated field equipment with analyte-free reagent water. Rinsate blanks are typically collected at a rate of one per sampling team per day. If field equipment is not re-used between sampling locations (i.e., dedicated equipment is used or equipment is disposable and decontamination is not necessary), rinsate blanks are not collected.

As shown in **Table 3**, a total of five rinsate blanks for the 28 groundwater samples were collected in Phase IIB. Seven LA fibers were observed in one rinsate blank sample which resulted in a total LA concentration of 0.35 million fibers per liter (MFL) (Note that all fibers from this rinsate blank were less than 10 µm in length). This indicates that the decontamination procedures applied were not effective and that LA may have been introduced into the samples due to cross-contamination. Two groundwater samples (P2-00780 and P2-00781) were collected on the same day with this rinsate blank, with total LA concentrations ranging from non-detect to 0.1 MFL. Due to the contamination in the rinsate blank, the samples collected on the same day were FB-qualified.

With the exception of the following, rinsate blanks were collected at the frequencies specified in the applicable SAP:

- Phase IIB Groundwater – Rinsate blanks were only collected on 4 of the 7 days samples were collected.

3.1.3 Lot Blanks

Before air filter cassettes can be used for asbestos sampling, the lot must be determined to be asbestos-free. Two lot blanks are selected at random from each group of cassettes to be used for collection of air samples. The lot blanks are analyzed for asbestos fibers by the same method used for field sample analysis. If any asbestos fibers are detected on the lot blanks, the entire batch of cassettes is rejected. Only lots of filters with acceptable lot blank results are placed in the general supply area for use by project personnel.

A total of 14 lot blanks for air cassettes were collected. No asbestos structures were observed in any of the lot blanks analyzed. From these results it was concluded that the likelihood of asbestos contamination in air filter cassettes was low, and the cassette lots were subsequently utilized for the air program.

It should be noted that lot blanks have not been collected and analyzed since 2010. The field team was contacted concerning this situation and it is still unknown whether or not the current lot was checked prior to use. Lot blanks should be checked by comparing the lot numbers of those analyzed versus what the field team recorded in the field logbooks or on the field sample data sheet (FSDS).

3.1.4 Field Splits

A field split is a QC sample that is prepared by thoroughly homogenizing a field sample, dividing the homogenized sample into two parts, and analyzing each independently. Field splits provide a measure of the precision of the sample preparation and analysis methods. As shown in **Table 3**, only four field splits (two surface water and two groundwater, collected respectively in Phases IIA and IIB) were performed for the 1,551 TEM field samples that were collected from 2007 through 2012. Neither of these original-duplicate pair field splits were found to be statistically different from each other using the Poisson ratio comparison test based on a 90% confidence interval.

3.1.5 Field Duplicates

A field duplicate is a second sample that is collected at the same location or coordinates and at approximately the same time as the original field sample, using the same collection technique. Field duplicates are used to evaluate variability due to small-scale media heterogeneity, along with analytical precision. Because field duplicate samples are expected to have inherent variability that is random and may be either small or large, there is no quantitative requirement for the agreement of field duplicates. Rather, results are used to determine the magnitude of this variability to evaluate data usability. With the exception of the following, field duplicates were collected at the frequencies specified in the applicable SAP:

- Phase I Air - The SAP specifies a collection frequency of 10%; however, field duplicates were only collected at a frequency of 8.2%.
- Phase IIA Surface water - The SAP specifies a collection frequency of 10%; however, field duplicates were only collected at a frequency of 6.6%.
- Phase IIB Groundwater - The SAP specifies a collection frequency of 10%; however, field duplicates were only collected at a frequency of 3.6%.

For OU3 samples collected in the 10 investigation phases from 2007 through 2012 (as shown in **Tables 1-3**), 48 field duplicate pairs were collected for samples prepared and analyzed by PLM, and 84 field duplicate pairs were collected for samples prepared and analyzed by TEM.

3.1.5.1 TEM

For the TEM field duplicates, the LA concentration estimates derived from the original and duplicate samples were compared using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI).

Of the 84 duplicate pairs collected for TEM analysis, 32 of the original-duplicate pairs (38%) summarized in **Table 5** below were statistically different from each other, suggesting that reproducibility of water, tree bark, and duff results (even within a small sampling scale) is difficult due to the inherent sampling variability within the medium.

Table 5 - TEM Field Duplicates Outside Reference Criteria

				Parent Sample			Field Duplicate			
Investigation	Media	Parent ID	Field Dup. ID	Struct. Count	Analytical Sensitivity [a]	Conc [a]	Struct. Count	Analytical Sensitivity [a]	Conc [a]	Poisson Ratio Rate Comparison (CI=90%)
Phase I	Duff	P1-00103	P1-00104	7	9.18E+06	6.43E+07	0	9.14E+06	<LOD	0.00E+00
		P1-00122	P1-00126	8	6.28E+06	5.02E+07	0	9.00E+06	<LOD	1.18E+08
		P1-00177	P1-00178	4	9.11E+06	3.64E+07	61	4.24E+06	2.59E+08	1.32E+05
		P1-00115	P1-00116	25	8.98E+06	2.25E+08	14	8.41E+06	1.18E+08	5.66E+05
	Tree Bark	P1-00113	P1-00114	51	1.53E+04	7.80E+05	21	8.73E+03	1.83E+05	1.03E+05
		P1-00121	P1-00125	53	3.06E+04	1.62E+06	14	9.40E+03	1.32E+05	6.77E+07
		P1-00175	P1-00176	51	9.79E+03	4.99E+05	53	1.99E+04	1.05E+06	3.49E+05
		P1-00071	P1-00072	8	5.09E+03	4.07E+04	51	1.11E+04	5.66E+05	8.96E+05
		P1-00075	P1-00076	52	8.15E+04	4.24E+06	6	8.99E+03	5.39E+04	2.14E+08
		P1-00153	P1-00154	23	9.40E+03	2.16E+05	11	9.40E+03	1.03E+05	3.59E+06
Phase IIA	Surface Water	P2-00012	P2-00013	31	9.96E+05	3.09E+07	26	1.99E+05	5.17E+06	3.32E+07
		P2-00091	P2-00093	28	9.96E+05	2.79E+07	34	1.99E+06	6.77E+07	9.42E+06
		P2-00313	P2-00314	26	6.43E+04	1.67E+06	6	7.97E+04	4.78E+05	3.73E+06
		P2-00346	P2-00347	0	4.98E+04	<LOD	7	4.98E+04	3.49E+05	2.82E+07
		P2-00351	P2-00352	27	1.05E+05	2.84E+06	25	5.53E+04	1.38E+06	6.18E+07
		P2-00802	P2-00803	25	7.66E+04	1.92E+06	18	4.98E+04	8.96E+05	1.88E+08
		P2-00930	P2-00931	7	4.98E+04	3.49E+05	22	4.98E+04	1.10E+06	0.00E+00
Phase IVB	Surface Water	P4-50043	P4-50046	119	9.96E+05	1.19E+08	215	9.96E+05	2.14E+08	1.18E+08
		P4-50097	P4-50100	100	5.69E+05	5.69E+07	107	3.32E+05	3.55E+07	1.32E+05
		P4-50124	P4-50127	101	5.86E+04	5.92E+06	45	7.97E+04	3.59E+06	5.66E+05
		P4-50151	P4-50154	100	4.43E+05	4.43E+07	100	1.42E+05	1.42E+07	1.03E+05
		P4-50181	P4-50184	0	7.97E+04	<LOD	100	3.32E+05	3.32E+07	6.77E+07
		P4-50208	P4-50211	100	1.11E+05	1.11E+07	104	2.49E+05	2.59E+07	3.49E+05
		P4-50235	P4-50238	100	4.98E+05	4.98E+07	104	9.06E+04	9.42E+06	8.96E+05
Phase VA	Surface Water	P5-10067	P5-10068	25	5.33E+04	1.33E+06	1	3.57E+04	3.57E+04	2.14E+08
		P5-20085	P5-20087	5	4.62E+04	2.31E+05	27	1.38E+05	3.73E+06	3.59E+06
Phase VB	Pore Water	P5-20007	P5-20008	39	6.92E+07	2.70E+09	57	6.92E+07	3.94E+09	3.32E+07
		P5-20097	P5-20102	56	1.66E+06	9.30E+07	34	8.30E+05	2.82E+07	9.42E+06
	Surface Water	P5-20018	P5-20019	0	8.49E+04	<LOD	65	1.64E+06	1.07E+08	3.73E+06
		P5-20225	P5-20226	25	9.96E+05	2.49E+07	62	9.96E+05	6.18E+07	2.82E+07
		P5-20261	P5-20262	26	1.15E+05	2.99E+06	25	3.08E+05	7.70E+06	6.18E+07
Commercial Logging	Duff	CL-3-0003	CL-3-0005	66	9.26E+06	6.11E+08	32	5.88E+06	1.88E+08	1.88E+08

[a] tree bark sensitivity units: $(cm)^{-2}$
water sensitivity units: $(L)^{-1}$
duff sensitivity units: $(g)^{-1}$

At least three of the duplicate pairs listed in **Table 5** (P4-50181/ P4-50184, P5-20018/ P5-20019, and P5-10067/P5-10068), appear to be outside of acceptance criteria due to possible mislabeling in the field or misidentification by the laboratory, which is part of a larger investigation described in a technical memorandum to EPA on August 30, 2013 (**see Attachment 1**).

3.1.5.2 PLM

3.1.5.2.1 PLM-VE

A field duplicate for soil is an independent sample of soil collected at the same location or coordinates and at the same time as the primary sample. Field duplicate results analyzed by PLM-VE are ranked as concordant (in agreement) if both the original sample result and the field duplicate result report the same semi-quantitative classification. Results are ranked as weakly discordant if the original sample result and the field duplicate result differ by one semi-quantitative classification (e.g., Bin A vs. Bin B1). Results are ranked as strongly discordant if the original sample result and the field duplicate result differ by more than one semi-quantitative classification (e.g., Bin A vs. Bin B2).

Table 6 summarizes the results of the original and field PLM-VE duplicate samples for forest soils, sediments, and mine waste collected from five investigative phases between 2007 and 2012. Twenty-five (25) of the 31 original duplicate pairs were found to be in concordance (80.6%). Six field duplicates were ranked as discordant, however the results were only weakly discordant. This may be due to analytical variability, but might also arise from authentic heterogeneity between the samples.

Table 6 - PLM-VE Field Duplicate Concordance Summary

			Laboratory Duplicate Results			
			Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
			A	B1	B2	C
Original Sample Results	Bin A (ND)	A	9	1	0	0
	Bin B1 (Tr)	B1	0	7	2	0
	Bin B2 (<1%)	B2	0	2	10	0
	Bin C (≥1%)	C	0	0	1	5
Total Pairs			31			
N Concordant			25			
N Weakly Discordant			6			
N Strongly Discordant			0			
Concordant			(81%)			
Weakly Discordant			(19%)			
Strongly Discordant			(0%)			

3.1.5.2.2 PLM-GRAV

Of the 16 duplicate pairs collected for PLM-GRAV analysis, six pairs were reported as non-detect (ND), five pairs were reported as having trace (tr) levels of LA, three pairs were report as trace and >1% LA, and two pairs were reported as trace and ND. Because asbestos present in coarse samples is typically scrapped from material that cannot be passed through a ¼ inch

sieve, which can vary between the field and field duplicate pairs, these numbers should be considered acceptable.

3.2 Preparation Quality Control

Soil samples delivered to the Troy Sample Preparation Facility (SPF) and the former CDM Close Support Facility (CSF) are processed in accordance with latest revision of SOP ISSI-LIBBY-01, which includes processes for drying, splitting, sieving, grinding, and archiving soils. Once processed, the resulting fine ground and/or coarse fractions are submitted for analysis by the Libby-specific PLM methods (PLM-GRAV and PLM-VE). The purpose of grinding the samples to a uniform size prior to shipping for analysis is to remove the variability of having each of the laboratories grind their own sample. In order to ensure proper sample handling and decontamination of soil/sediment sample preparation equipment at the former CDM CSF and Troy SPF, Preparation QC samples are also collected. These samples are assigned unique field identifiers and are submitted blindly to the analytical laboratories along with the field samples. Two types of preparation QC samples were utilized for PLM analyses at the preparation facilities: preparation blanks (i.e., drying and grinding) and preparation duplicates. Of the 437 soil/sediment samples collected at OU3 for PLM-VE analysis from 2007 through 2012 for phases I, II, and V, 82 (18.8%) preparation QC duplicate and blank samples were collected (**see Table 7**).

Table 7 - PLM-VE QC

				Prep Duplicates		Grinding Blanks		Drying Blanks	
Facility	**Investigation**	**Media**	**Field Samples**	**No. of Samples**	**%**	**No. of Samples**	**%**	**No. of Samples**	**%**
CSF	Phase I	Soil	174	14	8.0%	9	5.2%	0	0.0%
	Phase IIA	Soil	176	17	9.7%	18	10.2%	14	8.0%
	Phase IIC	Soil	16	1	6.3%	1	6.3%	1	6.3%
SPF	Phase VA	Sediment	6	0	0.0%	0	0.0%	0	0.0%
	Phase VB	Sediment	65	2	3.1%	2	3.1%	3	4.6%
		Totals	**437**	**34**	**7.8%**	**30**	**6.9%**	**18**	**4.1%**

Of the 194 soil/sediment samples collected at OU3 for PLM-GRAV analysis for phases I, II, and V, 16 (8.2%) preparation QC duplicate samples were collected (**see Table 8**).

Table 8 - PLM-GRAV QC

				Prep Duplicate	
Facility	**Investigation**	**Media**	**Field Samples**	**No. of Samples**	**%**
CSF	Phase I	Solid	146	12	8.2%
	Phase IIA	Solid	27	3	11.1%
	Phase IIC	Solid	9	1	11.1%
SPF	Phase VA	Sediment	0	0	NA
	Phase VB	Sediment	12	0	0.0%
		Totals	**194**	**16**	**8.2%**

3.2.1 Preparation Blanks (Drying Blanks and Grinding Blanks)

3.2.1.1 Drying Blanks

Drying blanks consist of aliquots of asbestos-free quartz sand processed with each batch of field samples (i.e., group of routine and QC samples that are prepared for analysis at the same time). Drying blanks are used to determine if cross-contamination is occurring during sample processing (i.e., drying sieving, grinding, and splitting). A total of 18 drying blanks were analyzed from 2007 through 2012, with all reported as non-detect (Bin A) by PLM-VE. These results suggest that the procedures utilized within the preparation laboratory did not introduce LA contamination.

3.2.1.2 Grinding Blanks

Grinding blanks consist of asbestos-free quartz sand processed at a frequency of one per day. Like the drying blanks, grinding blanks are used to determine if cross-contamination has occurred during or after the grinding process. A total of 30 grinding blanks were analyzed from 2007 through 2012, with all reported as non-detect (Bin A) by PLM-VE.

Note that the number of preparation blanks recorded in **Table 7** does not reflect all of the preparation blanks prepared at the preparation facilities, but only those prepared on the days that OU3 samples were processed. Additional preparation blanks were processed with samples from other Libby OUs.

3.2.2 Preparation Duplicates

Preparation duplicates are created by dividing a sample into two parts after drying but prior to sieving and grinding, and are prepared at a frequency of 5%. Comparison of the preparation duplicate results with the paired original field sample results helps to evaluate the variability that that may occur during preparation and analysis.

3.2.2.1 PLM-VE

Similar to field duplicates, preparation duplicates for PLM-VE are ranked as concordant if both the original sample results and the preparation duplicate results display the same semi-quantitative PLM-VE classification. As shown in **Tables 9** and **10** below, a total of 30 preparation duplicates prepared and analyzed by PLM-VE; 28 at the CSF and 2 at the SPF. Of the 28 preparation duplicates at the CSF, 21 (75%) were concordant and seven (25%) were weakly discordant, and at the SPF both of the preparation duplicates (100%) were concordant. These results suggest that the PLM-VE results are generally reproducible and reliable and are not greatly influenced by differences in laboratory preparation and analysis techniques.

Table 9 - CSF Preparation Duplicate Summary

			Lab Duplicate Results			
			Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
			A	B1	B2	C
Original Sample Results	Bin A (ND)	A	6	1	0	0
	Bin B1 (Tr)	B1	0	9	1	0
	Bin B2 (<1%)	B2	0	3	10	1
	Bin C (≥1%)	C	0	0	1	3

Table 9 - CSF Preparation Duplicate Summary

		Lab Duplicate Results			
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
Total Pairs		28			
N Concordant		21			
N Weakly Discordant		7			
N Strongly Discordant		0			
Concordant		(75%)			
Weakly Discordant		(25%)			
Strongly Discordant		(0%)			

Table 10 - SPF Preparation Duplicate Summary

			Lab Duplicate Results			
			Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
			A	B1	B2	C
Original Sample Results	Bin A (ND)	A	0	0	0	0
	Bin B1 (Tr)	B1	0	0	0	0
	Bin B2 (<1%)	B2	0	0	0	0
	Bin C (≥1%)	C	0	0	0	2
Total Pairs			2			
N Concordant			2			
N Weakly Discordant			0			
N Strongly Discordant			0			
Concordant			(100%)			
Weakly Discordant			(0%)			
Strongly Discordant			(0%)			

3.2.2.2 PLM-GRAV

Of the four preparation duplicate pairs collected for PLM-GRAV analysis, one pair was reported as having trace (tr) levels of LA, two pairs were report as trace and >1% LA, and for one set the a coarse fraction was not collected for the original sample. Because asbestos present in coarse samples is typically scrapped from material that cannot be passed through a ¼ inch sieve, of which there might be varying amounts between the field and field duplicate pairs, these numbers should be considered acceptable.

As noted above for the preparation blanks, the number of preparation duplicates recorded in **Table 7** does not reflect all of the preparation duplicates prepared at the preparation facilities, but only those prepared on the days that OU3 samples were processed. Additional preparation blanks were processed with samples from different Libby OUs.

3.3 Laboratory Analysis Quality Control

A variety of laboratory-based QC analyses are performed with TEM and PLM sample analyses to help ensure the quality of data. The results of laboratory QC applied to OU3 samples collected for all phases and analyzed between 2007 and 2012 are described in the sections below.

3.3.1 TEM Laboratory QC

The laboratory QC requirements for TEM analyses at the Libby OU3 site are patterned after the requirements set forth by NVLAP, and include:

- Laboratory blanks
- Recounts (i.e., recount same, recount different, and verified analyses)
- Re-preparations
- Inter-laboratory analyses

Table 11 provides a summary of the number and frequency at which laboratory QC analyses were performed on a program-wide basis by investigation phase.

Table 11 - TEM Laboratory QC Summary

Investigation	Media	Field Samples	Lab Blanks*		Re-preparations		Recount Different		Recount Same		Inter-Laboratory		Verified	
			Blanks	%	RP	%	RD	%	RS	%	IL	%	VA	%
Phase I	Air	49	2	4.1%	1	2.0%	1	2.0%	2	4.1%	0	0.0%	0	0.0%
	Duff	81	59	72.8%	3	3.7%	1	1.2%	1	1.2%	1	1.2%	1	1.2%
	Surface Water	30	1	3.3%	1	3.3%	0	0.0%	1	3.3%	0	0.0%	0	0.0%
	Tree Bark	82	4	4.9%	3	3.7%	3	3.7%	1	1.2%	0	0.0%	0	0.0%
	Phase I Total	242	66	27.3%	8	3.3%	5	2.1%	5	2.1%	1	0.4%	1	0.4%
Phase IIA	Surface Water	290	11	3.8%	5	1.7%	9	3.1%	4	1.4%	2	0.7%	1	**0.3%**
Phase IIB	Air	82	4	4.9%	2	2.4%	3	3.7%	1	1.2%	1	1.2%	2	2.4%
	Groundwater	28	0	0.0%	0	**0.0%**	1	3.6%	0	0.0%	0	0.0%	1	3.6%
	Phase IIB Total	110	4	**3.6%**	2	1.8%	4	3.6%	1	0.9%	1	0.9%	3	2.7%
Phase IIC	Surface Water	4	0	**0.0%**	0	**0.0%**	0	**0.0%**	0	**0.0%**	0	**0.0%**	0	**0.0%**
Phase III	Air (ABS)	241	11	4.6%	6	**2.5%**	3	**1.2%**	-	---	3	1.2%	0	**0.0%**
Phase IVA	Air (ABS)	262	11	4.2%	7	2.7%	6	2.3%	-	---	8	3.1%	0	0.0%
	Tree Bark	5	0	0.0%	1	20.0%	0	0.0%	-	---	1	20.0%	0	0.0%
	Phase IVA Total	267	11	4.1%	8	**3.0%**	6	2.2%	-	---	9	3.4%	0	**0.0%**
Phase IVB	Surface Water	104	1	1.0%	0	**0.0%**	0	**0.0%**	1	1.0%	2	1.9%	0	**0.0%**
Phase VA	Air (ABS)	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Surface Water	88	1	1.1%	1	1.1%	0	0.0%	0	0.0%	0	0.0%	1	1.1%
	Phase VA Total	91	1	1.1%	1	**1.1%**	0	**0.0%**	0	**0.0%**	0	**0.0%**	1	1.1%
Phase VB	Pore Water	49	0	0.0%	3	6.1%	1	2.0%	0	0.0%	2	4.1%	0	0.0%
	Surface Water	124	4	3.2%	1	0.8%	2	1.6%	0	0.0%	1	0.8%	1	0.8%
	Phase VB Total	173	4	2.3%	4	**2.3%**	3	**1.7%**	0	**0.0%**	3	**1.7%**	1	**0.6%**
CL	Air (ABS)	17	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	5.9%	0	0.0%
	Duff	6	3	50.0%	1	16.7%	0	0.0%	0	0.0%	1	16.7%	0	0.0%
	Tree Bark	6	3	50.0%	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%
	Phase CL Total	29	6	20.7%	1	**3.4%**	0	**0.0%**	0	**0.0%**	3	10.3%	0	**0.0%**

* For duff samples the blank total includes drying and filtration blanks that were prepared as part of initial method development

In **Table 11** above, the TEM laboratory QC sample frequency goals, as specified in the investigative SAPs, were not met for those percentages highlighted in bold. Note that the frequency goals provided in the SAPs are not media-specific, and therefore the frequency criteria are applied to the totals for each of the investigations. For the year 2012 (Phase V), the

primary laboratory used by EPA for TEM analysis from OU3 stopped assigning project-specific QC analyses for OU3 samples at the required frequency, which explains the absence of QC for most media in 2012. A more detailed explanation of this discrepancy is described in the technical memorandum submitted to EPA on August 30, 2013 (**see Attachment 1**).

3.3.1.1 Laboratory Blanks

Laboratory blanks are prepared from new, unused filters and analyzed using the same procedures used to analyze the associated field samples. The purpose of a laboratory blank is to determine the presence of any significant sources of asbestos contamination during sample preparation and analysis in the TEM laboratory. As specified in Libby Laboratory Modification LB-000029, laboratory blanks are to be analyzed at a frequency of 4%; however, as shown in **Table 11**, not every sampling program achieved this goal. Although the overall frequency across programs is greater than 4%, this number is biased high due to the inclusion of the drying and filtration blanks prepared with duff samples. When the extra blanks prepared with duff samples are excluded, the total number of preparation blanks is 46, for a program-wide frequency of 3.4%.

Including filtration and drying blanks, a total of 115 TEM laboratory blanks were analyzed across all sampling programs. No asbestos structures were observed in any of the laboratory blank samples prepared and analyzed. These results suggest that the sample preparation and analysis procedures performed by the laboratories did not introduce asbestos contamination.

3.3.1.2 Recounts

A recount analysis is a re-examination of the original TEM grid openings to verify the reported asbestos structure counts and characteristics. The following types of recount analyses were performed by the analytical laboratories during TEM determinations:

- Recount Same (RS) – This is a TEM analysis where the original grid openings are re-examined by the same microscopist who performed the initial examination.
- Recount Different (RD) – This is a TEM analysis where the original grid openings are re-examined by a different microscopist within the same laboratory who did not perform the initial examination.
- Verified Analysis (VA) – This analysis is similar to an RD but has different documentation requirements. A VA must be recorded in accordance with the 1994 protocol.

Recount analyses were compared with the original analysis on a grid opening-by-grid opening and structure-by-structure basis. Only those grid openings that were able to be re-examined during the recount analysis were included in this evaluation. The degree of concordance between the original analysis and the recount analysis was evaluated based on the total number of countable LA structures observed for each grid opening that was re-examined. The concordance criteria, which are summarized below, are specified in the most recent revision of Libby Laboratory Modification LB-000029:

- Number of LA structures within each grid opening - For grid openings with 10 or fewer structures, counts must match exactly. For grid openings with more than 10 structures, counts must be within 10 percent (%).

- Asbestos class of structure (LA, OA, or CH) - The class of structure must agree 100% on CH vs. amphibole. For assignment of amphiboles to LA or OA bins, there must be agreement on at least 90% of all amphibole structures.
- Structure Length - Fibers and bundles must agree within 0.5 microns (µm) or 10%, whichever is less stringent. Clusters and matrices must agree within 1 µm or 20%, whichever is less stringent.
- Structure Width - Fibers and bundles must agree within 0.5 µm or 20%, whichever is less stringent. For clusters and matrices, there is no quantitative rule for concordance.

As summarized in **Table 11,** a total of 11 RS, 30 RD, 7 VA, and 24 IL analyses have been performed across all of the sampling programs, for an overall frequency of recount analyses of approximately 4.6% (0.7% RS; 1.9% RD; 0.5% VA and 1.5% IL).

Tables 12A-12E show the recount analysis results for various matrices in investigation Phases I-V by mineral class, structure length, structure width, and matched structures per grid opening.

Table 12A – Phase I Recounts

Results for Matched LA Structures									
Matrix	**Attribute**	**Total**	**Pass**	**%**	**Matrix**	**Attribute**	**Total**	**Pass**	**%**
Water	Mineral Class	10	10	100%	Tree Bark	Mineral Class	106	106	100%
	Structure Length	10	10	100%		Structure Length	106	104	98%
	Structure Width	10	10	100%		Structure Width	106	99	93%
	Structure per GO	8	8	100%		Structure per GO	16	12	75%
Duff	Mineral Class	118	118	100%	**Total**	**Mineral Class**	**234**	**234**	**100%**
	Structure Length	118	111	94%		**Structure Length**	**234**	**225**	**96%**
	Structure Width	118	117	99%		**Structure Width**	**234**	**226**	**97%**
	Structure per GO	28	24	86%		**Structure per GO**	**52**	**44**	**85%**
Air	Mineral Class	--	--	--					
	Structure Length	--	--	--					
	Structure Width	--	--	--					
	Structure per GO	--	--	--					

Note: For the air sample summarized above no structures were detected in either the original or recount analysis.

With the exception of the structures per grid opening for Tree Bark, all of the above results fall into either the good or acceptable ranges. Of the 16 Grid Openings (GOs) analyzed for Tree Bark, only 12 (75%) met the specified criteria of ≥ 85%, which is considered poor.

Table 12B – Phase II Recounts

Results for Matched LA Structures									
Matrix	**Attribute**	**Total**	**Pass**	**%**	**Matrix**	**Attribute**	**Total**	**Pass**	**%**
Air	Mineral Class	22	22	100%	Water	Mineral Class	327	327	100%
	Structure Length	22	21	95%		Structure Length	327	287	88%
	Structure Width	22	22	100%		Structure Width	327	324	99%
	Structure per GO	13	10	77%		Structure per GO	**110**	**99**	**90%**
					Total	**Mineral Class**	**349**	**349**	**100%**
						Structure Length	**349**	**308**	**88%**
						Structure Width	**349**	**346**	**99%**

Table 12B – Phase II Recounts

Results for Matched LA Structures									
Matrix	**Attribute**	**Total**	**Pass**	**%**	**Matrix**	**Attribute**	**Total**	**Pass**	**%**
						Structure per GO	**123**	**109**	**89%**

With the exception of the structures per grid opening for air, all of the above results fall into either the good or acceptable ranges. Of the 13 Grid Openings (GOs) analyzed for air, only 10 (77%) met the specified criteria of ≥ 85%, which is considered poor.

Table 12C – Phase III Recounts

Results for Matched LA Structures									
Matrix	**Attribute**	**Total**	**Pass**	**%**	**Matrix**	**Attribute**	**Total**	**Pass**	**%**
Air	Mineral Class	3	3	100%	**Total**	**Mineral Class**	**3**	**3**	**100%**
	Structure Length	3	3	100%		**Structure Length**	**3**	**3**	**100%**
	Structure Width	3	3	100%		**Structure Width**	**3**	**3**	**100%**
	Structure per GO	3	3	100%		**Structure per GO**	**3**	**3**	**100%**

Table 12D – Phase IV Recounts

Results for Matched LA Structures									
Matrix	**Attribute**	**Total**	**Pass**	**%**	**Matrix**	**Attribute**	**Total**	**Pass**	**%**
Air	Mineral Class	54	54	100%	Water	Mineral Class	108	108	100%
	Structure Length	54	51	94%		Structure Length	108	95	88%
	Structure Width	54	54	100%		Structure Width	108	104	96%
	Structure per GO	48	46	96%		Structure per GO	10	8	80%
					Total	**Mineral Class**	**162**	**162**	**100%**
						Structure Length	**162**	**146**	**90%**
						Structure Width	**162**	**158**	**98%**
						Structure per GO	**58**	**54**	**93%**

Table 12E – Phase V Recounts

Results for Matched LA Structures									
Matrix	**Attribute**	**Total**	**Pass**	**%**	**Matrix**	**Attribute**	**Total**	**Pass**	**%**
Water	Mineral Class	109	109	100%	**Total**	**Mineral Class**	**109**	**109**	**100%**
	Structure Length	109	109	100%		**Structure Length**	**109**	**109**	**100%**
	Structure Width	109	108	99%		**Structure Width**	**109**	**108**	**99%**
	Structure per GO	50	49	98%		**Structure per GO**	**50**	**49**	**98%**

3.3.1.3 Re-preparations

A re-preparation is a TEM analysis where new grids are prepared using a new portion of the same field sample filter used to prepare the original grids. The results are compared to those from the original analysis based on the Poisson rate ratio method recommended by Nelson (1982). Re-preparations provide information on analysis precision, as well as within-filter variability. Re-preparations were prepared for 35 samples across each sampling program for water, air, tree bark, and duff, with the frequency of each summarized in **Table 11** above. The overall frequency of re-preparation analyses was 2.3%, which is above the minimum frequency requirement of 1.0%.

Table 13 summarizes the results of those re-preparation analyses that were statistically different from the original analysis for water and tree bark samples. The five samples listed in the Table represent 14% of the 35 re-preparations performed across all media types, indicating that 86% of the re-preparations performed were within the established criteria. When compared to the program-wide goals for Good (>95%), Acceptable (90-95%), or Poor (<90%), the 86% would indicate "Poor", which should prompt investigation and possible corrective action.

Table 13 - Statistical Comparison of TEM Re-preparation Analyses

Investigation	Media	Media	First Evaluation (Rate 1)			Re-prep. Evaluation (Rate 2)			Poisson Ratio Rate Comparison (CI=90%)
			Struct. Count	Sensitivity [a]	Conc [a]	Struct. Count	Sensitivity [a]	Conc [a]	
Phase IIA	Surface Water	P2-00208	0	4.98E+04	<LOD	35	1.99E+06	6.97E+07	[0-0] Rate 1<Rate 2
	Surface Water	P2-00804	17	4.98E+04	8.47E+05	83	4.98E+04	4.13E+06	[0.13-0.32] Rate 1<Rate 2
Phase IVA	Pore Water	P5-20001	42	6.92E+07	2.91E+09	27	5.54E+07	1.50E+09	[1.26-3.02] Rate 1>Rate 2
Phase VB	Pore Water	P5-20054	43	1.66E+06	7.14E+07	41	4.62E+05	1.89E+07	[2.57-5.54] Rate 1>Rate 2
	Tree Bark	SP4-00787	56	5.16E+04	2.89E+06	54	1.61E+04	8.69E+05	[2.38-4.63] Rate 1>Rate 2

[a] tree bark sensitivity units: $(cm)^{-2}$
water sensitivity units: $(L)^{-1}$

3.3.1.4 TEM Inter-laboratory Analyses

Samples for TEM inter-laboratory analyses were selected in accordance with the most recent revision of Laboratory Modification LB-000029. Once selected, the list was provided to each of the participating laboratories, who then retrieved the sample(s) from their archive storage, prepared the necessary TEM grids, analyzed the samples, prepared the necessary paperwork, and shipped the grids to the laboratory selected to perform the inter-laboratory analyses. The criteria for inter-laboratory analyses are the same as those for the other recount analyses, which are described in **Section 3.3.1.2** above. The following tables (**Tables 14A-14E**) provide a summary of the results by both investigation phase and media:

Table 14A - Phase II Inter-laboratory Analyses

Results for Matched LA Structures									
Matrix	Attribute	Total	Pass	%	Matrix	Attribute	Total	Pass	%
Air	Mineral Class	13	13	100%	Water	Mineral Class	86	85	99%
	Structure Length	13	6	46%		Structure Length	86	32	37%
	Structure Width	13	6	46%		Structure Width	86	84	98%
	Structure per GO	4	3	75%		Structure per GO	15	4	27%
					Total	**Mineral Class**	**99**	**98**	**99%**
						Structure Length	**99**	**38**	**38%**
						Structure Width	**99**	**90**	**91%**
						Structure per GO	**19**	**7**	**37%**

With the exception of the following, all of the above results fall into either the good or acceptable ranges:

- Air - The percentage of the structure length and widths passing the specified criteria is not ≥80%, which is considered poor.
- Air - The percentage of GOs with structure counts passing the specified criteria is not ≥85%, which is considered poor.

- Water - The percentage of the structure lengths passing the specified criteria is not ≥80%, which is considered poor.

Table 14B - Phase III Inter-laboratory Analyses

Results for Matched LA Structures									
Matrix	**Attribute**	**Total**	**Pass**	**%**	**Matrix**	**Attribute**	**Total**	**Pass**	**%**
Air	Mineral Class	2	2	100%	**Total**	**Mineral Class**	**2**	**2**	**100%**
	Structure Length	2	2	100%		**Structure Length**	**2**	**2**	**100%**
	Structure Width	2	2	100%		**Structure Width**	**2**	**2**	**100%**
	Structure per GO	2	2	100%		**Structure per GO**	**2**	**2**	**100%**

Table 14C - Phase IV Inter-laboratory Analyses

Results for Matched LA Structures									
Matrix	**Attribute**	**Total**	**Pass**	**%**	**Matrix**	**Attribute**	**Total**	**Pass**	**%**
Air	Mineral Class	41	38	93%	Tree Bark	Mineral Class	65	62	95%
	Structure Length	41	35	85%		Structure Length	65	54	83%
	Structure Width	41	39	95%		Structure Width	65	60	92%
	Structure per GO	45	29	64%		Structure per GO	4	0	0%
Water	Mineral Class	114	114	100%	**Total**	**Mineral Class**	**220**	**214**	97%
	Structure Length	114	100	88%		**Structure Length**	**220**	**189**	86%
	Structure Width	114	112	98%		**Structure Width**	**220**	**211**	96%
	Structure per GO	4	3	75%		**Structure per GO**	**53**	**32**	**60%**

With the exception of the following, all of the above results fall into either the good or acceptable ranges:

- Air (ABS) - The percentage of GOs with structure counts passing the specified criteria is not ≥85%, which is considered poor.
- Water - The percentage of GOs with structure counts passing the specified criteria is not ≥85%, which is considered poor.
- Tree Bark - The percentage of GOs with structure counts passing the specified criteria is not ≥85%, which is considered poor.

It should be noted that the results from the inter-laboratory analysis of tree bark sample SP4-00795 are not included in this summary. As explained in the report narrative, it was determined that the laboratory that performed the original analysis (RP) used standard ISO 10312 counting rules, which do not take into account the best estimate of visible length and width described in Laboratory Modification LB-000016H. As a result of this error, the analyses could not be compared.

Table 14D - Phase V Inter-laboratory Analyses

Results for Matched LA Structures									
Matrix	**Attribute**	**Total**	**Pass**	**%**	**Matrix**	**Attribute**	**Total**	**Pass**	**%**
Water	Mineral Class	111	105	95%	**Total**	**Mineral Class**	**111**	**105**	**95%**
	Structure Length	111	98	88%		**Structure Length**	**111**	**98**	**88%**
	Structure Width	111	111	100%		**Structure Width**	**111**	**111**	**100%**
	Structure per GO	10	3	30%		**Structure per GO**	**10**	**3**	**30%**

With the exception of the structures per grid opening, all of the above results fall into either the good or acceptable ranges. Of the 10 GOs analyzed, only 3 (30%) met the specified criteria of ≥ 85%, which is considered poor.

Table 14E - Commercial Logging (CL) Inter-laboratory Analyses

Results for Matched LA Structures									
Matrix	**Attribute**	**Total**	**Pass**	**%**	**Matrix**	**Attribute**	**Total**	**Pass**	**%**
Air	Mineral Class	19	16	84%	Tree Bark	Mineral Class	38	38	100%
	Structure Length	19	18	95%		Structure Length	38	34	89%
	Structure Width	19	18	95%		Structure Width	38	38	100%
	Structure per GO	10	6	60%		Structure per GO	4	3	75%
Duff	Mineral Class	79	76	96%	**Total**	**Mineral Class**	**130**	**136**	**96%**
	Structure Length	79	63	80%		**Structure Length**	**115**	**136**	**85%**
	Structure Width	79	78	99%		**Structure Width**	**134**	**136**	**99%**
	Structure per GO	4	1	25%		**Structure per GO**	**18**	**10**	**56%**

With the exception of the following, all of the above results fall into either the good or acceptable ranges:

- Air (ABS) - The percentage of GOs with structure counts passing the specified criteria is not ≥85%, which is considered poor.
- Duff - The percentage of GOs with structure counts passing the specified criteria is not ≥85%, which is considered poor.
- Tree Bark - The percentage of GOs with structure counts passing the specified criteria is not ≥85%, which is considered poor.

Table 15 below provides an additional, investigation-specific summary of instances of structures identified in the original analyses, but not in the recount analyses and vice versa.

Table 15 - Inter-laboratory Structure Discrepancies

Investigation	Media	Not in Original (RP)	Not in Interlab (IL)
Phase II	Air	0	3
	Water	13	19
Phase IV	Air	31	2
	Tree Bark	14	1
Phase IV	Water	29	5
Phase VB	Water	21	0
CL	Duff	27	4
	Tree Bark	5	13

Of the 11 inter-laboratory analyses performed by the laboratories from 2010 through 2012, seven samples (64%) required reconciliation due to discordant results between the original (RP) and inter-laboratory (IL) analyses. The reasons for discordance in the results provided by the laboratories include:

- The use by laboratories of standard ISO 10312 counting rules and not the modified rules described in the most recent revision of Laboratory Modification LB-000016.
- Failure to record “close call” non-asbestos material (NAM) structures, which could be identified as LA by the laboratory performing the inter-laboratory analysis.

- Measurement inaccuracies, most of which were related to the lengths of structures intersecting countable grid bars.
- The presence of damaged grid openings that could not be re-analyzed, resulting in incomplete inter-laboratory analyses.
- The interpretation of EDS spectrum as it applies to the identification of LA versus a "close call" NAM due to the presence of slightly higher aluminum (Al) and relatively lower calcium (Ca) peaks.

In addition to the above, a higher than normal incidence of damaged grid openings were observed during the 2010 and 2011 inter-lab studies. It was determined that this problem was isolated to those laboratories using grids with a larger than normal grid openings (i.e., 0.0130mm^2 versus 0.006mm^2). In response to this observation, corrective action was applied which included a requirement to use grids with smaller grid openings. This resulted in a dramatic decrease in the frequency of damaged grid openings in the 2012 study. A detailed explanation of this observation and eventual corrective action is provided in the technical memorandum submitted to EPA on August 30, 2013. Although this issue does not directly affect field sample analyses, it could affect associated QC analyses and the ability to reanalyze samples at a later date if needed (**see Attachment 1**).

3.3.2 PLM Laboratory QC

Three types of laboratory-based QC analyses are performed for OU3 samples analyzed by PLM-VE: laboratory duplicates, inter-laboratory analyses, and the analyses of PESs.

3.3.2.1 Laboratory Duplicates

A laboratory duplicate is a reanalysis of a sample within the same laboratory. There are two types of laboratory duplicates performed for PLM-VE:

- Laboratory Duplicate Self-check (LDS) – A reanalysis of a client sample by the same analyst.
- Laboratory Duplicate Cross-check (LDC) – A reanalysis of a client sample by a different analyst within the same laboratory.

Table 16 provides a summary of the frequency at which these analyses were performed by phase, and program-wide. As a whole, the laboratories exceeded the frequency goal for LDS and IL analyses, but fell short of the frequency goal for LDCs, as indicated in **Table 16**. It should also be noted that these analyses were not always performed at the specified frequencies by the individual laboratories.

Table 16 – PLM-VE Lab QC

			Lab Dup-Cross Check (LDC) (Freq. Goal 8%)		Lab Dup Self Check (LDS) (Freq. Goal 2%)		Inter-laboratory (IL) (Freq. Goal 1.0%)	
Investigation	**Media**	**Field Samples**	**LDC**	**%**	**LDS**	**%**	**IL**	**%**
Phase I	Forest Soil	82	--	--	21	25.6%	--	--
	Mine waste	42	--	--	0	0.0%	--	--
	Sediment	27	--	---	0	0.0%	--	--
	Soil	23	--	---	1	4.3%	--	--

Table 16 – PLM-VE Lab QC

			Lab Dup-Cross Check (LDC) (Freq. Goal 8%)		Lab Dup Self Check (LDS) (Freq. Goal 2%)		Inter-laboratory (IL) (Freq. Goal 1.0%)	
Investigation	**Media**	**Field Samples**	**LDC**	**%**	**LDS**	**%**	**IL**	**%**
Phase IIA	Sediment	128	17	13.3%	0	0.0%	15	11.7%
	Soil	48	5	10.4%	0	0.0%	0	0.0%
Phase IIC	Sediment	13	2	15.4%	0	0.0%	1	7.7%
	Soil	3	1	33.3%	0	0.0%	0	0.0%
Phase VA	Sediment	6	1	16.7%	0	0.0%	2	33.3%
Phase VB	Sediment	65	1	1.5%	3	4.6%	1	1.5%
		437	**27**	**6.2%**	**25**	**5.7%**	**19**	**4.3%**

A total of 70 laboratory duplicate analysis pairs, made up of 27 LDC, 25 LDS, and 19 IL analyses, were performed from 2007 through 2012. As illustrated in **Table 17** below, 100% of the LDS results were concordant with the original results.

Table 17 - PLM-VE LDS Summary

			Lab Duplicate Results			
			Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
			A	B1	B2	C
Original Sample Results	Bin A (ND)	A	22	1	0	0
	Bin B1 (Tr)	B1	0	0	0	0
	Bin B2 (<1%)	B2	0	0	0	0
	Bin C (≥1%)	C	0	0	0	3
Total Pairs			25			
N Concordant			25			
N Weakly Discordant			0			
N Strongly Discordant			0			
Concordant			(100%)			
Weakly Discordant			(0%)			
Strongly Discordant			(0%)			

As shown in **Table 18** below, for the LDC results, all but one of the results were concordant with the original results. The one discordant PLM-VE LDC result reported was only weakly discordant.

Table 18 - PLM-VE LDC Summary

			Lab Duplicate Results			
			Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
			A	B1	B2	C
Original Sample Results	Bin A (ND)	A	6	1	0	0
	Bin B1 (Tr)	B1	0	6	0	0
	Bin B2 (<1%)	B2	0	0	8	0
	Bin C (≥1%)	C	0	0	0	7

Table 18 - PLM-VE LDC Summary

		Lab Duplicate Results			
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
		A	B1	B2	C
Total Pairs		27			
N Concordant		26			
N Weakly Discordant		1			
N Strongly Discordant		0			
Concordant		(96%)			
Weakly Discordant		(4%)			
Strongly Discordant		(0%)			

3.3.2.2 PLM Inter-laboratory Analyses

Inter-laboratory samples are samples previously analyzed by one laboratory, which are selected by QATS for analysis by another laboratory. For OU3 PLM analyses, the IL samples were selected in accordance with the most recent revision of laboratory modification LB-000073. Once the IL samples were selected, a finely ground (FG) aliquot, which had not been analyzed, was retrieved from the sample archive at the Troy SPF and shipped to the laboratory performing the inter-laboratory analysis. Because these samples are shipped from the Troy SPF and not the originating laboratory the laboratories are not aware that the samples are being shipped for inter-laboratory analysis. **Table 19** provides a summary of the results from samples previously analyzed in 2012 and selected for inter-laboratory analysis of samples.

Table 19 - PLM-VE Inter-Laboratory Summary

			Inter-laboratory Results			
			Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
			A	B1	B2	C
Original Sample Results	Bin A (ND)	A	5	0	0	0
	Bin B1 (Tr)	B1	0	4	1	1
	Bin B2 (<1%)	B2	0	3	5	2
	Bin C (≥1%)	C	0	0	2	5
Total Pairs			19			
N Concordant			10			
N Weakly Discordant			8			
N Strongly Discordant			1			
Concordant			(53%)			
Weakly Discordant			(42%)			
Strongly Discordant			(5%)			

The PLM-VE IL results were 53% concordant, 42% weakly discordant, and 5% strongly discordant. The most recent revision of laboratory modification LB-000073 indicate that weakly discordant results greater than 40% fall into the “poor” category, necessitating corrective action. It should be noted, however, that this evaluation of OU3 PLM-VE data represents a relatively small sample size. A better measurement of the overall quality of the PLM-VE data can be determined from the larger sample size collected for the site-wide study.

3.4 Performance Evaluation Sample Results

Performance Evaluation Samples (PES) are synthetic, man-made test samples that are prepared by "spiking" a known concentration of asbestos into a contaminant-free media. As illustrated in **Table 20** below, of these 40 PLM-VE PES pairs, 78% were concordant, 18% were weakly discordant, and 5% were strongly discordant.

Table 20 - PLM-VE PES Summary

			PES Results			
			Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
			A	B1	B2	C
Original Sample Results	Bin A (ND)	A	8	0	0	0
	Bin B1 (Tr)	B1	0	4	1	0
	Bin B2 (<1%)	B2	0	0	12	3
	Bin C (≥1%)	C	0	2	3	16
Total Pairs			40			
N Concordant			31			
N Weakly Discordant			7			
N Strongly Discordant			2			
Concordant			(78%)			
Weakly Discordant			(18%)			
Strongly Discordant			(5%)			

4.0 Asbestos Data Validation

Data for asbestos in air, tree bark, mine waste, surface water, duff, sediment, forest soil, groundwater, and pore water were validated by the QATS Program in accordance with the applicable method, SAP Analytical Requirements Summaries, Laboratory Modifications, and QATS Libby-specific data validation SOPs, which include SOP QATS-70-094 (Validation of Polarized Light Microscopy (PLM) Data Deliverables) and SOP QATS-70-095 (Validation of Libby Transmission Electron Microscopy (TEM) Data Deliverables).

The validation process involves evaluating asbestos data based on the analytical requirements in the applicable method or SOP used by EPA for analysis of Libby OU3 samples. These include Method ISO 10312 and EPA Method 100.2 for TEM, and PLM-VE and PLM-GRAV for PLM analysis. Criteria that are evaluated and reported include Sample Receipt, Sample Preparation, Microscope Alignment, Instrument Calibrations, Stopping Rules, Structure Recording and Identification, Blank Analysis (if applicable), Recount/Re-preparation Analysis (if applicable), and Overall Assessment of Data.

Data are qualified if the daily or monthly calibrations associated with a sample set were not performed at the required frequency, or if the calibrations fail to meet method requirements. The equipment alignment and calibration documentation from each of the Libby support laboratories are provided separately on a quarterly basis. This calibration information is entered into laboratory-specific spreadsheets where the data validators can access the information and verify that the calibrations were acceptable and performed at the correct frequency.

Qualifiers for blank contamination are applied during the validation process for those blanks directly associated with field samples (i.e., provided with a particular deliverable selected for

validation). In addition to those QC analyses reviewed during the validation of select deliverables, QC analyses are also reviewed and evaluated on a program-wide basis to ensure they are both performed at the required frequency and that they are within the applicable criteria. With the exception of QC analyses directly associated with a particular set of samples, laboratory QC analyses are performed to determine the overall quality of the collective data, and not the quality of any one specific set of samples.

The data validation process also includes a comparison of the information reported on the bench sheets to the entries in the associated laboratory method-specific EDDs to ensure that the reported results are complete, compliant with the specified methodology, and accurate. These comparison discrepancies are noted in a separate table of the data validation report. A QATS Data Review Checklist is used to document the data validation process.

Selection of the five percent (5%) of sample results to validate was performed by randomly choosing sample results by laboratory, method, and media. A total of 360 field samples from 30 Laboratory Job Numbers, analyzed by five different laboratories between 2007 and 2012 were selected for validation. The Lab Jobs selected by year, laboratory, and method are listed in **Table 21** below:

Table 21 - Validated Asbestos OU3 Deliverables

Year	Laboratory	Lab Job No.	Method/Media	Number of Samples
2007	EMSL, Westmont, NJ	040726758	TEM ISO/Air	11
2007	EMSL, Westmont, NJ	040724967	TEM ISO/Tree Bark	3
	EMSL, Beltsville, MD			28
2007	EMSL, Westmont, NJ	040730897	PLM-VE/Mine Waste	5
2007	EMSL, Westmont, NJ	040730895	PLM-GRAV/Mine Waste	4
2007	EMSL, Libby, MT	270701089	TEM 100.2/Surface Water	2
2008	EMSL, Westmont, NJ	040725946	TEM ISO/Duff	20
	EMSL, Libby, MT			8
2008	EMSL, Westmont, NJ	040726269	TEM ISO/Tree Bark	25
	EMSL, Libby, MT			26
2008	EMSL, Westmont, NJ	040817340	PLM-VE/Sediment	12
2008	EMSL, Westmont, NJ	040825407	PLM-GRAV/Sediment	1
2008	EMSL, Beltsville, MD	270800192	TEM ISO/Surface Water	4
2008	EMSL, Libby, MT	270800012	PLM-GRAV/Forest Soil	44
2008	EMSL, Libby, MT	270800018	PLM-VE/Forest Soil	10
2008	EMSL, Libby, MT	270800271	TEM ISO/Surface Water	8
2008	EMSL, Libby, MT	270800714	TEM ISO/Air	10
2009	EMSL, Westmont, NJ	040725351	TEM ISO/Duff	23
2009	EMSL, Westmont, NJ	270800257	TEM ISO/Surface Water	4
	EMSL, Beltsville, MD			3
2009	Hygeia Environmental	12302090005	TEM ISO/Air	6
2009	Hygeia Environmental	12302090025	TEM ISO/Air	9
2009	Hygeia Environmental	12302080011	PLM-VE/Sediment	16
2010	EMSL, Cinnaminson, NJ	041021393	TEM ISO/Tree Bark	5
2010	EMSL, Libby, MT	271001549	TEM ISO/Water	10
2010	Hygeia Environmental	12302100026	TEM ISO/Air	15
2011	EMSL, Libby, MT	271100171	TEM ISO/Surface Water	6

Table 21 - Validated Asbestos OU3 Deliverables

Year	Laboratory	Lab Job No.	Method/Media	Number of Samples
2011	Hygeia Environmental	12302110006	TEM ISO/Surface Water	3
2012	EMSL, Cinnaminson, NJ	271200263	TEM ISO/Pore Water	3
2012	EMSL, Libby, MT	271201033	PLM-VE/Sediment	5
			PLM-GRAV/Sediment	8
2012	EMSL, Libby, MT	271201048	TEM ISO/Air	17
2012	EMSL, Libby, MT	271200347	TEM ISO/Pore Water	3
2012	EMSL, Denver, CO	271200306	TEM ISO/Pore Water	3
Total				**360**

Note that a total of 25 surface water samples collected in 2012 were included in Laboratory Job Numbers 271200263, 271200275, 271200347, and 271200306; however, validation of these samples is currently on hold pending an investigation into a possible sample mix-up during the sampling effort.

Very few OU3 asbestos data were qualified. Qualifiers were applied to only one field sample and one QC sample (recount different) of the 360 asbestos samples validated (0.56%); 99.4% of the OU3 asbestos results for samples analyzed between 2007 and 2012 required no qualification. The samples were qualified due to the failure of the laboratory to perform and/or document daily calibration activities. Several samples that did not have a daily calibration were not qualified due to the submission and review of other information suggesting acceptable instrument performance, such as spectra, daily Standard Reference Material (SRM) analysis, review of the bracketing daily alignment, evaluation of concordance between recounts or re-preparations, or the presence of structures versus non-detected results. The samples that were qualified for lack of a daily calibration are listed in **Table 22** below:

Table 22 - Qualified Samples

Laboratory	EPA Sample ID	Lab Job No.	Date Analyzed	Method/Media	Qualifier
EMSL, Westmont, NJ	P1-00115 RD	040725946	02/10/2009	TEM ISO/Duff	J*
EMSL, Denver, CO	P5-20041	271200306	07/08/2012	TEM ISO/Pore Water	J*

J* - The result (concentration) is estimated.

In addition to the 360 field samples validated, 43 blanks and 25 QC samples were validated. The QC samples are listed by type and analysis year in **Table 23** below:

Table 23 – Number of Blanks and QC Samples Validated

QC Type	Analysis Year						
Blank/QC Sample Type	2007	2008	2009	2010	2011	2012	Total
Laboratory Blanks	2	3	1	5		1	12
Field Blanks	2	1	2	1			6
Drying Blanks		4	17				21
Filtration Blanks		2	1	1			4
Recount Same (RS)	2	1			1		4
Recount Different (RD)	1	3					4
Repreparation (RP)	3	3	1	3			10

Table 23 – Number of Blanks and QC Samples Validated

QC Type	Analysis Year						
Blank/QC Sample Type	2007	2008	2009	2010	2011	2012	Total
Verified Analysis (VA)		1	1				2
Reconciliation (RC)		1					1
Lab Duplicate Self-check (LDS)							0
Lab Duplicate Cross-check (LDC)		2	2				4

From the data of 428 field samples, QC samples, and blanks validated, the results from one field sample and one QC sample were qualified.

The bench sheet/EDD information comparisons did reveal discrepancies due to information omissions and typographical errors, which were reported in the EDD/Bench Sheet Discrepancy Table in the Asbestos Validation Summary Reports. The discrepancies ranged from minor (i.e., typographical errors in fields that do not affect the sample results) to more severe discrepancies (i.e., typographical errors for fiber length and/or width, primary filter area, mineral identification which could affect the sample result, or date analyzed discrepancies which could affect the daily calibration verification). A total of 89 of the 360 sample results validated (24.7%) contained some type of bench sheet/EDD discrepancy. However, 86 of these 89 (97%) were minor typographical discrepancies. **Table 24** shows the number of discrepancies found in the EDD files submitted by laboratory and the analysis year:

Table 24 - Number of Discrepancies Listed in the EDD/Bench Sheet Discrepancy Table

Laboratory	2007	2008	2009	2010	2011	2012
EMSL, New Jersey	1	7	2	2	NA	4
EMSL, Beltsville, MD	12	1	0	NA	NA	NA
EMSL, Denver, CO	NA	NA	NA	NA	NA	2
EMSL, Libby, MT	2	22	0	6	3	5
Hygeia Environmental	NA	NA	4	0	1	NA

NA indicates no samples analyses from the laboratory were performed for that year.

5.0 Laboratory Audits

This section includes a summary of the results of on-site audits of laboratories and soil preparation facilities used by EPA for analytical support at the Libby OU3 site that were conducted between 2008 and 2012. During this period, a total of 14 on-site audits were performed, consisting of nine asbestos laboratory audits, three asbestos soil preparation facility (SPF) audits, and two asbestos toxicology study laboratory audits. **Table 25** lists the audits performed by laboratory/facility, audit type, and date.

Table 25 - Asbestos/Toxicology Laboratory and Soil Preparation Facility On-site Audits

Laboratory	Audit Type	Audit Date(s)
Fort Environmental Laboratories, Inc. (Stillwater, OK)	Toxicology Laboratory	11/19/2012
EMSL Analytical, Inc. (Libby, MT)	Asbestos Laboratory	08/08-09/2012
ESAT Region 8 Soil Preparation Facility (Troy, MT)	Soil Preparation Facility	08/07/2012
Hygeia Environmental, Inc. (Sierra Madre, CA)	Asbestos Laboratory	07/25-26/2012

Table 25 - Asbestos/Toxicology Laboratory and Soil Preparation Facility On-site Audits

Laboratory	Audit Type	Audit Date(s)
EMSL Analytical, Inc. (Beltsville, MD)	Asbestos Laboratory	06/28-29/2012
EMSL Analytical, Inc. (Westmont, NJ) [1]	Asbestos Laboratory	06/26-27/2012
EMSL Analytical, Inc. (Denver, CO)	Asbestos Laboratory	05/21-22/2012
Oregon State University (OSU) Aquatic Toxicology Lab.	Toxicology Laboratory	06/11/2011
CDM Close Support Facility (Denver, CO)	Soil Preparation Facility	10/02/2008
ESAT Region 8 Soil Preparation Facility (Troy, MT)	Soil Preparation Facility	09/18/2008
EMSL Analytical, Inc. (Libby, MT)	Asbestos Laboratory	09/16-17/2008
Hygeia Environmental, Inc. (Sierra Madre, CA)	Asbestos Laboratory	06/25-26/2008
EMSL Analytical, Inc. (Beltsville, MD)	Asbestos Laboratory	05/13-14/2008
EMSL Analytical, Inc. (Westmont, NJ)	Asbestos Laboratory	04/23-24/2008

[1] This laboratory is now located in Cinnaminson, NJ

5.1 On-site Audit Process

On-site audits are used by EPA to verify samples analyzed by their contract facilities are being processed in accordance with EPA requirements. Each on-site audit involves the general elements of preparation, on-site support, and report generation, which are modified as needed to fit the type of audit being performed. Preparation for asbestos laboratory audits typically involves ensuring the on-site audit checklist to be used is updated to reflect the latest methods and modifications required for Libby sample preparation and analysis; coordination with Region 8 to receive the most recent copies of the laboratory's SOPs, Quality Assurance Manual (QAM) and other needed documentation; and coordination with the EPA representative attending the audit with regard to travel logistics. If there are any anticipated problem areas based on prior evaluation of QA/QC data or validation reports, the auditor will discuss these with the EPA member of the audit team prior to the audit. The on-site audit generally starts with an entrance debriefing to the laboratory regarding what areas will be evaluated and the anticipated duration of the audit. This is followed by evaluating areas throughout the laboratory to verify adherence to Libby project analysis requirements, the laboratory preparation and analysis SOPs, and adherence to the requirements in the laboratory QAM. The areas typically audited in an asbestos laboratory include Sample Receipt, Log-in, Storage, and Chain-of-Custody (COC); Indirect and Direct Preparation of Samples; Transmission Electron Microscopy (TEM) Analysis; Polarized Light Microscopy (PLM) Analysis; and Quality Control and Quality Assurance. All laboratory staff involved with handling, preparing, analyzing, reporting, and performing QC on Libby samples are interviewed. Findings are recorded as identified, and reported to the laboratory at the exit debriefing. On-site audit reports detailing the findings are prepared and submitted to EPA typically within a month, and following EPA approval are sent to the laboratories, who are required to provide corrective action response to EPA regarding the findings. Areas in which findings are identified and evaluated during the next on-site audit to determine the degree to which laboratories have applied corrective action.

The results from the above-listed nine OU3 analytical support laboratory and two toxicology laboratory on-site audits are summarized below in the following categories:

- Deficiencies by Laboratory
- Laboratory Trends

- Deficiencies by Laboratory Process Area
- Laboratory Internal Audits
- Air Monitoring Samples
- Laboratory Responses
- Soil Preparation Facility (SPF) Audits
- Toxicology Laboratory On-site Audits

5.2 Deficiencies by Laboratory

A total of 112 observed deficiencies, compiled from the completed summary on-site audit reports, were identified from the nine OU3 laboratory on-site audits performed on five different laboratories between 2008 and 2012. Deficiencies from the two toxicology laboratory audits are not included in this total because these did not involve the preparation and/or analysis of asbestos samples. Of the nine laboratory audits, four were conducted in 2008, and five were performed in 2012. For four of the five laboratories audited in 2012, it was their second audit by EPA; one laboratory, (EMSL Analytical, Denver, CO) was a new laboratory audited for the first time in 2012. For all laboratory audits conducted in 2008 and 2012, an average of 12.4 deficiencies per audit was observed. The lowest number of deficiencies per audit was observed for EMSL Analytical (Westmont, NJ) in 2012 with seven (7), and the highest number of on-site deficiencies per audit occurred at Hygeia Environmental, Inc. (CA) in 2008 with 19. The deficiency totals, by laboratory, for all on-site audits conducted in 2008 and 2012 are provided in **Table 26**.

5.3 Laboratory Trends

A total of 34 deficiencies were identified in the four asbestos on-site laboratory audits performed during 2012 as compared to the 63 defects observed in the on-site audits of the same four laboratories in 2008. Note that five asbestos laboratory on-site audits were performed in 2012 (with 49 total defects observed) versus four on-site audits in 2008. The average of 8.5 defects per on-site audit in 2012 represents a 46.2% decrease from the 15.8 average number of defects per on-site audit (for the same four laboratories) recorded in 2008. All four laboratories audited in 2008 and again in 2012 showed a reduction in the number of defects, which suggests that all four laboratories applied corrective action in response to their initial audits in 2008.

The percent change (decrease or increase) in total defects from one on-site audit to the next can be a useful indicator of laboratory performance and/or applied corrective action. The percent change in defects between the four laboratories audited in 2008 to 2012 include Hygeia Environmental, Inc. (Sierra Madre, CA) (-47.4%), EMSL Analytical, Inc. (Westmont, NJ (-58.8%), EMSL Analytical, Inc. (Libby, MT) (-40.0%), and EMSL Analytical, Inc. (Beltsville, MD) (-33.3%).

Table 26 – Deficiencies by Laboratory (2008 - 2012)

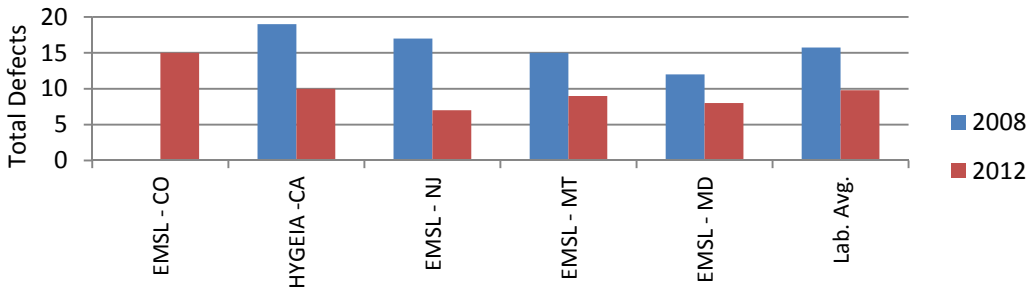
Laboratory	Deficiencies			Change In Defects per Audit	
	2008	2012	AVG	Increase/ (Decrease)	%Increase/ (%Decrease)
EMSL Analytical, Inc. (Denver, CO)		15	15	NA	NA
Hygeia Environmental, Inc. (Sierra Madre, CA)	19	10		(9)	(47.4%)
EMSL Analytical, Inc. (Westmont, NJ)	17	7	11.5	(10)	(58.8%)
EMSL Analytical, Inc. (Libby, MT)	15	9	12	(6)	(40.0%)
EMSL Analytical, Inc. (Beltsville, MD)	12	8	10	(4)	(33.3%)

Table 26 – Deficiencies by Laboratory (2008 - 2012)

Laboratory	Deficiencies			Change In Defects per Audit	
	2008	2012	AVG	Increase/ (Decrease)	%Increase/ (%Decrease)
Total	**63**	**49**			
Average	**15.8**	**9.8**		**(7.3)**	**(44.9%)**

Figure 1 provides a graphic of the number of defects by laboratory of all on-site audits performed in 2008 and 2012.

Figure 1 – Asbestos On-site Audit Trends: Total Defects by Laboratory (2008-2012)



5.4 Deficiencies by Laboratory Process Area

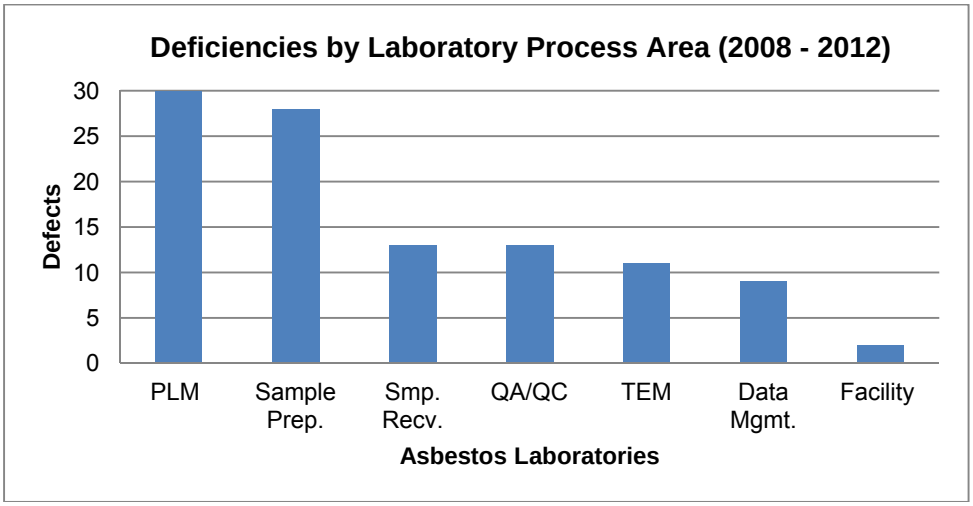
The 112 asbestos on-site audit deficiencies identified in the nine on-site laboratory audits performed in 2008 and 2012 were trended by eight laboratory process areas. The laboratory process categories in which the majority of the observed deficiencies occurred include PLM, Sample Preparation, Sample Receiving, and QC/QA. Categories with the least frequently occurring deficiencies included TEM, Facility, and Data Management.

Table 27 and **Figure 2** show the laboratory process categories evaluated, the number of deficiencies observed in each from the combined 2008 and 2012 on-site audits, and the percentage of deficiencies observed by category.

Table 27 - OU3 On-site Laboratory Audit Deficiencies by Laboratory Process Area - 2008 to 2012

Laboratory Area	Deficiencies	Percentage
PLM Analysis	30	28.3%
Sample Preparation	28	26.4%
Sample Receiving	13	12.3%
QC/QA	13	12.3%
TEM Analysis	11	10.4%
Data Management	9	8.5%
Facility	2	1.9%
Total	**106**	**100%**

Figure 2 – Asbestos On-site Audit Trends: Deficiencies by Laboratory Area (2008 - 2012)



Examples of high frequency deficiencies by laboratory process category that were observed in the five on-site audits performed in 2012 are summarized as follows:

Polarized Light Microscopy (PLM) Analysis - In four of the five laboratories audited in 2012, the Laboratory Duplicate Cross-check (LDC) optical property observations were being recorded on the same bench sheet as the observations for the original (first) analysis, and therefore were not "blind". In three of the laboratories, the procedure used for performing the PLM analysis of finely ground soil samples did not comply with the procedure described in SOP SRC-Libby-03 in that suspect fibers were picked out after rather than prior to preparing the five random slide mounts. In three of laboratories, the permanently mounted, LA reference slides of 0.2% and 1.0% were not prepared "in-house," but by one of the other Libby laboratories.

Indirect and Direct Preparation of Air Filter and Dust Samples - Three of the five laboratories audited in 2012 had deficiencies related to balance calibrations, including failure to perform daily calibration checks of balances used to weigh samples and the use of an outside service for annual balance calibrations. In two of the laboratories, the Effective Filtration Area (EFA) of the disposable filter assembly was not being determined for each lot of filters received.

Sample Receipt, Storage, Log-in, and COC - Two of the five laboratories audited in 2012 did not have HEPA hoods in the sample receiving area or the hoods were not properly identified to allow flow checks and HEPA filter changes to be documented.

Quality Control and Quality Assurance – Several of the laboratories audited in 2012 did not always implement or maintain adequate quality systems. EMSL-MT did not perform internal audits at the required frequency, EMSL-NJ did not have an adequate quality system in place to track corrective actions, and Hygeia did not control obsolete documents including QAMs and SOPs. Two laboratories did not adequately perform air monitoring including EMSL-MD which did not always perform cleanups and re-sampling in response to internally or externally-identified asbestos contamination, and Hygeia which did not perform air monitoring of the analytical areas at the frequency described in their written procedures.

Transmission Electron Microscopy (TEM) Analysis - There were no common deficiencies in TEM analysis identified in the 2012 on-site audits. One laboratory had no defects in this

category, while the other four each had one deficiency related to documentation, availability of lab modification, or the availability of instrument LA reference spectra.

Data Management - There were no common deficiencies in Data Management identified in the 2012 on-site audits. Three of the five laboratories had no deficiencies in this category. Deficiencies related to record-keeping and availability of all required procedures were observed in the EMSL-Beltsville and EMSL-Denver audits.

Facilities - There were no facility-related deficiencies identified in the 2012 on-site audits.

5.5 Laboratory Responses to On-site Laboratory Audits

EPA requires that laboratories provide responses to on-site audit reports which include the laboratory's proposed corrective action to each of the identified findings. These laboratory responses assist EPA in "closing the loop" on laboratory deficiencies, and help resolve method interpretation issues. Laboratory responses to all reports for the 2008 and 2012 on-site audits have been received from the five OU3 support laboratories. All laboratories provided proposed corrective actions for the identified findings along with objective evidence as applicable. No findings were contested. These laboratory-proposed corrective actions in response to the 2012 audits will be verified during the next round of scheduled audits. As shown in **Table 26**, the total number of findings by the OU3 support laboratories decreased between 2008 and 2012 from 58.8% to 33.3%, which suggests that corrective action has been performed in response to previous audit findings.

5.6 Soil Preparation Facility (SPF) Audits

In 2008 and 2012 QATS supported three soil preparation facility on-site audits. The ESAT Region 8 SPF in Troy, MT and the CDM CSF in Denver, CO were audited in 2008, and a follow up audit of the ESAT Region 8 SPF was performed in 2012. A summary of deficiencies from the three on-site audits are listed in **Table 29.**

5.6.1 Deficiencies by Laboratory

A total of 35 observed deficiencies, compiled from the completed summary on-site audit reports, were identified from the three soil preparation facility on-site audits performed on two different facilities in 2008 and 2012. Of the three audits, two were conducted in 2008 and one in 2012. For all three audits, an average of 11.7 deficiencies per audit was observed. The lowest number of deficiencies per audit was observed for ESAT Region 8 SPF in 2008 with eight (8), and the highest number of on-site deficiencies per audit occurred with CDM CSF in 2009 with 17. The deficiency totals, by facility are provided in **Table 29**.

Table 29 – Deficiencies by Facility (2008 and 2012)

	Deficiencies			Change In Defects per Audit	
Soil Preparation Facility	2008	2012	AVG	Increase/ (Decrease)	%Increase/ (%Decrease)
CDM Close Support Facility (Denver, CO)	17		17	NA	NA
ESAT Region 8 Soil Prep. Facility (Troy, MT)	8	10	9	2	25.0%
Total	**25**	**10**			
Average	**12.5**	**10**		**(2.5)**	**(20.0%)**

5.6.2 Laboratory Trends

Ten deficiencies were identified in the ESAT Region 8 SPF on-site audit performed in 2012 as compared to the eight defects observed at the same facility in 2008. This represents a 25.0% increase from the 2008 audit. This increase is due mainly to one additional deficiency in the bulk drying, grinding and splitting, QA/QC, sample receiving, and sieving categories. Decreases were observed in the facility, sample preparation, and health and safety categories.

The 35 on-site audit deficiencies identified in the three soil preparation facility on-site audits were trended by eight laboratory process areas. The laboratory process categories in which the majority of the observed deficiencies occurred include Bulk Drying, Grinding and Splitting, QC/QA, and Sample Receiving. Categories with the least frequently occurring deficiencies included Facility Sieving of Preparation Samples, Sample Preparation, and Health and Safety.

Table 30 shows the laboratory process categories evaluated, the number of deficiencies observed in each from the combined 2008 and 2012 on-site audits, and the percentage of deficiencies observed by category.

Table 30 - OU3 On-site Laboratory Audit Deficiencies by Laboratory Process Area - 2008 to 2012

	Deficiencies				
Laboratory Area	**SPF 2012**	**SPF 2008**	**CSF 2008**	**Total**	**Percentage**
Bulk Drying	3	2	6	11	31.4%
Grinding and Splitting	3	2	1	6	17.1%
QC/QA	2	1	3	6	17.1%
Sample Receiving	1	0	4	5	14.3%
Facility	0	1	2	3	8.6%
Sieving of Preparation Samples	1	0	1	2	5.7%
Sample Preparation	0	1	0	1	2.9%
Health and Safety	0	1	0	1	2.9%
Total	**10**	**8**	**17**	**35**	**100%**

5.7 Toxicology Laboratory On-site Audits

In 2011-2012 QATS supported the on-site laboratory audits of two toxicology laboratories, one at the Oregon State University (OSU) Aquatic Toxicology Laboratory in Albany, OR, and the other at Fort Environmental Laboratories, Inc. (FEL), in Stillwater, OK. A summary of deficiencies from the two on-site audits are listed below:

- The audit of the OSU Aquatic Toxicology Laboratory involved an evaluation of the pilot study protocol, *ASB-RBT-AS5d-001 (Revision 4) – Evaluation of Free-fiber Libby Amphibole Asbestos Toxicity in Laboratory Water to the Rainbow Trout (Oncorhynchusmykiss)* against the procedures used by the laboratory for all aspects of the study. These included the shipping and receiving of test organisms, standards, and collected samples; the preparation and monitoring (physical and chemical) of test chambers; sample collection; a review of the laboratory's record keeping practices for shipping and receiving, test chamber preparation, and analytical measurements; the availability of written procedures; and the presence of a viable quality assurance/quality control (QA/QC) program. Several on-site audit observations were identified, including

the standards used were not received under proper chain-of-custody (COC) and stored in a secure location within the facility; collected samples were not shipped as scheduled; use of an inadequate COC form; failure to always document adjustments made to the water quality; use of insufficiently specific toxicology forms; deviations from protocol were not communicated to the proper authority; the size and type of filter used to collect samples were not recorded; and the QA/QC program implemented was not as described in the laboratory Quality Assurance Plan.

- The audit of the Fort Environmental Laboratories, Inc. (FEL) involved an evaluation of the toxicological study to examine the effects of LA on the complete metamorphosis of ranid amphibians. The results of the study will be used to support the evaluation of potential ecological risk at the Libby Asbestos Superfund Site in Libby, Montana. This study involved a complete amphibian metamorphosis assay in which ranid larvae, beginning at Gosner Stage 20, were exposed to LA. The general experimental design entailed exposing the test organisms to contaminated soil collected from the Libby Superfund Site and two controls, inert sand and reference sediment. The primary endpoints of the study were survival, developmental stage, time to metamorphosis for each test organism, median time to metamorphosis for each replicate, metamorphic count, external and internal malformations, whole body weight, and snout-vent length of each surviving test organism. The on-site evaluation identified only one observation: There was a failure to analyze the laboratory control (inert sand) and reference sediment for the presence of LA prior to initiation of the in-life study.

5.8 Laboratory Internal Audits

Each laboratory conducts internal audits of their specific operations on an annual basis using appropriate checklists. During the on-site audits, the Audit Team reviews with the laboratory staff any significant findings noted in their internal audit reports. **Table 28** shows the internal audit history from 2007 to 2012 of the five laboratories that currently provide support to OU3 investigation activities. Internal audits were performed by two of the five laboratories in 2007, by all of the laboratories between 2008 and 2011, and by four of the five laboratories in 2012. **Table 28** below lists the dates of the laboratory internal audits between 2007 and 2012:

Table 28 - Internal Audit History for OU3 Support Laboratories (2007 - 2012)

Laboratory	2007	2008	2009	2010	2011	2012
EMSL-Westmont	None	4/29/2008	4/13-15/2009	4/27-29/2010	7/7-8/2011	None
EMSL-Denver	None	2/25/2008	5/18/2009	3/31/2010	3/23-25/2011	10/30/2012
EMSL-Beltsville	None	11/12-14/2008	12/7-9/2009	12-21-22/10	12/15-16/2011	12/19-20/12
EMSL-Libby	6/24/2007	9/10/2008	10/13-14/09	1/14-15/2010	1/12/2011	9/24-25/2012
Hygeia	8/20/2007	9/3-4/2008	11/13/2009	7/14-15/2010	8/15-16/2011	9/24-28/2012

5.9 Air Monitoring Samples

An environmental contamination monitoring program is required at each laboratory that analyzes samples from Libby. Specifics regarding the requirements of the laboratory monitoring program for each laboratory are described in the laboratory QA management plan. The laboratory QAM should immediately contact the LC and the QATS contractor of any laboratory contamination monitoring results that are outside of the appropriate acceptance criteria. From April 20, 2010 through December 12, 2012 112 air monitoring samples were collected at the EMSL Laboratory in Libby, Montana. Samples were collected at various locations throughout

the laboratory including, the transmission electron microscope laboratory, the polarized light microscopy laboratory, the base, and the reception area. Of the 112 air monitoring samples collected, two had results that exceeded the acceptance criteria, as described below:

- July 20, 2012 – An air monitoring sample collected from the PLM room on this date contained 1 LA structure. Upon being notified of this contamination, which was minor, the appropriate corrective action was initiated. The area was re-cleaned and re-sampled to ensure the problem had been addressed.

- September 20, 2012 – An air monitoring sample collected in one of the TEM rooms on this date contained 2 chrysotile structures. Corrective action was taken by the laboratory; however since CH is not an analyte of interest, no additional action was necessary.

6.0 Laboratory Mentoring Program

In 2012 EPA requested the support of QATS to mentor Materials Analytical Services (MAS) in Suwannee, GA to perform asbestos analysis of samples collected from Libby OU3. Mentoring activities included a review of project-specific procedures (i.e. SOPs, SAP Summaries and Modifications) and electronic data deliverable tools, and also the selection of previously analyzed air, water, and soil samples, which were shipped to MAS for asbestos analysis by PLM and TEM methodologies. Upon completion of the analyses, QATS performed a review of both the hardcopy and electronic deliverables to ensure completeness and compliance with project-specific requirements. The mentoring process continued into September, during which time the laboratory demonstrated proficiency in both PLM and TEM analyses. On September 24, 2012 QATS submitted the first of two technical memos summarizing the mentoring activities associated with the PLM and TEM analyses by MAS of both soil and air QC samples which included re-preparations and inter-laboratory analyses. QATS was in the process of reviewing the TEM water deliverables when a perceived conflict of interest (COI) between MAS and the Primary Responsible Party (PRP), WR Grace, was identified by EPA. EPA directed QATS at this point to terminate all mentoring activities.

7.0 Development and Review of Standard Operating Procedures (SOPs) and Other Quality Documents

7.1 Standard Operating Procedures (SOPs)

The following SOPs were developed for the data validation of TEM and PLM data by the multiple methods used at the Libby site:

a) SOP QATS-70-094-00 (Standard Operating Procedure for the Validation of Libby Polarized Light Microscopy (PLM) Data Deliverables)

b) SOP QATS-70-095-00 (Standard Operating Procedure for the Validation of Libby Transmission Electron Microscopy (TEM) Data Deliverables)

7.2 Laboratory Modifications

During the period QATS supported the development or revision of sixteen (16) project-specific laboratory modifications. Listed below are summary descriptions and revision dates of each laboratory modification.

a) LB-000016H (Revised 9/25/2012) – This modification documents permanent modifications and clarifications to TEM structure recording rules for ISO 10312 and documents previous historical modifications and clarifications. This modification applies to all Libby TEM samples where the ISO 10312 counting rules apply, regardless of sample matrix (air, dust, water, woodchip/duff, tree bark, and tissue samples).

b) LB-000020B (Revised 3/19/2012) – This modification applies to the preparation and analysis of water samples for the Libby Project. As of 07/27/2010, it requires all water samples associated with the Libby Superfund Site (including OU3) to undergo treatment with ozone/UV light and sonication prior to filtration as specified in Section 6.2 of EPA Method 100.1 (EPA 1983a). Only polycarbonate (PC) or mixed cellulose ester (MCE) filters with a pore size of 0.2 µm or smaller should be used for filtering water samples. On the bench sheets, the preparation date should be recorded as the filtration date, not the grid preparation date. Recording rules will be as described in the ISO 10312 (ISO 1995) method, except that the aspect ratio and minimum length requirements will be specified in the applicable governing Analytical Requirements Summary Sheet. The reason for the modification is studies performed by the EPA (EPA 1983b) have indicated that water samples collected for asbestos concentration determination that are not completely sterile are complicated by microbial growth which leads to the potential for clumping of fibers within organic matter and clumps adhering to the sides of the vessel. This has a two-fold effect towards underestimating asbestos estimation; fibers within clumps of organic matter cannot be adequately identified by microscopy and fibers adhering to the sides of the vessel decrease the fiber concentration in the water.

c) LB-000029D (Revised 3/12/2013) – This modification provides permanent clarifications to laboratory-based quality control (QC) analysis requirements for TEM. The purpose is to standardize the frequency of analysis and procedures for the selection and interpretation of the results for laboratory-based TEM QC analyses (regardless of sample medium).

d) LB-000055B (Revised 11/2/2012) – This purpose of this laboratory modification is to address sample collection procedures for the Outdoor Ambient Air Monitoring Programs for the Libby Asbestos Superfund Site, including the ambient air programs for Operable Unit 4 (OU4) and OU7 (Troy). Due to meteorological conditions prevalent in Libby in the late fall (e.g., fog, inversions, other potential precipitation), the collected air filters have the potential to arrive at the laboratory in a damp condition. To allow these samples to be properly prepared for TEM analysis and to prevent subsequent biological growth, this modification requires all ambient air samples to be dried upon receipt at the on-site laboratory (e.g., EMSL-Libby), prior to further preparation/analysis at the on-site laboratory, or prior to transfer to another laboratory for further preparation/analysis.

e) LB-000066C (Revised 9/11/2007) – This temporary modification applies to all investigative samples (as defined in the most recent version of LB-000053) evaluated at the Libby Superfund Site. This temporary modification requires all analytical laboratories to: 1) complete the structure comment field to characterize particles with regard to the levels (presence/absence) of the sodium and potassium peaks observed in the energy dispersive spectrometry (EDS) spectrum; 2) record on the data sheets all non-asbestos material (NAM) particles that are “close calls”; 3) increase the frequency that EDS spectra are saved for “LA” and “close call” structures; 4) increase the frequency that photographic images of particle morphology are recorded for “LA” and “close call”

structures; and 5) complete the comment field to record mineral type of each recorded particle, including “LA”, “OA”, “C” and “close call” NAM particles.

Note: Modification LB-000066C is only to be used if specified.

f) LB-000066D (Revised 7/2/2010) – This permanent modification applies to all Libby site investigative samples as defined by in the relevant SAPs and analyzed by TEM. This modification does not apply to non-investigative samples. Based on this modification, all analytical laboratories shall: 1) indicate on the count sheet the presence or absence of sodium and potassium in all recorded structures (except chrysotile); 2) record on the count sheet “close-call” NAM particles; 3) record the probable mineral species of each recorded structure; 4) record EDS spectra of “LA” and “close-call” NAM particles; and 5) record 1 photomicrograph of a SAED (selected area electron diffraction) pattern for each “LA” or “OA” amphibole type encountered in a sample.

g) LB-000067C (Revised 4/1/2013) - This modification provides direction on how to improve consistency in the recording and reporting of structures for all TEM methods for the Libby Project. It also consolidates the three modifications applicable to all TEM methods into a single modification.

h) LB-000073C (Revised 12/6/2012) - This modification provides permanent clarifications to inter-laboratory analyses for the Libby-specific PLM-VE (SRC-LIBBY-03) and PLM-Gravimetric (SRC-LIBBY-01) methods; and standardizes the selection and analysis procedures for inter-laboratory samples of soil.

i) LB-000085A (Revised 5/4/2012) – The purpose of this modification is to standardize the frequencies and performance criteria of instrument calibrations at all TEM laboratories that analyze samples for the Libby Project. Contamination monitoring by air sampling at the labs is also described in this modification.

j) LB-000087 (Revised 5/4/2012) – This modification documents clarification of the PLM NIOSH Method 9002 asbestos mineral identification criteria as applied to the identification of tremolite-actinolite, and its presence as “LA” in soils collected from the Libby Superfund Site. It also describes the historical recording and reporting of tremolite-actinolite and “LA”, respectively, in samples analyzed by NIOSH Method 9002 prior to 03/14/2012; how the Scribe database will be updated to address the described inconsistencies; and how samples identified as containing tremolite-actinolite by this method will be qualified to document their inclusion in “LA” solid solution series in all future deliverables.

k) LB-000088 (Revised 12/17/2012) – This modification documents the effective dates on which the project soil preparation facility (SPF) and analytical laboratories are to adhere to SOPs ISSI-Libby-01, SRC-Libby-03, and SRD-Libby-01 when performing PLM-VE, Gravimetric analysis, or particle size reduction.

8.0 Conclusions & Recommendations

Although several quality issues were identified from the review of the field and laboratory QC results, data validation results, and on-site audit results; overall, the QC data evaluated from the assessments appear to be of good quality and capable of supporting risk assessment and other

decision making related to the results of the associated samples. A summary of the issues identified by QC category along with recommendations are provided as follows:

Field QC

Field QC includes field, lot, and rinsate blanks; and field duplicates. Four field issues were identified:

- Field blanks, duplicate blanks were not always collected at the frequencies described in the applicable SAPs.
- Lot blanks have not been collected since 2010 and it is unknown whether the lots checked in 2010 are still in use.
- Libby Amphibole (LA) was identified in two field blanks.
- Field duplicate pairs with Poisson ratio rates outside of the desired 95% confidence interval were detected.

To address the above issues, it is recommended that field SAPs be read and acknowledged by all field personnel, and that COCs are reviewed to ensure that field QC are collected at the frequencies required by the investigation-specific SAPs. To ensure that the filters used to collect air samples are from the lots checked in 2010, the applicable FSDSs should be checked to ensure that the filter lot numbers recorded match those that have been verified.

Regarding the field blanks, contamination was limited to a single LA structure detected in two out of the 86 field blanks collected. As a result of this contamination, all associated samples with positive LA concentrations will be qualified “FB” to warn users of the potential for cross contamination. It should also be noted that LA fibers were also detected in an additional two field blanks, but that these particular samples are part of an investigation concerning the possibility that samples were either mixed up in the field or misidentified at the laboratory. For the field duplicates, sample pairs falling outside the desired confidence interval were limited to water, tree bark, and duff samples suggesting that reproducibility is difficult due to inherent sampling variability associated with the collection of these media types.

Laboratory QC

Laboratory QC includes both intra- and inter-laboratory results. Two laboratory QC issues were observed:

- Intra-laboratory QC analysis frequency was not always performed at the project level or specific to samples collected from OU3.
- The inter-laboratory results for TEM did not always fall within the desired accuracy parameters.

The Intra-laboratory quality control analyses includes laboratory blanks, recount same, recount different and verified analyses. The laboratories, for reasons not determined, ceased tracking intra-laboratory QC these analyses separately for OU3 and instead tracked them with samples collected from other operable units. This issue was brought to the attention of the applicable laboratories who have since resumed assigning intra-laboratory analyses at the project level. In order to correct this deficiency, QATS would recommend that the laboratories perform these QC analyses retroactively in order to meet the requirements specified in each of the investigative-specific SAPs.

As noted in Tables 14A-14E in Section 3.3.1.4 of this report, the results from the inter-laboratory results failed to meet the criteria established for structure length, structure width and structures per GO. Although some of these discrepancies can be attributed to differences in instrumentation, analytical experience, and the nature of the structures themselves, which can exhibit different elemental compositions at different points along the fiber (i.e. transitional fibers), the identified discrepancies highlight the need for further discussion among the participating laboratories. This would help to achieve greater consistency between laboratories when identifying samples as either "close call" or NAMs, and also help them gain a better understanding of the length and width discrepancies observed. Increasing the frequency of inter-laboratory analyses for specific media should also be considered.

Data Validation

Data validation for asbestos in ambient air, tree bark, mine waste, surface water, duff, sediment, forest soil, groundwater, and pore water was performed in accordance with the applicable methods, SAP Analytical Requirements Summaries, Laboratory Modifications, and CB&I - QATS Libby-specific data validation SOPs. Selection of five percent (5%) of the sample results to validate was performed by randomly choosing sample results by laboratory, method, and media. A total of 360 field samples from 30 Laboratory Job Numbers, analyzed by five different laboratories between 2007 and 2012, were selected for validation. In addition to the 360 field samples validated, 43 blanks and 25 QC samples were validated.

Very few OU3 asbestos results were qualified. Qualifiers were applied to only one field sample result and one QC sample result (recount different) of the 360 asbestos sample results validated (0.56%); 99.4% of the OU3 asbestos results for samples analyzed between 2007 and 2012 required no qualification. The two sample results qualified were due to the failure of the laboratory to perform and/or document daily calibration activities. The lack of recording instrument calibrations (i.e. daily TEM alignment and energy checks) has been addressed though the initiation of laboratory modification LB-000085A, which requires the laboratories to provide instrument calibration on a quarterly basis.

Discrepancies were observed in the bench sheet/EDD information comparisons due to information omissions and typographical errors, which were reported in the EDD/Bench Sheet Discrepancy Table in the Asbestos Validation Summary Reports. The discrepancies ranged from minor (i.e., typographical errors in fields that do not affect the sample results) to more severe discrepancies (i.e., typographical errors for fiber length and/or width; primary filter area; and mineral identification which could affect the sample result, or date analyzed discrepancies which could affect the daily calibration verification). A total of 89 of the 360 sample results validated (24.7%) contained some type of bench sheet/EDD discrepancy. However, 86 of these 89 (97%) were minor typographical discrepancies.

On-site Audits

Fourteen (14) on-site audits were performed, nine of which were asbestos laboratory audits, three were soil preparation facility audits, and two that were asbestos toxicology study laboratory audits. For the asbestos laboratory audits, the areas audited in an asbestos laboratory include Sample Receipt, Storage, Log-in, and Chain-of-Custody (COC); Indirect and Direct Preparation of Samples; Transmission Electron Microscopy (TEM) Analysis; Polarized Light Microscopy (PLM) Analysis; and Quality Control and Quality Assurance.

A total of 112 observed deficiencies were identified from the nine OU3 laboratory on-site audits performed on five different laboratories between 2008 and 2012. Overall a 46.2% decrease in the average number of defects per on-site audit (for the same four laboratories) recorded in 2008 was observed in 2012. All four laboratories audited in 2008 and again in 2012 showed a reduction in the number of defects, which suggests that all four laboratories applied corrective action in response to their first audits in 2008. Of the five asbestos laboratory audits in 2012, the first-time audit of EMSL-CO had the most defects with 15, while EMSL-NJ had the fewest number of defects with seven. Laboratory responses to all reports for the 2008 and 2012 on-site audits have been received from the five OU3 support laboratories. All laboratories provided proposed corrective actions for the identified findings along with objective evidence as applicable. No findings were contested. These laboratory-proposed corrective actions in response to the 2012 audits will be verified during the next round of scheduled audits.

For the ESAT Region 8 SPF audits, there was a slight increase (from 8 to 10) in the number of deficiencies observed in the 2012 on-site audit versus the audit in 2008. This increase could partially be attributed to the presence of several new staff in 2012 who were not present during the 2008 audit.

A final recommendation is that QC activities (i.e. on-site audits, validation and inter-labs) be scheduled on an annual basis in order to identify and resolve quality issues in a timely manner, which will minimize the impact on the quality of associated data.

Attachment 1

EMSL Analytical (Libby, MT) Issues and Concerns

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Memorandum

From: Michael P. Lenkauskas
Date: August 30, 2013
Subject: EMSL Analytical (Libby, MT) Issues and Concerns

The following is a summary of issues and analytical data discrepancies associated with the EMSL Analytical laboratory in Libby, Montana. The discrepancies, identified by CDM Smith and CB&I, raise concerns about the quality of the data provided by this laboratory for samples collected from Operable Unit 3 (OU3) of the Libby Superfund Site. The specific issues include:

- TEM Inter-lab sample preparation issues
- Inadequate frequency of project-specific QC analyses
- Possible misidentification of samples
- Result discrepancies between TEM rapid TAT and full analysis of OU3 water samples

TEM Inter-lab Sample Preparation Issues

The EMSL Analytical laboratory experienced an unusually high percentage (37%) of damaged grid openings (GOs) on re-preparations prepared for the 2010 and 2011 TEM inter-laboratory, which resulted in these samples having to be re-prepped again, slowing down what turned out to be an already laborious process. Upon identification of this issue on March 25, 2013, the laboratory was directed to investigate and apply the necessary correction actions prior to preparing the re-preparations for the 2012 TEM inter-laboratory study about to be initiated. The root cause of the damaged GOs, as determined by the laboratory, is described in the attached corrective action (CAR# 1303-1), was the following:

- Grid opening size, EMSL uses a custom made grid with an opening of 0.0130 sq. mm;
- Grid condition;
- Carbon coating thickness;
- Ash time; and
- Packaging and shipping.

In addition to using a grid with a smaller grid opening size (15x15 grids with a G.O.A. of 0.0064 sq. mm) the laboratory is now also pre-cleaning the grids and has adjusted the asher and carbon coating settings. Since none of the 11 samples re-prepped by the laboratory for the 2012 TEM inter-laboratory were received damaged, the corrective actions initiated by the laboratory appear to have resolved the issue.

It should also be noted that undissolved filter material has also been observed on EMSL grid preparations, which will be investigated on a laboratory-by-laboratory basis during the 2012 laboratory on-site audits.

Inadequate Frequency of Project-specific QC Analyses

A review of the QC analyses available in the OU3 database for samples analyzed in 2012 revealed that the frequency at which QC analyses were performed for both TEM and PLM analyses during this period was not in accordance with the criteria described in Laboratory Modification LB-000029D and SOP SRC-Libby-03 (rev. 3) for TEM and PLM, respectively. The following table provides a summary of analyses

performed, the required frequency, the number of QC analyses that should have been performed, and the actually number and percentage of QC analyses that were performed:

Method	QC Type	Sample Analyses	Required Frequency	Performed	Actual Frequency
TEM	LB	293	4%	7	2.4%
TEM	RS	293	1%	0	0%
TEM	RD	293	2.5%	3	1%
TEM	VA	293	1%	2	0.7%
TEM	RP	293	1%	5	1.7%
PLM	LDC	65	8%	1	1.5%
PLM	LDS	65	2%	3	4.6%

Although QC analyses were not performed at the required frequency on a project-specific basis (OU3), they were prepared at the required frequency for all of the operable units combined. This discrepancy was brought to the attention of EMSL Analytical Management on May 22, 2013, who performed an investigation and determined that separate QC logbooks were maintained up until June 25, 2012, at which time they were combined[1]. Effective May 23, 2013 samples received from OU3 are once again recorded in a separate, OU3-specific, QC logbook, ensuring that project-specific QC will be performed at the required frequencies.

Possible Misidentification of Samples

A review of the results from surface water samples collected from OU3 during the spring of 2012 and analyzed by the laboratory indicates that samples were misidentified either in the field during collection or in the laboratory while being processed. Samples possibly misidentified are summarized in the following table:

Index ID	Sample Type	Date Prepared	Date Analyzed	Structures	Comments
P5-10013	Field Sample	5/19/12	5/25/12	0	Same preparation batch. Lab indicated sample P5-10014 was cloudy.
P5-10014	Field Blank		5/26/12	25	
P5-10067	Field Sample	6/20/12	6/26/12	25	Field sample/field duplicate pair
P5-10068	Field Duplicate		6/26/12	1	
P5-20018	Field Sample	5/17/12	6/01/12	0	Field sample/field duplicate pair. Lab RP had 50 structures.
P5-20019	Field Duplicate		6/02/12	65	
P5-20085	Field Sample	7/04/12	7/09/12	5	Field sample/field duplicate pair
P5-20087	Field Duplicate		7/09/12	27	
P5-20225	Field Sample	9/20/12	11/08/12	25	Field sample/field duplicate pair
P5-20226	Field Duplicate		11/08/12	62	

Although sometimes analyzed on separate days, each of the sample pairs in question were prepared on the same days by the same preparer, increasing the possibility that the misidentification of at least the field duplicate pairs at the laboratory. It should also be noted that with the exception of the sample pair prepared and analyzed in September and November, respectively, which has results that may or may not indicate the samples were misidentified, the remaining samples, which exhibit much greater disparity, were all prepared and analyzed during the spring/early summer 2012.

The potential that the misidentification of samples was brought to EMSL Analytical Management's attention, and on February 19, 2013 the laboratory provided a memo to both EPA and Remedium summarizing the findings of their investigation. The first section of this memo discusses the TEM Rapid TAT versus TEM full analysis discrepancies, which are discussed below. Concerning the possible misidentification of samples, the laboratory offered the explanation that at the time of the misidentifications the laboratory was operating beyond its capacity, creating a disorganized environment

[1] Note that this timeframe coincides with the change in the OU3 laboratory subcontracting mechanism from Remedium to TechLaw.

with staff trying to handle too many responsibilities. Procedural changes put in place by the laboratory to prevent similar situations for occurring in the future include:

- Expansion of the sample preparation area creating a less cluttered workspace in which to stage more samples in an organized manner
- Restricting the number of jobs being prepared simultaneously
- Having one individual track the progress of each individual lab job
- Provide training and improve intra-laboratory communication to better handle lab capacity issues

Note: Although this memorandum indicated that the capabilities of the Denver laboratory were to be increased to handle duff and water samples, as of the spring of 2013, this action has not been implemented.

Result discrepancies between TEM rapid TAT and full analysis of OU3 water samples

For a subset of the Kootenai River water samples collected in 2012, the EMSL-Libby laboratory was requested to perform a "rapid" TAT analysis. This analysis was performed using the same preparation techniques and counting rules as the traditional "full" analysis, but only required the analyst to record the total number of countable LA structures per GO (i.e., recording of structure-specific attributes, such as length, width, and structure type, was not required) to facilitate the faster reporting of water concentrations. Following the rapid TAT analysis, each water sample was subsequently re-analyzed[2] using the traditional full analysis reporting requirements.

A comparison of the rapid vs. full analysis results performed in January/February 2013 revealed significant discrepancies between the reported water concentrations for several samples (examples provided below):

Index ID	Total LA Water Conc. (MFL)	
	Rapid Analysis	Full Analysis
P5-10004	3.7	0
P5-10010	97	0
P5-10008	62	0
P5-10013	40	0

These discrepant results were brought to EMSL Analytical Management's attention, and the laboratory repeated the rapid and full analysis for a subset of the Kootenai River water samples (from the raw water that was in archive) to identify the nature of these discrepancies. The results of these repeated analyses indicated that the reported water concentrations from the original rapid analysis were not confirmed, but that the original full analysis results were confirmed *for most samples*. On this basis, the laboratory provided a memo to both EPA and Remedium on February 19, 2013, recommending that "*all rapid results should be disregarded in favor of the full ISO analyses*". This memo did not specify the reason for the differences between the rapid and full analysis results, but EMSL later noted that the analyst performing the rapid analysis may have utilized PCM recording rules, resulting in the recording of diatom fragments as countable structures.

However, as noted above, the repeat full analyses did not confirm the results for all samples. In particular, for a subset of samples listed below, the repeat full analysis did not confirm either the original rapid analysis or the full analysis:

Index ID	Total LA Water Conc. (MFL)		
	Original Analysis		Repeat
	Rapid Analysis	Full Analysis	Full Analysis
P5-10018	78	35	0
P5-10017	37	58	0

[2] Because the grids from the rapid analysis were often blown due to the original examination, this re-analysis was performed using a newly prepared set of grids from the original filter.

Index ID	Total LA Water Conc. (MFL)		
	Original Analysis		Repeat
	Rapid Analysis	Full Analysis	Full Analysis
P5-10015	34	60	0

In the case of one field blank (P5-10014), the re-analysis supported the unexpected results of the original full analysis, which reported a total LA water concentration of about 25 MFL. However, EMSL is looking further into the possibility that there were clip and archive grid location mix-ups that occurred at EMSL-Libby that may explain these unexpected results.

Because of these discrepancies, the validity of the original full analysis results is also uncertain.

Resolution of discrepancies for OU3 water samples

Re-analyses of samples collected in 2012

As a consequence of the discrepancies discussed above, several re-analyses were performed of the water samples collected in 2012 from the Phase V Part A (Kootenai) and Part B (Ecological) studies to confirm the originally reported results. This re-analysis effort included the analysis of a subset of water samples from the Kootenai River study (i.e., samples collected during Rounds 1 through 5 from stations LRC-6 and UKR-0) and the in-stream fish toxicity tests (i.e., a subset of the LRC surface water samples from the eyed egg study and 20% of the surface water samples from the fry study). These re-analyses were performed by EMSL-Cinnaminson in July/August 2013 from the raw water[3].

The following table summarizes these results. As shown, of the 24 samples that were re-analyzed, there were 8 samples where the repreparation analysis performed by EMSL-Cinnaminson was statistically different from the original analysis performed by EMSL-Libby (based on a Poisson ratio comparison test at a 90% confidence interval). This means that the difference in LA water concentrations between the original analysis and the repreparation analysis was more than can be attributed to Poisson counting error alone. For the 3 samples that were different from the Part A program (Kootenai), these results confirmed that some type of filter mix-up had occurred for samples P5-10015, P5-10017, and P5-10018 during the original analysis at EMSL-Libby. For the other 5 samples that were different from the Part B program (Ecological), there appears to be a consistent bias, with EMSL-Cinnaminson reporting higher concentrations than EMSL-Libby. Although for most of these samples, the concentrations are usually within a factor of about 3, there was one sample (P5-20027) where the reported concentration by EMSL-Cinnaminson is about 90 times higher than what was reported by EMSL-Libby, which may indicate another potential filter mix-up.

Re-analyses of samples collected in 2013

In addition, approximately 20% of the water samples collected as part of the 2013 eyed egg study were also be randomly selected *a priori* for re-analysis by EMSL-Cinnaminson in July/August 2013. These re-analyses were performed from either the originally prepared filter or the raw water (depending upon the nature of the archived sample).

The following table summarizes these results. A total of 17 samples were selected for re-analysis by EMSL-Cinnaminson; 10 samples were reprepared from the filter (filter was prepared by EMSL-Libby) and 7 samples were reprepared from the raw water. As shown, 8 of the 17 samples that were re-analyzed by EMSL-Cinnaminson were statistically different from the original analysis performed by EMSL-Libby (based on a Poisson ratio comparison test at a 90% confidence interval). Similar to what was observed in the 2012 re-analyses, there appears to be a consistent bias, with concentrations reported by EMSL-Libby tending to be lower than those reported by EMSL-Cinnaminson. However, concentrations in most samples were usually within a factor of about 2.

[3] For two samples, the re-analysis was performed from the original filter because no raw water remained (these samples are indicated in the table).

Of particular interest are the results for samples P5-20325 and P5-20326. These two samples were preferentially selected for re-analysis because the originally reported LA concentrations suggested that the results for the pore water and its paired surface water got mixed up. The re-analysis performed by EMSL-Cinnaminson confirmed that a filter mix up did occur and that it happened in EMSL-Libby when reporting the results (not in the field)[4].

Conclusions

The results of these re-analyses support the conclusion that filter mix-ups occurred at EMSL-Libby both in 2012 and 2013. The largest mix-up appears to be associated with the set of filters that were prepared during Round 3 of the Phase V, Part A (Kootenai) sampling effort (which included P5-10014, P5-10015, P5-10017, and P5-10018). However, other filter mix-ups outside of this timeframe were also noted, and even occurred during the 2013 study after corrective actions were to have been implemented.

The re-analyses also show that there are differences between the EMSL laboratories in the identification and recording of LA structures in water samples from OU3, albeit the magnitude of the differences in the reported water concentrations are not large (usually within a factor of 2-3).

LIBBY OU3: 2012 PHASE V, SURFACE WATER RE-ANALYSIS RESULTS
REPREPARATION RESULT COMPARISON

Investigation	Repreparation Type	Index ID	Original Analysis (2012)				Repreparation Analysis (Jul/Aug 2013, EMSL-Cinnaminson)				Poisson Rate Comparison (90% CI)
			Laboratory	Total LA Structures	Sensitivity (1/L)	Total LA Conc (MFL	Laboratory	Total LA Structures	Sensitivity (1/L)	Total LA Conc (MFL	
2012 Phase V Part A Surface Water	Raw water	P5-10005	EMSL27	2	3.3E+05	**0.7**	EMSL04	0	1.3E+06	**0**	[0-13.62] The rates are not different
	Raw water	P5-10006	EMSL27	121	3.5E+06	**419**	EMSL04	39	1.2E+07	**473**	[0.65-1.23] The rates are not different
	Raw water	P5-10011	EMSL27	0	1.6E+05	**0**	EMSL04	0	6.4E+05	**0**	Both counts are 0; the rates are not different
	Raw water	P5-10012	EMSL27	27	1.5E+06	**42**	EMSL04	25	1.9E+06	**47**	[0.54-1.46] The rates are not different
	Filter	**P5-10015**	**EMSL27**	**26**	**2.3E+06**	**60**	**EMSL04**	**0**	**1.8E+05**	**0**	**[0-0.01] Rate 1 is greater than Rate 2**
	Raw water	**P5-10017**	**EMSL27**	**25**	**2.3E+06**	**58**	**EMSL27**	**1**	**6.4E+05**	**0.6**	**[17.65-1828.91] Rate 1 is greater than Rate 2**
	Raw water	**P5-10018**	**EMSL27**	**25**	**1.4E+06**	**35**	**EMSL04**	**0**	**6.4E+05**	**0**	**[0-0.06] Rate 1 is greater than Rate 2**
	Raw water	P5-10025	EMSL27	27	2.8E+06	**75**	EMSL04	26	1.9E+06	**51**	[0.91-2.42] The rates are not different
	Raw water	P5-10033	EMSL22	1	4.9E+04	**0.05**	EMSL04	3	2.8E+04	**0.09**	[0.02-5.24] The rates are not different
	Raw water	P5-10034	EMSL22	121	2.8E+05	**33**	EMSL04	114	2.7E+05	**31**	[0.87-1.36] The rates are not different
	Raw water	P5-10053	EMSL04	0	5.0E+04	**0**	EMSL04	1	2.1E+04	**0.02**	[0-44.2] The rates are not different
	Raw water	P5-10056	EMSL04	66	2.5E+05	**16**	EMSL04	84	2.4E+05	**20**	[0.6-1.05] The rates are not different
2012 Phase V Part B Eyed Egg Surface Water	Raw water	P5-20002	EMSL27	58	6.9E+05	**40**	EMSL04	26	1.6E+06	**42**	[0.63-1.46] The rates are not different
	Raw water	P5-20006	EMSL27	33	6.9E+05	**23**	EMSL04	26	8.1E+05	**21**	[0.68-1.74] The rates are not different
	Raw water	P5-20011	EMSL27	25	7.9E+04	**2**	EMSL04	25	2.6E+05	**7**	[0.18-0.5] Rate 1 is less than Rate 2
2012 Phase V Part B Fry Surface Water	Raw water	P5-20016	EMSL04	46	8.2E+05	**38**	EMSL04	60	8.2E+05	**49**	[0.54-1.08] The rates are not different
	Filter	P5-20018	EMSL04	0	8.5E+04	**0**	EMSL04	0	8.6E+04	**0**	Both counts are 0; the rates are not different
	Raw water	P5-20021	EMSL04	26	5.0E+05	**13**	EMSL04	25	5.5E+05	**14**	[0.58-1.58] The rates are not different
	Raw water	P5-20027	EMSL04	25	6.7E+04	**2**	EMSL04	60	2.4E+06	**146**	[0.01-0.02] Rate 1 is less than Rate 2
	Raw water	P5-20031	EMSL04	41	2.5E+05	**10**	EMSL04	73	2.4E+05	**18**	[0.4-0.79] Rate 1 is less than Rate 2
	Raw water	P5-20042	EMSL22	34	1.0E+06	**34**	EMSL04	39	9.7E+05	**38**	[0.59-1.35] The rates are not different
	Raw water	P5-20045	EMSL27	2	5.2E+04	**0.1**	EMSL04	3	5.1E+04	**0.2**	[0.08-4.34] The rates are not different
	Raw water	P5-20069	EMSL27	79	2.8E+05	**22**	EMSL04	42	9.7E+05	**41**	[0.39-0.75] Rate 1 is less than Rate 2
	Raw water	P5-20081	EMSL27	25	1.4E+05	**3**	EMSL04	31	7.8E+05	**24**	[0.09-0.23] Rate 1 is less than Rate 2

All filters pass the CHISQ test for filter loading evenness.

Original Analysis > Repreparation Analysis
Original Analysis < Repreparation Analysis

Notes:
LA - Libby amphibole
-- = result not available
L = liter
MFL - million fibers per liter
% = percent
CI = confidence interval
TEM = transmission electron microscopy

Repreparation analysis confirms suspected filter mix-up at the laboratory during the original analysis.

Lab identifier is in error; corrected EDD is pending

[4] As shown in the table, EMSL-Cinnaminson performed an extra repreparation analysis which confirmed their results for sample P5-20326.

LIBBY OU3: PHASE V PART B, 2013 EYED EGG STUDY, WATER SAMPLING RESULTS

REPREPARATION RESULT COMPARISON

Repreparation Type	Media Type	Index ID	Original Analysis (EMSL-Libby)			Repreparation Analysis (EMSL - Cinnaminson)			Poisson Rate Comparison (90% CI)
			Total LA Structures	Sensitivity (1/L)	Total LA Conc (MFL)	Total LA Structures	Sensitivity (1/L)	Total LA Conc (MFL)	
Reprep from filter	Surface Water	P5-20290	27	1.4E+06	**38**	25	9.8E+05	**25**	[0.96-2.57] The rates are not different
	Surface Water	P5-20294	27	1.2E+06	**34**	25	8.9E+05	**22**	[0.92-2.48] The rates are not different
	Pore Water	P5-20299	28	2.5E+06	**70**	50	2.5E+06	**123**	[0.37-0.86] Rate 1 is less than Rate 2
	Surface Water	P5-20300	0	1.2E+05	**0**	6	1.3E+05	**0.8**	[0-0.59] Rate 1 is less than Rate 2
	Surface Water	P5-20309	26	1.3E+06	**35**	25	2.5E+06	**61**	[0.34-0.93] Rate 1 is less than Rate 2
	Pore Water	P5-20336	1	8.3E+04	**0.08**	2	8.6E+04	**0.2**	[0.02-6.16] The rates are not different
	Pore Water	P5-20324	27	1.3E+06	**36**	37	1.3E+06	**48**	[0.47-1.16] The rates are not different
	Surface Water	**P5-20325**	**26**	**1.7E+06**	**43**	**25**	**1.1E+05**	**2.6**	**[9.93-27.01] Rate 1 is greater than Rate 2**
	Pore Water	**P5-20326**	**0**	**7.8E+04**	**0**	**33**	**1.6E+06**	**54**	**[0-0] Rate 1 is less than Rate 2**
						46	**1.6E+06**	**75**	**[0-0] Rate 1 is less than Rate 2 ****
	Surface Water	P5-20331	25	3.7E+05	**9**	25	6.5E+05	**16**	[0.34-0.94] Rate 1 is less than Rate 2
Reprep from water	Pore Water	P5-20338	34	1.7E+06	**56**	32	1.3E+06	**41**	[0.88-2.11] The rates are not different
	Surface Water	P5-20341	25	2.4E+05	**6**	25	2.5E+05	**6**	[0.57-1.58] The rates are not different
	Pore Water	P5-20348	30	1.7E+06	**50**	32	9.2E+05	**30**	[1.07-2.64] Rate 1 is greater than Rate 2
	Surface Water	P5-20356	25	7.1E+05	**18**	31	1.1E+06	**33**	[0.33-0.86] Rate 1 is less than Rate 2
	Pore Water	P5-20352	0	8.3E+04	**0**	3	8.5E+04	**0.3**	[0-1.67] The rates are not different
	Pore Water	P5-20363	0	1.3E+05	**0**	0	1.3E+05	**0**	Both counts are 0; the rates are not different
	Surface Water	P5-20369	0	1.2E+05	**0**	0	1.3E+05	**0**	Both counts are 0; the rates are not different

All filters pass the CHISQ test for filter loading evenness.

Original Analysis > Repreparation Analysis

Notes:

Original Analysis < Repreparation Analysis

LA - Libby amphibole

-- = result not available

L = liter

MFL - million fibers per liter

% = percent

CI = confidence interval

TEM = transmission electron microscopy

These samples were selected for repreparation analysis by EMSL-Cinnaminson because it was suspected that the paired pore water and surface water results were mixed up by EMSL-Libby. The filter repreparation results confirm that the results were reported incorrectly by EMSL-Libby.

**EMSL-Cinnaminson performed a second repreparation for this filter which confirmed the first repreparation.

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February 6, 2015

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Document ID #: 3021-02062015-1

EPA CONTRACT NUMBER EP-W-10-033
TASK ORDER NUMBER 3021
QA SUPPORT FOR RI/FS AT THE LIBBY ASBESTOS SITE OU3

Dear Ms. Progess:

Enclosed please find the final version of the Annual Laboratory QA/QC Summary Report (2013). This report is a deliverable under Task 9 of Task Order 3021.

If you have any questions, please feel free to contact me.

Sincerely,

Lyndsay K. Gensler
Task Leader, QATS Program
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cc: Dania Zinner, USEPA, Region 8
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ANNUAL QA/QC SUMMARY REPORT (2013) (FINAL)

FOR TASK ORDER 3021 QUALITY ASSURANCE (QA) SUPPORT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) AT SITE OU3

Prepared by:

The Data Auditing Group
Quality Assurance Technical Support Program
CB&I Federal Services LLC
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February 6, 2015

QATS Contract Number: EP-W-10-033

Prepared for:

Christina Progess and Dania Zinner

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OFFICE OF SUPERFUND REMEDIATION AND TECHNOLOGY INNOVATION
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ATTACHMENT

Attachment 1 - EMSL Analytical (Libby, MT) Issues and Concerns
Attachment 2 - Annual Evaluation of TEM Inter-laboratory Results (2013)
Attachment 3 - Mentoring of EMSL Analytical Services, Inc., New York, NY

Acronym List

<	Less Than
≥	Greater Than or Equal To
%	Percent
AHERA	Asbestos Hazard Emergency Response Act
AOC	Administrative Order on Consent
ASTM	American Society for Testing and Materials
CB	Compact Bundle
CB&I	Chicago Bridge and Iron Company
CBO	Compact Bundle Obscured
CC	Compact Cluster
CF	Compact Fiber
CFO	Compact Fiber Obscured
CH	Chrysotile
CI	Confidence Interval
COC	Chain-Of-Custody
CSF	Close Support Facility
EDD	Electronic Data Deliverable
EDS	Electron Diffraction System
EPA	Environmental Protection Agency
ESAT	Environmental Services Assistance Team
f/cc	Fibers per Cubic Centimeter
f/mm^2	Fibers per Square Millimeter
FB	Field Blank
FBAS	Fluidized Bed Asbestos Segregator
FG	Finely Ground
GO	Grid Opening
IL	Inter-laboratory
ISO	International Organization for Standardization
ISSI	ISSI Consulting Group, Inc.
LA	Libby Amphibole
LB	Laboratory Blank
LC	Laboratory Coordinator
LDC	Laboratory Duplicate Cross-check
LDS	Laboratory Duplicate Self-check
MAS	Material Analytical Services, LLC
MB	Matrix Bundle
MBO	Matrix Bundle Obscured
MC	Matrix Cluster
MFL	Million Fibers per Liter
MF	Matrix Fiber
MFO	Matrix Fiber Obscured
NA	Not Applicable
NAM	Non-asbestos material
ND	Non-Detect
NIOSH	National Institute for Occupational Safety and Health
NVLAP	National Voluntary Laboratory Accreditation Program
OA	Other Amphibole
OU	Libby Operable Unit
PC	Point Count
PCM	Phase Contrast Microscopy
PCME	PCM-Equivalent
PES	Performance Evaluation Sample
PLM	Polarized Light Microscopy
PLM-GRAV	Polarized Light Microscopy Gravimetric
PLM-VE	Polarized Light Microscopy-Visual Area Estimation
QAM	Quality Assurance Manager
QAPP	Quality Assurance Project Plan
QA	Quality Assurance
QARD	Quality Assurance Reference Document
QATS	Quality Assurance Technical Support
QC	Quality Control
RD	Recount Different
RI/FS	Remedial Investigation/Feasibility Study
RP	Re-preparation
RS	Recount Same
SAED	Selected Area Electron Diffraction
SAP	Sampling and Analysis Plan
s/cc	Structures per Cubic Centimeter
SOP	Standard Operating Procedure
SPF	Soil Preparation Facility
SRM	Solid Reference Material
TAT	Turn-around Time
TEM	Transmission Electron Microscopy
VA	Verified Analysis

1.0 Introduction

1.1 Purpose of this Report

This Annual Summary Report provides a summary of the 2013 laboratory Quality Assurance (QA) activities applied to asbestos sample data collected from Libby Superfund Site Operable Unit (OU) 3, and to the laboratories that analyzed the samples; a summary of the results of various Quality Control (QC) samples collected and analyzed from this OU across the sampling program; and an assessment of the overall quality of the data, with recommendations for refining and strengthening the QA/QC program in the future. Operable Unit 3 (OU3) is one (1) of eight (8) OUs designated by EPA for the Libby Remedial Investigation/Feasibility Study (RI/FS), which encompasses the mine property and surrounding areas impacted by releases from the mine, such as creeks, the Kootenai River, settling ponds, nearby forests, and Rainy Creek Road. The Libby RI/FS at OU3 is being conducted through an Administrative Order on Consent (AOC) entered into by EPA with respondents W.R. Grace and Co. and Kootenai Development Corporation (KDC). This report was prepared for the U.S. Environmental Protection Agency (EPA) Region 8 by CB&I Federal Services LLC's Quality Assurance Technical Support (QATS) Program under Task 9 of Task Order 3-021, *QA Support for RI/FS at Site OU3.*

1.2 Report Outline

The sections in this report include:

- QC Data Evaluated
- Asbestos Data Validation
- Laboratory On-site Audits
- Laboratory Mentoring Program
- Conclusions and Recommendations

The primary contaminant at OU3 is Libby Amphibole (LA) which is a form of asbestos present in the vermiculite that was mined at the site from 1919 to 1990. The QA activities and QC data evaluations performed in 2013 for each of the above-listed assessment areas are summarized in this report. The QC data assessments include those from the preparation and analysis of LA from samples analyzed in 2013 from Libby OU3.

2.0 QC Data Evaluated

The QC data described in this section are from samples which were collected from the OU3 site and analyzed in 2013 by the EPA contract laboratories listed in **Table 1**, below.

Table 1 – 2013 Libby Laboratories

Abbreviation	Name, Location
EMSL03[1]	EMSL Analytical, Inc., New York, NY
EMSL04	EMSL Analytical, Inc., Cinnaminson, NJ
EMSL22	EMSL Analytical, Inc., Denver, CO
EMSL27	EMSL Analytical, Inc., Libby, MT

[1] Although EMSL03 did not directly analyze field samples from OU3 in 2013, they did participate in the TEM Inter-laboratory study for samples analyzed in 2013.

The data presented herein are categorized in the tables by investigation phases performed to support specific types of studies. **Table 2** presents the investigation phases with titles and the approximate dates in which they were performed at the Libby OU3 Superfund Site.

Table 2 – Libby OU3 Site Investigation Phases

Phase	Phase Title	Date
I	Phase I	September 2007
III	Phase III ABS	May 2009
IVA	Data to Support Human Health Risk Assessment	June 2010
CL	Commercial Logging; Commercial Logging ABS (Revision 2)	September 2012
AMP	Amphitheater Removal	September 2012
VA	Kootenai River Surface Water, Sediment, and ABS (Revision 2)	October 2012
VB	Ecological Studies (Revision 4)	April 2013
SM	Wildfire Contingency Air Monitoring (Revision 1)	July 2013

This section summarizes the QC data results by the following categories:

- Field QC
- Sample Preparation (SPF) QC
- Laboratory Analysis QC
- Performance Evaluation Sample (PES) Results

2.1 Field Quality Control

Field-based QC samples are collected in the field and submitted, along with the regular field samples, to the laboratories for analysis. Four types of field QC samples were collected from OU3 in 2013:

- Field Blank
- Rinsate Blank
- Lot Blank
- Field Duplicate/Split

Field QC samples were to be collected with the Polarized Light Microscopy -Visual Estimation (PLM-VE), PLM-Gravimetric (PLM-GRAV), and Transmission Electron Microscopy (TEM) analysis samples.

The single soil field duplicate sample collected for PLM-VE analysis, for the OU3 2013 Amphitheater project, represents a field QC to sample ratio of 11%. Both the original and field duplicate results were reported as <1% asbestos (Bin B2), and thereby concordant. **Table 3** provides a summary of the PLM-VE field QC collected by Investigation Phase.

Table 3 – 2013 OU3 PLM-VE Field QC

Phase	Media	Field Samples	Field Duplicates	
			#	%
Amphitheater	Surface Soil	9	1	11%
Totals		**9**	**1**	**11%**

Because PLM-GRAV samples are not collected, but generated during the sieving process of soil samples at the Troy SPF, there are no field QC samples for PLM-GRAV for OU3 in 2013. **Table 4** provides a summary of the PLM-GRAV field samples collected by investigation phase.

Table 4 – 2013 OU3 PLM-GRAV Field QC

Phase	Media	Field Samples
Amphitheater	Surface Soil	1
Totals		**1**

Field QC samples collected for TEM analyses were applied to water samples in 2013 for investigation Phase VB (VB-2013) and to air and ash samples in the Fire Contingency Plan (Fire) investigation phase. 2013 OU3 TEM field QC samples were applied in the form of field duplicate samples, field blanks, and lot blanks. Of the 98 field samples collected from the OU3 site for TEM analysis during 2013, 11 total field QC samples were collected, representing 11% of the total. **Table 5** shows the type, number, and frequency of TEM Field QC samples by investigation phase.

Table 5 – 2013 OU3 TEM Field QC

Phase	Media	Field Samples	Field Duplicates		Rinsate Blanks		Field Blanks		Lot Blanks		Field Splits	
			#	%	#	%	#	%	#	%	#	%
VB-2013	Pore Water (in)	39	3	7.7%	0	0.0%	1	2.6%	0	0.0%	0	0.0%
	Surface Water	38	3	7.9%	0	0.0%	3	7.9%	0	0.0%	0	0.0%
Fire	Air	18	0	0.0%	0	0.0%	0	0.0%	1	5.6%	0	0.0%
	Ash	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Totals		**98**	**6**	**6.1%**	**0**	**0.0%**	**4**	**4.1%**	**1**	**1.0%**	**0**	**0.0%**

2.1.1 Field Duplicates

A field duplicate is an additional sample collected at the same location or coordinates and at approximately the same time as the original field sample. Field duplicates are used to evaluate analytical precision and sample variability due to small-scale media heterogeneity. Because field duplicate samples have inherent random variability, there is no quantitative requirement for the agreement of field duplicates; rather, results are used to evaluate data usability based upon the magnitude of variability between original and field duplicate samples. For OU3 field samples in two investigations in 2013 (as shown in **Tables 3** and **5**), 1 field duplicate pair was collected in the Amphitheater phase for samples prepared and analyzed by PLM-VE resulting in a QC frequency of 11%, and 6 field duplicate pairs were collected in the VB-2013 phase for samples prepared and analyzed by TEM resulting in a QC frequency of 8%.

2.1.2 Rinsate Blanks

No rinsate blank samples were collected in 2013 for OU3. A lack of rinsate blank QC samples implies that only disposable equipment was used in the collection of 2013 OU3 samples.

2.1.3 Field Blanks

A field blank is an aliquot of the same medium as the field samples in which it is associated. Field blank QC samples are used to determine the occurrence of cross-contamination during sample collection and/or analysis. Collection frequency requirements for field blanks are specified in the associated Sampling and Analysis Plans (SAPs). In 2013, OU3 field blanks were collected for water samples-only. With the exception of the following, field blanks were collected at the frequencies specified in the applicable SAP:

- Phase VB Pore Water – Section 5.4 of the Phase VB SAP (July 2012, Rev. 2) states that field blanks are to be collected once at the beginning and once at the end of each study. In this 2013 OU3 phase, only a field blank was collected at the end of the study, on June 17, 2013.

- Wildfire Contingency – Section B.5.1.3 of the Wildfire Contingency Monitoring Plan (August 2013, Rev.1) states that field blanks are to be collected at a rate of one field blank for every two days of sampling that occurs. No field blanks were collected for this phase of the 2013 OU3 study; however, it should be noted that samples were only collected on one day, July 27, 2013.

As shown in **Table 5** above, a total of 4 field blanks, at an overall frequency of 4%, were collected across all investigation phases in 2013, all of which were reported as non-detect (ND) for the presence of asbestos structures.

2.1.4 Lot Blanks

Lot blanks are selected at random from each group of cassettes to be used for collection of air samples. Before air filter cassettes can be used for asbestos sampling, though, the lot must be asbestos-free. The selected lot blanks are analyzed for asbestos fibers by the same method used for field sample analysis. If any asbestos fibers are detected on the lot blanks, the entire batch of cassettes is rejected. Only lots of filters with acceptable lot blank results are placed in the general supply area for use by project personnel. In all 2013 OU3 phases, a single lot blank for air cassettes was collected and analyzed with no asbestos structures found.

2.1.5 Field Splits

There were no field splits collected in 2013.

2.1.5.1 Transmission Electron Microscopy

The 2013 TEM field duplicate results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). Six (6) TEM field duplicate sample pairs were analyzed in 2013 in the OU3 VB-2013 phase. Of the six duplicate pairs collected for TEM analysis, one (17%), sample P5-20295 as presented in **Table 6** below, considered the parent and field duplicate samples to be statistically different. This difference suggests that the reproducibility of water results, even within a small sampling scale, is difficult due to the inherent sampling variability within the medium. Unless otherwise noted, where the structure (str) counts are different between the first and second evaluations, the 90% CI requirement is still met.

Table 6 – Statistical Comparison of 2013 TEM Field Duplicate Results Using Two Poisson Rates

Phase	Media	Parent ID	Field Dup. ID	Parent Sample (Rate 1)			Field Duplicate (Rate 2)			Poisson Ratio Rate Comparison (CI=90%)
				Str	Sens [a]	Conc [a]	Str	Sens [a]	Conc [a]	
VB-2013	Pore Water	P5-20295	P5-20296	28	2.49E+06	6.97E+07	26	1.42E+06	3.70E+07	[1.16-3.07] Rate 1 is greater than Rate 2
		P5-20357	P5-20358	25	1.42E+06	3.56E+07	28	1.42E+06	3.98E+07	[0.55-1.46] The rates are not different
		P5-20373	P5-20375	0	1.17E+05	0.00E+00	0	1.17E+05	0.00E+00	Both counts are 0; the rates are not different
	Surface Water	P5-20294	P5-20293	27	1.25E+06	3.36E+07	25	9.06E+05	2.26E+07	[0.91-2.44] The rates are not different
		P5-20353	P5-20355	25	1.25E+06	3.11E+07	25	1.11E+06	2.77E+07	[0.68-1.87] The rates are not different
		P5-20372	P5-20376	0	1.17E+05	0.00E+00	0	1.17E+05	0.00E+00	Both counts are 0; the rates are not different

Str = Structure count Sens = Analytical sensitivity Conc = Concentration [a] Water sensitivity units: $(L)^{-1}$

2.1.5.2 Polarized Light Microscopy

2.1.5.2.1 PLM-VE

A soil field duplicate is an independent soil sample collected at the same time and location as the primary sample. Field duplicate results from analysis by PLM-VE are ranked as concordant, or in agreement, if both the original sample result and the field duplicate sample result report the same semi-quantitative classification. Results are ranked as weakly discordant if the original sample result and the field duplicate result differ by one semi-quantitative classification (e.g., Bin A vs. Bin B1). Results are ranked as strongly discordant if the original and the field duplicate results differ by more than one semi-quantitative classification (e.g., Bin A vs. Bin B2).

Table 7 summarizes the result of the single 2013 OU3 PLM-VE original and field duplicate surface soil samples from the Amphitheatre investigation phase. Both the parent and field duplicate were found to be in concordance, reported as Bin B2.

Table 7 – 2013 OU3 PLM-VE Field Duplicate Concordance Summary

		Field Duplicate Results			
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
Original Sample Results	Bin A (ND)	0	0	0	0
	Bin B1 (Tr)	0	0	0	0
	Bin B2 (<1%)	0	0	1	0
	Bin C (≥1%)	0	0	0	0

Total Pairs	**1**
N Concordant	1
N Weakly Discordant	0
N Strongly Discordant	0
Concordant	100%
Weakly Discordant	0%
Strongly Discordant	0%

2.2 Sample Preparation Facility Quality Control

The SPF, approximately 19 miles from the Libby Superfund site in Troy, MT, is used by EPA to prepare samples from the Libby OU3 for Polarized Light Microscopy (PLM) analysis. In 2013, the EPA Region 8 ESAT contractor, which operates the Troy SPF, prepared 18 OU3 samples at the facility.

Soil samples delivered to the Troy SPF are processed in accordance with the latest revision of Standard Operating Procedure (SOP) ISSI-LIBBY-01, which includes procedures for drying, splitting, sieving, grinding, and archiving soil samples. Once processed, the resulting fine ground and/or coarse fractions are submitted for analysis by the Libby-specific PLM methods, PLM-GRAV and PLM-VE. Grinding the samples to a uniform size prior to shipping for analysis removes the potential variability introduced by each laboratory grinding their own samples. In order to ensure proper sample handling and decontamination of soil sample preparation equipment at the Troy SPF, preparation QC samples are also collected. These samples are assigned unique field identifiers and are submitted blindly to the analytical laboratories along with the fine ground and/or coarse fractions processed from the field samples. The preparation QC samples that were utilized for PLM analyses at the SPF include preparation blanks, which include drying blanks and grinding blanks, and preparation duplicates. Of the 16 soil/sediment samples collected at OU3 for SPF PLM-VE analysis in 2013 for the Phase VB and the Amphitheater Removal Action three (3) (18.8%) were blank samples (see **Table 8**). Of the five (5) soil/sediment samples collected at OU3 for SPF PLM-GRAV analysis in 2013 for the Phase VB and the Amphitheater Removal Action no blank samples were prepared (see **Table 9**).

Table 8 – 2013 SPF PLM-VE Preparation QC

Facility	Phase	Media	Field Samples	Prep Duplicates		Grinding Blanks		Drying Blanks	
				No. of Samples	%	No. of Samples	%	No. of Samples	%
SPF	Amphitheater	Soil	10	0	0.0%	0	0.0%	0	0.0%
	Phase VB[1]	Sediment	6	0	0.0%	1	16.7%	2	30.0%
Totals			**16**	**0**	**0.0%**	**1**	**6.3%**	**2**	**12.5%**

Table 9 – SPF PLM-GRAV QC

Facility	Phase	Media	Field Samples	Prep Duplicate	
				No. of Samples	%
SPF	Amphitheater	Soil	1	0	0.0%
	Phase VB[1]	Sediment	4	0	0.0%
Totals			**5**	**0**	**0.0%**

[1] Identified as “not field” in the database, but were processed at the Troy SPF.

2.2.1 Preparation Blanks

The two (2) types of preparation blanks used at the Troy SPF, drying blanks and grinding blanks, are both made from asbestos-free quartz sand. It was determined, as outlined in an ESAT Region 8 memo entitled “New Source for Libby Amphibole-free Sand,” that in 2012 the mason sand purchased from Pioneer Sand Company, located in Golden, Colorado, was not ideal for use in the Troy SPF as either a decontamination material or as an equipment contamination check (i.e. in drying and grinding blanks). It was found that the sand material from this company contained materials with optical properties similar to those of Libby

Amphibole (LA), and that it was composed of two (2) inseparable layers, one (1) of which contains fibrous components. Because of these undesirable material characteristics, Premier Silica, located in Colorado Springs, Colorado, which produces bulk Colorado Silica Sand, was selected as a replacement material provider. Upon receipt in January, 2013, ESAT Region 8 personnel collected and analyzed forty (40) representative aliquots of this material using the project-specific PLM-VE procedure. The material was verified to be suitable for use as a blank matrix, with all results reported in the Bin A, non-detect (ND) category.

2.2.1.1 Drying Blanks

Drying blanks are used to determine if cross-contamination is occurring during sample processing, specifically the sample drying process. Drying blanks consist of one (1) aliquot of asbestos-free quartz sand placed in each of the drying ovens used during the drying process. As shown in **Table 8**, two (2) drying blanks in total were analyzed on 01/25/2013 and 06/26/2013 as available in the OU3 database. Not presented in the table above, the site-wide database contains results for four (4) additional drying blanks from 01/24/2013, 06/25/2013, 06/28/2013, and 07/09/2013, which are the other applicable dates on which the above samples were dried. All six (6) of the associated drying blank results were reported as non-detects (Bin A) by PLM-VE, suggesting that the procedures utilized to dry the samples did not introduce LA contamination.

2.2.1.2 Grinding Blanks

Like drying blanks, grinding blanks are used to determine if cross-contamination has occurred during or after the PLM grinding process. Grinding blanks consist of asbestos-free quartz sand and are processed at a frequency of one (1) per day. As shown in **Table 8**, a single grinding blank was prepared on 01/25/2013, as available in the OU3 database. Not presented in the table above, the site-wide database contains results for four (4) additional grinding blanks from 06/26/2013, 06/28/2013, 07/01/2013, and 07/10/2013, which are the other applicable dates on which the above samples were dried. All five (5) of the associated drying blank results were reported as non-detects (Bin A) by PLM-VE, suggesting that the procedures utilized to grind the samples did not introduce LA contamination.

Note: During the 2014 on-site audit of the Troy SPF, it was observed that both the drying and grinding blanks were split, sieved, and ground on clean equipment, prior to any of the field samples. Through this process, the drying oven and/or grinder decontamination applied between field samples cannot be effectively measured, which may explain why no fibers were detected in either the drying or grinding blanks in 2013. This observation and the recommended corrective action (to process the drying and grinding blanks after field samples) are detailed in the 2014 Troy SPF On-site Audit Report.

2.2.2 Preparation Duplicates

Preparation duplicates are created by dividing a sample designated for PLM analysis into two (2) parts after drying, but prior to sieving and grinding. Preparation duplicates are prepared at a frequency of 5.0% of processed field samples. Comparison of the preparation duplicate results with the paired original field sample results is used to evaluate variability that may occur during preparation and analysis. As presented in **Tables 8** and **9** above, no preparation duplicates were prepared for 2013 OU3 samples. The fact that no duplicates were performed on any of the OU3 samples is a deficiency that requires Corrective action by the Troy SPF.

Note that the number of preparation blanks and preparation duplicates recorded in **Tables 8** and **9** do not reflect all of the preparation blanks prepared at the preparation facilities, but only those prepared on the days that OU3 samples were processed. Additional preparation blanks were processed with samples from other Libby OUs, which are summarized in the CDM Smith 2010-2013 QA/QC Summary Report (CDM Smith, 2014).

2.3 Laboratory Analysis Quality Control

A variety of laboratory-based QC analyses are performed for TEM and PLM sample analyses, which are used to assess the quality of the associated sample data. The results of laboratory QC applied to samples collected from the Libby OU3 Superfund site and analyzed by laboratories in 2013, are described in the sections below.

2.3.1 TEM Laboratory QC

The laboratory QC requirements for TEM analyses at the Libby OU3 site are patterned after the requirements set forth by NVLAP, include:

- Laboratory Blanks (LBs)
- Recount Analyses (RS, RD and VA)
- Re-preparations (RPs)
- Inter-laboratory (IL) Analyses

Each of these TEM laboratory QC have Phase-specific, program-wide frequency requirements as a percentage of the field samples analyzed. **Table 10** provides summaries of the number and frequency of TEM laboratory QC analyses performed by laboratory and investigation phase in 2013.

Table 10 –TEM QC Summary

Lab	Phase	Media	Field Samples	Lab Blanks (LB-only Freq. Goal=4%)[2]				Recount Same (Freq. Goal=1%)		Recount Different (Freq. Goal=2.5%)		Verified Analysis (Freq. Goal=1%)		Re-preparation (Freq. Goal=1%)		Inter-labortatory[1] (Freq. Goal=1%)	
				DB	FB	LB	%LB	RS	%	RD	%	VA	%	RP	%	IL	%
EMSL04	I	Duff	12	0	0	3	25%	0	0%	0	0%	0	0%	0	0%	0	0%
EMSL27		Tree bark	12	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	1	8%
EMSL04	CL	Tree Bark	10	0	0	1	10%	0	0%	0	0%	0	0%	0	0%	1	10%
EMSL04		Duff	10	0	0	2	20%	0	0%	0	0%	0	0%	0	0%	1	10%
EMSL04	SM	Ash	9	1	1	1	11%	0	0%	1	11%	0	0%	0	0%	1	11%
EMSL27		Air	19	0	0	0	0%	1	5%	1	5%	1	5%	1	5%	1	5%
EMSL27	III	Air	12	0	0	1	8%	0	0%	1	8%	0	0%	0	0%	0	0%
EMSL22	IVA	Air	35	0	0	8	23%	1	3%	1	3%	0	0%	1	3%	1	3%
EMSL04	VA	Water	4	0	2	1	25%	0	0%	0	0%	0	0%	0	0%	0	0%
EMSL04	VB	Water	3	0	0	1	33%	0	0%	0	0%	0	0%	1	33%	0	0%
EMSL27		Water	88	0	0	2	2%	1	1%	3	3%	2	2%	0	0%	2	2%
Totals			**214**	**1**	**3**	**20**	**9%**	**3**	**1%**	**7**	**3%**	**3**	**1%**	**3**	**1%**	**8**	**4%**

[1] The IL frequency goal of 1% represents the overall program goal, and not the goal for each individual laboratory.
[2] The 4% frequency is specific to the Lab Blanks (LBs) and does not include the filtration blanks (FBs) or drying blanks (DBs), which are not performed at a specified frequency, but as needed.

As summarized in **Table 10,** a total of three (3) each of RS, VA, and RP, seven (7) RD, and eight (8) IL TEM analyses were performed in 2013 across the OU3 phases, for an overall frequency of recount analyses of approximately 11% (1% RS, 3% RD, 1% VA, 1% RP, and 4% IL). It should also be noted that the referenced IL analyses are those that were performed on samples analyzed by the laboratories in 2013, which were analyzed in early 2014. The IL analyses associated with the samples analyzed from 2010-2012, which were analyzed in early 2013, are not included in these tallies since they are associated with the samples analyzed from 2010-2012 and not 2013.

Areas of discordance between the required frequencies and the percentage actually performed are highlighted in yellow. It should be noted that all of these discrepancies are a result of the laboratories not having received the number of samples necessary to initiate the performance of the specific QC types. To ensure that an adequate number of QC analyses are performed, specifically those with frequency requirements of 1%, it is recommended that the QC analyses first be performed on samples received at the beginning of year.

2.3.1.1 TEM Laboratory Blanks

Laboratory blanks (LBs) for TEM analysis are prepared from new, unused filters and analyzed using the same procedures as applied to field samples. The purpose of a LB is to determine the presence of any significant sources of asbestos contamination during sample preparation and analysis in the TEM laboratory. As specified in Libby Laboratory Modification LB-000029 and the applicable SAPs (see **Section 8.0 References** of this report), LBs are to be analyzed at a frequency of 4%. As summarized in **Table 10**, EMSL27, which performed 131 sample analyses but only 3 (2.3%) associated lab blanks, was the only individual laboratory which did not meet the frequency goals for performing LBs. Overall, 20 LB analyses were performed, resulting in an overall frequency of 9%.

Including filtration blanks (FBs) and drying blanks (DBs), a total of 24 TEM laboratory blanks were analyzed across all sampling programs. No asbestos structures were observed, suggesting that the sample preparation and analysis procedures performed by the laboratories were effective in not introducing asbestos contamination. Of additional concern is that EMSL27 did not analyze a single FB in 2013.

2.3.1.2 TEM Recounts

A recount analysis is a re-examination of the original TEM grid openings (GOs) to verify the reported asbestos structure counts and characteristics. Three (3) types of recount analyses were performed by the TEM analytical laboratories:

- Recount Same (RS) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by the same microscopist who performed the initial examination.
- Recount Different (RD) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by a microscopist within the same laboratory who did not perform the initial examination.
- Verified Analysis (VA) – Similar to RD but with different documentation requirements, a VA must be recorded in accordance with the NIST (1994) protocol requirements.

Recount analyses were compared with the original analysis on a GO-by-GO, and structure-by-structure basis, with only those GOs that were able to be re-examined during the recount analysis included in the evaluation; in some instances grid openings may have been damaged with no alternates available. The degree of concordance between the original analysis and the recount analysis was evaluated based on the total number of countable LA structures observed for each grid opening that was re-examined. The concordance metrics, as defined in LB-000029, are summarized in **Table 11**.

Table 11 – TEM Recount Analysis Concordance Rules

Measurement Parameter	Concordance Rule
Number of LA structures within each grid opening	For grid openings with 10 or fewer structures, counts must match exactly. For grid openings with more than 10 structures, counts must be within 10 percent (%) as calculated as RPD (((maximum count – minimum count)/average count)*100%).
Asbestos class of structure (LA, OA, CH)	Must agree 100% on CH vs. amphibole. For assignment of amphiboles to LA or OA bins, must agree on at least 90% of all amphibole structures.
LA Structure length	For fibers and bundles (all methods) and CF, CB, MF, and MB structures (ISO), must agree within 1 micron (µm) or 10% (whichever is less stringent), is required. For clusters and matrices (AHERA and ASTM) and CFO, CBO, CC, MFO, MBO, and MC structures (ISO), must agree within 2 µm or 20% (whichever is less stringent), is required.
LA Structure width	For fibers and bundles (all methods) and CF, CB, CFO, CBO, MF, MB, MFO, and MBO structures (ISO), must agree within 0.5 µm or 20% (whichever is less stringent), is required. For clusters and matrices (AHERA and ASTM) and CC and MC structures (ISO), there is no quantitative rule for concordance.
Presence of Sodium (Na) and Potassium (K)	There is no rule for concordance, but must be tabulated to identify potential trends that may indicate inconsistencies in recording practices or interpretation of spectra.

The TEM recount program-wide concordance criteria, as defined in LB-000029, are summarized in **Table 12**.

Table 12 – TEM Recount Program-Wide criteria

QC Sample Type	Metric	Program-Wide Criteria		
		Good	Acceptable	Poor
Lab Blanks	% with ≥1 asbestos structures	0% - 0.1%	0.2% - 0.5%	>0.5%
Recounts	Concordance on LA count	>95%	85-95%	<85%
	Concordance on type (chrysotile vs. amphibole)	>99%	95%-99%	<95%
	Concordance on LA length	>90%	80%-90%	<80%
	Concordance on LA width	>90%	80%-90%	<80%
Re-preparations	Concordance on LA concentration/loading	>95%	90-95%	<90%

Tables 13A – 13D show the recount analysis results for various matrices by investigation phase, mineral class, structure length, structure width, and matched structures per grid opening.

Table 13A – Phase IIIB TEM Recounts

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Air	Mineral Class	0	0	NA	**Totals**	**Mineral Class**	**0**	**0**	**NA**
	Structure Length	0	0	NA		**Structure Length**	**0**	**0**	**NA**
	Structure Width	0	0	NA		**Structure Width**	**0**	**0**	**NA**
	Structures per GO[1]	0	0	NA		**Structures per GO[1]**	**0**	**0**	**NA**
	Structures per GO[2]	10	10	100%		**Structures per GO[2]**	**10**	**10**	**100%**

Table 13B – Phase IVA TEM Recounts

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Air	Mineral Class	2	2	100%	**Totals**	**Mineral Class**	**2**	**2**	**100%**
	Structure Length	2	1	50%		**Structure Length**	**2**	**1**	**50%**
	Structure Width	2	2	100%		**Structure Width**	**2**	**2**	**100%**
	Structures per GO[1]	1	1	100%		**Structures per GO[1]**	**1**	**1**	**100%**
	Structures per GO[2]	20	20	100%		**Structures per GO[2]**	**20**	**20**	**100%**

Table 13C – Phase VB TEM Recounts

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Surface Water	Mineral Class	71	71	100%	Pore Water (In)	Mineral Class	34	34	100%
	Structure Length	71	71	100%		Structure Length	34	34	100%
	Structure Width	71	71	100%		Structure Width	34	34	100%
	Structures per GO[1]	26	26	100%		Structures per GO[1]	8	8	100%
	Structures per GO[2]	50	50	100%		Structures per GO[2]	8	8	100%
					Totals	**Mineral Class**	**105**	**105**	**100%**
						Structure Length	**105**	**105**	**100%**
						Structure Width	**105**	**105**	**100%**
						Structures per GO[1]	**34**	**34**	**100%**
						Structures per GO[2]	**58**	**58**	**100%**

Table 13D – Phase SM TEM Recounts

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Air	Mineral Class	6	6	100%	Ash	Mineral Class	4	4	100%
	Structure Length	6	6	100%		Structure Length	4	2	50%
	Structure Width	6	6	100%		Structure Width	4	4	100%
	Structures per GO[1]	6	6	100%		Structures per GO[1]	4	4	100%
	Structures per GO[2]	60	60	100%		Structures per GO[2]	7	7	100%
					Totals	**Mineral Class**	**10**	**10**	**100%**
						Structure Length	**10**	**8**	**80%**
						Structure Width	**10**	**10**	**100%**
						Structures per GO[1]	**10**	**10**	**100%**
						Structures per GO[2]	**67**	**67**	**100%**

[1] For GOs in which either the NOT QC, the recount, or both have LA structures.
[2] For all GOs, including NDs.

As illustrated in **Tables 13A – 13D** above, with the exception of the following, all recount analyses were within the "Good" category of the program-wide criteria (**Table 12**) specified for

Mineral Class, Structure Length, Structure Width, and Structures per GO. The exceptions, as highlighted in **Tables 13B** and **13D**, include:

- Structure Length, Phase IVA – The air QC results for structure length resulted in a 50% pass rate, falling into the "Poor" category at <80%.
- Structure Length, Phase SM – The total QC results for structure length resulted in an 80% pass rate, falling into the "Acceptable" category at <80%.
- Structure Length, Phase SM – Two (2) of the four (4) ash QC results for structure length resulted in a 50% pass rate for the matrix overall, falling into the "Poor" category at <80%.

2.3.1.3 TEM Re-preparations

A TEM re-preparation (RP) is the re-analysis of a sample from which new grids have been prepared using a different portion of the same field sample filter used to prepare the original grids. The 2013 RP results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). RPs provide information on analysis precision, as well as within-filter variability.

In 2013, three (3) sample RPs were prepared out of 214 TEM samples analyzed across all OU3 phases, for a frequency of 1.4% (see **Table 10**). Of these three (3) RPs, none were found to be statistically different from the original analyses (see **Table 14**) with 100% of RP analyses results within the established criteria. When compared to the program-wide goals, the 100% acceptable RP analyses rates as "Good" (>95%). Note that, unless otherwise indicated, where the LA structure (str) counts are different between the first and second evaluations, the 90% CI requirement is still met.

Table 14 – Statistical Comparison of TEM Re-preparation (RP) Analyses

Lab	Sample No.	Method	Media	First Evaluation (Rate 1)			Second Evaluation (Rate 2)			Poisson Ratio Rate Comparison (CI=90%)
				Str	Sens. [a]	Conc. [a]	Str	Sens. [a]	Conc. [a]	
EMSL22	P4-00593	ISO10312	Air	0	3.04E-02	0.00E+00	0	3.04E-02	0.00E+00	Both counts are 0; the rates are not different
EMSL27	P5-20294	ISO10312	Surface Water	27	1.25E+06	3.36E+07	25	8.92E+05	2.23E+07	[0.92-2.48] The rates are not different
EMSL27	SM-10080	ISO10312	Air	0	6.86E-04	0.00E+00	0	6.86E-04	0.00E+00	Both counts are 0; the rates are not different

[a] Water $(L)^{-1}$, Air $(CC)^{-1}$

Not represented in the **Table 14** above, additional RPs were performed in 2013 for OU3 by different laboratories, most notably those between EMSL27 (Libby, MT) and EMSL04 (Cinnaminson, NJ), in response to problems encountered by EMSL27, as described later in this report and also in the EMSL Analytical (Libby, MT) Issues and Concerns Memo (see **Attachment 1**).

2.3.1.4 TEM Inter-laboratory Analyses

Eight (8) samples for the 2013 TEM re-preparation/inter-laboratory (RP/IL) analyses were selected in accordance with the most recent revision of Laboratory Modification LB-000029. The list was provided to each of the Libby contract laboratories, who then retrieved the samples

from their archive storage, prepared the necessary TEM grids, analyzed the samples, prepared the necessary paperwork, and shipped the grids to the laboratory selected to perform the IL analyses. The criteria for TEM IL analyses are the same as those for the other recount analyses, described in Section 2.2.1.2 above. **Table 15** provides a summary of the overall 2013 OU3 TEM IL results, across all laboratories, by media. For a more detailed assessment, refer to the 2013 TEM Inter-Laboratory report provided as **Attachment 2** to this report.

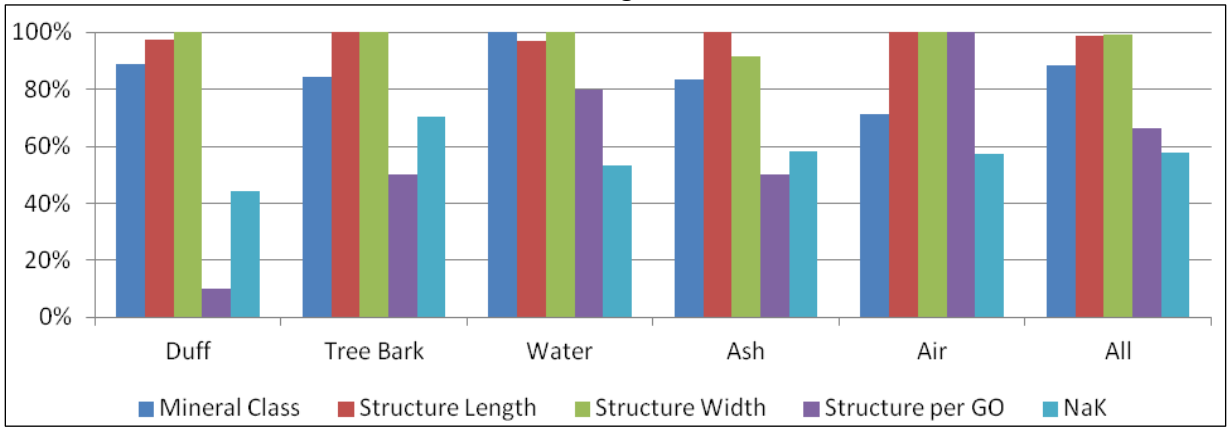
The **Table 15** and **Figure 1** summaries present the 2013 OU3 TEM IL study analyses and includes those structures determined to be ambiguous as described in the attached 2013 TEM IL report.

Table 15 – 2013 OU3 TEM Inter-laboratory Analyses – All Matching Structures

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Air	Mineral Class	7	5	71.4%	Tree Bark	Mineral Class	51	43	84.3%
	Structure Length	7	7	100.0%		Structure Length	51	51	100.0%
	Structure Width	7	7	100.0%		Structure Width	51	51	100.0%
	Structures per GO	20	20	100.0%		Structures per GO	14	7	50.0%
	Na/K	7	4	57.1%		Na/K	51	36	70.6%
Duff	Mineral Class	36	32	88.9%	Water	Mineral Class	32	32	100.0%
	Structure Length	36	35	97.2%		Structure Length	32	31	96.9%
	Structure Width	36	36	100.0%		Structure Width	32	32	100.0%
	Structures per GO	10	1	10.0%		Structures per GO	20	16	80.0%
	Na/K	36	16	44.4%		Na/K	32	17	53.1%
Ash	Mineral Class	12	10	83.3%	**Totals**	**Mineral Class**	**138**	**122**	**88.4%**
	Structure Length	12	12	100.0%		**Structure Length**	**138**	**136**	**98.6%**
	Structure Width	12	11	91.7%		**Structure Width**	**138**	**137**	**99.3%**
	Structures per GO	10	5	50.0%		**Structures per GO**	**74**	**49**	**66.2%**
	Na/K	12	7	58.3%		**Na/K**	**138**	**80**	**58.0%**

Note: The structures determined to be ambiguous are included in the results presented in the table above.

Figure 1 – 2013 OU3 TEM Sample RP/IL Pair Compliance by Media – All Matching Structures



As illustrated in **Table 15** and **Figure 1** above, with the exception of the following, IL analyses were all within the "Good" or "Acceptable" range of the program-wide criteria (**Table 12**) specified for Mineral Class, Structure Length, Structure Width, and Structures per GO. The exceptions, as highlighted in **Table 15**, include:

- Structures per GO
    - Duff – 10.0% of the GOs were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 12**.
    - Tree Bark – 50.0% of the GOs were in concordance with the structures per GO criteria, falls into the "Poor" category (<85% concordance) described in **Table 12**.
    - Water – 80.0% of the GOs were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 12**.
    - Ash – 50.0% of the GOs were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 12**.
- Mineral Class
    - Ash – 83.3% of the structures were not compliant with the mineral class criteria of greater than or equal to 90% requirement described in **Table 11**.
    - Air – 71.4% of the structures were not compliant with the mineral class criteria of greater than or equal to 90% requirement described in **Table 11**.
    - Duff – 88.9% of the structures were not compliant with the mineral class criteria of greater than or equal to 90% requirement described in **Table 11**.
    - Tree Bark – 84.3% of the structures were not compliant with the mineral class criteria of greater than or equal to 90% requirement described in **Table 11**.

The discordances presented above may be attributed to false negative results potentially caused by analyst error and/or misinterpretation, chemical variability among structures, tears in the film replicate causing the relocation of fibers, etc. It should be noted that for all RP/IL pairs, there was 100% agreement on Chrysotile versus Amphiboles, and that the mineral class discrepancies were between Amphiboles and NAMs. Note that no program-wide criteria from **Table 11** apply to NaK.

Excluding the ambiguous structures can be helpful in assessing the performance of laboratories based upon only those results considered most appropriate. An evaluation of such can be further examined in the QATS Program Annual Evaluation of TEM Inter-laboratory Results (2013) report (**Attachment 2**). Reasons for structures to be identified as ambiguous include:

- Damaged (i.e., ripped or torn) grid openings preventing the IL laboratory from either locating or reconciling missed structures.
- Heavy particulate or melting of organic material causing replica to shift resulting in structures migrating into other GOs and onto grid bars.

- Structures burned during the original analyses resulting in inability to identify by EDS and SAED.
- Chemical variability along structures, causing significant differences in EDS spectra, and resulting in the same structure recorded as a NAM in one (1) analysis and LA in the other.

2.3.1.5 TEM Problems Encountered

Several issues were observed from TEM data generated by the EMSL27 laboratory in Libby, Montana, as detailed in the September 20, 2013 dated memorandum entitled "EMSL Analytical (Libby, MT) Issues and Concerns," which is provided as **Attachment 1** to this report. The TEM discrepancies were identified by CDM Smith and CB&I QATS through review of sample and QC data from this laboratory. The specific issues include:

- TEM IL sample preparation discrepancies.
- Poor sample control that led to the misidentification of samples.
- Post-training TEM IL result discrepancies.

An investigation was conducted, which revealed the root cause for these issues was due the inability of the laboratory to follow laboratory-specific and project-specific requirements.

The laboratory staff's inability to follow their own written procedures resulted in damaged RP grids associated with the 2010 and 2011 TEM IL studies and the possible misidentification of samples. Concerning the IL RPs, insufficient ashing, carbon coating, and packaging were identified as possible causes for the high frequency of damaged GOs. As for the possible misidentification of samples, unique laboratory identification number were not applied to samples as described in the laboratory sample login SOP, which could have resulted in the identified sample mix-ups.

EMSL27's failure to assign QC sample analyses at the required frequencies, thereby failing to follow OU3 project-specific requirements, was attributed to a lack of sufficient QA/QC oversight at the laboratory management level, and failure to request clarification from EPA concerning project-specific procedures when necessary.

As a result of the aforementioned conclusions, the following original analyses performed by EMSL27 in 2013 were Rejected (R) and replaced with the RP analyses performed by EMSL04:

- P5-10014
- P5-10015
- P5-10017
- P5-10018
- P5-20027
- P5-20325
- P5-20326

To accomplish the above, a corrected EDD was submitted by EMSL27 which changed the filter status for the above samples from analyzed to cancelled, and an analysis comment was added regarding the rejected status. A modified EDD was also submitted by EMSL04 which changed the laboratory QC type for the associated RPs to "Not QC" and an analysis comment explaining why the QC type was changed was added.

2.3.2 PLM Laboratory QC

In 2013, two (2) types of laboratory-based QC analyses were performed for OU3 samples analyzed by PLM-VE: Laboratory Duplicates and Performance Evaluation Sample (PES) Analyses.

2.3.2.1 Laboratory Duplicate Analyses

A laboratory duplicate analysis is a reanalysis of a sample within the same laboratory. There are two (2) types of laboratory duplicate analyses performed for PLM-VE:

- Laboratory Duplicate Self-check (LDS) – Reanalysis of a client sample by the same analyst.
- Laboratory Duplicate Cross-check (LDC) – Reanalysis of a client sample by a different analyst.

Table 16 provides a summary of the frequency in 2013 at which these analyses were performed by phase and program-wide.

Table 16 – 2013 PLM-VE QC Sample Frequency by Phase

			Lab Duplicate Cross Check (Freq. Goal 8.0%)		Lab Duplicate Self Check (Freq. Goal 2.0%)		Inter-laboratory (Freq. Goal 1.0%)	
Investigation	**Media**	**Field Samples**	**LDC**	**%**	**LDS**	**%**	**IL**	**%**
Amphitheater	Soil	10	1	10.0%	0	0.0%	0	0.0%
Phase VB	Sediment	9	0	0.0%	0	0.0%	0	0.0%
Phase I	Duff	4	0	0.0%	0	0.0%	0	0.0%
Totals		**23**	**1**	**4.3%**	**0**	**0.0%**	**0**	**0.0%**

One (1) laboratory duplicate analysis was performed in 2013 on Sample VW-1-014; both the original (NOT QC) and LDC were reported in Bin C. Due to the limited number of field samples analyzed for OU3-only, neither an LDS nor an inter-lab was performed for samples analyzed in 2013. Concerning the lack of an Inter-lab sample, the QATS program was not aware that PLM-VE analyses had been performed in 2013. Inter-lab samples have already been selected for 2014.

2.4 Performance Evaluation Sample Results

Performance Evaluation Samples (PESs) are synthetic man-made test samples that are prepared by “spiking” a known concentration of asbestos into a media similar to that collected in the field. A total of 16 PLM-VE PESs were distributed and analyzed by the four (4) Libby OU3 contract laboratories in 2013. The PESs, along with the true values against which the laboratory results were evaluated, were provided by the United States Geological Survey via the Troy SPF. Each of the four (4) participating laboratories analyzed a high concentration and a low concentration PES in the spring and again in the fall of 2013, totaling four (4) analytical results per laboratory for the year. As illustrated in **Table 17** below, nine (9) of the 16 PES analyses were concordant (56%), seven (7) (44%) were weakly discordant, and no results were strongly discordant. The discordant results fall into the “Poor” category of >40% weakly discordant and “Good” range with <5% strongly discordant, respectively.

Table 17 – 2013 PLM-VE PES Summary

		Laboratory PES Results:			
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
PES TRUE Values	Bin A (ND)	0	0	0	0
	Bin B1 (Tr)	0	0	0	0
	Bin B2 (<1%)	0	1	3	4
	Bin C (≥1%)	0	0	2	6

Total Pairs	**16**
N Concordant	9
N Weakly Discordant	7
N Strongly Discordant	0
Concordant	56%
Weakly Discordant	44%
Strongly Discordant	0%

Weakly discordant results were reported by EMSL03 and EMSL22 in one (1) PES, EMSL04 in two (2) PESs, and EMSL27 in three (3) PESs. The remaining reported PES results were concordant. Note that due to the limited number of PESs evaluated, no statistically significant trends can be identified.

3.0 Asbestos Data Validation

In 2013, asbestos data from 51 Libby OU3 samples were validated by the QATS Program for media that included air, tree bark, water, duff, sediment, soil, dust, and bulk. Data validation of these samples was performed in accordance with the applicable method, SAP Analytical Requirements Summaries, Laboratory Modifications, and QATS Libby-specific data validation SOPs. The methods include ISO 10312 and EPA Method 100.2 for TEM, and PLM-VE and PLM-GRAV for PLM analysis. The validation SOPs applied by the QATS Program include SOP QATS-70-094 (Validation of Polarized Light Microscopy (PLM) Data Deliverables), SOP QATS-70-095 (Validation of Libby Transmission Electron Microscopy (TEM) Data Deliverables), and SOP QATS-70-096 (Validation of Phase Contrast Microscopy (PCM) Data Deliverables).

The validation process involves evaluating asbestos data based on the analytical requirements in the applicable method or SOP used by EPA for analysis of samples collected at Libby Superfund Site OUs. Criteria that are evaluated and reported include sample receipt, sample preparation, microscope alignment, instrument calibrations, stopping rules, structure recording and identification, blank analysis (if applicable), recount/re-preparation analysis (if applicable), and overall assessment of data.

Data are qualified if the daily or monthly calibrations associated with a sample set were not performed at the required frequency, or if the calibrations fail to meet method requirements. The equipment alignment and calibration documentation from each of the Libby support laboratories are provided separately on a quarterly basis. This calibration information is entered into laboratory-specific spreadsheets, where the data validators can access the information and verify that the calibrations were acceptable and performed at the correct frequency for the analyses being evaluated.

B-qualifiers for blank contamination are applied during the validation process for those blanks directly associated with field samples (i.e., provided with a particular deliverable selected for validation). In addition to those QC analyses reviewed during the validation of select deliverables, QC analyses are also reviewed and evaluated on a program-wide basis to ensure they are both performed at the required frequency and that they are within the applicable criteria. With the exception of QC analyses directly associated with a particular set of samples, laboratory QC analyses are performed to determine the quality of the collective data, and not the quality of any specific single set of samples.

The data validation process also includes a comparison of the information reported on the bench sheets to the entries in the associated laboratory method-specific EDDs to ensure that the reported results are complete, compliant with the specified methodology, and accurate. These comparison discrepancies are noted in a separate table of the data validation report. An EPA-approved QATS Data Review Checklist is used to document the data validation process.

Selection of five percent (5%) of OU3 sample results to validate was performed by randomly choosing sample results by laboratory, method, and media. A total of 51 OU3 samples from seven (7) Laboratory Job Numbers, analyzed by three (3) different laboratories during 2013, were selected for validation. The laboratories and associated job numbers for validation included: EMSL04 job numbers 041316380, 041316497, and 041330976; EMSL22 job number 221303192; and EMSL27 job numbers 041316629, 271300302, and 271300513.

The 51 OU3 samples validated in 2013 consisted of 41 field samples, seven (7) laboratory blanks, and three (3) QC samples, consisting of one (1) RP and two (2) RD samples.

Qualifiers were applied to the results from four (4) field samples, or approximately 7.8% of the 51 asbestos samples validated. All four (4) of these samples were analyzed by EMSL27, and were qualified for not meeting the required frequency for k-factor calculation. EMSL27 in Libby, MT determines k-factors on a semi-annual basis, resulting in failure to meet the quarterly calibration requirement. For this laboratory, all detected results were qualified with the exceptions of those results for samples analyzed within three (3) months of the semi-annual k-factor determination, which were not qualified. Note that the quarterly performance of K-factors is a project-specific requirement and not that of NVLAP, which should be considered. The four (4) samples qualified in 2013 are listed in **Table 18** below:

Table 18 – 2013 OU3 Samples Qualified by Data Validation

Laboratory	EPA Sample ID	Lab Job No.	Date Analyzed	Method/Media	Qualifier Reason	Qualifier*
EMSL27	P1-00219 (0001A) P1-00219 (0001B) P1-00221 (0002A) P1-00221 (0002B)	041316629	07/25/2013	TEM ISO/Tree Bark	k-factors	J

*J - The result (concentration) is estimated.

The bench sheet/EDD information comparisons did reveal discrepancies due to information omissions and typographical errors, which were reported in the EDD/Bench Sheet Discrepancy Table in the Asbestos Validation Summary Reports. Of the 51 sample results validated, 11 (21.6%) contained some type of bench sheet/EDD discrepancy. All of these bench sheet/EDD discrepancies were considered minor (i.e., typographical errors or omissions in fields) and were

considered by the validators to have no impact on the sample results. **Table 19** presents the number of discrepancies found in the EDD files submitted by laboratory for 2013.

Table 19 – 2013 OU3 Sample EDD/Bench Sheet Discrepancies

Laboratory	Totals
EMSL04	**7**
EMSL22	**1**
EMSL27	**3**
Total Discrepancies	**11**

4.0 Laboratory On-site Audits

This section includes a summary of the results of on-site audits of laboratories and soil preparation facilities used by EPA for analytical support at the Libby Superfund Site that were conducted in 2013. During this period, a total of five (5) on-site audits were performed as related to OU3, including four (4) asbestos laboratory audits and one (1) asbestos SPF audit. **Table 20** lists the audits performed by laboratory/facility, audit type, and date.

Table 20 – 2013 Asbestos Laboratory and Soil Preparation Facility On-site Audits

Laboratory	Audit Type	Audit Date(s)
EMSL22 (Denver, CO)	Asbestos Laboratory	05/07/2013
EMSL03 (New York, NY)[1]	Asbestos Laboratory	05/22/2013
EMSL27 (Libby, MT)	Asbestos Laboratory	07/09/2013
EMSL04 (Cinnaminson, NJ)	Asbestos Laboratory	10/08/2013
ESATR8 SPF (Troy, MT)	Soil Preparation Facility	07/11/2013

[1] Although EMSL03 did not directly analyze field samples from OU3 in 2013, they did participate in the TEM Inter-laboratory study for samples analyzed in 2013.

4.1 On-site Audit Process

On-site audits are used by EPA to verify that samples analyzed by their contract facilities are processed in accordance with EPA requirements. Each on-site audit involves the general elements of preparation, on-site support, and report generation, which are modified as needed to fit the type of audit being performed. Preparation for asbestos laboratory audits typically involves ensuring the on-site audit checklist to be used is updated to reflect the latest methods and modifications required for Libby sample preparation and analysis; coordination with Region 8 to receive the most recent copies of the laboratory's SOPs, Quality Assurance Manual (QAM) and other needed documentation; and coordination with the EPA representative attending the audit with regard to travel logistics. If there are any anticipated problem areas based on prior evaluation of QA/QC data or validation reports, the auditor will discuss these with the EPA member of the Audit Team prior to the audit. The on-site audit generally starts with an entrance debriefing to the laboratory regarding the areas will be evaluated and the anticipated duration of the audit. This is followed by evaluating areas throughout the laboratory to verify adherence to Libby project analysis requirements, the laboratory preparation and analysis SOPs, and adherence to the requirements in the laboratory QAM. The areas typically audited in an asbestos laboratory include Sample Receipt, Log-in, Storage, and Chain-of-Custody (COC)

procedures; Indirect and Direct Preparation of Samples; Transmission Electron Microscopy (TEM) Analysis; Polarized Light Microscopy (PLM) Analysis; and Quality Control and Quality Assurance. All laboratory staff involved with handling, preparing, analyzing, reporting, and performing QC on Libby samples are interviewed. Findings are identified, and reported to the laboratory at the exit debriefing. On-site audit reports detailing the findings are prepared and submitted to EPA typically within a month, and following EPA approval are sent to the laboratories, which are required to provide corrective action response to EPA regarding the findings. Areas where findings were identified are evaluated during the next on-site audit to determine the degree to which laboratories have applied corrective action.

The results from the above-listed four (4) asbestos laboratory on-site audits are summarized by the following categories:

- Deficiencies by Laboratory
- Deficiency Trends by Laboratory
- Deficiencies by Laboratory Process Area
- Laboratory Responses
- Laboratory Internal Audits
- Air Monitoring Samples

4.2 On-site Audit Deficiencies by Laboratory

A total of 19 deficiencies were identified from the four (4) asbestos laboratory on-site audits performed in 2013. Soil preparation deficiencies from the SPF audit (SPF-MT) are not included in this total because it did not involve the preparation and analysis of asbestos samples. The results from the SPF on-site audit are discussed separately in Section 4.6. Of the four (4) laboratory audits, one (1) laboratory (EMSL03) was audited for the first time in 2013. For the laboratory audits conducted in 2013, an average of 4.8 deficiencies per audit was observed. The laboratory with the lowest number of on-site audit deficiencies was EMSL03 with three (3) deficiencies, and the laboratory with the highest number of deficiencies EMSL04 with seven (7) deficiencies. The 2013 Libby OU3 asbestos on-site audit deficiencies by laboratory are provided in **Table 21**.

Table 21 – 2013 Asbestos On-Site Audit Deficiencies by Laboratory

Laboratory	Total Deficiencies	Percentage
EMSL03	7	36.8%
EMSL27	5	26.3%
EMSL22	4	21.1%
EMSL04	3	15.8%
Total	**19**	**100.0%**
Average	**4.8**	

4.3 Deficiency Trends by Laboratory

A deficiency comparison between the 2013 on-site audits and the same laboratories audited in 2012 was performed to determine corrective action trends. Note that EMSL03 was audited in 2013 (as shown in **Table 21**) but not in 2012, and EMSL Analytical, Inc. in Beltsville, MD (EMSL19) was audited in 2012, though not reflected in **Table 22**, but not in 2013. A total of 12

deficiencies were identified in the three (3) asbestos on-site laboratory audits performed during 2013, as compared to the 31 defects observed in the on-site audits of the same three (3) laboratories in 2012 (see **Table 22**).

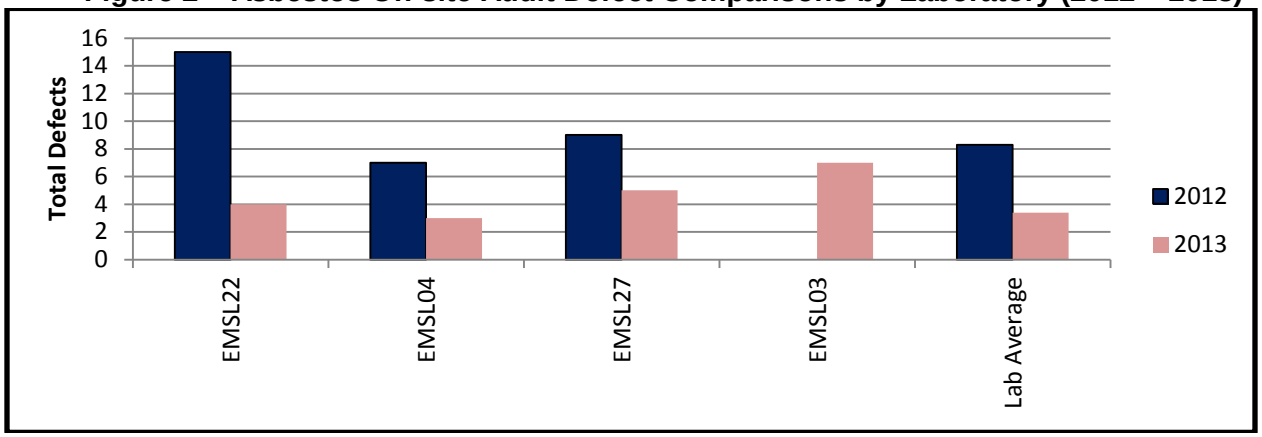
Table 22 – 2012 and 2013 On-site Audit Total Defects by Laboratory

Laboratory	Deficiencies		Change In Defects per Audit	
	2012	2013	Increase/ (Decrease)	%Increase/ (%Decrease)
EMSL27	9	5	(4)	(44.4%)
EMSL22	15	4	(11)	(73.3%)
EMSL04	7	3	(4)	(57.1%)
Totals	**31**	**12**	**(19)**	**(61.3%)**
Average	**10.3**	**4.0**	**(6.3)**	**(61.2%)**

As **Table 22** shows, the average of 4.0 defects per on-site audit in 2013 represents a 61.2% decrease from the 10.3 average number of defects per on-site audit (for the same three laboratories) recorded in 2012. All three laboratories audited in 2012 and again in 2013 showed a significant reduction in the number of defects, which suggests that each of the laboratories applied corrective action in response to their initial audits in 2012.

Figure 2 provides a graphic illustration of the on-site audit defect reductions for the laboratories audited in 2012 and again in 2013 (note that EMSL19 is excluded as it was not audited in 2013).

Figure 2 – Asbestos On-site Audit Defect Comparisons by Laboratory (2012 – 2013)



4.4 Deficiencies by Laboratory Process Area

The 19 asbestos on-site audit deficiencies identified in the four (4) on-site laboratory audits performed in 2013 were trended by six (6) laboratory process areas. The laboratory process categories in which the majority of the observed deficiencies occurred include: Sample Preparation, PLM Analysis, and Sample Receiving. Categories with the least frequently occurring deficiencies included: TEM, QA/QC, and Data Management.

Table 23 shows the laboratory process categories evaluated, the number of deficiencies observed in each of the 2013 on-site audits, and the percentage of deficiencies observed by category.

Table 23 – 2013 On-site Laboratory Audit Deficiencies by Laboratory Process Area

Laboratory Area	Deficiencies	Percentage
Sample Preparation	10	52.6%
PLM Analysis	5	26.3%
Sample Receiving	3	15.8%
TEM Analysis	1	5.3%
QA/QC	0	0.0%
Data Management	0	0.0%
Total	**19**	**100.0%**

Examples of high frequency deficiencies by laboratory process category that were observed in the four (4) on-site audits performed in 2013 are summarized as follows:

Indirect and Direct Preparation of Air Filter Samples – A total of ten (10) deficiencies from all four (4) laboratories were identified during the 2013 on-site audits, as follows:

1. Lack of certified calibration for the pan balance used for the gravimetric analyses (EMSL27).
2. No assigned logbook to record calibration of the pan balance (EMSL27).
3. Uncalibrated ashing furnace with no assigned calibration logbook (EMSL27).
4. No ashing of the filters as specified in the applicable project-specific SOPs (EMSL22).
5. Failure to assign unique identification numbers to two (2) analytical balances (EMSL03).
6. The hood used for the treatment of water samples by Ozone and UV light did not have a brim to contain liquids (EMSL27).
7. Lack of a dedicated drying oven for Libby ambient air filters (EMSL03).
8. Lack of a second plasma asher (EMSL03).
9. Failure to stock disposable funnels required for the indirect preparation of samples for TEM analysis (EMSL03).
10. Lack of trained personnel to prepare duff and tree bark samples for analysis by TEM (EMSL04).

Polarized Light Microscopy (PLM) Analysis – A total of five (5) deficiencies from three (3) laboratories were identified during the 2013 on-site audits, as follows:

1. Failure to install and calibrate the muffle furnace (EMSL22),
2. Failure to calibrate the in-use balance on a daily basis (EMSL22).
3. Lack of reference weights necessary to calibrate balances prior to weighing samples for the project-specific PLM-GRAV procedure (EMSL03).
4. Failure to utilize the correct 550 nm compensator plate on a PLM microscope as specified in the project-specific procedure (EMSL04).
5. Failure to submit completeness checklists with the PLM-VE and PLM-GRAV data packages (EMSL04).

Sample Receipt, Storage, Log-in, and COC – Three (3) distinct deficiencies from three (3) laboratories were identified, as follows:

1. Incorrect completion of the Internal Chain-of-Custody (ICOC) and Chain-of-Custody (COC) sample records (EMSL22).
2. Water samples stored in the basement sample storage area without a laboratory assigned sample identification number (EMSL27).

3. Lack of a HEPA hood in the sample receiving area for use in opening and inspecting sample shipment containers (EMSL03).

Quality Assurance and Quality Control – No deficiencies were identified in the QA/QC category during the 2013 on-site audits. This is a major improvement from the previous year in which implementation and maintenance of adequate quality systems was an issue in the 2012 on-site audits.

Transmission Electron Microscopy (TEM) Analysis – Only one (1) deficiency in TEM analysis was identified in the 2013 on-site audits. The defect was for failure to generate instrument-specific Libby Amphibole (LA) reference spectra on scope 3-2 (EMSL03).

Data Management – There were no common deficiencies in Data Management identified in the 2013 on-site audits

Fiber Analysis by Phase Contrast Microscopy (PCM) – There were no PCM-related deficiencies identified in the 2013 on-site audits.

Facilities – There were no facility-related deficiencies identified in the 2013 on-site audits.

4.5 Soil Preparation Facility (SPF) Audits

In 2013, QATS supported one on-site audit of the SPF in Troy, MT. In 2013, six (6) deficiencies were identified from the Troy SPF on-site audit as compared to the 10 deficiencies identified in 2012, which represents a 40% decrease (see **Table 24**).

Table 24 – 2012 and 2013 Troy SPF On-Site Audit Deficiencies by Facility

Facility	Deficiencies		Change In Defects per Audit	
	2012	2013	Increase/ (Decrease)	%Increase/ (%Decrease)
Troy SPF (Troy, MT)	10	6	(4)	(40.0%)

Table 25 shows the on-site audit deficiencies identified in the 2012 and 2013 SPF on-site audits by five (5) facility process areas. Deficiency reductions were observed in the Bulk Drying, Grinding and Splitting, and QA/QC process categories. Categories with no year-over-year change in the number of deficiencies include Sample Receiving and Sieving of Preparation Samples. No categories showed an increase in defects.

Table 25 – 2012 and 2013 Troy SPF On-site Audit Deficiencies by Process Area

Laboratory Area	Deficiencies		%Increase/ (%Decrease)
	SPF 2012	SPF 2013	
Bulk Drying	3	2	(33.3%)
Grinding and Splitting	3	2	(33.3%)
QA/QC	2	0	(100.0%)
Sample Receiving	1	1	(0.0%)
Sieving of Preparation Samples	1	1	(0.0%)
Totals	**10**	**6**	**(40.0%)**

4.6 Laboratory Responses

EPA requires that laboratories provide responses to on-site audit report, which includes the laboratory's proposed corrective action to each of the identified findings. These laboratory responses assist EPA in "closing the loop" on laboratory deficiencies, and help resolve method interpretation issues. Laboratory responses to all of the 2013 on-site audit reports have been received from all four (4) of the Libby OU3 support laboratories and the Troy SPF. All laboratories provided proposed corrective actions for the identified findings, along with objective evidence as applicable. No findings were contested. The laboratory-proposed corrective actions will be verified during the next round of scheduled audits. As shown in **Table 22**, the average number of findings per on-site audit of the support laboratories decreased by 61.2%, from 10.3 to 4.0 defects per audit between 2012 and 2013, suggesting that corrective action has been performed in response to previous audit findings. As shown in **Table 25**, the average number of findings per on-site audit of the Troy SPF decreased by 40.0%, from 10.0 to 6.0 defects per audit between 2012 and 2013, also suggesting that corrective action has been performed in response to previous audit findings.

4.7 Laboratory Internal Audits

Each of EPA's Libby asbestos support laboratories has an internal audit program in place, and conducts internal audits of their specific operations on an annual basis using standardized checklists. During the external EPA on-site laboratory audits, the Audit Team reviews with the laboratory staff any significant findings noted in their internal audit reports. **Table 26** presents the 2013 internal audit history for the four (4) laboratories that provided support to Libby OU3 investigation activities in 2013.

Table 26 – 2013 Laboratory Internal Audits

	Laboratory			
	EMSL03	**EMSL04**	**EMSL22**	**EMSL27**
Date:	12/10/2013	05/08-10/2013	10/02-03/2013	07/10-11/2013

4.8 Air Monitoring Samples

An environmental contamination monitoring program is required at each laboratory that analyzes samples from Libby. The requirements of the laboratory monitoring programs for each laboratory are described in the laboratory QA management plans. These include immediate notification by the laboratory QAM to the LC and the QATS contractor of any laboratory contamination monitoring results that are outside of the appropriate acceptance criteria. Air monitoring samples were verified during the on-site audits to have been collected on a quarterly basis at the EMSL Laboratories in New York (EMSL03), New Jersey (EMSL04), Denver (EMSL22) and Libby (EMSL27) in 2013. These samples are collected from various locations in each of the laboratories, including the sample receiving, PLM and TEM sample preparation, and the TEM analysis areas. Air monitoring samples at the Troy SPF are collected on a monthly basis. Air monitoring results were reviewed during the 2013 annual on-site audits. No LA structures were observed by the Audit Team.

In addition to laboratory air monitoring, CDM Smith collected monthly samples at the EMSL27 laboratory due to its location in Libby, Montana. In all, 52 samples were collected and blindly analyzed by the participating laboratories with no asbestos detected in any of the samples evaluated.

5.0 Laboratory Mentoring Program

As outlined in the October 10, 2014 memo entitled "Mentoring of EMSL Analytical Services, Inc., New York, NY" (See **Attachment 3**), a single laboratory, EMSL03, participated in the mentoring program for the performance of asbestos analysis in support of the Libby Superfund activities during 2013, which included participation in the 2013 TEM IL study. The mentoring support involved an evaluation by the QATS support contractor of inter-laboratory soil, air, and water samples analyzed for asbestos by PLM and TEM. Evaluation of minimum acceptance criteria including: laboratory certification, quality documentation and written procedures, records of training and experience of PLM and TEM analysts, availability of instrumentation, laboratory participation in Libby-specific IL studies, on-site audits, conference calls, etc. EMSL03 met all of these minimum acceptance criteria prior to receiving samples.

The EPA approval process part of the mentoring of EMSL03 in 2013 included an evaluation of laboratory proficiency based upon performance in both sample analyses and an EPA on-site audit.

The sample analysis performed by EMSL03 to determine proficiency included the analysis of PESs and participation in PLM-VE and TEM IL studies. Several non-concordances were observed in the PLM-VE IL study results, and it was therefore recommended that samples not be shipped to the facility for PLM analyses until proficiency has been demonstrated through the analysis of additional PLM IL analyses. Applicable to OU3, the TEM IL study consisted of two (2) samples, one (1) air and one (1) water, previously analyzed by the ESATR8 laboratory. This study found no air sample results discrepancies, however, a discrepancy was observed in the water sample analysis results. Additional training was provided to the EMSL03 laboratory analysts by analysts from other EMSL laboratories with experience analyzing Libby samples of procedures and problems. This training included an in-depth discussion of the variability of LA encountered during analysis. Subsequent to this study, the laboratory was approved to receive samples for TEM analyses.

On May 22, 2013 an EPA on-site audit of EMSL03 was performed, which assessed facilities, equipment, personnel, and documentation as related to the laboratory's capability to process samples collected from the Libby Superfund Site and tested for asbestos in accordance with Libby-specific requirements. The on-site audit resulted in the identification of nine (9) deficiencies. None of the findings identified by the Audit Team in the May 2013 on-site evaluation were of such significance to preclude them from receiving samples for TEM analysis.

6.0 Laboratory Modifications

Nine (9) OU3 project-specific laboratory modifications were developed, revised, and/or reviewed in 2013. Listed below are summary descriptions and the applicable effective and/or revision dates of each laboratory modification.

a) LB-000016H (03/19/2012) – This modification documents permanent modifications and clarifications to TEM structure recording rules for ISO 10312, and documents previous historical modifications and clarifications. This modification applies to all Libby TEM samples where the ISO 10312 counting rules apply, regardless of sample matrix (air, dust, water, woodchip/duff, tree bark, and tissue samples).

b) LB-000020B (03/19/2012) – This modification applies to the preparation and analysis of water samples for the Libby Project. As of 07/27/2010, it requires all water samples

associated with the Libby Superfund Site to undergo treatment with ozone/UV light and sonication prior to filtration as specified in Section 6.2 of EPA Method 100.1 (EPA 1983a). Only polycarbonate (PC) or mixed cellulose ester (MCE) filters with a pore size of 0.2 µm or smaller should be used for filtering water samples. On the bench sheets, the preparation date should be recorded as the filtration date, not the grid preparation date. Recording rules will be as described in the ISO 10312 (ISO 1995) method, except that the aspect ratio and minimum length requirements will be specified in the applicable governing Analytical Requirements Summary Sheet.

c) LB-000029D (03/12/2013) – This modification provides permanent clarifications to laboratory-based quality control (QC) analysis requirements for TEM. The purpose is to standardize the frequency of analysis and procedures for the selection and interpretation of the results for laboratory-based TEM QC analyses (regardless of sample medium).

d) LB-000066E (08/15/2013) – This modification applies to all investigative samples analyzed by TEM (regardless of the specific TEM method or sample matrix) for the Libby Asbestos Site. Based on this modification, direction is provided to all analytical laboratories for reporting various information on count sheets related to the presence or absence of sodium and potassium in all recorded structures (except chrysotile), “close-call” NAM particles, NR particles, probable mineral species (if known) of each recorded structure, EDS (energy dispersive spectrometry) spectra of LA, NR, and close-call NAM particles, and a photomicrograph of a SAED (selected area electron diffraction) pattern from an LA structure for each sample in which LA is found.

e) LB-000067C (04/01/2013) – This modification provides direction on how to improve consistency in the recording and reporting of structures for all TEM methods for the Libby Project. It also consolidates the three modifications applicable to all TEM methods into a single modification.

f) LB-000073C (12/06/2012) – This modification provides permanent clarifications to inter-laboratory analyses for the Libby-specific PLM-VE (SRC-LIBBY-03) and PLM-Gravimetric (SRC-LIBBY-01) methods, and standardizes the selection and analysis procedures for inter-laboratory soil samples.

g) LB-000085A (05/04/2012) – This modification standardizes the frequencies and performance criteria of instrument calibrations at all TEM laboratories that analyze samples for the Libby Project. Contamination monitoring by air sampling at the labs is also described in this modification.

h) LB-000091 (07/16/2013) – This modification applies to SOP EPA-Libby-08, Revision 1, “Indirect Preparation of Air and Dust Samples for TEM Analysis”, and provides directions for adjusting the requirement of the use of a 10% solution of glacial acetic acid to the aqueous suspension when preparation is performed by the indirect-ashed procedure and the de-ionized water used is treated with ultraviolet light. The modification allows the substitute of acetone for collapsing MCE filters, encourages the use of the largest aliquot possible in TEM analysis, and provides direction on a Rock Flour Preparation variant of the standard indirect-ashed procedure. It additionally presents clarification on acetone vaporizers for use with collapse MCE filters for direct, indirect, or indirect-ashed preparation of Libby Project TEM samples.

i) LB-000096 (01/01/2014 – 03/31/2014) – The development of this temporary modification standardizes the PLM-VE preparation procedures and removes the procedural options presented in Revision 3 of SRC-LIBBY-03.

7.0 Conclusions and Recommendations

7.1 QC Data Evaluated

7.1.1 Field QC

A limited number of field QC samples were collected for the 2013 OU3 studies. The field QC samples were comprised of field blanks, lot blanks, and field duplicates. Because each OU3 phase requires different QC sample processing frequencies based upon the applicable SAP, the QATS Program recommends that field SAPs be read and acknowledged by all field personnel, and that COCs are reviewed to ensure that field QC are collected at the frequencies required by the investigation-specific SAPs. Additionally, to ensure that the filters used to collect air samples are from the lots evaluated in 2010, the applicable FSDSs should be checked to ensure that the filter lot numbers recorded match those that have been previously verified.

7.1.2 SPF QC

In 2013, preparation QC samples collected at the Troy SPF, which include preparation duplicates, grinding blanks, and drying blanks, for OU3 PLM analysis in 2013 for Phase VB and the Amphitheater Removal Action were performed at a frequency of 16.7% of the 18 total field samples. Of the three (3) SPF QC samples, one (1) was a grinding blank and two (2) were drying blanks, none of which were considered discordant with all QC analyses resulting in the Bin A (non-detect) category. No preparation duplicates and limited preparation blanks appear to have been analyzed specifically for PLM OU3 sampling events, as recorded in **Tables 8** and **9**, though these tables only reflect those QC samples prepared on the days that OU3 samples were processed. The fact that duplicates were not processed using OU3 samples is a deficiency requiring corrective action by the Troy SPF. Additional preparation blanks were processed with samples from other Libby OUs, which are summarized in the CDM Smith 2010-2013 QA/QC Report (CDM Smith, 2014).

During the 2014 on-site audit of the Troy SPF, the EPA Audit Team observed that both the drying and grinding blanks were processed at the beginning of each day, prior to samples, on equipment which was cleaned the previous day, thereby rendering the evaluation of potential for cross-contamination with field samples ineffective. To effectively monitor for grinder contamination process, the QATS Program recommends that the grinding blank be processed only after field samples have already been processed.

7.1.3 Laboratory Analysis QC

7.1.3.1 Transmission Electron Microscopy

<u>TEM QC Frequency</u>

As illustrated in **Table 10**, many of the program-wide TEM QC sample frequencies in 2013 were not consistent with the requirements described in Laboratory Modification LB-000029. These requirement failures can likely be attributed to laboratories not having received sufficient samples to trigger the requirement to perform QC analyses. To ensure an appropriate number

of QC analyses are performed, specifically those with frequency requirements of 1.0%, the QATS Program recommends that laboratory Modification LB-000029 be modified to ensure adequate QC analyses are performed when less than the number of samples necessary to trigger these analyses are reached.

Laboratory TEM QC Discordances

Twenty (20) TEM LBs, three (3) FBs, and one (1) DB were analyzed by participating laboratories in 2013, with no asbestos structures were observed. This suggests that asbestos contamination was not introduced during preparation or analyses of TEM samples. With the exception of EMSL27, individual laboratories met the OU3 program frequency requirements and the overall program frequency of LB analyses is approximately 9%, exceeding the Laboratory Modification LB-000029 frequency requirement of 4%.

Overall, the 2013 TEM intra-laboratory recount analyses (i.e. RS, RD, RP and VA) fell into the "Good" and "Acceptable" ranges described in **Tables 13A – 13D**, the exceptions being the structure length criteria, which fell into the "Poor" category for the air and ash media for the recount QC in phases IVA and SM, respectively. Statistical analysis of the RP results showed that 100% of the three (3) RP analyses were within the 90% CI established for their evaluation, falling into the "Good" rating category, as established by the program-wide goals.

Though limited in number, the majority of the eight (8) inter-laboratory (IL) analyses fell into the "Good" or "Acceptable" category ranges described in the **Table 12**, the exceptions being failures for structures per GO concordance for duff, tree bark, water, and ash (all <85% concordance), and non-compliance with mineral class criteria for ash, air, duff, and tree bark media (<90%). The results of the 2013 TEM IL study suggest further discussion is needed to ensure laboratories can accurately differentiate between NAM and LA structures on a more consistently between laboratories. Since the 2013 study was completed, various discussions to standardize spectra interpretation (i.e. aluminum and calcium content) have been discussed during the monthly Libby Lab Calls to resolve some of these inconsistencies in spectral interpretation.

TEM Problems Encountered

In 2013, an investigation by EPA with support from CDM Smith and CB&I QATS was conducted to evaluate asbestos analysis and reporting issues observed from the EMSL Analytical, Inc. laboratory in Libby, MT during 2013. The identified discrepancies raised concerns over the quality of data provided by this laboratory for samples collected from the OUs at the Libby Superfund Site. At the forefront of concern were issues related to TEM sample preparation, misidentification of samples, IL results discrepancies, and post-training to staff on TEM IL discrepancies.

The causes of these issues as identified from the investigation were due to an inability by the laboratory to follow laboratory-specific and project-specific requirements. Both causes were further attributed to a lack of sufficient QA/QC oversight at the laboratory management level, including failure to request clarification from the client for project-specific procedures, where needed.

As a result of this investigation, seven (7) original analyses performed by EMSL27 were Rejected (R) and replaced with the RP analyses performed by EMSL04. To accomplish such, corrected and modified EDDs were submitted by EMSL27 which changed the filter status for the samples and included commentary regarding the status changes.

7.1.3.2 Polarized Light Microscopy

PLM QC Frequency

Eighteen (18) PLM-VE QC samples were analyzed in 2013. As illustrated in **Table 16**, the 2013 program-wide PLM QC frequency met only the requirements described in the PLM-VE SOP for LDC samples of 8.0% in the Amphitheater investigation phase. Aside from the one (1) LDC sample analyzed in the Amphitheater phase, no other LDC, LDS, or IL PLM-VE QC samples were prepared for the Libby RI/FS at OU3. Due to the limited number of field samples analyzed for OU3-only, the 2013 PLM-VE QC samples analyzed are not representative of all QC evaluations, with many QC samples processed and reported with the site-wide (all other OUs) data. Regardless, the laboratories should be reminded of the importance of performing OU3-specifc QC to avoid the observed QC deficiencies.

Laboratory PLM QC Discordances

A single PLM-VE QC sample was evaluated, an LDC sample, and was concordant with both the original and LDC samples reported in Bin C.

7.1.4 PES Results

A total of 16 PLM-VE PESs were analyzed in 2013 by all four (4) laboratories (four PESs were analyzed by each laboratory) in two (2) events: Spring and Fall. The overall PES evaluation resulted in ratings of concordant for 56% of sample results and weakly discordant for 44% of sample results. The weakly and strongly discordant results fell into the “Poor” and “Good” categories, respectively, as defined by EPA, prompting discussions as to the generation of laboratory modifications to more strictly standardize the PLM-VE and PLM-GRAV procedures.

7.2 Asbestos Data Validation

In 2013, data validation was performed on 51 Libby samples, representing approximately 5.0% of all Libby OU3 field samples collected in 2013. 92.2% of the Libby OU3 asbestos results for samples analyzed in 2013 required no qualification. Qualifiers were applied to four (4) field samples, or approximately 7.8% of the 51 asbestos samples validated. All four (4) of the qualified field samples were the result of the laboratory failing to meet the required frequency for k-factor calculation. As noted above, the quarterly K-factor requirement is a Libby-specific requirement specified in Laboratory Modification LB-000085A.

Bench sheet/EDD comparisons were also conducted on all samples validated in 2013. Few discrepancies due to information omissions and typographical errors were observed. Of the 51 sample results validated, 11 (21.6%) contained some type of bench sheet/EDD discrepancy. All discrepancies were considered minor (i.e., typographical errors or omissions in fields) and were considered by the validators to have no impact on the sample results.

7.3 Laboratory On-site Audits

A total of 19 audit defects were identified in the four (4) on-site laboratory audits performed in 2013. The deficiencies by laboratory from high to low include: EMSL03 (7), EMSL27 (5), EMSL22 (4), and EMSL04 (3). The laboratory process categories in which the majority of the observed deficiencies for the audits performed in 2013 occurred include: Sample Preparation,

PLM Analysis, and Sample Receiving. Overall, for the 2013 on-site audits there was a 61.2% decrease observed in the average number of defects per on-site audit as compared to 2012 (for the same three (3) laboratories audited in both 2012 and 2013). All three (3) of these laboratories showed a reduction in the number of defects (from 31 total defects in 2012 to 12 total defects in 2013), which suggests that all laboratories applied corrective action in response to the findings of their 2012 audits. Laboratory responses, in the form of proposed corrective actions to the identified deficiencies, were submitted by the laboratories for both the 2012 and 2013 audits. No findings were contested. These laboratory-proposed corrective actions in response to the 2013 audits will be verified during the next round of scheduled audits.

In 2013, CB&I QATS also supported one (1) SPF on-site audit of the Troy SPF in Troy, MT which was last audited in 2012. Six (6) deficiencies were identified in the Troy SPF on-site audit performed in 2013 as compared to the ten (10) defects observed at the same facility in 2012, representing a 40.0% decrease.

The 61.2% reduction in the average number of defects between the laboratories audited in 2012 and again in 2013 suggests that the on-site audit program is effective in improving laboratory quality and compliance. It is recommended that the on-site audit program continue, with annual on-site audits scheduled at the Libby asbestos support laboratories and sample preparation facilities. QATS will use information gathered from the validation process, PLM and TEM Inter-laboratories, and feedback from data users to further enhance the on-site audit process.

8.0 References

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ATTACHMENT 1

EMSL Analytical (Libby, MT) Issues and Concerns

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Memorandum

From: Michael P. Lenkauskas
Date: April 16, 2014
Subject: EMSL Analytical (Libby, MT) Issues and Concerns

The following is a summary of issues and analytical data discrepancies associated with the EMSL Analytical laboratory in Libby, Montana. The discrepancies, identified by CDM Smith and CB&I, raise concerns about the quality of the data provided by this laboratory for samples collected from both Operable Unit 3 (OU3) and other OUs at the Libby Superfund Site. The specific issues include:

- 2010-2011 TEM Inter-laboratory sample preparation issues.
- Inadequate frequency of 2012 OU3 project-specific quality control (QC) analyses.
- Possible mis-identification of 2012 OU3 water samples.
- Result discrepancies between transmission electron microscopy (TEM) rapid turn-around time (TAT) and full analysis of OU3 water samples.
- TEM result discrepancies for Fluidized Based Asbestos Segregator (FBAS) filter samples prepared using the “Rock Flour Prep” preparation technique.
- Post-training TEM Inter-laboratory discrepancies.

2010-2011 TEM Inter-lab Sample Preparation Issues

The EMSL Analytical laboratory (EMSL-Libby) experienced an unusually high percentage (37%) of damaged grid openings (GOs) on re-preparations prepared for the 2010 and 2011 TEM inter-laboratory study, which resulted in these samples having to be re-prepped again. Upon identification of this issue on March 25, 2013, the laboratory was directed by EPA to investigate and apply the necessary corrective actions prior to preparing the re-preparations for the 2012 TEM inter-laboratory study about to be initiated. The root cause of the damaged GOs as reported by the laboratory is described in corrective action report CAR# 1303-1 and is summarized below:

- GO size too large. EMSL-Libby used a custom-made grid with a GO size of 0.0130 square millimeters (mm^2);
- Grid condition;
- Carbon coating thickness;
- Ash time; and
- Packaging and shipping.

In addition to using a grid with a smaller GO size (15x15 grids with a GO size of 0.0064 mm^2), the laboratory is now also pre-cleaning the grids and has adjusted the asher and carbon coating settings. Since these corrective actions have been implemented, none of the 11 samples re-prepped by the laboratory for the 2012 TEM inter-laboratory were received damaged. Thus, the corrective actions initiated by the laboratory appear to have resolved the issue.

It should be noted that undissolved filter material was observed on several EMSL-Libby grid preparations for samples prepared in 2012. This issue was investigated during the on-site audit conducted on July 9, 2013, however, no deviations from procedures were identified that could have contributed to this issue.

Inadequate Frequency of 2012 Project-specific QC Analyses for OU3

A review of the laboratory QC analyses available in the OU3 database for samples analyzed in 2012 revealed that the frequency at which QC analysis were performed for four of five TEM and one of two polarized light microscopy (PLM) QC analysis types during this period was not in accordance with the criteria described in Libby Laboratory Modification LB-000029D and SOP SRC-LIBBY-03 (rev. 3) for TEM and PLM, respectively. Only the TEM re-preparation (RP) and PLM Laboratory Duplicate Self-check (LDS) QC analyses were performed at frequencies exceeding the requirements. The following table provides a summary of the type of QC analyses performed, the required frequency, and the actual number and frequency of QC analyses that were performed by EMSL-Libby in 2012:

Method	QC Type[1]	Sample Analyses	Required Frequency	Performed	Actual Frequency
TEM	LB	293	4%	7	2.4%
	RS	293	1%	0	0%
	RD	293	2.5%	3	1%
	VA	293	1%	2	0.7%
	RP	293	1%	5	1.7%
PLM	LDC	65	8%	1	1.5%
	LDS	65	2%	3	4.6%

[1] QC Types are Laboratory Blank (LB), Recount Same (RS), Recount Different (RD), Verified Analysis (VA), Re-preparation (RP), Laboratory Duplicate Cross-check (LDC), and Laboratory Duplicate Self-check (LDS).

Although QC analyses were not performed by EMSL-Libby in 2012 at the required frequency on a project-specific basis (OU3), they were prepared at the required frequency for across all site operable units. This discrepancy was brought to the attention of EMSL Analytical Management on May 22, 2013, who performed an investigation and determined that separate QC logbooks were maintained up until June 25, 2012, at which time they were combined[1]. Effective May 23, 2013, samples received from OU3 are once again recorded in a separate, OU3-specific, QC logbook, ensuring that project-specific QC will be performed at the required frequencies.

Possible Mis-identification of 2012 OU3 Water Samples

Select surface water samples collected from OU3 during the spring of 2012 and analyzed by EMSL-Libby show large discrepancies between field samples and field blanks or between field samples and duplicates. This suggests that samples were misidentified either in the field during collection or in the laboratory while being processed. Samples that were possibly misidentified are summarized in the following table:

Index ID	Sample Type	Date Prepared	Date Analyzed	Structures	Comments
P5-10013	Field Sample	05/09/12	05/25/12	0	Same preparation batch
P5-10014	Field Blank		05/26/12	25	
P5-10067	Field Sample	06/20/12	06/26/12	25	Field sample/field duplicate pair
P5-10068	Field Duplicate		06/26/12	1	
P5-20018	Field Sample	05/17/12	06/01/12	0	Field sample/field duplicate pair. The RP for sample P5-20019 had 50 structures.
P5-20019	Field Duplicate		06/02/12	65	
P5-20085	Field Sample	07/04/12	07/09/12	5	Field sample/field duplicate pair
P5-20087	Field Duplicate		07/09/12	27	
P5-20225	Field Sample	09/20/12	11/08/12	25	Field sample/field duplicate pair
P5-20226	Field Duplicate		11/08/12	62	

[1] Note that this timeframe coincides with the change in the OU3 laboratory subcontracting mechanism from Remedium to TechLaw.

Although sometimes analyzed on separate days, each of the sample pairs in question were prepared on the same day by the same preparer, increasing the possibility that the misidentification of samples occurred at the laboratory. It should also be noted that the samples which exhibit the greater disparity were all prepared and analyzed during the spring/early summer 2012.

The potential misidentification of samples was brought to EMSL Analytical management's attention, and on February 19, 2013, EMSL-Libby provided a memo to EPA and Remedium summarizing the findings of their investigation. The first section of this memo discusses the TEM rapid TAT versus TEM full analysis discrepancies, which are discussed below. Concerning the possible misidentification of samples, the laboratory offered the explanation that, at the time of the misidentifications, the laboratory was operating beyond its capacity, creating a disorganized environment with staff trying to handle too many responsibilities. Procedural changes put in place by the laboratory to prevent similar situations from occurring in the future include:

- Expansion of the sample preparation area to create a less cluttered workspace and allow staging of samples in a more organized manner.
- Restricting the number of jobs being prepared simultaneously.
- Using one individual track the progress of each individual laboratory job.
- Provide training and improve intra-laboratory communication to better handle laboratory capacity issues.

Note: This memorandum also proposed, as a solution to the capacity issue, that the capabilities of the EMSL-Denver laboratory were to be increased to handle duff and water samples. However, as of the last on-site audit (performed in May of 2013) this action has not been implemented.

Result discrepancies between TEM rapid TAT and full analysis of OU3 water samples

For a subset of the Kootenai River water samples collected in 2012, the EMSL-Libby laboratory was directed by EPA to perform a "rapid TAT" analysis. This analysis was to be performed using the same preparation techniques and counting rules as the traditional "full" analysis, but only required the analyst to record the total number of countable LA structures per GO (i.e., recording of structure-specific attributes, such as length, width, and structure type was not required) to facilitate the faster reporting of water concentrations. Following the rapid TAT analysis, each water sample was subsequently re-analyzed[2] using the traditional full analysis reporting requirements.

A comparison of the rapid TAT versus full analysis results performed in January/February 2013 revealed significant discrepancies between the reported water concentrations for several samples analyzed:

	Total LA Water Conc. (MFL)	
Index ID	Rapid TAT Analysis	Full Analysis
P5-10004	3.7	0
P5-10010	97	0
P5-10008	62	0
P5-10013	40	0

When these discrepant results were brought to EMSL Analytical management's attention, EMSL-Libby repeated the rapid TAT and full analysis for the subset of the Kootenai River water samples (from the raw water that was in archive) to identify the nature of these discrepancies. The results of the repeated rapid TAT and full analyses indicated that the reported water concentrations from the original rapid TAT analysis were not confirmed, while the results from the original full analysis

[2] Because the grids from the rapid analysis were often blown due to the original examination, this re-analysis was performed using a newly prepared set of grids from the original filter.

were confirmed for the most samples. On this basis, the EMSL-Libby laboratory recommended in a memo to EPA and Remedium on February 19, 2013 that "*all rapid results should be disregarded in favor of the full ISO analyses.*" This memo did not specify the reason for the differences between the rapid and full analysis results; however, EMSL-Libby noted in a subsequent memo on September 4, 2013 **(refer to Attachment 1)** that the analyst performing the rapid TAT analysis erroneously utilized PCM recording rules, resulting in the recording of diatom fragments as countable structures.

However, as noted above, the repeat full analyses did not confirm the results for all samples. For three of the repeat full analyses performed, the repeat full analysis results did not confirm either the original rapid TAT analysis or the full analysis:

	Total LA Water Conc. (MFL)		
	Original Analysis		Repeat
Index ID	Rapid Analysis	Full Analysis	Full Analysis
P5-10018	78	35	0
P5-10017	37	58	0
P5-10015	34	60	0

In the case of one field blank (P5-10014), the re-analysis supported the unexpected results of the original full analysis, which reported a total LA water concentration of about 25 MFL. Because of these discrepancies, the validity of the original full analysis results is also uncertain.

EPA direction in response to OU3 sample preparation, misidentification, and rapid TAT/full analysis discrepancies

As a consequence of the discrepancies discussed above, EPA directed EMSL Analytical to perform re-analyses of the OU3 water samples collected in 2012 and 2013 to confirm the originally-reported results. This re-analysis effort included the analysis of a subset of water samples from the Phase V, Part A Kootenai River study, collected in 2012 during Rounds 1 through 5 from stations LRC-6 and UKR-0, and the 2013 Phase V, Part B in-stream fish toxicity tests that include a subset of the LRC surface water samples from the eyed egg study and 20% of the surface water samples from the fry study. These re-analyses were performed by EMSL-Cinnaminson in July/August 2013 from the raw water[3].

Table 1 at the end of this report summarizes the results of the Libby OU3 2012 Phase V, Part A surface water re-analyses. Of the 25 samples that were re-analyzed, there were 9 samples where the re-preparation analysis performed by EMSL-Cinnaminson gave statistically different results from the original analysis performed by EMSL-Libby (based on a Poisson ratio comparison test at a 90% confidence interval). This means that the difference in LA water concentrations between the original analysis and the re-preparation analysis was more than can be attributed to Poisson counting error alone. For the Part A program (Kootenai), these results confirmed that some type of filter mix-up had occurred for four samples (P5-10014, P5-10015, P5-10017, and P5-10018) during the original analysis at EMSL-Libby. For sample P5-10014 (the field blank discussed above), the results confirmed that both the original analysis (reported in May 2012) and the re-analysis (performed in May 2013) by EMSL-Libby were in error. All of these samples were prepared by the same person on the same day (05/09/2012). This preparation batch included 16 samples (P5-10013 through P5-10027). Most of the samples in this preparation batch (P5-10019 through P5-10027) were associated with a pilot study to evaluate differences in three different water sampling methodologies and were not part of the Kootenai River sampling program.

For the five samples that were different from the Part B program (Ecological), there appears to be a consistent bias, with EMSL-Cinnaminson reporting higher concentrations than EMSL-Libby. Although

[3] For two samples, the re-analysis was performed from the original filter because no raw water remained (these samples are indicated in the table).

for most of these samples, the concentrations are usually within a factor of about 2-3, there was one sample (P5-20027) where the reported concentration by EMSL-Cinnaminson is about 70 times higher than what was reported by EMSL-Libby, which suggests that another filter mix-up occurred.

Approximately 20% of the surface water samples collected as part of the 2013 eyed egg study were also randomly selected at EPA's direction for re-analysis by EMSL-Cinnaminson in July/August 2013. These re-analyses were performed from either the originally prepared filter or the raw water (depending upon the nature of the archived sample).

Table 2 at the end of this report summarizes these results. A total of 17 samples were selected for re-analysis by EMSL-Cinnaminson; 10 samples were re-prepared from the filter; one (1) with the filter prepared by EMSL-Libby, and 7 samples were re-prepared from the original raw water samples. Eight (8) of the 17 samples that were re-analyzed by EMSL-Cinnaminson were statistically different from the original analysis performed by EMSL-Libby (based on a Poisson ratio comparison test at a 90% confidence interval). Similar to what was observed in the 2012 re-analyses, there appears to be a consistent bias, with concentrations reported by EMSL-Libby tending to be lower than those reported by EMSL-Cinnaminson. However, concentrations in most samples were usually within a factor of about 2.

Of particular interest are the results for samples P5-20325 and P5-20326. These two samples were preferentially selected for re-analysis because the originally-reported LA concentrations suggested that the results for the pore water and its paired surface water got mixed up. The re-analysis performed by EMSL-Cinnaminson confirmed that a filter mix-up did occur[4] and that it happened in EMSL-Libby laboratory when reporting the results. Note that this filter mix-up occurred after EMSL-Libby had implemented corrective actions to mitigate this issue.

Based on the above results, EPA took the following actions on the EMSL-Libby reported 2012/2013 OU3 water analysis results:

- All rapid TAT results will be discarded; only full TEM analyses will be retained in the OU3 project database.

- For samples where the re-analysis confirmed that a filter mix-up occurred (i.e., P5-10014, P5-10015, P5-10017, P5-10018, P5-20027, P5-20325, and P5-20326), the original EMSL-Libby results will be rejected; a corrected EDD will be submitted changing the *Filter Status* field from 'Analyzed' to 'Cancelled,' and an analysis comment will be added regarding the rejected status; a modified EDD will be submitted for the corresponding EMSL-Cinnaminson analyses that will be used in preference; a corrected EDD will be submitted changing the *Lab QC Type* from 'Repreparation' to 'Not QC,' and an analysis comment will be added explaining why the QC status was changed; and the revised EDDs will be uploaded to the OU3 project database.

- For all other samples that were re-analyzed, the EMSL-Libby results will be retained as the 'Not QC' analysis, and the EMSL-Cinnaminson results will be retained as the 'Repreparation.' When these results are summarized, the results of the re-preparations will be used to demonstrate the between-laboratory differences in TEM counting and recording and results uncertainty/variability, but will not be used to alter the reported results.

[4] As shown in the table, EMSL-Cinnaminson performed an extra repreparation analysis which confirmed their results for sample P5-20326.

The results of these re-analyses support the conclusion that filter mix-ups occurred at EMSL-Libby both in 2012 and 2013 as part of the OU3 investigations. The largest mix-up appears to be associated with the set of filters that were prepared during Round 3 of the Phase V, Part A (Kootenai) sampling effort (which included P5-10014, P5-10015, P5-10017, and P5-10018). However, other filter mix-ups outside of this timeframe were also noted, and also occurred during the 2013 study after corrective actions were to have been implemented.

The re-analyses also show that there are differences between the EMSL laboratories in the identification and recording of LA structures in water samples from OU3, albeit the magnitude of the differences in the reported water concentrations are not large (usually within a factor of 2-3).

On-site Re-training of EMSL-Libby TEM Analysts by ESAT Region 8

On September 20, 2013 and because of the issues discussed above, EMSL-Libby was issued a stop work order which barred the laboratory from performing TEM analyses on investigative samples from the Site until TEM proficiency could be demonstrated.

On September 25, 2013 and at the direction of EPA Region 8, two senior TEM analysts from EPA's Environmental Services Assistance Team (ESAT) traveled to Libby, Montana to perform a two-day training session at the EMSL-Libby laboratory. The focus of the training was two-fold: 1) to investigate discrepancies regarding the determination of Sodium (Na) and Potassium (K) peaks in the EDS spectra and 2) to provide training in the differentiation of LA and pyroxenes by TEM. Training included the examination by both the ESAT and EMSL-Libby analysts of grids prepared from Standard Reference Materials (SRMs) using one of the laboratory TEM instruments, which was followed by discussions concerning the morphology, EDS composition, and diffraction characteristics of the minerals observed.

Concerning the reporting of Na and K, it has been noted by Site data managers that nearly all LA structures identified by EMSL-Libby have historically been recorded as NaK (i.e., the LA structure EDS indicated the presence of Sodium and Potassium peaks), while the other laboratories record LA structures as XX, XK, and NaX (i.e., EDS does not indicate the presence of Sodium, Potassium, or both) with some degree of regularity. ESAT's initial concern was that the analysts were automatically recording "NaK" for every LA structure; however, during the trip, it became apparent that this was not the case. Laboratory modification LB-000066 states that Na and K should be recorded if they are "clearly present," which the analysts interpreted to mean that they were detected in any amount by the TEM's EDS system above the background noise that is inherent in any EDS spectrum. Unfortunately, the EDS system software will determine that an element is present, even when the concentration of that element is considerably less than the amount needed to produce a distinct peak that is apparent upon visual examination of a spectrum. Nearly every Tremolite/Actinolite (Tr/Ac) structure that occurs in nature contains trace amounts of Na and K. Therefore, every Winchite/Richterite/Tremolite/ Actinolite (WRTA) structure identified by the analysts was classified as NaK, based on the EDS software indication, regardless of whether or not Na and/or K peaks were visually observable in the spectrum. On this basis, ESAT recommended that any NaK assignments made by EMSL-Libby prior to October 2013 should be excluded from any evaluation of NaK data that is used to look for trends in possible LA fiber origins.

ESAT determined during their visit that EMSL-Libby's understanding of LA mineralogy appeared to be essentially strong. In ESAT's opinion, at least 80% of LA structures can be easily and definitively classified as LA by a trained analyst; thus, ESAT has no reason to think that EMSL-Libby may have mis-classified a high percentage of LA structures. A detailed description of the training provided by ESAT Region 8 and their conclusion is provided in their EMSL/Libby LA Structure Classification Deliberative Report **(refer to Attachment 2)**.

On October 29, 2013, EMSL-Libby provided a corrective action report (CAR# 1310-01) that documented the results of the SRM analyses as well as several intra- and inter-laboratory analysis performed by EMSL-Libby as part of their proficiency demonstration **(refer to Attachment 3)**.

Although this report showed improvement in the assignment of NaK status, there continued to be reproducibility issues related to the inter-laboratory analyses.

FBAS "Rock Flour Prep" TEM Result Discrepancies

The FBAS technique frees aerosolizeable particles from a soil samples and deposits them onto a filter allowing the Asbestos structures to be counted and classified during TEM analysis. The FBAS method was applied to various soil samples collected from flowerbeds in Libby and Troy, Montana, and also in commercially-available potting soil and vermiculite that may be used in flowerbeds. Each sample was processed by FBAS in triplicate, and the resulting filters were sent to three separate laboratories to provide separate analyses for each sample. A preliminary review of the between laboratory results indicated that EMSL-Libby may have counted low on their flowerbed samples. All of the samples in question were prepped by the Rock Flour Prep method at all three laboratories. The Rock Flour Prep method involves running 5 grams of soil by FBAS, so the resulting filter is never under-loaded. If the laboratory determines that the filter is overloaded or has loose debris (which is the case for all but the coarsest soils), preparation proceeds by Rock Flour Prep, which is the indirect-ashed approach where the aqueous suspension is allowed to settle for 3 hours prior to filtration to remove the coarsest silicate mineral grains. This results in more particles of interest (silicate grains <3 microns in diameter, which includes almost all asbestos) on the area of filter viewed during TEM analysis, and a higher rate of detections when the asbestos content of the original soil sample is low. The analyzed filters for these samples were the secondary filters generated at the laboratories, not the primary filters. However, a review of these results indicates that EMSL-Libby's preps for the Flowerbed samples were often more lightly loaded than preps from other laboratories, as were the structure concentrations reported by EMSL-Libby. ESAT hypothesized that EMSL-Libby may have had difficulty properly implementing the Rock Flour Prep method and may have under-loaded their filters. This would have affected their results for the Flowerbed Study even if TEM examination itself was fundamentally sound. Unfortunately, ESAT did not investigate this possibility during their visit to the laboratory because ESAT did not become aware of the magnitude of possible undercounting by EMSL-Libby on FBAS samples until afterwards[5]. For additional detail and sample results, refer to **Attachment 4**.

Post Training TEM Inter-laboratory Summary

A technical memo was provided by QATS and submitted to EPA on January 27, 2014 **(refer to Attachment 4)** that described the results from two inter-laboratory studies, one between EMSL-Libby and RESI, and the other between EMSL-Libby and Hygeia. Discrepancies in the results suggested that EMSL-Libby has yet to demonstrate the necessary proficiency to accurately analyze investigative samples for LA. The number of potentially missed LA structures from the two inter-laboratory studies (22 total) is significant. In addition, EMSL-Libby failed to follow the directions provided in Laboratory Modification LB-000029. In summary, the memo indicates:

- The inter-laboratory analysis results between EMSL-Libby and RESI show that the asbestos mineral class, length, and widths were consistent between the laboratories for common structures. However, and more significantly, EMSL-Libby missed five out of the 14 (36%) structures identified by RESI. This inter-laboratory analysis evaluation also revealed that neither EMSL-Libby nor RESI may be collecting EDS spectra for a long enough period of time to accurately determine the presence of Na and K.

- The inter-laboratory results between EMSL-Libby and Hygeia revealed that a total of 17 LA structures detected by Hygeia were not detected by EMSL-Libby in either the inter-laboratory or reconciliation analyses. This concludes that: a) the structures were not present during the original analysis by Hygeia; b) the grid preparations were damaged in such a way that structures were lost; or c) the structures were present but were identified in neither the inter-laboratory or reconciliation analyses by EMSL-Libby. Concerning the detection of Na and

[5] It was determined at a later date that the laboratory was checking the filter loading after three hours, prior to filtering, and the samples being allowed to settle beyond the 3-hour limit, which resulted in lighter loading and lower fiber counts.

K from EDXA analysis, there appears to be some evidence that EMSL-Libby is not collecting spectra for an adequate amount of time.

One interesting observation from this inter-laboratory analyses is that EMSL-Libby now has a tendency to report LA structures as XX (no Na or K in the EDS spectra), indicating the absence of both Na and K. For the inter-laboratory study between Hygeia and EMSL-Libby, Hygeia reported 57 spectra as NaK versus 6 for EMSL-Libby, and EMSL-Libby reported 38 spectra as XX versus 4 for Hygeia. The high incidence of XX reported by EMSL-Libby could be associated with both the length of time EDS spectra are collected and the technique used to collect them. Based on the results of the most recent inter-laboratory studies, additional retraining for EMSL-Libby is recommended.

Conclusions and Recommendations

Each of the quality issues described in this technical memo can be attributed to a failure to follow laboratory-specific requirements and/or a failure to follow project-specific requirements.

Examples of the laboratory's failure to follow their own written procedures include the damaged re-preparation grids associated with the 2010 and 2011 TEM inter-laboratory studies and the possible misidentification of OU3 water samples. Concerning the damaged inter-laboratory re-preparation, insufficient ashing, carbon coating, and packaging were identified as possible causes for the high frequency of damaged GOs. As for the possible misidentification of OU3 water samples, samples were not labeled with a unique laboratory identification number as described in their sample login SOP, which could have resulted in the identified sample mix-ups.

Examples of the laboratory's failure to follow project-specific requirements include not assigning quality analyses at the frequencies described in the applicable analytical summaries, not preparing the FBAS samples in accordance with the Rock Flour Preparation procedure, not having a clear understanding of the difference between the standard and rapid TAT TEM procedures, and a flawed interpretation of TEM spectra.

Insufficient Quality Assurance/Quality Control (QA/QC) oversight at the laboratory management level is a likely root cause for most of the issues observed.

For future OU3 investigations, the following recommendations are suggested:

- Ensure that the SAP/QAPPs for 2014 water sampling at OU3 include a 20% re-preparation requirement (from raw water) by EMSL-Cinnaminson.
- Ensure that a copy of the analytical summary sheet is included with all submitted chain-of-custody forms.
- Ensure that all analysts have access to the appropriate eRooms and are familiar with any site-specific methods and procedures prior to analysis.

Additionally, EPA's laboratory support contractor, Tech Law, Inc., is tasked with providing continuing re-training of all TEM analysts in the EMSL-Libby laboratory and developing a training procedure for all TEM Libby laboratories to minimize potential between-laboratory differences in LA structure reporting for future TEM analyses.

TABLE 1
LIBBY OU3: 2012 PHASE V, SURFACE WATER RE-ANALYSIS RESULTS
REPREPARATION RESULT COMPARISON

Investigation	Repreparation Type	Index ID	Original Analysis (2012)				Repreparation Analysis (Jul/Aug 2013, EMSL-Cinnaminson)				Poisson Rate Comparison (90% CI)
			Laboratory	Total LA Structures	Sensitivity (1/L)	Total LA Conc (MFL)	Laboratory	Total LA Structures	Sensitivity (1/L)	Total LA Conc (MFL)	
2012 Phase V Part A Surface Water	Raw water	P5-10005	EMSL27	2	3.3E+05	**0.7**	EMSL04	0	1.3E+06	**0**	[0-13.62] The rates are not different
	Raw water	P5-10006	EMSL27	121	3.5E+06	**419**	EMSL04	39	1.2E+07	**473**	[0.65-1.23] The rates are not different
	Raw water	P5-10011	EMSL27	0	1.6E+05	**0**	EMSL04	0	6.4E+05	**0**	Both counts are 0; the rates are not different
	Raw water	P5-10012	EMSL27	27	1.5E+06	**42**	EMSL04	25	1.9E+06	**47**	[0.54-1.46] The rates are not different
	Raw water	**P5-10014**	**EMSL27**	**25**	**9.2E+05**	**23**	**EMSL04**	**0**	**2.6E+04**	**0**	**[0-0] Rate 1 is greater than Rate 2**
	Filter	**P5-10015**	**EMSL27**	**26**	**2.3E+06**	**60**	**EMSL04**	**0**	**1.8E+05**	**0**	**[0-0.01] Rate 1 is greater than Rate 2**
	Raw water	**P5-10017**	**EMSL27**	**25**	**2.3E+06**	**58**	**EMSL04**	**1**	**6.4E+05**	**0.6**	**[17.65-1828.91] Rate 1 is greater than Rate 2**
	Raw water	**P5-10018**	**EMSL27**	**25**	**1.4E+06**	**35**	**EMSL04**	**0**	**6.4E+05**	**0**	**[0-0.06] Rate 1 is greater than Rate 2**
	Raw water	P5-10025	EMSL27	27	2.8E+06	**75**	EMSL04	26	1.9E+06	**51**	[0.91-2.42] The rates are not different
	Raw water	P5-10033	EMSL22	1	4.9E+04	**0.05**	EMSL04	3	2.8E+04	**0.09**	[0.02-5.24] The rates are not different
	Raw water	P5-10034	EMSL22	121	2.8E+05	**33**	EMSL04	114	2.7E+05	**31**	[0.87-1.36] The rates are not different
	Raw water	P5-10053	EMSL04	0	5.0E+04	**0**	EMSL04	1	2.1E+04	**0.02**	[0-44.2] The rates are not different
	Raw water	P5-10056	EMSL04	66	2.5E+05	**16**	EMSL04	84	2.4E+05	**20**	[0.6-1.05] The rates are not different
2012 Phase V Part B Eyed Egg Surface Water	Raw water	P5-20002	EMSL27	58	6.9E+05	**40**	EMSL04	26	1.6E+06	**42**	[0.63-1.46] The rates are not different
	Raw water	P5-20006	EMSL27	33	6.9E+05	**23**	EMSL04	26	8.1E+05	**21**	[0.68-1.74] The rates are not different
	Raw water	P5-20011	EMSL27	25	7.9E+04	**2**	EMSL04	25	2.6E+05	**7**	[0.18-0.5] Rate 1 is less than Rate 2
2012 Phase V Part B Fry Surface Water	Raw water	P5-20016	EMSL04	46	8.2E+05	**38**	EMSL04	60	8.2E+05	**49**	[0.54-1.08] The rates are not different
	Filter	P5-20018	EMSL04	0	8.5E+04	**0**	EMSL04	0	8.6E+04	**0**	Both counts are 0; the rates are not different
	Raw water	P5-20021	EMSL04	26	5.0E+05	**13**	EMSL04	25	5.5E+05	**14**	[0.58-1.58] The rates are not different
	Raw water	**P5-20027**	**EMSL04**	**25**	**6.7E+04**	**2**	**EMSL04**	**60**	**2.4E+06**	**146**	**[0.01-0.02] Rate 1 is less than Rate 2**
	Raw water	P5-20031	EMSL04	41	2.5E+05	**10**	EMSL04	73	2.4E+05	**18**	[0.4-0.79] Rate 1 is less than Rate 2
	Raw water	P5-20042	EMSL22	34	1.0E+06	**34**	EMSL04	39	9.7E+05	**38**	[0.59-1.35] The rates are not different
	Raw water	P5-20045	EMSL27	2	5.2E+04	**0.1**	EMSL04	3	5.1E+04	**0.2**	[0.08-4.34] The rates are not different
	Raw water	P5-20069	EMSL27	79	2.8E+05	**22**	EMSL04	42	9.7E+05	**41**	[0.39-0.75] Rate 1 is less than Rate 2
	Raw water	P5-20081	EMSL27	25	3.5E+05	**9**	EMSL04	31	7.8E+05	**24**	[0.22-0.58] Rate 1 is less than Rate 2

All filters pass the CHISQ test for filter loading evenness.

Original Analysis > Repreparation Analysis
Original Analysis < Repreparation Analysis

Notes:
LA - Libby amphibole
-- = result not available
L = liter
MFL - million fibers per liter
% = percent
CI = confidence interval
TEM = transmission electron microscopy

Repreparation analysis confirms suspected filter mix-up at the laboratory during the original analysis.
Repreparation analysis indicates potential filter mix-up at the laboratory during the original analysis.

TABLE 2
LIBBY OU3: PHASE V PART B, 2013 EYED EGG STUDY, WATER SAMPLING RESULTS
REPREPARATION RESULT COMPARISON

Repreparation Type	Media Type	Index ID	Original Analysis (EMSL-Libby)			Repreparation Analysis (EMSL - Cinnaminson)			Poisson Rate Comparison (90% CI)
			Total LA Structures	Sensitivity (1/L)	Total LA Conc (MFL)	Total LA Structures	Sensitivity (1/L)	Total LA Conc (MFL)	
Reprep from filter	Surface Water	P5-20290	27	1.4E+06	**38**	25	9.8E+05	**25**	[0.96-2.57] The rates are not different
	Surface Water	P5-20294	27	1.2E+06	**34**	25	8.9E+05	**22**	[0.92-2.48] The rates are not different
	Pore Water	P5-20299	28	2.5E+06	**70**	50	2.5E+06	**123**	[0.37-0.86] Rate 1 is less than Rate 2
	Surface Water	P5-20300	0	1.2E+05	**0**	6	1.3E+05	**0.8**	[0-0.59] Rate 1 is less than Rate 2
	Surface Water	P5-20309	26	1.3E+06	**35**	25	2.5E+06	**61**	[0.34-0.93] Rate 1 is less than Rate 2
	Pore Water	P5-20336	1	8.3E+04	**0.08**	2	8.6E+04	**0.2**	[0.02-6.16] The rates are not different
	Pore Water	P5-20324	27	1.3E+06	**36**	37	1.3E+06	**48**	[0.47-1.16] The rates are not different
	Surface Water	**P5-20325**	**26**	**1.7E+06**	**43**	**25**	**1.1E+05**	**2.6**	**[9.93-27.01] Rate 1 is greater than Rate 2**
	Pore Water	**P5-20326**	**0**	**7.8E+04**	**0**	**33**	**1.6E+06**	**54**	**[0-0] Rate 1 is less than Rate 2**
						46	**1.6E+06**	**75**	**[0-0] Rate 1 is less than Rate 2 ****
	Surface Water	P5-20331	25	3.7E+05	**9**	25	6.5E+05	**16**	[0.34-0.94] Rate 1 is less than Rate 2
Reprep from water	Pore Water	P5-20338	34	1.7E+06	**56**	32	1.3E+06	**41**	[0.88-2.11] The rates are not different
	Surface Water	P5-20341	25	2.4E+05	**6**	25	2.5E+05	**6**	[0.57-1.58] The rates are not different
	Pore Water	P5-20348	30	1.7E+06	**50**	32	9.2E+05	**30**	[1.07-2.64] Rate 1 is greater than Rate 2
	Surface Water	P5-20356	25	7.1E+05	**18**	31	1.1E+06	**33**	[0.33-0.86] Rate 1 is less than Rate 2
	Pore Water	P5-20352	0	8.3E+04	**0**	3	8.5E+04	**0.3**	[0-1.67] The rates are not different
	Pore Water	P5-20363	0	1.3E+05	**0**	0	1.3E+05	**0**	Both counts are 0; the rates are not different
	Surface Water	P5-20369	0	1.2E+05	**0**	0	1.3E+05	**0**	Both counts are 0; the rates are not different

All filters pass the CHISQ test for filter loading evenness.

Original Analysis > Repreparation Analysis
Original Analysis < Repreparation Analysis

Notes:
LA - Libby amphibole
-- = result not available
L = liter
MFL - million fibers per liter
% = percent
CI = confidence interval
TEM = transmission electron microscopy

These samples were selected for repreparation analysis by EMSL-Cinnaminson because it was suspected that the paired pore water and surface water results were mixed up by EMSL-Libby. The filter repreparation results confirm that the results were reported incorrectly by EMSL-Libby.

**EMSL-Cinnaminson performed a second repreparation for this filter which confirmed the first repreparation.

ATTACHMENT 1

September 4, 2013

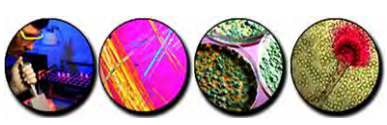
Mr. Douglas Kent
TechLaw/ESAT Region 8
16194 West 45th Drive
Golden, CO 80403

Dear Mr. Kent,

EMSL has been investigating the source of the discordance in the OU3 water analyses completed at our Libby laboratory. As per our August 05, 2013 email to you, our initial investigation primarily focused on misidentification of fibers during the rapid analysis. Through re-examination of original grid preparations, original filters and the raw water, we have confirmed that the majority of fibers counted on the rapid analysis and reported as Libby Amphibole were not Libby amphibole. The QC analyses completed in Cinnaminson, showed structures meeting project defined fibrous aspect ratios, however not all of these fibers were Libby Amphibole. The majority of the fibers present were biogenic silica (fibrous pieces of diatom frustules), potassium aluminum silicates and titanium. When the samples were subjected to the full analysis these non-asbestos fibers were not considered close call NAMs and therefore were not documented on the full analysis bench sheets. This explains the very large discrepancy of fibers reported on the rapid versus full analysis reports.

Below is a summary of the findings of our investigation:

1. Mis-communication and/or misunderstanding of counting rules on rapid analysis led to any and all fibrous particles being counted. The rapid analysis is not a published method and in addition, for various reasons (both internal and external) neither the SOP nor even the SAP were available to the analyst at the time of analysis. The analysts were following the lab manager's verbal instructions to analyze these samples as simple fiber counts much like a PCM analysis.
2. Sample preparation issues including sample mix ups were exacerbated from constant starting and stopping of sample batches due to re-prioritizing by the EPA mid batch.
(P5-10013, P5-10014, P5-20325 and P5-20326)
3. Documentation issues such as SAP summaries not being provided with COC, as well as not including a SAP reference prevented the lab from referencing and printing out the governing SAP summary.
4. There was inconsistent documentation of Grid box identification and locations.
5. There were several instances of non-asbestos being called WRTA Na/K even though little or no Na or K was present due to inadequate EDXA collection times.
6. An investigation was initiated but not fully completed by the previous Laboratory Manager (RKM) back in Jan-Feb 2013 after re-analysis showed non-reproducible results for samples analyzed by the rapid turn analysis. The manager stopped the investigation once concordance was shown between the full analyses but before determining the root cause of the rapid analysis discordance.



Details of the investigation:
On January 16th 2013 Lynn Woodbury emailed Ronald Mahoney questioning the results of the samples listed in the following table. Ron began the process of investigating the source of the discordances by having the samples in question re-prepared and re-analyzed.

EMSL Sample ID	Cust Sample ID	Rapid Total LA (MFL)	Std (Full) Total LA (MFL)	Rapid QC Analysis (Jan-Feb)	Std (Full) QC Analysis (Jan-Feb)
271200151	P5-10002	0.92	0	0	0
271200151	P5-10004	3.7	0	0	0
271200196	P5-10008	62	0	0	0
271200196	P5-10010	97	0	0	0
271200241	P5-10013	40	0	0	0
271200353	P5-10059	2.95	0	0	1 FIBER
271200353	P5-10061	1.29	0	0	0
271200393	P5-10065	0.18	0	0	0
271200427	PF-10072	1.66	0	0	0

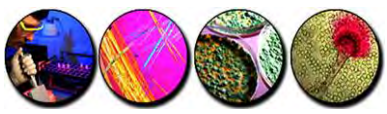
The QC analyses confirmed the full analysis results and therefore Ron concluded his investigation. On February 19th 2013 he sent an email suggesting that rapid analysis results be disregarded in favor of the full analyses. The correspondence also presented the fact that during the time of the original analysis, the lab was overcapacity and overtaxed with multiple conflicting priorities that changed daily.

In order to investigate all possible causes of discordance, two samples (P5-10015 and P5-10008) were filtered down and the empty sample bottles were sent to our Materials Science division. SEM analysis was performed to determine if an unusually high static charge and the combination of long term storage at ambient temperature in a HDPE bottle might result in large numbers of fibers attaching to the inside walls of the container and therefore not be captured by subsequent filtration. The results of this investigation showed no fibers adhering to the bottle.

During the EPA audit in Libby, (Mike Lenkauskas, Christina Progess, Robyn Denton and Roy Pescador) conducted a review of the processes and issues surrounding OU3 samples. After this audit in Libby, all materials for the samples in question (raw water, filters, slide preparations, paperwork and grid boxes) were transferred, under chain of custody, to EMSL's corporate headquarters where the investigation continued.

The investigation and re-analysis focused primarily on the original rapid analysis grids and filters. For many samples, the carbon replica was torn and prevented the complete re-analysis of the same grid opening. The intact grid openings from the original rapid analysis showed structures meeting project defined fibrous aspect ratios but were not Libby Amphibole.

In compiling the re-analysis data of the samples in question it became apparent that the majority of the samples were analyzed by the same analysts. An inquiry was made to determine how the non-asbestos came to be included in the Libby Amphibole concentration. The analysts explained that it was their understanding that rapid turn waters were to be analyzed "like PCM's" (no chemistry on the structures present) as per the direction of their lab manager. This



instruction was only for the rapid samples and the standard full analysis was conducted with identification. No SAP was provided with these sample sets and at the time of the analysis the analysts did not have access to the e-room to obtain the SAP or SOP on their own. This is the primary source of the discordance for the rapid analysis.

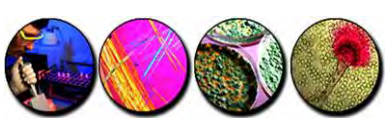
The full analyses investigations suggest that:

- samples P5-10013 and P5-10014 were analyzed from the incorrect multiple specimen holder.
- samples P5-20325 and P5-20326 were prepared from the wrong filter section on the slide. This error likely caused sample P5-20324 to not have been analyzed.
- samples P5-10015, P5-10025, P5-10013, P5-10017 and P5-10018 misidentification for Libby Amphibole were made. In speaking with the analyst it was determined that she did not collect the EDXA spectrum long enough to make a positive identification.

These errors were aggravated by inconsistencies with documentation on slides, grid boxes and benchsheets. During this entire period the lab was overcapacity and overtaxed with multiple conflicting priorities that changed hourly.

In response to these findings, EMSL Analytical, Inc. has initiated the following corrective actions:

- Though there have been numerous “Libby lab calls” discussing the need for appropriate SAPs to be included with the sample set this was not happening in all cases. In many cases even the reference to the governing SAP was not documented on the COC which would have enabled the lab to print out a copy of the governing SAP themselves. Going forward all EMSL Libby staff have been instructed to determine (through TechLaw if not included on the COC) the appropriate SAP reference PRIOR to sample log in.
- Once the appropriate SAP has been determined it will be printed out and included with the sample set will be initialed by every prep person and analyst who works on that order.
- OU3 work will be tallied for QC separately from site wide samples.
- If rapid analyses are performed in the future they will be represented in the QC analyses
- EMSL will provide additional training to JoMay and Roy on rapid analysis (SOP, SAP and QAPP). Training will be documented a completed and signed training record
- EMSL will provide additional training of JoMay on proper spectrum acquisition.
- Provide training to all staff on proper documentation, sample/slide/grid box labeling, how to handle re-prepared samples, etc. to avoid any chance for sample mix ups.
- Implement procedures that increase reproducibility and traceability of sample preps to the existing prep logs (add preparation dates to slides, sample dishes and grid box preps)
- Additional and on-going external surveillance of EMSL’s Libby lab
    - Blind QC analysis should be done by third party (Cinnaminson) until a point defined by VP of Asbestos
    - Increased site visits from EMSL corporate



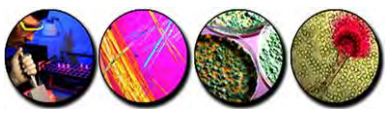
To date the issues discovered appear to be post filtration therefore, if re-analysis is required and no raw water remains, the filter appears viable. We sincerely apologize for any issues stemming from these discordances. We would like to assure you that every effort has been made to identify the root causes of these issues and that we are implementing corrective actions to prevent any future re-occurrences of this kind.

Sincerely,
EMSL Analytical, Inc.



Robert J. DeMalo, M.Sc.
Senior Vice President, Laboratory Services & Business Development

cc: Mark McDaniel, TechLaw/ESAT Region 8
Ed Cahill, EMSL
Robyn Denton, EMSL
Charles LaCerra, EMSL
Roy Pescador, EMSL



ATTACHMENT 2

Environmental Services Assistance Team
February 7, 2014

EMSL/Libby LA Structure Classification Deliberative Report

Prepared by:



TechLaw, Inc.
ESAT Region VIII
16194 West 45th Drive
Golden, CO 80403

Prepared For: USEPA Region 8
Contract Number: EP-W-13-028
TDF: L-004
Document Control Number: EP8-1-1048

Introduction

On September 25 and 26, 2013, two senior ESAT microscopy staff members visited the EMSL Analytical, Inc. laboratory in Libby, Montana to provide mentoring in TEM identification of Libby Amphibole and pyroxenes, and to investigate discrepancies in NaK codes recorded by EMSL/Libby. Robyn Denton, Laboratory Manager from EMSL/Cinnaminson, was also present.

Libby Amphibole shows a wide range of compositions and consists primarily of the minerals winchite, richterite, tremolite, and possibly actinolite (Meeker et al, 2003). Pyroxenes are a group of minerals that are similar to amphiboles in composition and structure. Pyroxenes occur naturally in the Libby Valley and are problematic from an analytical perspective because they can be confused with tremolite and actinolite when examined by TEM (Bern et al, 2002).

Presence or absence of sodium and potassium in LA structures is of interest because the majority of Libby Amphibole from the mine contains those elements in quantities that can be detected by EDS (Energy Dispersive Spectrometry) during routine TEM analysis. For all TEM investigative analyses, Libby Lab Modification Form LB-000066E requires labs to record presence or absence of sodium and potassium in LA structures according to the following codes:

Code	Meaning
NaK	Both Na and K are clearly present
NaX	Only Na is clearly present
XK	Only K is clearly present
XX	Neither Na nor K are clearly present

TEM Examination of Reference Materials

ESAT was not convinced that EMSL/Libby had sufficient reference spectra available that showed the range of compositions expected for Libby Amphibole. That is because on April 8, 2010 ESAT conducted an audit of EMSL/Libby and during this audit few reference spectra were readily available at the TEM bench for comparison to spectra from field samples. ESAT performed the audit because they were appointed to be OU4/OU7 sample broker on April 1, 2010.

ESAT keeps a stock of grids of asbestos standards and asbestos look-alikes at the Region 8 Lab, which serve as reference materials to establish traceability to known standards. Two boxes of these grids were loaned to EMSL/Libby and contain grid preparations of the following minerals:

1) NIST (National Institutes of Standards and Technology) SRM (Standard Reference Material) 1867 Tremolite, which is "XX" for sodium and potassium content.
2) NIST SRM 1867 actinolite, which is also "XX" for sodium and potassium content.
3) The Dirty 30, also known as the Six-Mix, LA2000 Composite, and Libby Starting Material, which is a composite of six of the 30 LA samples collected from the mine for Meeker et al's 2003 Rainy Creek study (see references). The samples mixed to create the Dirty 30 were selected to show the wide range of compositions of LA from the mine. Most of the structures in the Dirty 30 are NaK, but it also contains some NaX, XK, and even a few XX structures.
4) Diopside, a common pyroxene, from Herschel, Ontario. This sample is particularly instructive because some structures from it are almost identical to the SRM 1867 actinolite in composition. It is XX for sodium and potassium content.
5) Augite, another common pyroxene, from Harcourt Township, Ontario. Most of the structures from it are XX's.

During the trip, EMSL and ESAT staff examined the above grids in one of the TEM's there and discussed the morphology, EDS composition, and diffraction characteristics of the minerals. EMSL/Libby already has prepared grids of several of the LA samples from USGS's Rainy Creek study. Upon ESAT's arrival,

EMSL/Libby had collected 40 EDS spectra of this LA from the mine. ESAT reviewed the spectra and determined that they were representative of the wide range of compositions expected of LA from the mine. Those spectra are now kept in a 3-ring binder available in the TEM room for reference so analysts can refer to them in real time while analyzing Project samples. Representative spectra were collected from ESAT's grids for the minerals listed above and printed out and added to the binder. ESAT is now satisfied that EMSL/Libby has a sufficient library of reference spectra to establish traceability to known standards. ESAT left a bulk sample of the Ontario diopside with EMSL/Libby for them to prepare their own grids from.

Pyroxenes are sometimes observed in Libby Project samples and can be easily confused with tremolite/actinolite. Most, but not all, pyroxenes are "XX" for NaK content. Compositionally and structurally, they can sometimes be almost undistinguishable from tremolite/actinolite. When that occurs, detailed diffraction studies may be the only reliable means to differentiate them, but pyroxenes typically show slightly to somewhat higher Al and Ca content than tremolite/actinolite does. Because it is not realistic to turn every close-call structure into a research project in a production setting, pyroxenes add an unavoidable element of uncertainty to any and all Libby Project TEM analyses. However, quantitative EDS can differentiate many pyroxenes structures from tremolite/actinolite when cation ratios are reported by apfu (atoms per formula unit). Two examples of this approach are provided in the attachments. Unfortunately, the state-of-the-art EDS systems that support this functionality are expensive and not widely used at Libby Project labs.

Historic NaK Recording by EMSL/Libby

The intent of Libby Lab Modification Form LB-66 is to gather additional mineralogical information for LA and close-call NAM (Non-Asbestos Mineral) structures found in Libby TEM investigative samples. LB-66 has been in effect since 2007. As previously mentioned, most LA from the mine contains detectable sodium and/or potassium. However, tremolite and actinolite that may occur naturally in the country rocks[1] in the Libby Valley is expected to be predominantly XX for sodium and potassium content. Tremolite/actinolite from commercial products (such as potting soil or vermiculite originating from sites other than Libby) may also be predominantly XX. Hence, when NaK data is mined for a large number of structures for a given sampling scenario, trends in NaK data may give an indication of approximately how much of the LA originated from the mine.

During the trip, ESAT discussed with EMSL the difficulties that EMSL/Libby's NaK recording practices has caused data users. CDM Smith (personal communication, 2013) has reported that nearly all LA structures found by ESML/Libby have been recorded as NaK WRTA (Winchite/Richterite/Tremolite/Acinolite) and ESAT needed to know why. ESAT explained to EMSL that there are apparently two camps of how structures are recorded for the Project. EMSL/Cinnaminson, EMSL/Beltsville, EMSL/New York, EMSL/Denver, ESAT, Reservoirs, and Hygeia have recorded XX, XK, and NaX structures with some degree of regularity, whereas EMSL/Libby is the only lab that has recorded very few non-NaK structures over the history of the Project. This has caused concern to the data users, especially for the Background Study (because XX structures from the country rocks may contribute to the background) and Flowerbed Study (because commercial potting soils available from local and regional hardware stores were included in the study).

ESAT was concerned that EMSL/Libby was automatically recording "NaK WRTA" for every LA structure just so those fields would be populated in the EDD's. However, during the trip it became apparent that this is not the case. LB-66 states that Na and K should be recorded if they are "clearly present." EMSL/Libby interpreted "clearly present" to mean that the software of the TEM's EDS system found those elements in any amount above the background noise that is inherent in any EDS spectrum. Unfortunately, EDS software will determine that an element is present when the concentration of that element is considerably less than the amount needed to produce a distinct peak that is apparent upon visual examination of a

[1] "Country rocks" is a geological term that refers to the rocks in a region that are not the ones of primary interest. In this case country rocks are the typical rocks found around Libby and Troy.

spectrum. Nearly every tremolite/actinolite structure that occurs in nature contains trace amounts of sodium and potassium. Hence, nearly every tremolite/actinolite structure seen at EMSL/Libby was classified as NaK, because that's what the EDS software saw, regardless of whether or not Na and/or K peaks were visually observable in the spectrum. Provided on page 12 is an example spectrum from an LA structure that was classified by EMSL/Libby as NaK WRTA even though distinct sodium and potassium peaks are not visually apparent.

ESAT avoids this problem by utilizing a function called thresholding in the software of the EDS system at the Region 8 Lab. The thresholding function allows the user to specify the degree of statistical confidence the EDS software must have that a peak is present before it will indicate that the element is there. ESAT set the limit very tightly, so that the EDS system will report that an element is present only if the software finds a very high probability that the peak is real. ESAT set the thresholding value so tightly that visual examination of a spectrum returns the same answer of whether or not an element is present as the EDS software will. According to EMSL, the EDS systems at EMSL/Libby do not support the thresholding function.

ESAT emphasized to EMSL how important it is that all four EMSL Libby Project labs (Cinnaminson, New York, Libby, and Denver) record NaK data in the same manner. And EMSL/Libby must follow the **intent** of LB-66, which is to create a database that can be queried so that trends in NaK data can be found for the various SAP's (Ambient Air, Background, Flowerbed, etc.). Based on the above, EMSL informed ESAT that EMSL/Libby will, from this point forward, record Na or K for a structure only if a distinct peak is apparent upon visual examination of a spectrum, which has always been the practice at EMSL's Cinnaminson, New York, and Denver labs.

Does EMSL/Libby Let EDS Spectra Run Long Enough?

As a general rule, the quality of an EDS spectrum is improved when it runs for a longer time period (e.g. one or two minutes), because more X-ray events are counted when the spectrum acquisition time is longer. Ideally, the silicon peak should have a height of at least 1,000 counts for Libby Project samples. During the visit, ESAT was unable to find any evidence that EMSL/Libby stops spectrum acquisition too fast, which would make small peaks hard to see. However, recent discussions have found that there is room for improvement at EMSL/Libby and other Project Labs, so this item will be addressed in greater detail during the 2013 TEM Inter-Lab Study and future Libby Lab Calls.

EMSL/Libby Doesn't Record Enough NAM's

Samples FB-00026 and FB-00027 are soil samples for the Flowerbed Study that were processed by FBAS (Fluidized Bed Asbestos Segregator) in triplicate. The resulting filters were sent to Hygeia, ESAT, and EMSL/Libby. ESAT revealed to EMSL the results from the other two labs. Hygeia and ESAT found some LA structures in those samples (mostly XX's but also a few NaK's) and some NAM's, but EMSL/Libby found no structures at all in either FB-00026 or FB-00027. CDM Smith (personal communication, 2013) indicated to ESAT that EMSL/Libby records NAM's at a frequency much lower than the other Project labs do. ESAT emphasized to EMSL/Libby that not recording close-call NAM's also defeats the intent of LB-66. Although NAM’s are not an analyte of interest, recording close-call NAM’s helps data users to look for trends or potential analytical problems when comparing results from different labs.

In this particular case recording of NAM’s by EMSL/Libby could have helped to tell if a sampling error occurred during the FBAS run of their replicate, which could have produced a ND result even if the actual TEM analysis was completely accurate. If EMSL/Libby had seen structures in FB-00026 and FB-00027 and recorded them as NAM’s, that could have indicated a problem in structure classification at any of the three labs that analyzed replicates of those two samples. Because EMSL/Libby has a history of not recording close-call NAM's, and did not record any structures in either FB-00026 or FB-00027, it is impossible to determine if a sampling error occurred at the Troy Prep Lab when EMSL's replicates of those samples were ran by FBAS. A sampling error at the Troy Prep Lab could explain EMSL/Libby’s ND results,

but the scenario that EMSL/Libby saw structures but classified them as NAM's and did not record them also fits the data. Therefore, we do not know if defective filters were shipped to EMSL/Libby for samples FB-00026 and FB-00027. EMSL/Libby's practice of not recording NAM's has negatively impacted the Libby data set, and this is just one example.

EMSL responded by indicating that, from now on, its Libby Lab will record close-call NAM's like the other EMSL's do. ESAT re-iterated to EMSL that the only NAM's that should be recorded are close calls such as pyroxenes, not structures that are clearly not LA such as biotite, vermiculite, gypsum, etc.

Is EMSL/Libby Undercounting Tremolite/Actinolite?

ESAT suspected that EMSL/Libby was recording only the NaK WRTA structures that match the typical NaK composition of most LA from the mine, and discounting other LA structures, especially XX tremolite and actinolite. That would explain the high rate of NaK structures reported by EMSL/Libby. ESAT suspected that EMSL/Libby was being overly cautious in its counting, and discounted many legitimate XX TR and AC structures because of fear of the positive bias that would be introduced by recording a pyroxene as a false positive. However, ESAT showed EMSL Hygeia's analysis of FB-00014, where Hygeia found 19 XX TR structures and no NaK's in their replicate. EMSL/Libby found 11 LA structures in their replicate of FB-00014, all of which they classified as NaK WRTA. ESAT and EMSL staff reviewed the three spectra that EMSL/Libby had saved for FB-00014 (one is on page 10) and determined that they should have been recorded as XX's. That means EMSL/Libby has counted at least some XX tremolite/actinolite structures, even if they have previously recorded them as NaK.

EMSL/Libby indicated to ESAT that they have historically applied a narrower range of allowable composition to what they are calling LA than the other EMSL's, but ESAT saw that all analysts at EMSL/Libby have a good mineralogical understanding of tremolite and actinolite. EMSL/Cinnaminson is retraining EMSL/Libby staff so that all four EMSL's apply the same range of allowable compositions to structures for the purposes of calling a structure LA or not.

Corrective Actions Performed by EMSL

On October 29, 2013, EMSL provided a corrective action report that documented the following actions:

1) All EMSL/Libby analysts assigned NaK codes to 30 spectra of LA from the mine and 10 spectra of NIST tremolite, both before and after training. EMSL provided results in a tabular format and many more structures were recorded as XX, NaX, and XK after the training.
2) EMSL/Libby indexed 3 diffraction patterns of NIST SRM 1867 actinolite as a training exercise. Results were provided in the report along with EDS spectra from the 3 structures that had their diffraction patterns indexed.
3) EMSL/Libby indexed 3 diffraction patterns of diopside from the bulk sample provided by ESAT. Results were provided in the report along with EDS spectra for the 3 structures that had their diffraction patterns indexed.
4) Seven intra-EMSL inter-lab analyses.
5) A training record for Robyn Denton's week-long visit to EMSL/Libby at the end of September 2013.

ESAT forwarded this corrective action report to EPA, QATS, and CDM Smith on October 30, 2013.

EMSL/Libby re-prepped and analyzed FB-00014. This time they found 9 LA structures, all of which they classified as XX AT (Actinolite/Tremolite). In the original analysis they had found 11 LA structures all of which they classified as NaK WRTA. The Libby Data Management Group rejected EMSL/Libby's original analysis of FB-00014 and replaced it with the re-prep result in the database.

A small inter-laboratory study was conducted for 5 samples after the training and corrective actions described above were complete. On four of the samples the inter-lab exchange was from Hygeia to

EMSL/Libby and on the fifth sample the inter-lab exchange was from EMSL/Libby to Reservoirs. QATS summarized the results of these inter-labs in a Technical Memorandum on January 27, 2014 and ESAT forwarded the memo onto EMSL.

Are EMSL/Libby's Flowerbed Analyses Biased Low?

The Fluidized Bed Asbestos Segregator (FBAS) frees aerosolizeable particles from a soil sample and deposits them onto a filter so the asbestos structures can be counted and classified during TEM analysis. Recently, the FBAS method was applied to various samples of soil collected from flowerbeds in Libby and Troy, as well as commercially-available potting soil and vermiculite that may be used in flowerbeds. Each sample was processed by FBAS in triplicate and the resulting filters were sent to separate labs, so there will be three separate analyses for each sample. Preliminary findings indicate that EMSL/Libby may have counted low on their flowerbed samples.

As a general rule ESAT does not look at analytical data from non-ESAT labs. That is because ESAT's responsibility is to broker the analyses out, explain analytical requirements to the labs, and load the EDD's into the database. The only reason ESAT opens the EDD's is to check the number of grid openings analyzed for invoice review purposes and to spot-check that stopping rules are being followed properly when a new SAP is implemented. ESAT was unaware that some of EMSL/Libby's Flowerbed analyses may be biased low until CDM Smith (personal communication, 2013) notified ESAT that some of EMSL/Libby's flowerbed results are considerably lower than the results from other labs.

The flowerbed samples in the next table have been analyzed and reported by ESAT. Since ESAT has access to the EDD's, ESAT opened the EDD's from other labs to see how results compare (after results were submitted, to preserve the ESAT's "blindedness" to the other labs' results when analyses were still underway).

Sample Number	Hygeia LA Structure Count	ESATR8 LA Structure Count	EMSL/Libby Structure Count	Hygeia Percent Loading on Analyzed Filter	ESATR8 Percent Loading on Analyzed Filter	EMSL/Libby Percent Loading on Analyzed Filter
FB-00001	8	4	0	20%	15%	4%
FB-00002	10	5	0	25%	10%	10%
FB-00003	51	50	50	20%	10%	3%
FB-00004	51	50	50	25%	15%	10%
FB-00005	7	4	0	25%	20%	6%
FB-00007	1	22	0	10%	15%	2%
FB-00008	18	19	0	15%	15%	2%
FB-00009	50	50	2	15%	10%	10%
FB-00010	18	36	2	10%	20%	4%
FB-00011	1	2	0	15%	10%	8%
FB-00014	18	4	9	15%	10%	6%
FB-00026	11	2	0	20%	10%	15%
FB-00027	18	5	0	25%	10%	15%

In ESAT's experience at least 80% of all LA structures found in Libby Project samples are easily classified as NaK or NaX WRTA's with no real potential for confusion or mis-classification by a trained TEM analyst. Less than 20% of structures require serious head-scratching or debate with other analysts to determine classification as LA or not LA. Hence, ESAT does not believe that mis-identification of structures can be a large contributing factor to apparent low bias of LA structure counts in EMSL/Libby's flowerbed analyses.

All of the samples in the above table were prepped by Rock Flour Prep at all three labs. The Rock Flour Prep method is described in Libby Lab Modification Form LB-000091 and was developed by ESAT in the

spring of 2011 in response to the extremely low rate of detections in the 2010 Libby Background Study. During that early background study, filters were loaded by FBAS and shipped to labs for direct preparation. However, repeated instances of under- and overloaded filters necessitated the costly and time consuming practice of re-running filters and re-sending them to labs until a properly-loaded filter (10% to 25%) was achieved. Region 10 avoids the problem by having their own on-site PCM lab where filters can be evaluated for loading rapidly. However, that approach is impracticable at the Troy Prep Lab because the nearest PCM lab is at EMSL/Libby and every Libby Project sample needs a Scribe-generated COC to ship, so multiple COC's must be generated for repeated sample shipments which is time consuming. The Rock Flour Prep method involves running 5 grams of soil by FBAS, so the resulting filter is never under-loaded. Previously, 1 to 3 grams of soil was used per FBAS run. Now the filters ship only once. If the lab finds the filter is overloaded or has loose debris (which is the case for all but the coarsest soils), preparation proceeds by Rock Flour Prep, which is the indirect-ashed approach where the aqueous suspension is allowed to settle for 3 hours prior to filtration to remove the coarsest silicate mineral grains. That results in more particles of interest (silicate grains < 3 microns in diameter, which includes almost all asbestos) on the area of filter viewed during TEM analysis and a higher rate of detections when the asbestos content of the original soil sample is very low. Since all of the samples in the above table were analyzed by Rock Flour Prep at all three labs, the analyzed filters for those samples were the secondary filters generated at the labs, not the primary filters.

ESAT knows that EMSL/Libby's inter-lab analyses with ESAT are fundamentally sound because high rates of concordance for LA structure counts occur at both labs. Unfortunately, inter-lab exchanges only evaluate variability that originates from TEM analysis and not the prep. Variability in reported LA structure concentration between different preps of the same sample is typically evaluated by the Poisson comparison test because it is generally believed that deposition of fibers onto a filter approximates a Poisson distribution[2]. ESAT only performs the Poisson comparison test on re-preps performed internally; it is not appropriate for ESAT to evaluate data from other labs because ESAT is part of the Analytical Group. However, a quick glance at the table above indicates that EMSL/Libby's preps for the Flowerbed samples are often more lightly loaded than preps from other labs and structure concentrations reported by EMSL/Libby are often lower too. No statistical treatment has been applied to the above table and results have not been verified. Results that obviously look discordant are highlighted in yellow.
ESAT hypothesizes that EMSL/Libby may have had difficulty properly implementing the Rock Flour Prep method which may have under-loaded their filters and affected their results for the Flowerbed Study, even if the actual TEM examination itself was fundamentally sound. Unfortunately, ESAT did not investigate this possibility during the trip because ESAT did not become aware of the magnitude of possible under-counting by EMSL/Libby on FBAS samples until afterwards.

Can Historic NaK Data Be Fixed?

EPA proposed that some or all EMSL/Libby EDD's be revised so that NaK data is captured according to the intent of LB-66. ESAT discussed this with EMSL and learned that only the first 5 LA spectra have been saved electronically per sample, as specified by LB-66. Hence, NaK data cannot be fixed for any sample with 6 or more LA structures without re-analyzing the sample. If a sample is re-analyzed, the original quantitative result (for example, structures/cc in an air sample) cannot be reproduced if any of the grid openings have been damaged. Although it should be possible to generate EDD corrections by re-examining spectra for samples with 5 or fewer LA structures, the only way to fix NaK data for samples with many structures is to re-analyze those samples from scratch. That would change quantitative data that had been previously verified, and would be complex to manage from a database standpoint as old results would need to be rejected and new ones loaded into the database and verified. Adding this additional layer of QC could delay generation of final data sets, so if this approach is employed, ESAT recommends that it be performed only for selected samples.

[2] Refer to page 10 for more on how Poisson counting error contributes to uncertainty of a TEM analysis.

Conclusions

The fundamental question that needs to be answered is, “has the Libby/Troy ABS data set been negatively impacted by EMSL/Libby’s analytical practices?” A large fraction of the ABS air samples were analyzed by EMSL/Libby. Here are ESAT’s findings based on all of the items described above.

1) Data users have expressed to ESAT that low FBAS results from EMSL/Libby may be indicative of a larger problem; that is, EMSL/Libby’s ABS results may have been similarly affected. ESAT recommends that, once the flowerbed analyses are complete, EPA should appoint a party to summarize the Flowerbed results in a tabular format and perhaps perform a Poisson comparison test to see how widespread alleged low bias in EMSL/Libby’s flowerbed results may be. ESAT does not know if other FBAS analyses from EMSL/Libby for other studies (e.g. Borrow/Background, City Gravel, Comparative Exposure) have been similarly affected or not. On January 27, 2014, EMSL provided the report of their internal investigation into EMSL/Libby’s Rock Flour Preparation practices and ESAT forwarded it onto EPA, CDM Smith, and QATS. EMSL found that many of the samples at their Libby Lab may have settled for longer than three hours, which could have under-loaded the filters.

2) If low bias in EMSL/Libby’s FBAS analyses is real, and if it occurred at the prep stage and not the analysis stage, then ABS data should not be affected by EMSL/Libby’s handling of the Rock Four Prep method because ABS samples are prepared by standard direct or indirect-ashed techniques. If prep technique explains the alleged bias in EMSL/Libby’s FBAS results, then ESAT recommends that the existing data set of ABS results from EMSL/Libby should not be flagged or qualified as potentially compromised. This is, of course, only a recommendation of ESAT from a purely analytical perspective; any decision to flag data would have to be made by the data users and verifiers. ESAT determined during their visit that EMSL/Libby's understanding of Libby Amphibole mineralogy is essentially strong. In ESAT’s experience at least 80% of LA structures can be easily and definitively classified as LA by a trained analyst, so ESAT has no reason to think that EMSL/Libby may have mis-classified a high percentage of structures.

3) Although EMSL/Libby clearly departed from the intent of LB-66 for years, the difficulty of differentiating between pyroxene and tremolite/actinolite introduces an element of uncertainty to any and all TEM analyses for the Project, that affects data not just from EMSL/Libby but from all other Project labs. It may be useful to try to quantify the uncertainty introduced by the pyroxene problem for all labs for the existing ABS data set. That would be difficult to quantify, and is an element of uncertainty that may not be adequately addressed by current Libby QC (re-count, re-prep, and inter-lab analysis) procedures. Perhaps a good starting point would be to define an upper limit of the uncertainty by asking the hypothetical question, “how would results be affected if every recorded NAM was actually an LA structure.” If labs recorded close-call NAM’s as they were directed to, and if the worst case scenario was assumed that every reported NAM was a false negative, then the actual LA result could not be higher than the sum of the LA and NAM counts.

4) ESAT recommends that any pre-October 2013 NaK data from EMSL/Libby should be excluded from any evaluation of NaK data that is used to look for trends that may indicate possible fiber origins. To ESAT’s knowledge, Reservoirs, Hygeia, EMSL/Cinnaminson, EMSL/Denver, EMSL/New York, and the ESAT TEM Lab have always followed LB-66 as it was intended. Therefore, ESAT expects that NaK data from the non-EMSL/Libby labs can still be successfully evaluated for trends that may indicate fiber provenance.

5) EPA has tasked ESAT to prepare standard grids of the Dirty 30, NIST Tremolite, NIST Actinolite, and representative pyroxene minerals to serve as standards for all labs for the Project. As of February 7, 2014, ESAT is still preparing these standards. However, one of the pyroxene standards ESAT purchased is on back-order for several weeks so ESAT is currently focusing their efforts on the inter-labs.

6) Quantitative EDS is an improvement over the historic practice of relying on visual estimation of

peak heights when classifying structures as LA or not LA. Many Libby Project labs rely solely on visual interpretation of EDS spectra, which may be a somewhat outdated practice given recent advances in EDS technology that allow quantitative EDS data to be readily presented as cation ratios (refer to attachments for examples). However, many older EDS systems are still in use at many Project labs and upgrading to newer EDS technology at those labs may be cost-prohibitive.

7) The stop work order on investigative analyses at EMSL/Libby went into effect on September 20, 2013 and ESAT will not lift it until directed by EPA to do so.

References

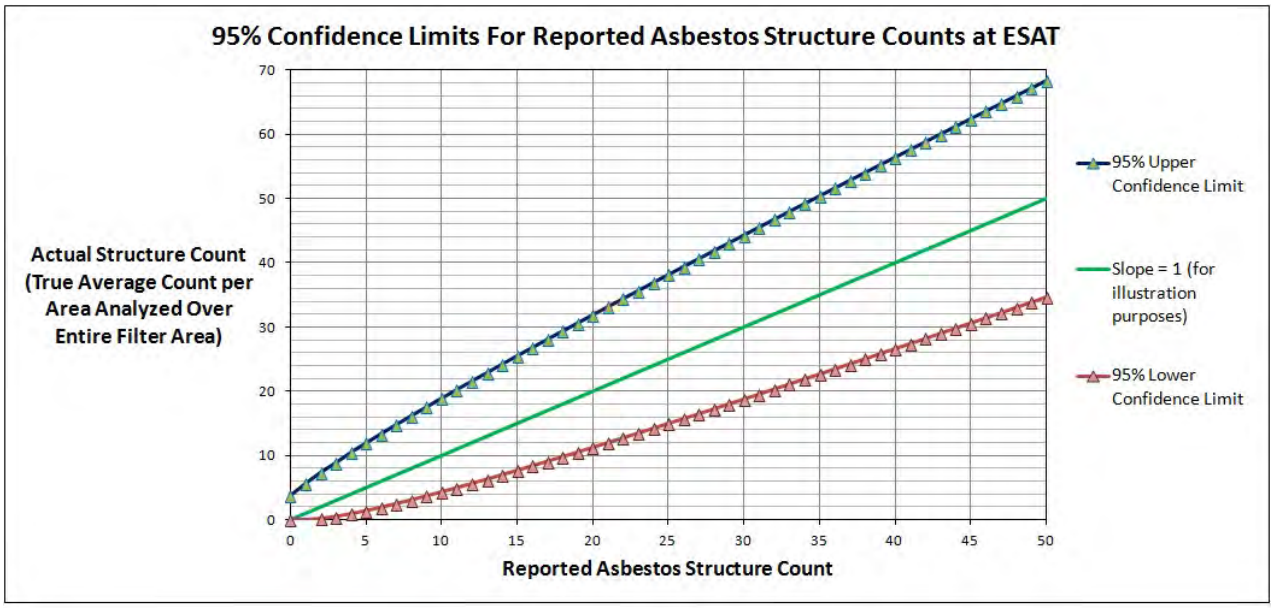
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Attachments

Uncertainty of a TEM Analysis

Uncertainty is an unavoidable element of all TEM analyses. At the analytical laboratory, the three primary factors that contribute to uncertainty of a TEM analysis are Poisson counting error caused by sub-sampling of the filter, variation in grid opening area, and variation in classification of structures caused by differences in analyst interpretation of EDS spectra and diffraction patterns. Those three sources of uncertainty can be combined to provide an overall estimate of uncertainty as shown in the following figure.



Variability can also be introduced by field conditions and sample shipping but variability from those sources cannot be evaluated by the laboratory. Poisson counting error is generally considered to be the largest contributor to uncertainty at the lab. However, when samples are prepared indirectly variability may also be introduced during generation of the secondary filter at the lab. Uncertainty caused by indirect preparation was not addressed in the above graph. Also, the pyroxene problem may not be adequately addressed by the above graph, because not all of the uncertainty caused by the pyroxene problem may have been captured in the recount data that was evaluated when the above graph was generated. Hopefully, the uncertainty introduced by potential confusion of pyroxenes with tremolite/actinolite is a very small contributor to uncertainty when compared to other factors (e.g. field conditions or Poisson counting error).

EDS Spectra

Page 12) An LA structure from sample FB-00014 (Miracle Gro potting soil) classified as NaK WRTA by EMSL/Libby during their May 15, 2013 analysis of that sample. During ESAT's trip to EMSL/Libby in September 2013, both ESAT and EMSL agreed that the structure should have been classified as "XX" according to the intent of Libby Lab Modification Form LB-000066E.

Page 13) The actinolite from NIST SRM 1867, which is a set of standards of commercial-grade asbestos. This spectrum was collected by EMSL/Libby during ESAT's September 2013 visit. This particular SRM is of particular interest because it is the most widely-used actinolite standard at asbestos labs across the United States and is traceable to NIST. Although not from the mine at Libby, this mineral would still have to be classified as LA (specifically, as "XX AC") had a structure of it been seen in a Libby sample, because it is still actinolite and hence one of the minerals that comprise LA.

Page 14) Diopside, a common pyroxene, from Herschel, Ontario. This spectrum was collected by EMSL/Libby during ESAT's September 2013 visit. This structure may be indistinguishable from actinolite by EDS. This sample is from ESAT's collection and ESAT has performed diffraction measurements on it and has confirmed that it is a pyroxene, as indicated by the supplier (Ward's Natural Science) who provided the specimen.

Page 15) A spectrum from ESAT of the SRM 1867 actinolite. Quantitative EDS has normalized the cation ratios on the basis of 23 oxygens. The predicted number of calcium cations for actinolite (expressed as apfu, or atoms per formula unit) predicted by this approach is 2, so a close match (2.02 apfu reported) was achieved for this structure.

Page 16) A spectrum from ESAT of the Herschel, Ontario diopside. Although this spectrum looks similar to the actinolite on the previous page, quantitative EDS indicates that its calcium content is 2.61 apfu, which is permissible for pyroxenes but impossible for amphiboles. Calcium content cannot exceed 2 apfu (plus or minus a few percent) for any amphibole. Quantitative EDS conclusively rules this structure out as LA. Relying solely on visual interpretation of this spectrum may not be adequate to determine that this structure is not LA.

Page 17) Augite, a common pyroxene, from Harcourt Township, Ontario. This spectrum was collected by EMSL/Libby during ESAT's September 2013 visit. Any TEM analyst trained in Libby procedures would quickly discount this structure as a NAM because of the very high calcium peak. No amphibole mineral can have a calcium peak higher than about a quarter of the height of the silicon peak. Visual interpretation of this spectrum can easily determine that this structure is not LA.

Page 18) A typical "NaK WRTA" LA structure from the mine, provided here for comparison purposes. This spectrum was collected by EMSL/Libby during ESAT's September 2013 visit.

ATTACHMENT 3

29 October 2013

Douglas Kent
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ESAT Region 8
16194 W. 45th Drive
Golden, CO 80403

Mr. Kent,

Thank you for your visit to our Libby laboratory on September 25th and 26th. Please find enclosed documentation of the corrective actions we discussed. These corrective actions include:

1) All EMSL/Libby analysts assign NaK codes to the 40 spectra of LA from the mine. Results for both before and after training are provided in a tabular format.
2) Index 3 diffraction patterns of NIST SRM 1867 actinolite. Include print-outs of EDS spectra for the 3 structures that had their diffraction patterns indexed.
3) Index 3 diffraction patterns of diopside from the bulk sample provided by ESAT. Include print-outs of EDS spectra for the 3 structures that had their diffraction patterns indexed.
4) The results of the intra-EMSL inter-lab study, which will include evaluation of NaK concordance.

Libby Amphibole EDXA interpretation

As you are aware LA particles are characterized by the presence of sodium, magnesium, potassium, calcium and iron. Aluminum is usually absent, but may occur at low levels in some structures. The use of EDS to classify an amphibole particle as LA is complicated by a number of factors, including a) inherent variability in chemical composition of different LA particles, b) dependence of the spectrum on random variables such as particle thickness, orientation, and proximity to other particles , c) variation between instruments in sensitivity to different elemental constituents, d) the presences of pyroxenes in the Rainey Creek Geologic Complex and e) subjective nature of spectra interpretation. For these reasons, it is not possible to define a single unique EDS spectrum for LA particles and an extensive library of references is needed to confirm a structure's identity. As such, the lab ran 40 spectra from the Libby Amphibole standards. These standards were used for the Libby Amphibole Spectra study in 2002. According to the SRC (Syracuse Research Center) these standards are from the following locations and contain the following minerals.

Sample Number	Source	Primary Amphibole Components
SW01201	Libby mine (site 20)	Tremolite, Actinolite
SW01281	Libby mine (site 28)	Richterite, Winchite
SW01231	Libby mine (site 23)	Tremolite, Actinolite, Richterite, Winchite
SW01TR1	NIST	Tremolite

Each analyst was instructed to independently assign mineral classification and NaK content for each spectra. I then personally reviewed with each individual analyst their data and spectra interpretations. It was
apparent from these discussions that the Libby staff had been trained to interpret that any energy channel above background should be considered clearly present. Due to the background and noise that are inherent to all EDXA systems this resulted in the majority of their spectra being classified as NaK. Additional training on EDXA theory and the production of statistically significant peaks was performed. After our discussion and the discussion with Doug Kent and Nathan DelHirro the exercise was run again. The results of these exercises are attached as well as the training record that was provided to each TEM analyst at Libby. **Please see attachments EMSL1.**

SAED/EDXA study of NIST 1867 Actinolite

The lab prepared a TEM drop mount of the NIST 1867 Actinolite for analysis. The TEM analysts were asked to provide 3 spectra and 3 indexed diffraction patterns from fibers they encountered during analysis. **Please see attachments EMSL2.**

SAED/EDXA study of Diopside (Herschel, Ontario)

The Diopside sample was obtained from Ward's Science and provided to EMSL Libby and Cinnaminson courtesy of Doug Kent. Each TEM analyst was asked to provide 3 spectra and 3 indexed patterns of the Diopside. **Please see attachments EMSL3.**

Inter Lab EMSL QC

Seven samples were picked for QC. The samples were analyzed in accordance with Lab mod 29. The results of the inter-lab EMSL QC exchange are summarized below

EMSL Sample Number	Customer sample ID	Reprep Result	Interlab Result	Result
271300789-0004	4R-02146	1 NAM	1 NAM	Concordant
271300800-0002	4R-02123	1 FP	1 NAM	Discordant
271300675-0010	P3-00774	1 NC LA	1 NC LA	Concordant
271300675-0003	P3-00880	ND	ND	Concordant
271300573-0001	SM-10080	ND	1 NC LA	Concordant
271300838-0001	4R-01595	ND	ND	Concordant
271300764-0002	4R-02012	ND	ND	Concordant

The majority of the samples were concordant- two samples showed documentation errors and in one of those instances lead to a false positive. One sample was improperly counted at corporate and is

discussed below.

For sample 271300573-0001 the incorrect fiber size recording rules were listed on the analytical worksheet. The analysis was for Low Magnification, PCME fibers only. However, the minimum fiber size listed on the analytical worksheet was 0.5 um.

EMSL04 analyzed the sample at high magnification (~ 20,000 xs) and found 1 structure. When compared to the re-prep analysis it was noted that the sample was analyzed at 4800x and it became apparent that the sizing information was incorrect on the benchsheets provided. This sample was part of the wildfire scenario which was analyzed at EPAs request prior to the SAP being finalized. The Libby Lab did receive written direction from Christina Progess on how to proceed with analysis. However these instructions were not forwarded to Corporate during the internal QC exchange. The SAP summary that was forwarded stated that the recording rules for the sample could be found in the "OU3 ISO modification #3: Rapid Air Analysis". This modification could not be found in either the Libby e-room or the OU3 e-room. This instance has been used as a training session with the staff to ensure that at receiving all the counting rules and pertinent information is reviewed before the samples get back to the lab and once back to the lab analysis should not commence until the analyst has reviewed the SAP summary and all the referenced documents in the SAP summary.

For Sample 271300800-0002 1 LA structure was listed on the bench sheet and Verified GO Map in GO C2: C8. The EDXA spectra provided documented that the structure was located in GO C1:G8. This structure was not located during the inter-lab verified analysis in either grid opening listed on the bench sheet/verified map or EDXA. During the reconciliation, the structure was located in GO C2:G8. The improper documentation of this grid opening led to a false positive being recorded. Roy Pescador investigated and determined that the root cause was not completing the analytical worksheet correctly prior to moving to the next grid opening. A corrective action was implemented to ensure that the correct grid openings are recorded on all documentation. Going forward the analyst will ensure that directly upon moving to a new grid, the grid ID will be documented before proceeding to the next grid opening. Prior to recording the grid opening the analyst will switch to low magnification and ensure the GO ID. Once GO ID is confirmed the analyst will document it on the analytical worksheet. EMSL's corrective action form is attached to this letter. **Please see attachments EMSL4.**

If you need any further clarification, please don't hesitate to contact me.



Robyn Denton| *Special Projects Manager*

ATTACHMENTS

Attachment EMSL1

September 25th, 2013 Pre-training

Source	Dominant Mineral Types	Spectra	R. Pescador				E.Wyatt-Pescador				K.Colberg				R. Denton			
			LA	NAM	Na	K	LA	NAM	Na	K	LA	NAM	Na	K	LA	NAM	Na	K
SW01201	Tremolite, Actinolite	**B1**	√		**X**	**K**	√		**X**	**X**	√		**X**	**X**	√		**X**	**X**
		B2	√		**Na**	**X**	√		**Na**	**K**	√		**Na**	**X**	√		**X**	**X**
		B3	√		**X**	**K**	√		**X**	**X**	√		**Na**	**K**	√		**X**	**X**
		B4	√		**Na**	**K**	√		**Na**	**K**	√		**Na**	**X**	√		**X**	**X**
		B5	√		**X**	**K**	√		**X**	**K**	√		**Na**	**K**	√		**X**	**X**
		B6	√		**Na**	**X**	√		**Na**	**X**	√		**Na**	**K**	√		**X**	**X**
		B7	√		**X**	**K**	√		**Na**	**X**	√		**Na**	**X**	√		**X**	**X**
		B8	√		**Na**	**K**	√		**Na**	**K**	√		**Na**	**X**	√		**X**	**X**
		B9	√		**X**	**X**	√		**X**	**X**	√		**Na**	**X**	√		**X**	**X**
		B10	√		**Na**	**K**	√		**Na**	**K**	√		**Na**	**K**	√		**X**	**X**
SW01231	Tremolite, Actinolite,Winchite, Richterite	D1	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D2	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D3	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D4	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D5		√	**Na**	**K**		√	**Na**	**K**		√	**Na**	**K**	√		**Na**	**K**
		D6	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D7	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D8	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D9	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D10	√		Na	K	√		Na	K	√		Na	K	√		Na	K

Boldface text denotes discordances

Attachment EMSL1

September 25th, 2013 Pre-training

Source	Dominant Mineral Types	Spectra	R. Pescador				E.Wyatt-Pescador				K.Colberg				R. Denton			
			LA	NAM	Na	K	LA	NAM	Na	K	LA	NAM	Na	K	LA	NAM	Na	K
SW1281	Richterite, Winchite	E1	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E2	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E3	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E4	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E5	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E6	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E7	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E8	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E9	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E10	√		Na	K	√		Na	K	√		Na	K	√		Na	K
SW01TR1	NIST Tremolite	G1	√		X	X	√		X	X	√		X	X	√		X	X
		G2	√		X	X	√		X	X	√		X	X	√		X	X
		G3	√		X	X	√		X	X	√		X	X	√		X	X
		G4	**√**		**Na**	**X**	**√**		**Na**	**X**	**√**		**X**	**X**	**√**		**X**	**X**
		G5	**√**		**Na**	**X**	**√**		**Na**	**X**	**√**		**X**	**X**	**√**		**X**	**X.**
		G6	√		X	X	√		X	X	√		X	X	√		X	X
		G7	**√**		**Na**	**X**	**√**		**Na**	**X**	**√**		**Na**	**X**	**√**		**X**	**X**
		G8	√		X	X	√		X	X	√		X	X	√		X	X
		G9	**√**		**X**	**X**	**√**		**X**	**X**	**√**		**Na**	**X**	**√**		**X**	**X**
		G10	**√**		**X**	**X**	**√**		**X**	**X**	**√**		**Na**	**X**	**√**		**X**	**X**

Boldface text denotes discordances

Attachment EMSL1

September 26th, 2013-Post Training

Source	Minerals	Spectra	R. Pescador				E.Wyatt-Pescador				K.Colberg				R. Denton			
			LA	NAM	Na	K	LA	NAM	Na	K	LA	NAM	Na	K	LA	NAM	Na	K
SW01201	Tremolite, Actinolite	B1	√		X	X	√		X	X	√		X	X	√		X	X
		B2	√		Na	X	√		Na	X	√		Na	X	√		Na	X
		B3	√		X	X	√		X	X	√		X	X	√		X	X
		B4	√		X	X	√		X	X	√		X	X	√		X	X
		B5	√		X	X	√		X	X	√		X	X	√		X	X
		B6	**√**		**X**	**X**	**√**		**X**	**X**	**√**		**Na**	**X**	**√**		**X**	**X**
		B7	**√**		**X**	**X**	**√**		**X**	**X**	**√**		**Na**	**X**	**√**		**X**	**X**
		B8	√		X	X	√		X	X	√		X	X	√		X	X
		B9	√		X	X	√		X	X	√		X	X	√		X	X
		B10	**√**		**X**	**X**	**√**		**X**	**X**	**√**		**Na**	**X**	**√**		**X**	**X**
SW01231	Tremolite, Actinolite,Winchite, Richterite	D1	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D2	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D3	**√**		**Na**	**K**	**√**		**Na**	**K**	**√**		**Na**	**K**	**√**		**X**	**K**
		D4	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D5		**√**	**Na**	**K**		**√**	**Na**	**K**		**√**	**Na**	**K**	**√**		**Na**	K
		D6	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D7	√		Na	X	√		Na	X	√		Na	X	√		Na	X
		D8	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D9	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		D10	**√**		**Na**	**K**	**√**		**Na**	**K**	**√**		**Na**	**K**	**√**		**X**	**K**

Boldface Text denotes discordances

Attachment EMSL1

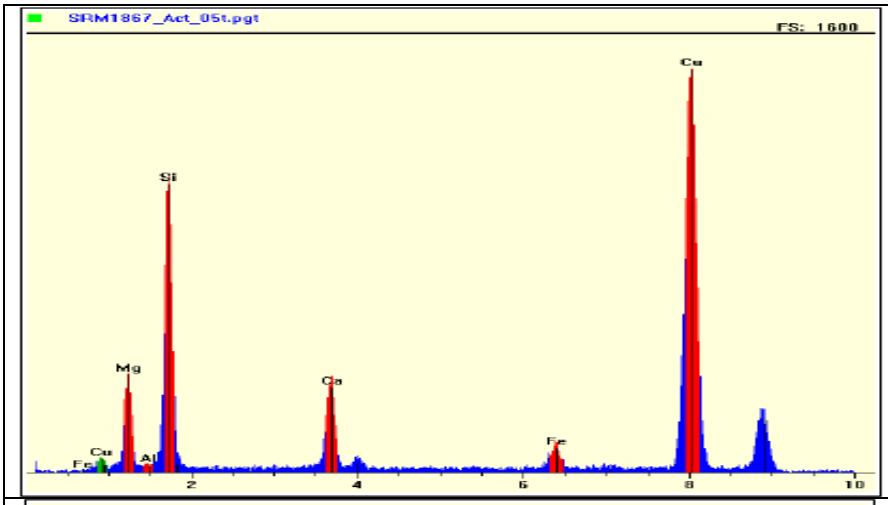
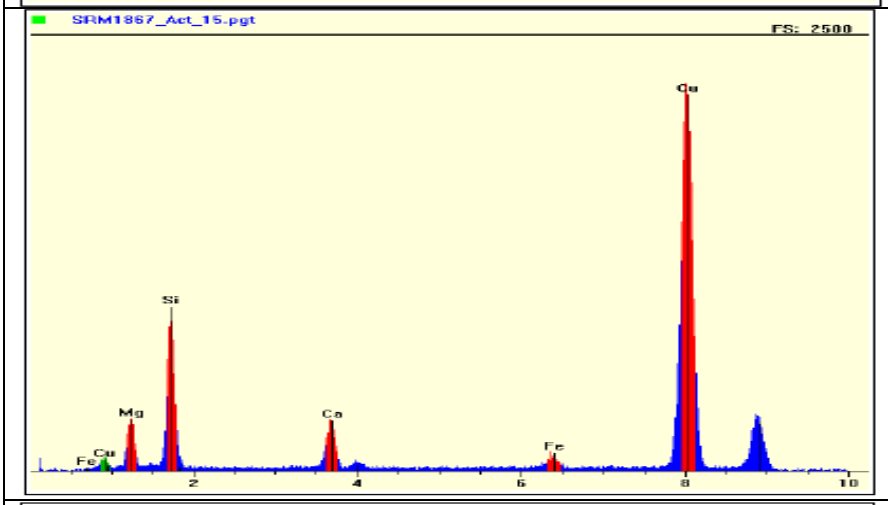
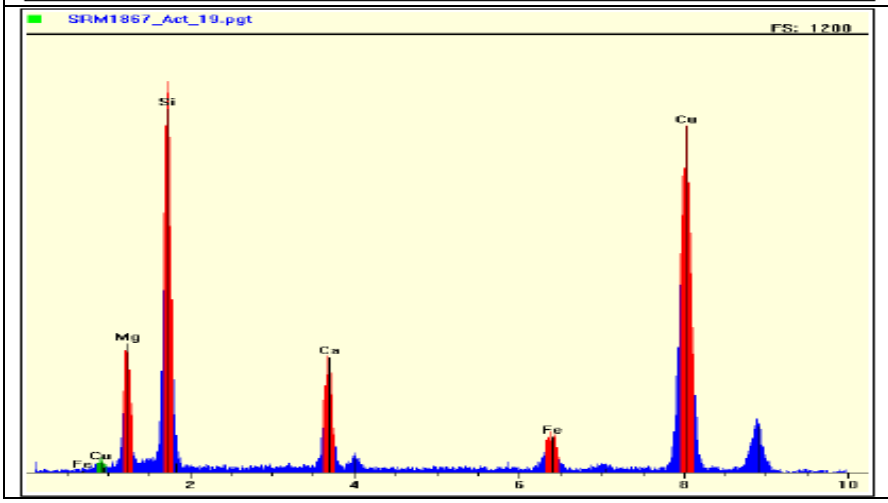
September 26th, 2013-Post Training

Source	Minerals	Spectra	R. Pescador				E.Wyatt-Pescador				K.Colberg				R. Denton			
			LA	NAM	Na	K	LA	NAM	Na	K	LA	NAM	Na	K	LA	NAM	Na	K
SW1281	Richterite, Winchite	E1	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E2	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E3	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E4	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E5	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E6	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E7	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E8	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E9	√		Na	K	√		Na	K	√		Na	K	√		Na	K
		E10	√		Na	K	√		Na	K	√		Na	K	√		Na	K
SW01TR1	NIST Tremolite	G1	√		X	X	√		X	X	√		X	X	√		X	X
		G2	√		X	X	√		X	X	√		X	X	√		X	X
		G3	√		X	X	√		X	X	√		X	X	√		X	X
		G4	√		X	X	√		X	X	√		X	X	√		X	X
		G5	√		X	X	√		X	X	√		X	X	√		X	X
		G6	√		X	X	√		X	X	√		X	X	√		X	X
		G7	√		X	X	√		X	X	√		X	X	√		X	X
		G8	√		X	X	√		X	X	√		X	X	√		X	X
		G9	√		X	X	√		X	X	√		X	X	√		X	X
		G10	√		X	X	√		X	X	√		X	X	√		X	X

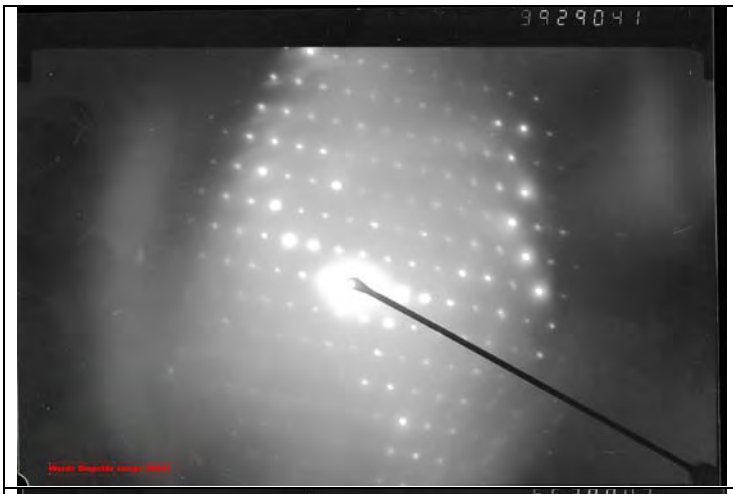
Boldface Text denotes discordances

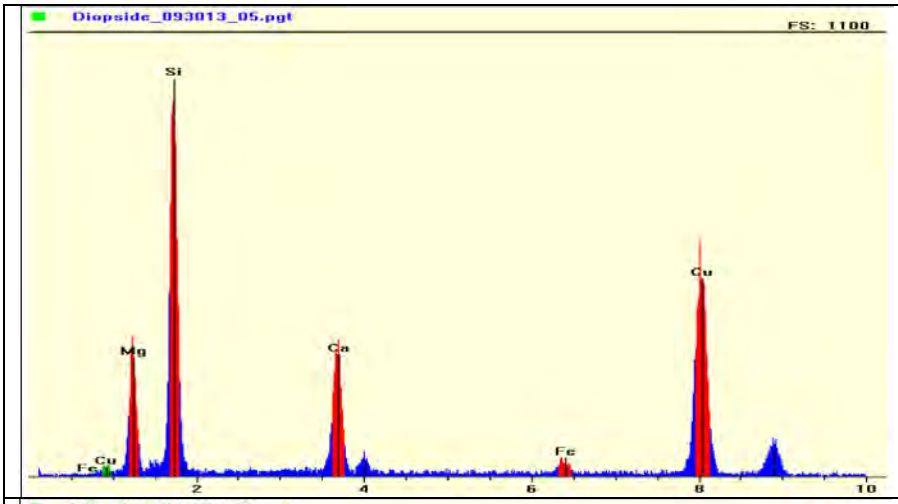
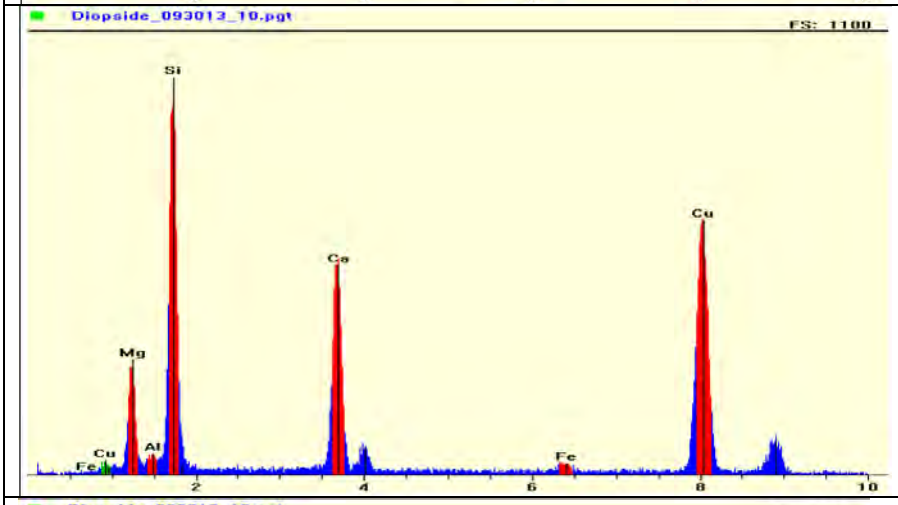
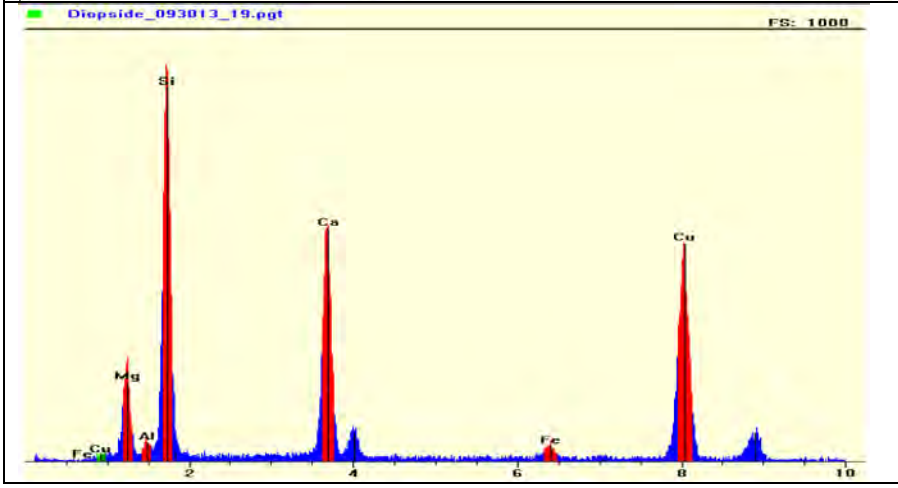
Attachment EMSL2

	*SAED IMAGE 29019* *NIST Actinolite* Interow 5.07 Angstroms Hko 5.02 Angstroms Hkl 4.76 Angstroms Slant Vector Angle 68° Zone Axis [3 1 2] *Camera Constant 22.82 mm/Angstroms* *SAED Reference JCPDS*
	*SAED IMAGE 29031* *NIST Actinolite* Interow 5.37 Angstroms Hko 9.13 Angstroms Hkl 4.56 Angstroms Slant Vector Angle 60° Zone Axis [1 0 0] *Camera Constant 22.82 mm/Angstroms* *SAED Reference JCPDS*
	*SAED IMAGE 29035* *NIST Actinolite* Interow 5.22 Angstroms Hko 5.02 Angstroms Hkl 2.56 Angstroms Slant Vector Angle 85° Zone Axis [3 -1 -10] *Camera Constant 22.82 mm/Angstroms* *SAED Reference JCPDS*

	*EDXA Spectra NIST Actinolite AC/XX* *Full scale 1600* *Corresponds to diffraction image 29019*
	*EDXA Spectra NIST Actinolite AC/XX* *Full scale 2500* *Corresponds to diffraction image 29031*
	*EDXA Spectra NIST Actinolite AC/XX* *Full scale 1200* *Corresponds to diffraction image 29035*

Attachment EMSL3

	*SAED IMAGE 29041* *Wards Diopside* Interow 5.19 Angstroms Hko 6.29Angstroms Hkl 4.99 Angstroms Slant Vector Angle 79° Zone Axis [-1 -1 0] *Camera Constant 22.82 mm/Angstroms* *SAED Reference JCPDS*
	*SAED IMAGE 29051* *Wards Diopside* Interow 5.27 Angstroms Hko 3.68 Angstroms Hkl 2.54 Angstroms Slant Vector Angle 85° Zone Axis [-4 2 2] *Camera Constant 22.82 mm/Angstroms* *SAED Reference JCPDS*
	*SAED IMAGE 29057* *Wards Diopside* Interow 5.22 Angstroms Hko 6.27 Angstroms Hkl 2.56 Angstroms Slant Vector Angle 80° Zone Axis [2 2 2] *Camera Constant 22.82 mm/Angstroms* *SAED Reference JCPDS*

	*EDXA Spectra Diopside Wards PY/XX* *Full scale 1100* *Corresponds to diffraction image 29041*
	*EDXA Spectra Diopside Wards PY/XX* *Full scale 1100* *Corresponds to diffraction image 29047*
	*EDXA Spectra Diopside Wards PY/XX* *Full scale 1000* *Corresponds to diffraction image 29057*

SUPPORTING DOCUMENTATION

RAW EDXA SPECTRA NAK
LA SPECTRA INTERPRETATION TRAINING RECORDS
EDXA NIST ACTINOLITE
EDXA WARDS DIOPSIDE
SAED INDEXING FORMS
INTRA LAB QC RESULTS

EMSL TRAINING RECORD

Employee: EXAMPLE

Title / Position:

Laboratory: Libby

Date of Training:

Trainer: Robyn Denton

Signature of Trainer:

Department: Asbestos

Topic: Libby Amphibole EDXA Collection and Interpretation

Details Of Training:

Robyn Denton visited the lab to discuss the collection of EDXA collection and Interpretation. During the training the Libby Amphibole standards were used. According to the SRC (Syracuse Research Center) these standards are from the following locations and contain the following minerals. These standards were used for the Libby Amphibole Spectra study in 2002.

Sample Number	Source	Primary Amphibole Components
SW01201	Libby mine (site 20)	Tremolite, Actinolite
SW01281	Libby mine (site 28)	Richterite, Winchite
SW01231	Libby mine (site 23)	Tremolite, Actinolite, Richterite, Winchite
SW01TR1	NIST	Tremolite

To Obtain a spectra:

Once the sample has been inserted, choose an intact grid opening.

- Attain eucentric position.
- Tilt to +32º to +35º
- Switch to an appropriate spot size. The appropriate spot size decision is made by taking into account the following.
    - The spot size should be able to produce a sufficient amount of x-ray counts to allow for adequate peak acquisition while not “flooding” the detector.
    - Sufficient x-ray counts are optimally 2000 counts per second. Change to a larger spot size if the counts are substantially lower than 2000 c/s.
    - “Flooding” the detector occurs when the amount of x-rays overwhelms the detector and the processor software producing a high dead time.
    - A high dead time is defined differently on different scope / detector combinations. In general:
        - For older scope / detector combinations “high” is when the deadtime exceeds about 20%
        - High deadtimes cause the detector to ignore a large percentage of x-rays that hit the window and the spectrum may be distorted.

Spectrum Collection Times:

- Collection time may vary depending on particle thickness, size and location. EMSL typically tries to collected until 1000 counts are reached in the Silicon peak.

    - Note: The FS (full scale) count in PGT is referring to the highest peak in the spectrum, which when you are close to a grid bar could be Cu. So be sure to scale your spectrum appropriately.

- The longer the collection time the lower the background.

- Collection times <1000 counts may be used if the spectrum that is being generated has a low, flat background and distinct peaks in the Na and K regions.

To decrease the amount of deadtime, you can:

· Switch to a smaller spot size if the deadtime is substantially above the optimal values above.
· For PGT users, adjust the LLD . Under Xray setup, ADC tab, adjust the LLD to a value near 1.50. Collect a spectrum and see if the dead time has been lessened. Once you are comfortable with the settings, insert NIST Crocidolite and collect a spectrum. Determine your Na sensitivity.
·

Selecting a Spot Size:

· The size of the fiber/ particle will affect the choice of spot size. In general larger fibers (usually amphibole) will require the selection of a smaller spot size, while smaller fibers (chrysotile fibrils) require larger spot sizes.

· A trade off exists when choosing larger spot sizes.
- The larger the spot size, the larger the area you are sampling.
- If there are other particles present close to the particle of interest and you choose a large spot size, then the x-ray spectrum will exhibit characteristic x-rays from both the particle of interest and also nearby particles.

Interpreting/ Analyzing the spectrum

· The spectrum is a histogram, with the x-axis being the energy (KeV) and the Y-axis being the number of x-rays counted.
- Each elemental x-ray will have a characteristic energy, that energy is measured by the detector.
- The x-ray's energy is then plotted on the graph as one count, at the appropriate energy.
- By plotting all x-rays, the graph will reveal peaks, energies that have a high numbers of counts, that can be identified as belonging to particular elements.

· Qualitative analysis consists of identifying the peaks present, using the software accompanying the detector processor. In general software can identify peaks in two ways:
- By producing a line of interest and offering possible elemental matches for the line. The line can be moved to a peak of interest, possible elemental identifications for the peak are then offered.
- Expected elements can be set, and their peak locations highlighted, so that any peak that happens to be present in this area is possibly from this element.

· Semi-quantitative analysis is the process of comparing these spectrums, against known standard spectrum, to generate a possible matched identification.

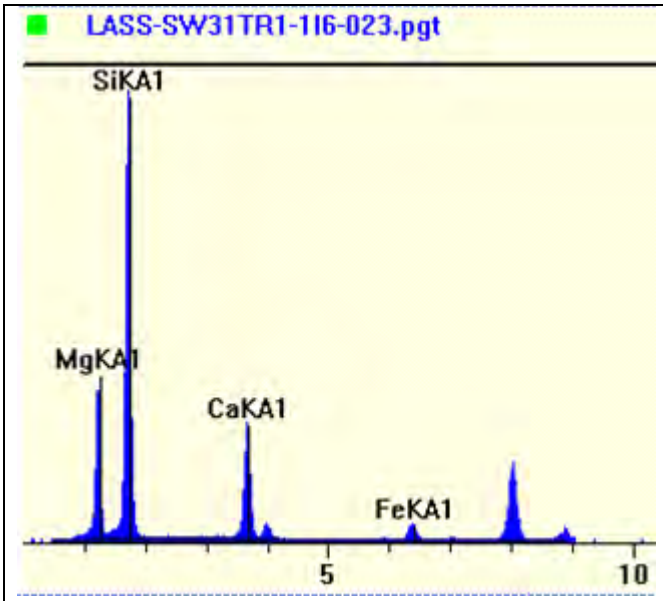
Libby Amphibole Identification

LA particles are characterized by the presence of sodium, magnesium, potassium, calcium and iron. Aluminum is usually absent, but may occur at low levels in some structures. The use of EDS to classify an amphibole particle as LA is complicated by a number of factors, including a) inherent variability in chemical composition of different LA particles, b) dependence of the spectrum on random variables such as particle thickness, orientation, and proximity to other particles (back scatter), and c) variation between instruments in sensitivity to different elemental constituents, d) the presences of pyroxenes in the Rainey Creek Geologic Complex. Pyroxenes are chemically similar to LA qualitatively. Analysis of the Atomic formula can aid in providing identification, but require much data manipulation is only available on certain EDXA systems.

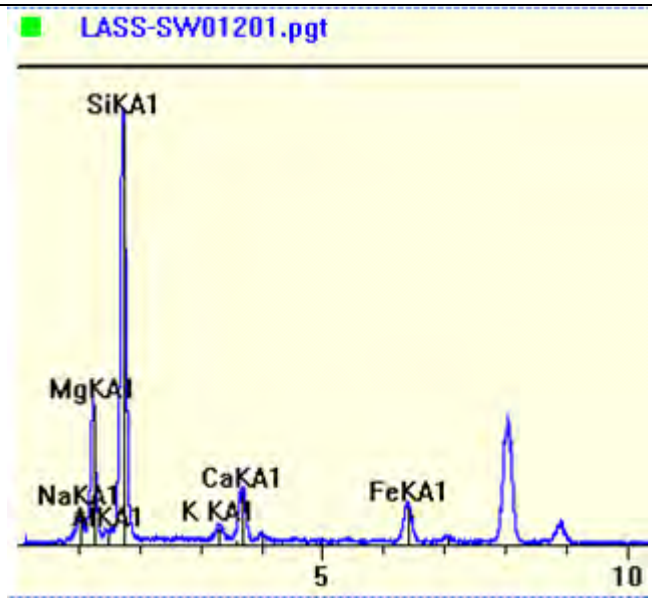
For these reasons, it is not possible to define a unique EDS spectrum for LA particles.

As noted above, there is substantial variability between particles and between instruments, but according to CHARACTERISTIC EDS SPECTRA FOR LIBBY-TYPE AMPHIBOLES dated March15, 2005 and prepared by SRC the following peak magnitudes (relative to silicone) are typical for Libby Amphibole. These values should not be interpreted as absolute values for classifying LA; there is too much variability amongst particles and scopes. This should cover the majority of the LA encountered during analysis. Any structure that falls outside these bounds may still be LA, but will need more corroboration before being fully indentified. (Morphology, diffraction) A spectrum from each standard is below. These spectra were collected on scope 27-2 in 2002.

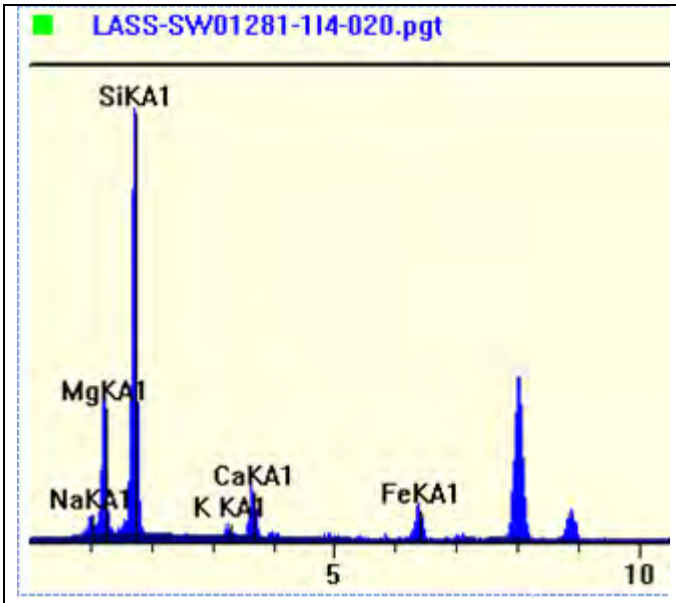
Element	Typical Peak Magnitude		
	Mean	5th	95th
Na	0.36	0.15	0.64
Mg	3.08	2.47	3.49
Al	0.08	0.00	0.27
Si	10.00	10.00	10.00
K	0.25	0.06	0.53
Ca	1.81	0.96	2.63
Fe	1.08	0.57	1.88



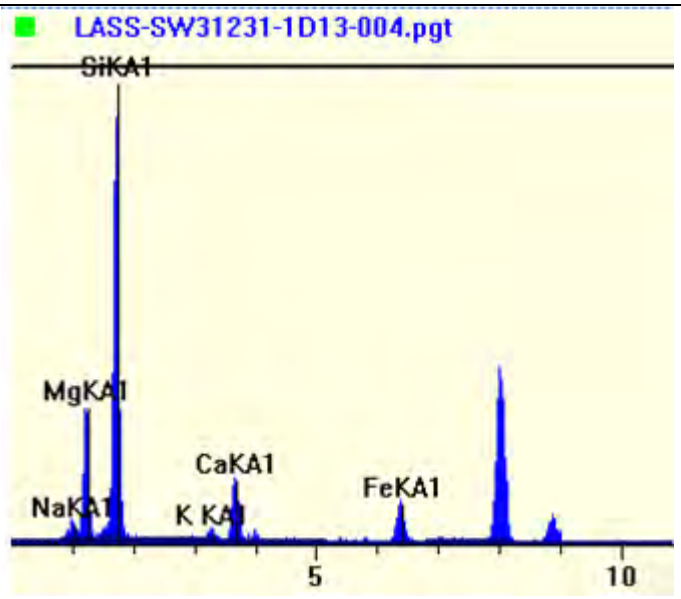
Primary Amphibole Components: Tremolite



Primary Amphibole Components: Tremolite, Actinolite



Primary Amphibole Components: Richterite, Winchite



Primary Amphibole Components: Tremolite, Actinolite, Richterite, Winchite

To determine Na / K presence:
Per lab mod 66 C every structure identified as LA needs to have the presence of Na or K documented. In order to determine, an analyst will evaluate the spectra and determined if the Na or K is present in a statistically stable amount above background. A small peak should be present, thus reflecting that the element has a high number of counts and can be statistically valid. A ratio of a particular element to Silicon can be used and compared to the above the table. Lastly, care must be taken when observing Na, as the Cu L alpha overlaps the Na K alpha peak. We need to be certain that any Quantitative analysis exclude Cu L alpha counts.

Lab mod 66 E states that the Na or K must be clearly present. A little blip of K or Na is not clearly present and therefore should not be labeled as such.

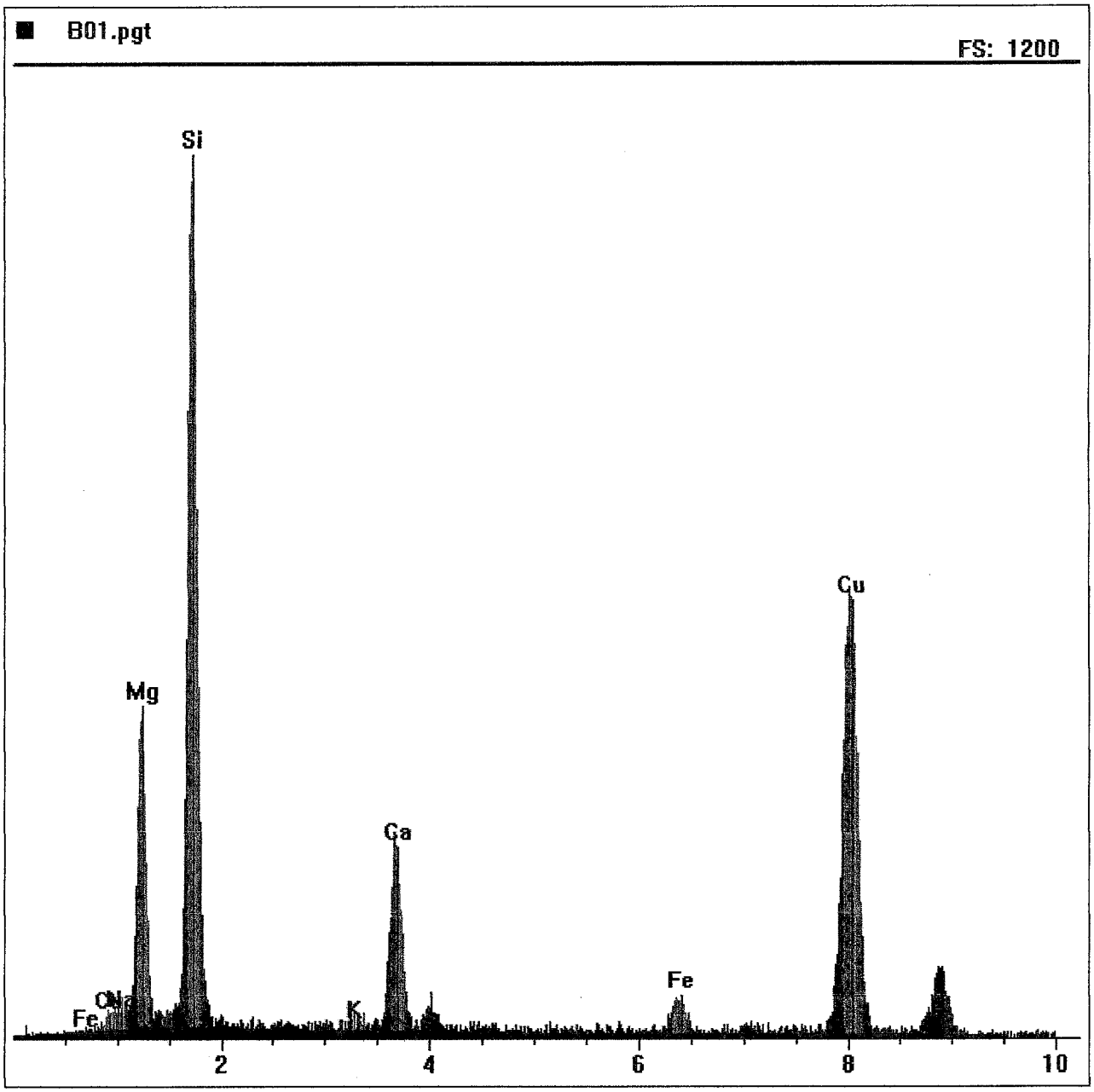
Lab Mod 66 E has many spectra present that can be used as references. It is important to remember that these spectra were taken on different detector than what we use and our own detectors may vary slightly from the examples.

Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\sw01201\B01.pgt
Collected: September 24, 2013 08:31:54

Live Time:	75.62	Count Rate:	2251	Dead Time:	24.18 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

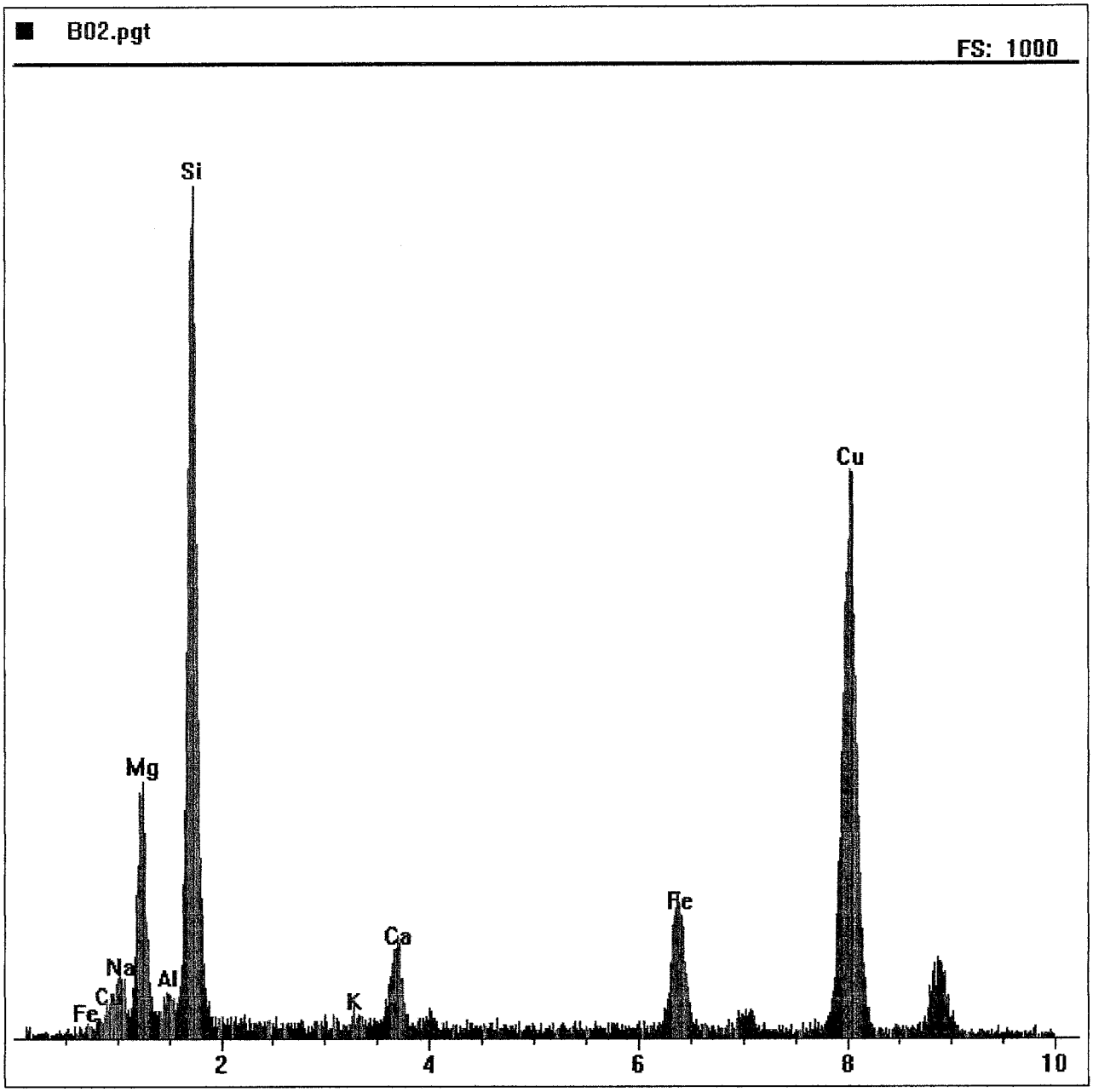


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\sw01201\B02.pgt
Collected: September 24, 2013 08:31:54

Live Time:	74.96	Count Rate:	1989	Dead Time:	21.99 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

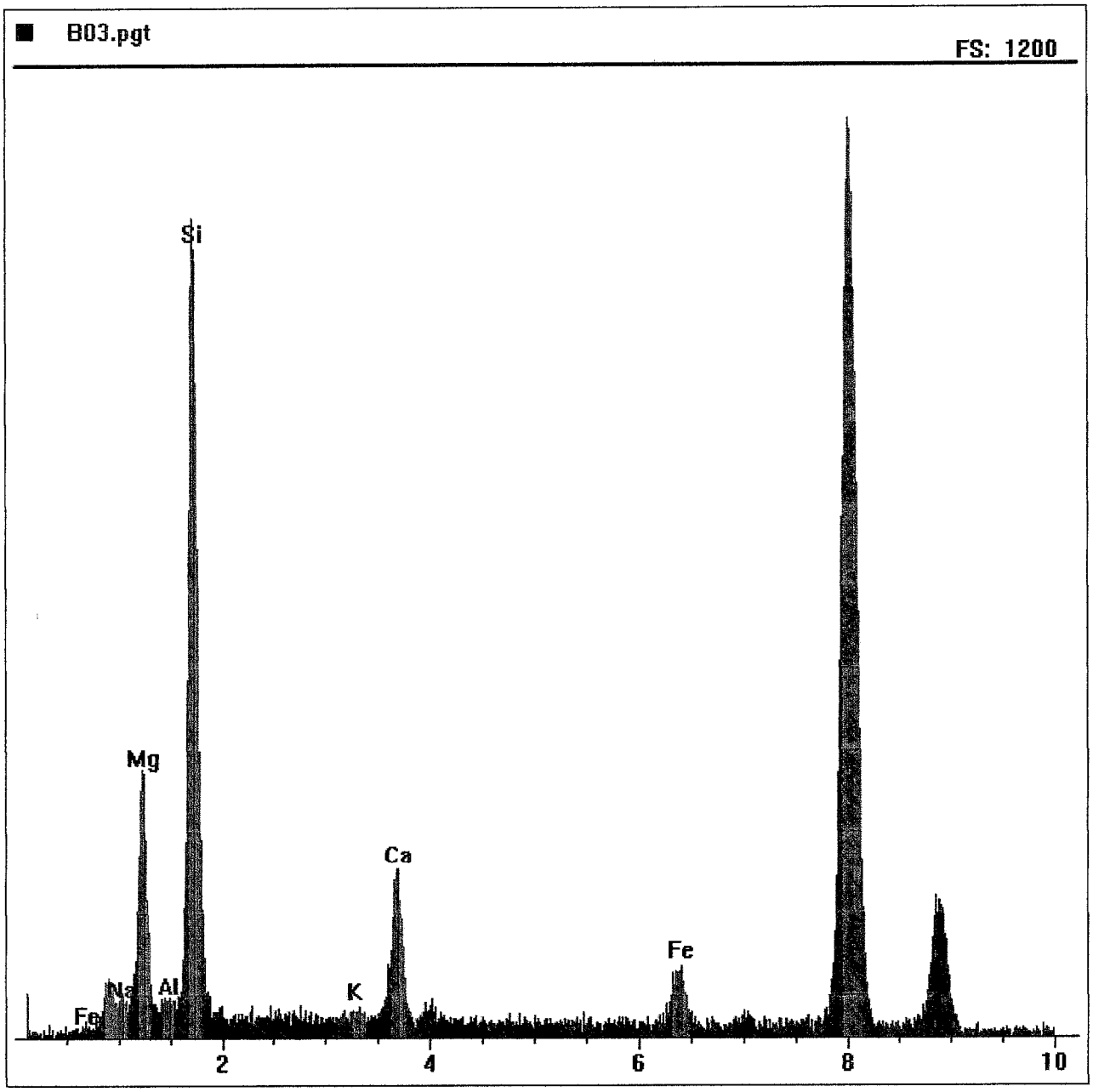


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\sw01201\B03.pgt
Collected: September 24, 2013 08:56:43

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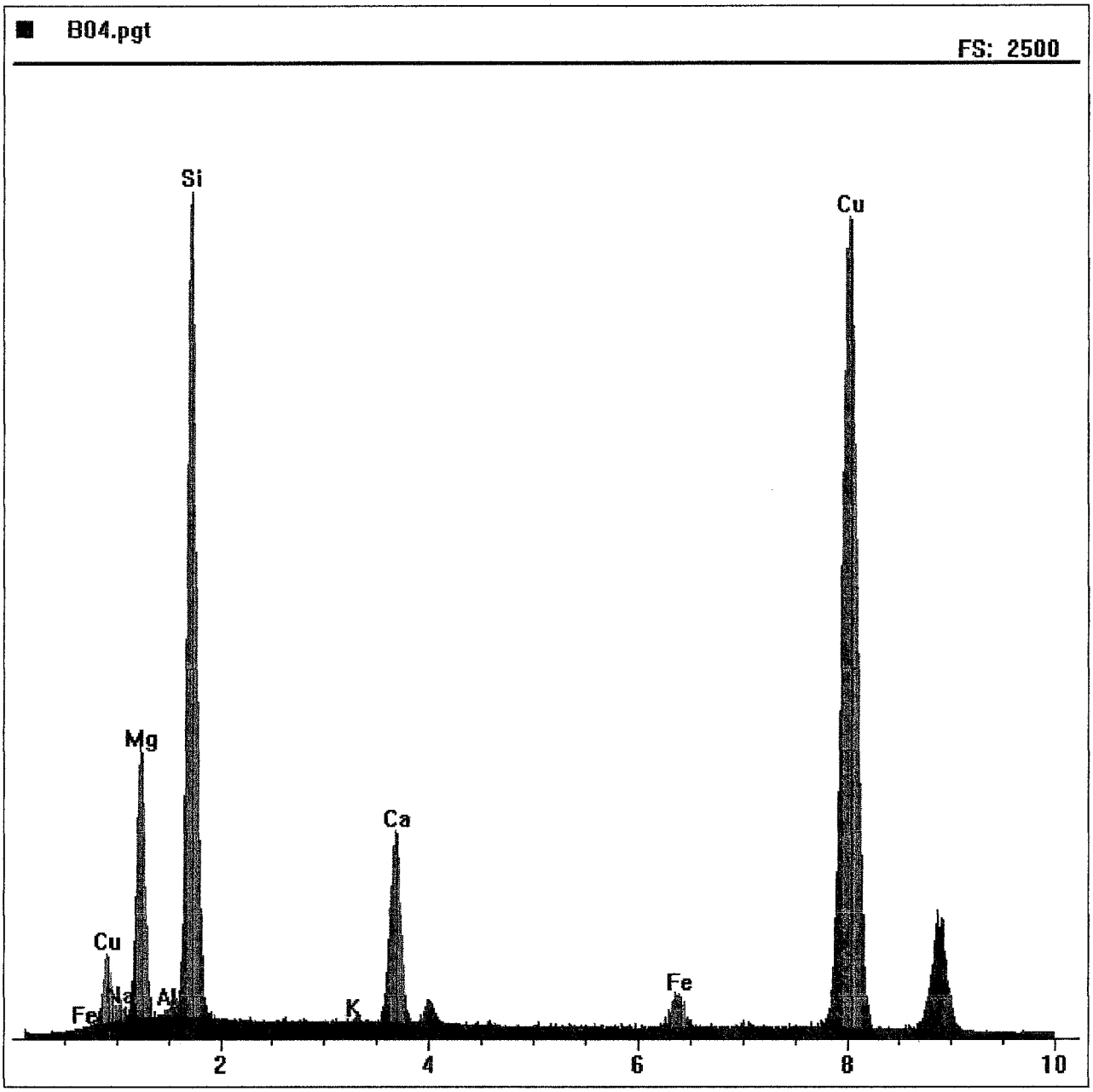


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\sw01201\B04.pgt
Collected: September 24, 2013 09:10:50

Live Time:	100.36	Count Rate:	4453	Dead Time:	40.52 %
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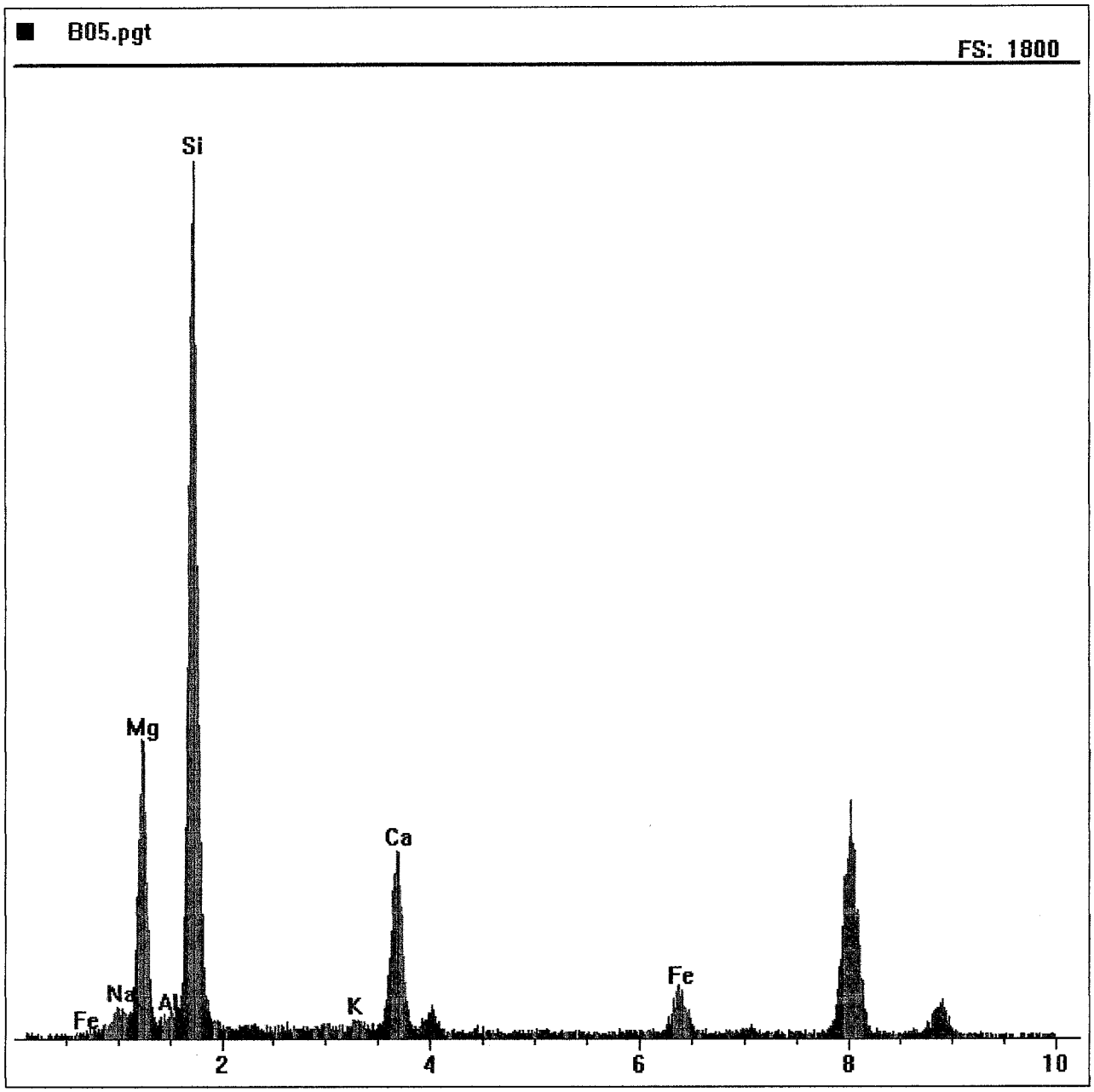
EMSL Analytical Inc. 107 West 4th Street, Libby, MT, 59923
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Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\sw01201\B05.pgt
Collected: September 24, 2013 09:10:50

Live Time:	50.82	Count Rate:	3764	Dead Time:	35.16 %
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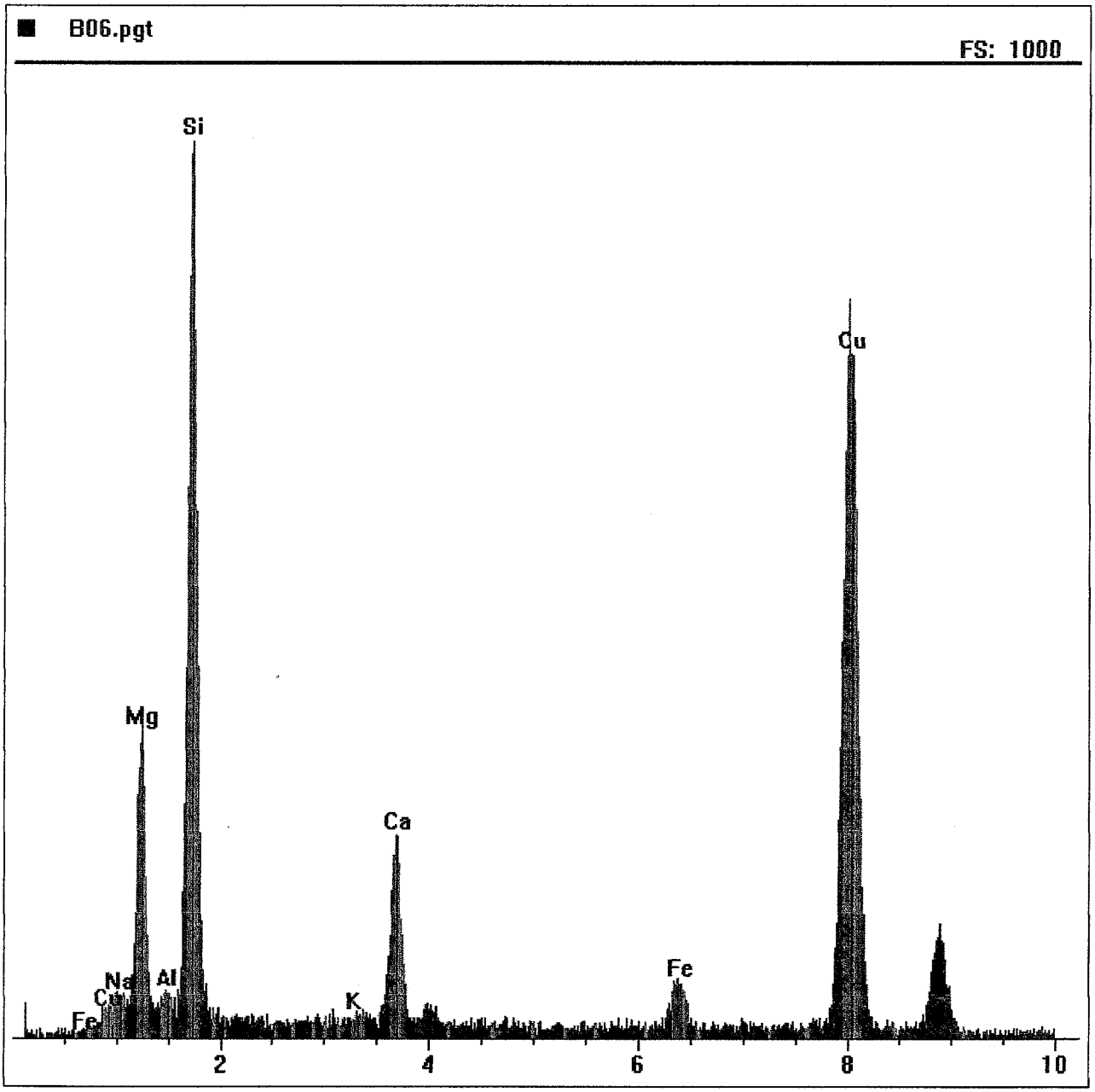


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\sw01201\B06.pgt
Collected: September 24, 2013 09:10:50

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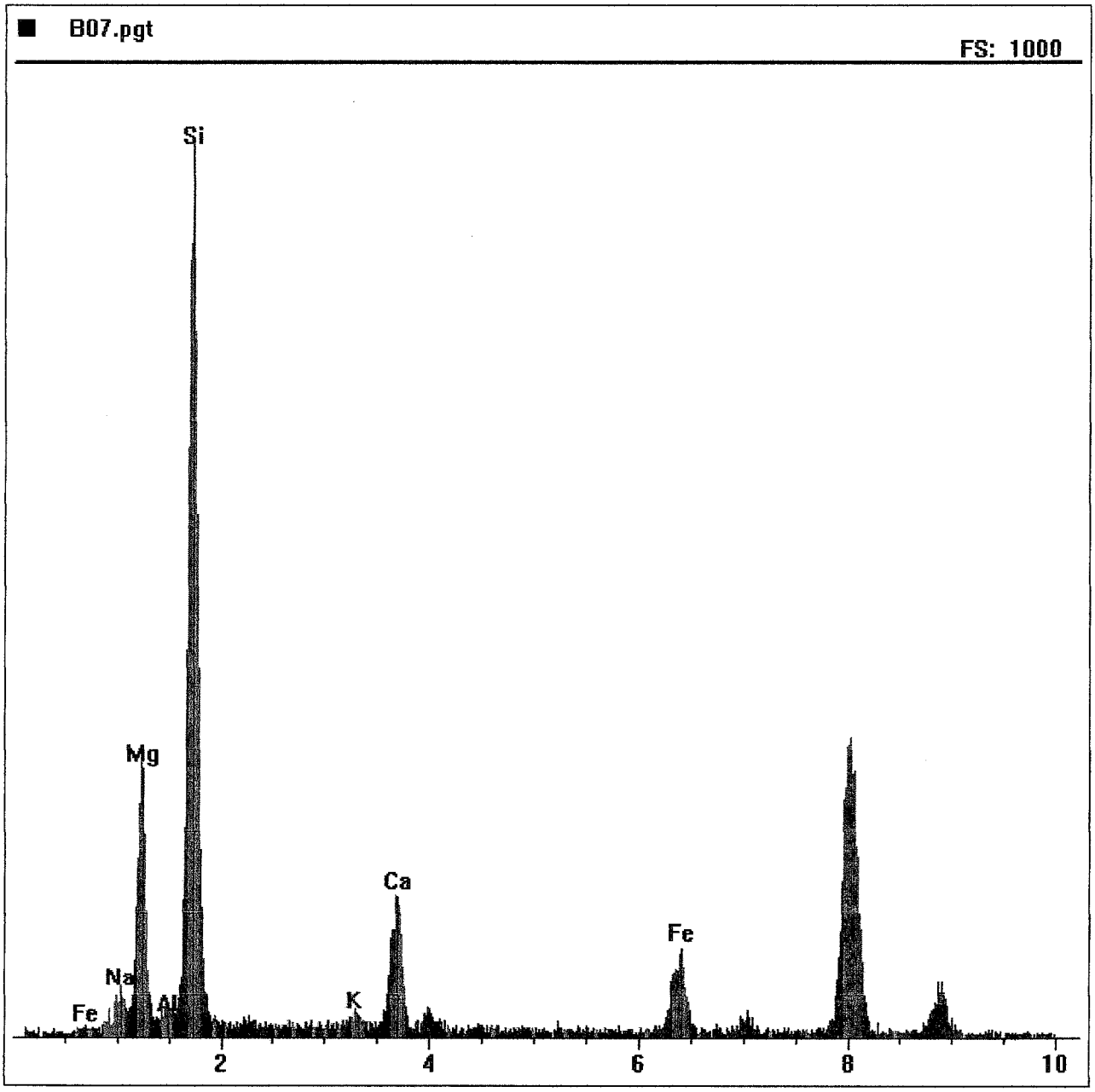


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\sw01201\B07.pgt
Collected: September 24, 2013 09:10:50

Live Time:	56.10	Count Rate:	2114	Dead Time:	22.47 %
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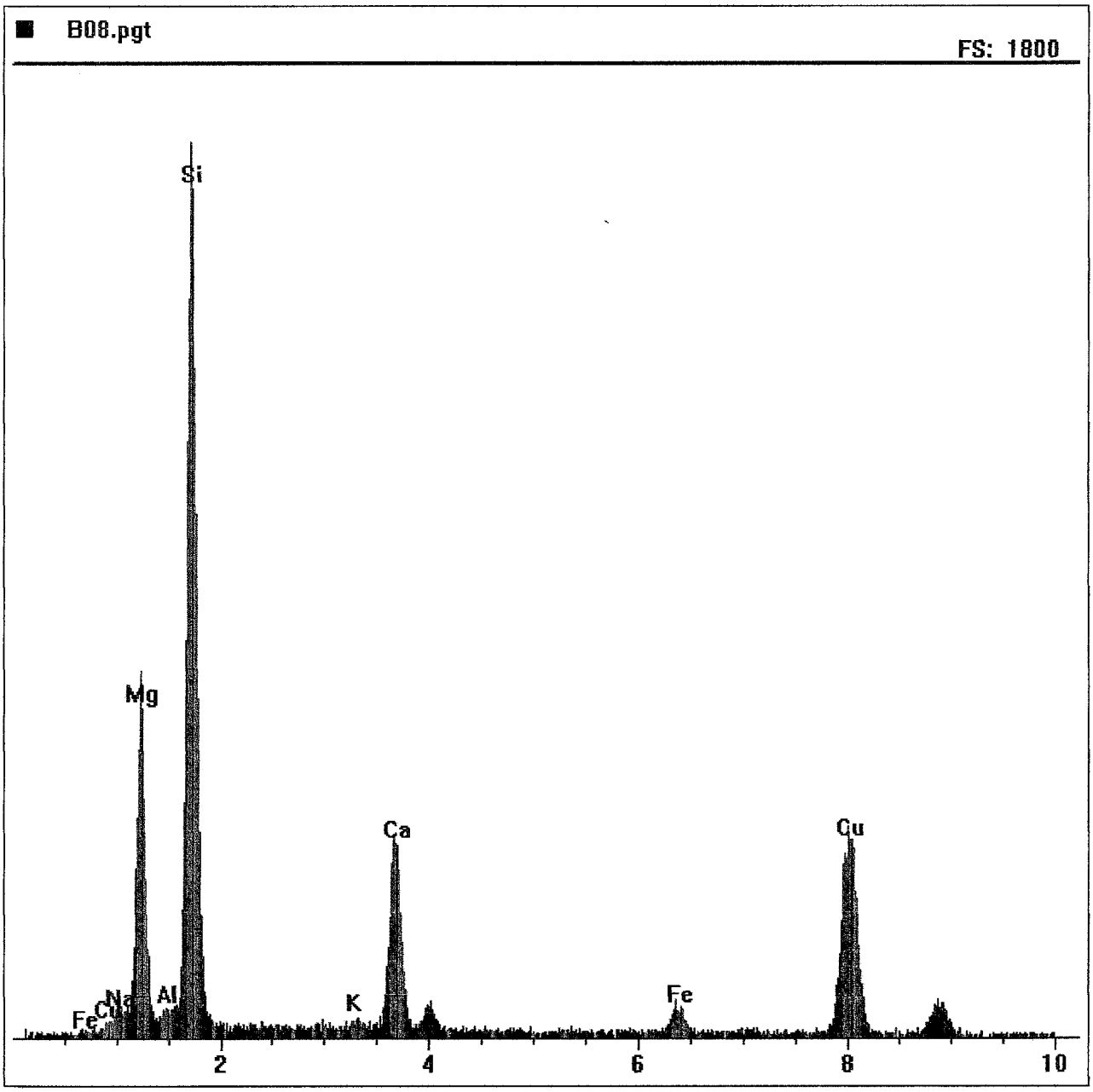


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\sw01201\B08.pgt
Collected: September 24, 2013 09:10:50

Live Time:	56.62	Count Rate:	3559	Dead Time:	33.49 %
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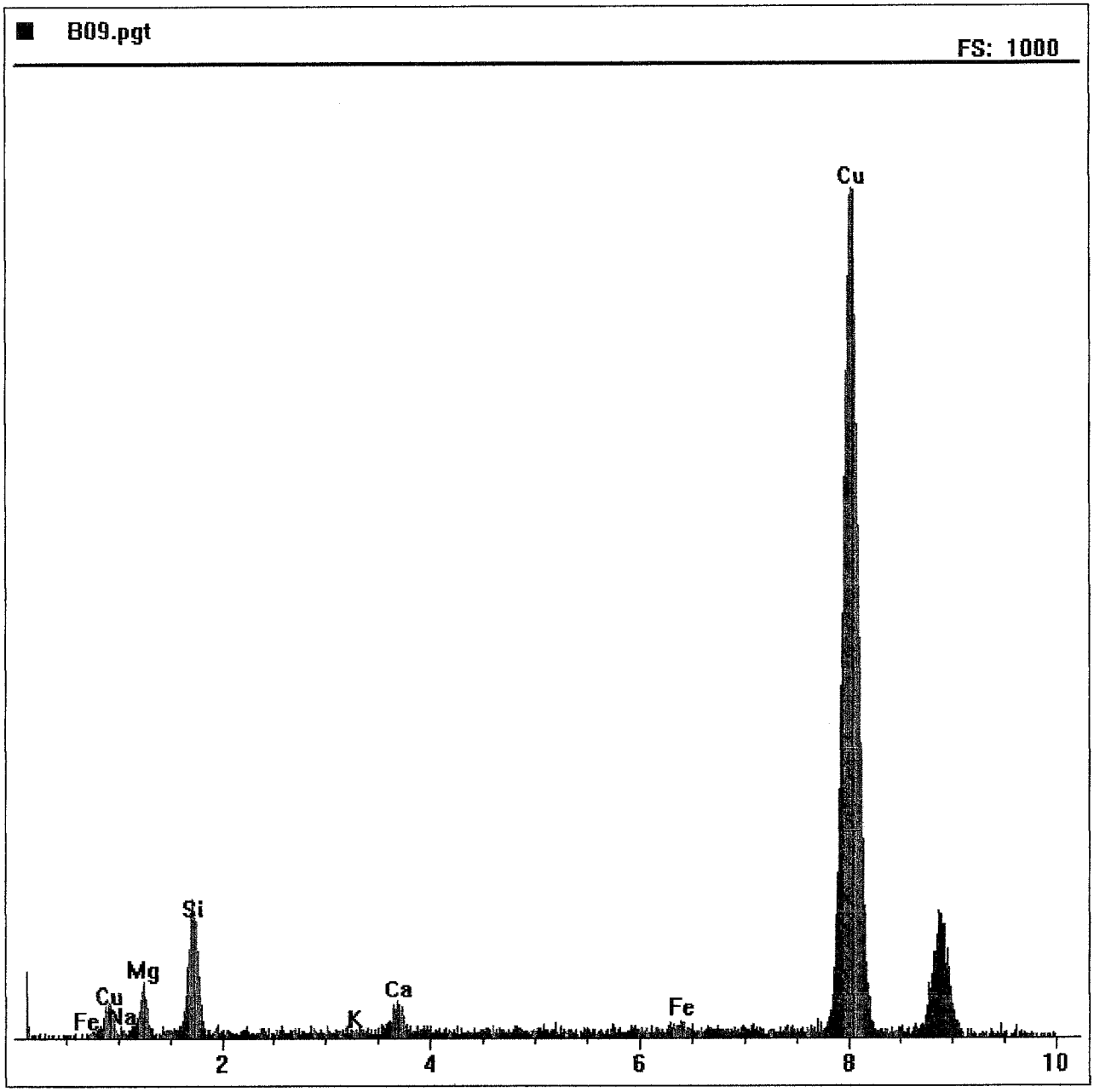


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\sw01201\B09.pgt
Collected: September 24, 2013 09:10:50

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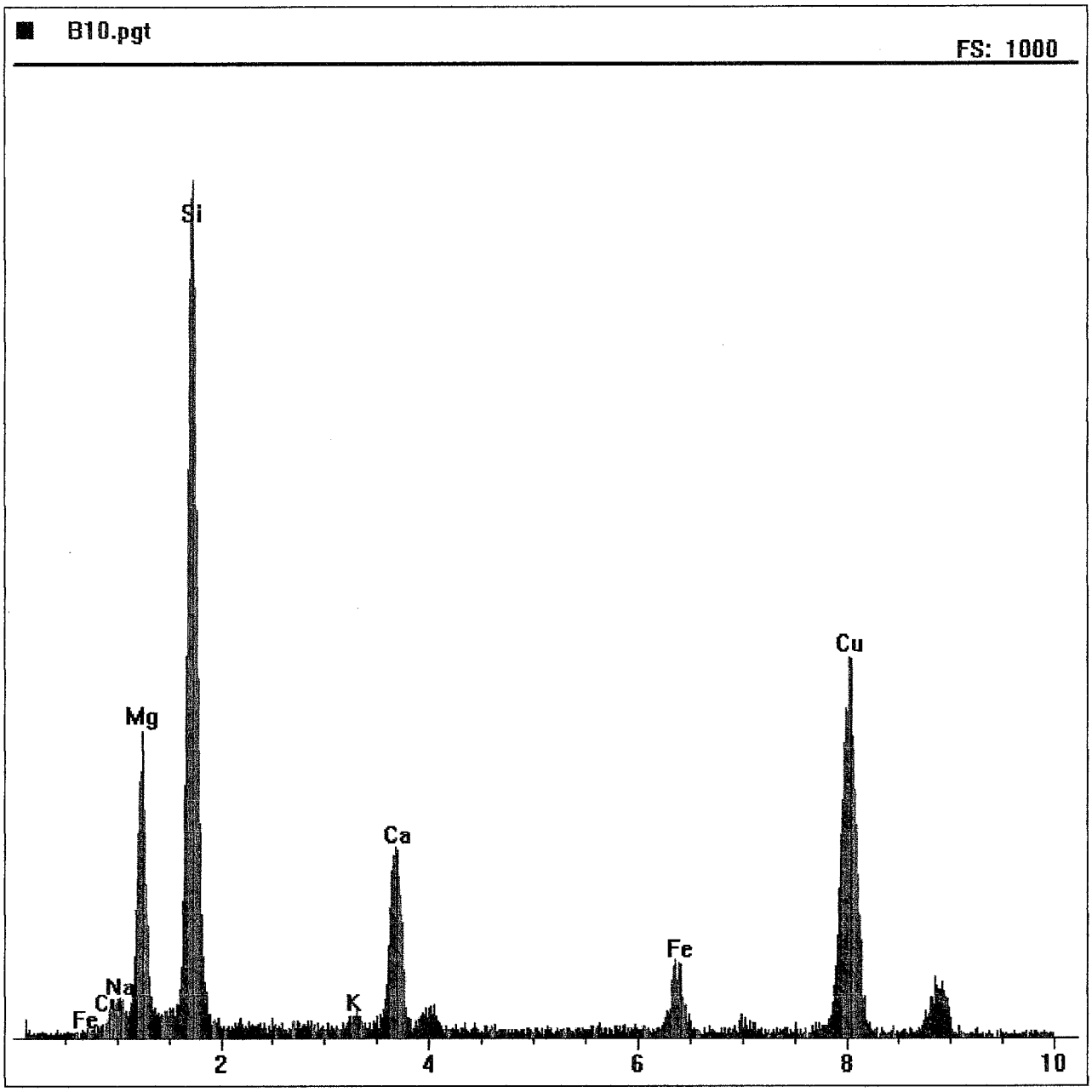


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\sw01201\B10.pgt
Collected: September 24, 2013 09:10:50

Live Time:	121.93	Count Rate:	1060	Dead Time:	14.01 %
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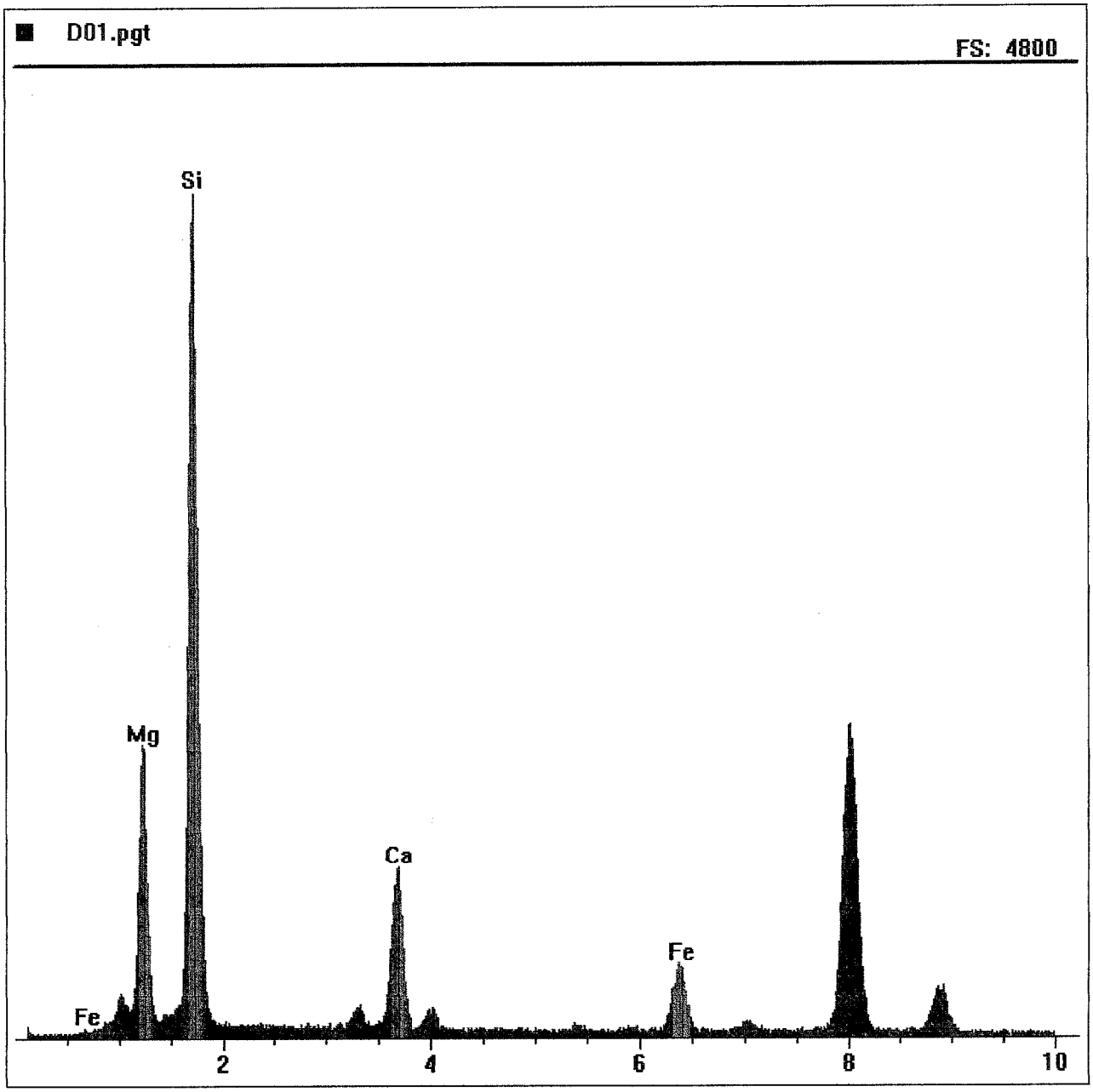


Energy Dispersive X-Ray Analysis Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01231\D01.pgt
Collected: September 24, 2013 09:40:13

Live Time:	162.75	Count Rate:	3645	Dead Time:	34.74 %
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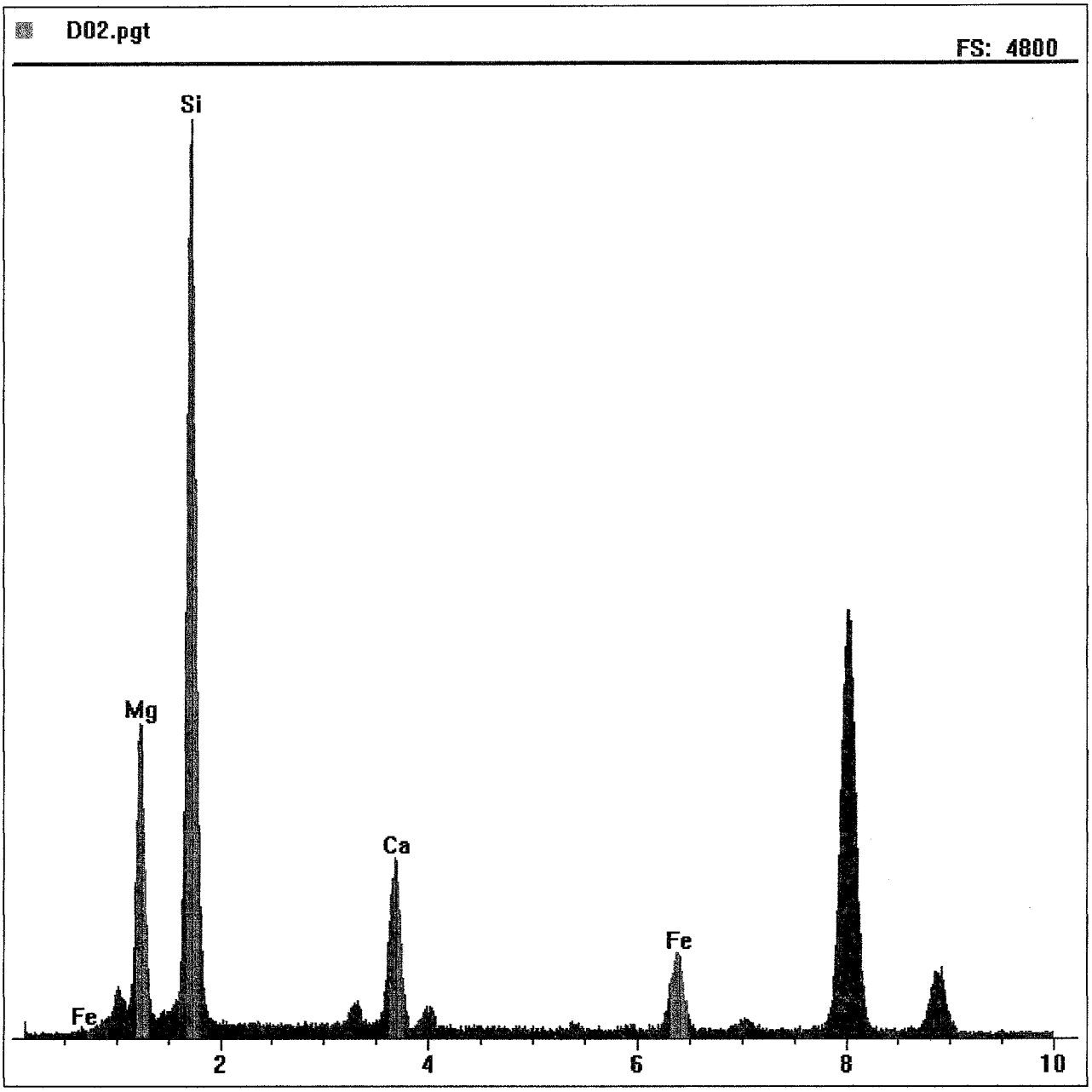


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01231\D02.pgt
Collected: September 24, 2013 09:40:13

Live Time:	281.14	Count Rate:	2478	Dead Time:	26.69 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

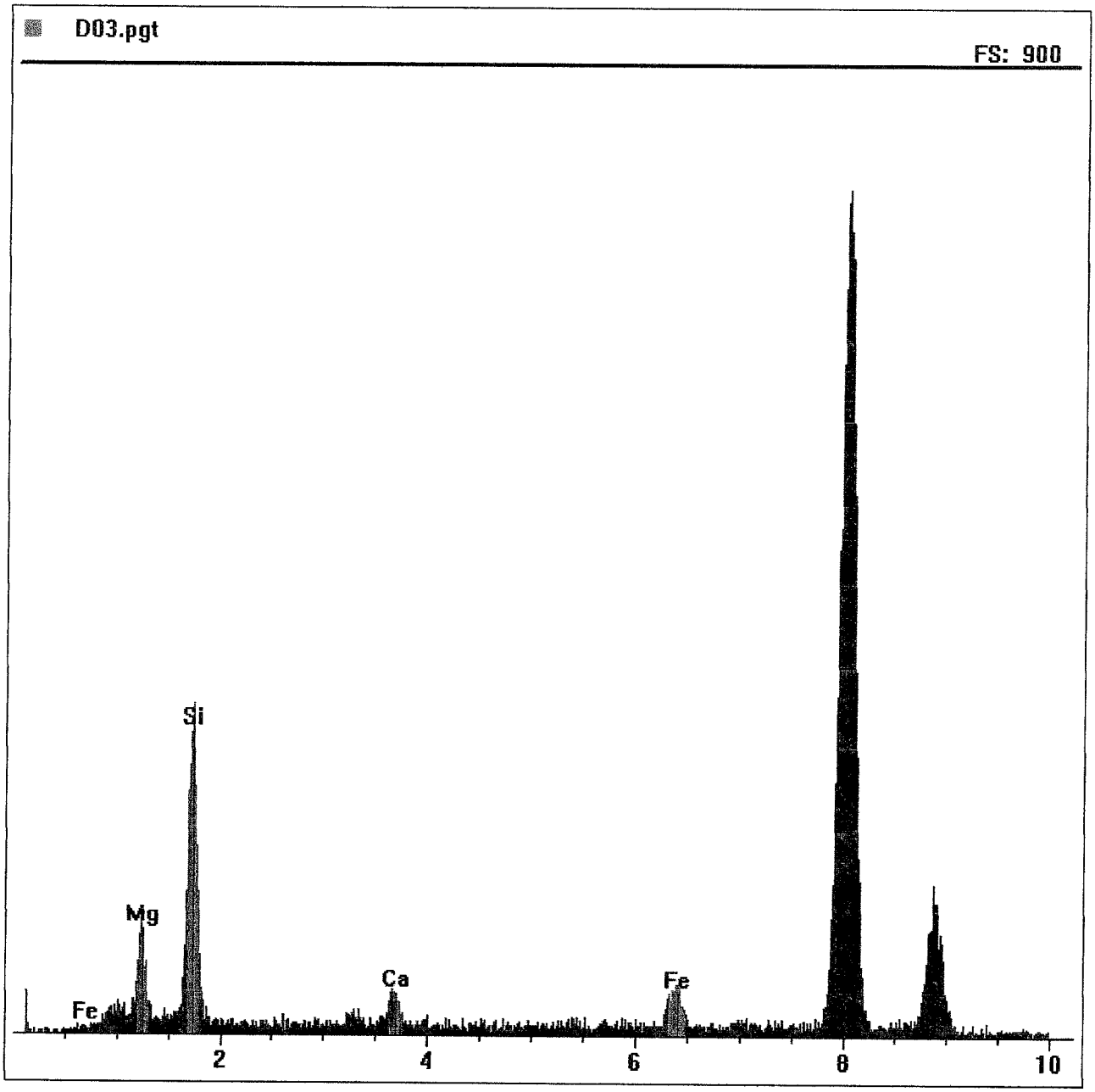


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01231\D03.pgt
Collected: September 24, 2013 09:48:02

Live Time:	272.30	Count Rate:	424	Dead Time:	6.98 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

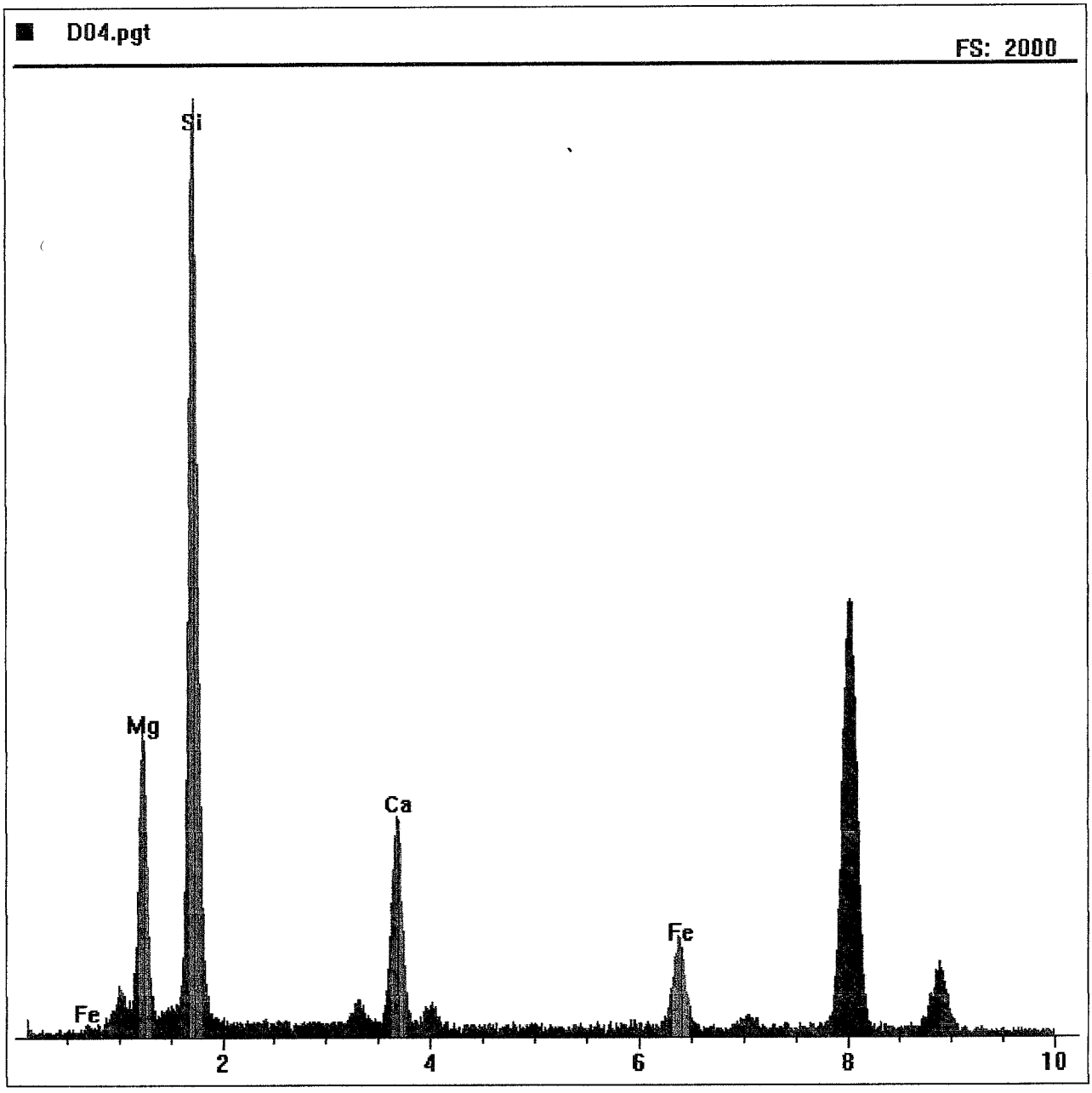


Energy Dispersive X-Ray Analysis Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01231\D04.pgt
Collected: September 24, 2013 09:48:02

Live Time:	150.91	Count Rate:	2011	Dead Time:	23.05 %
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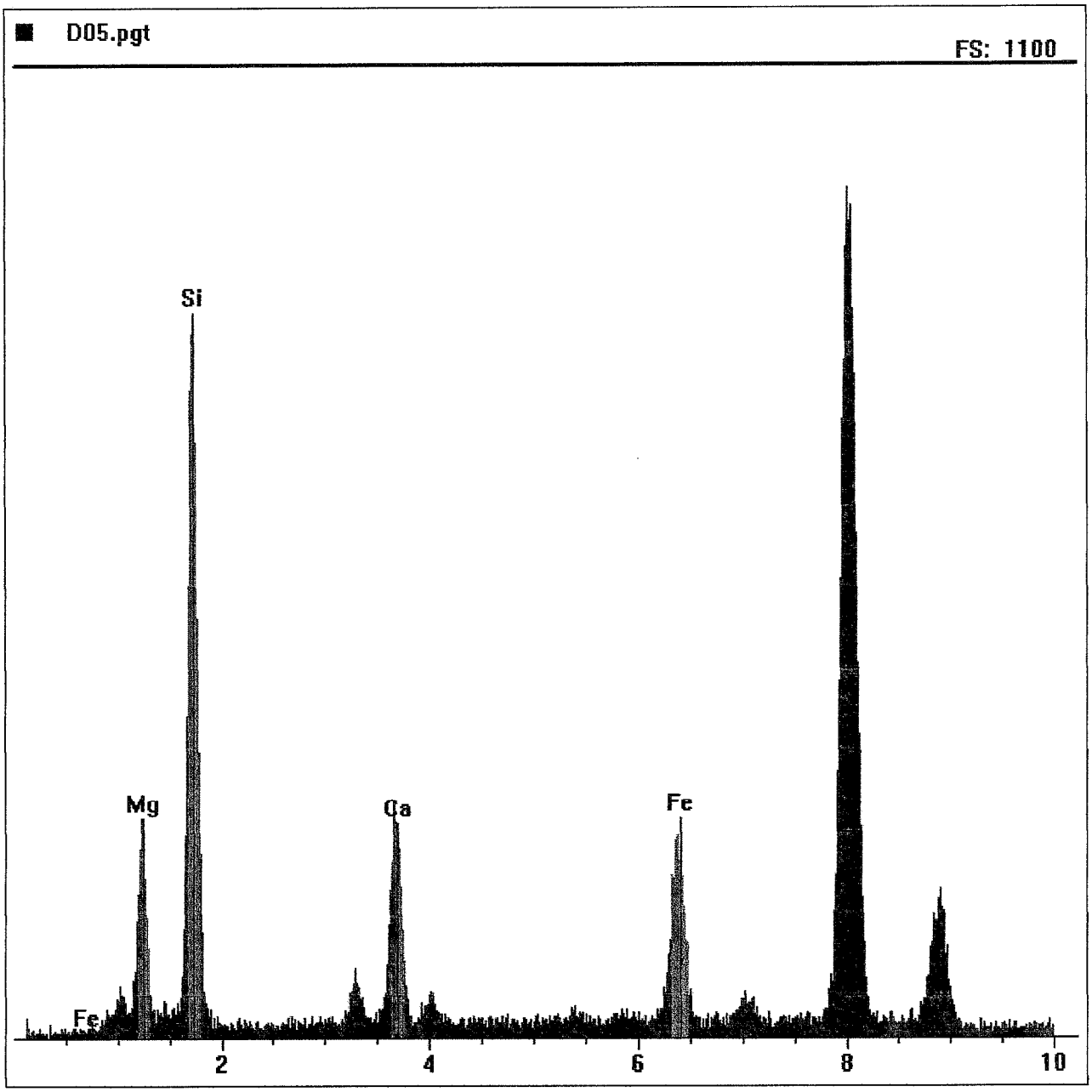


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01231\D05.pgt
Collected: September 24, 2013 09:48:02

Live Time:	117.84	Count Rate:	1863	Dead Time:	22.72 %
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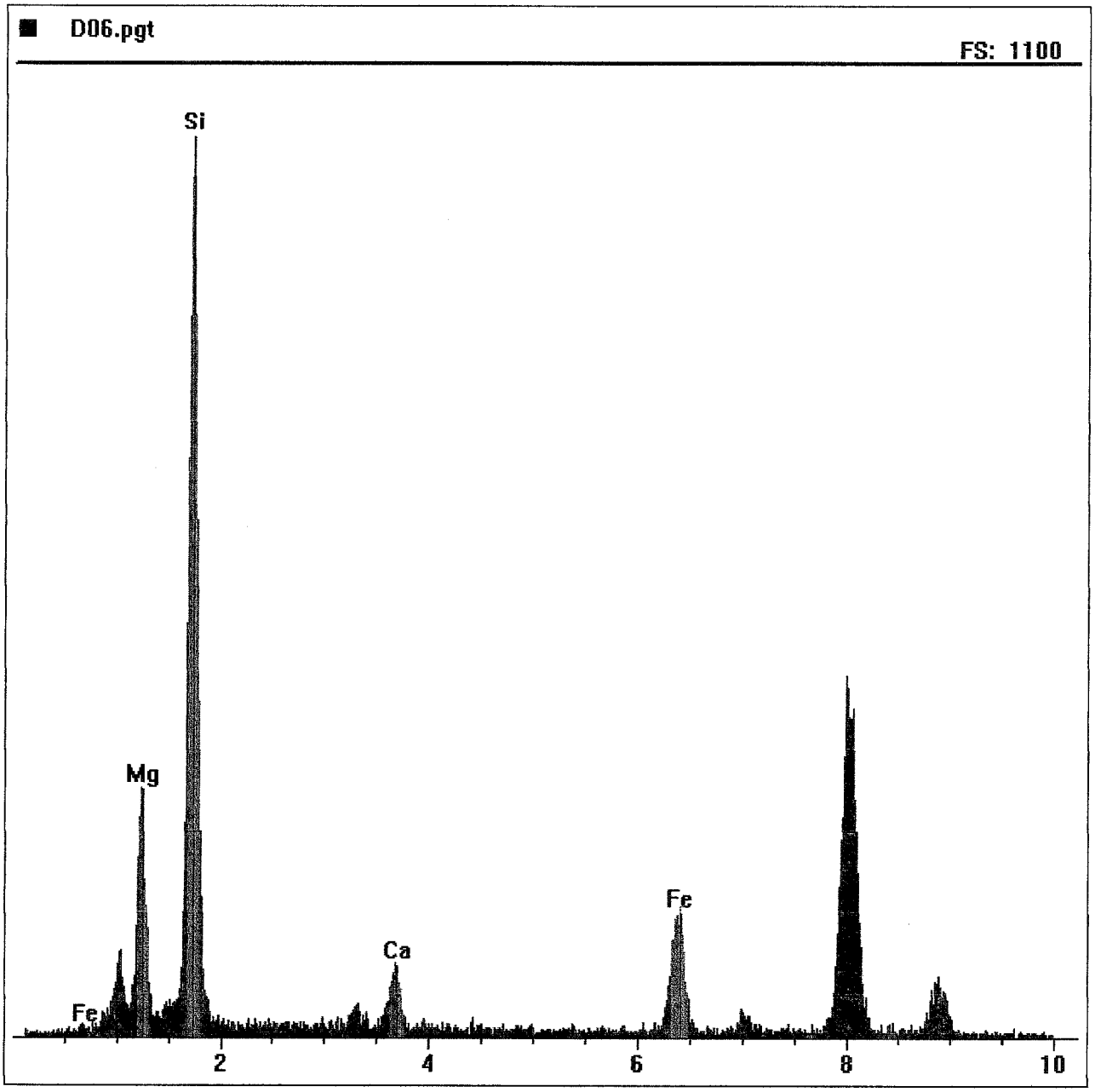


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01231\D06.pgt
Collected: September 24, 2013 09:48:02

Live Time:	74.78	Count Rate:	1883	Dead Time:	20.75 %
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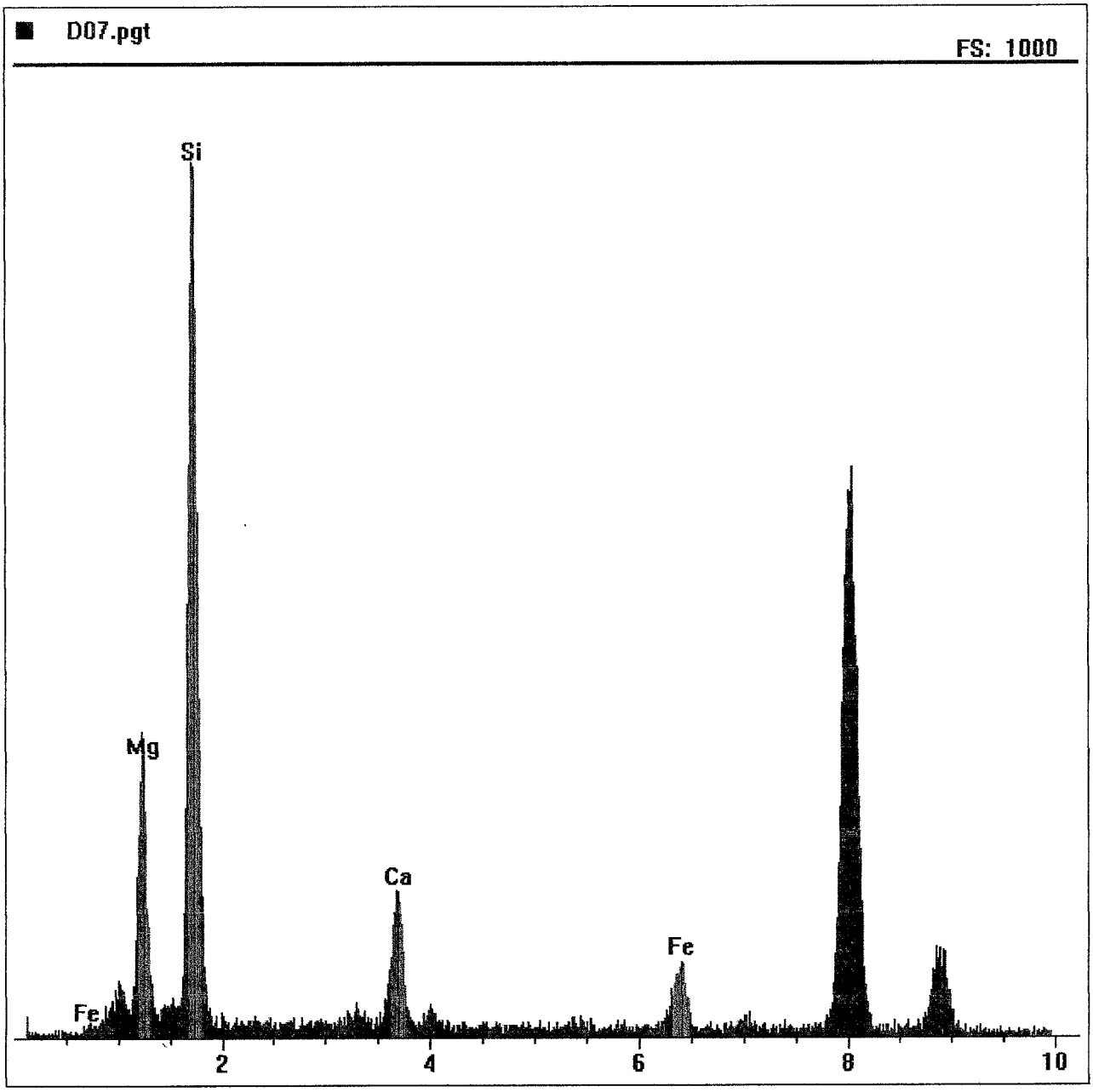


Energy Dispersive X-Ray Analysis Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01231\D07.pgt
Collected: September 24, 2013 09:48:02

Live Time:	119.62	Count Rate:	1284	Dead Time:	15.29 %
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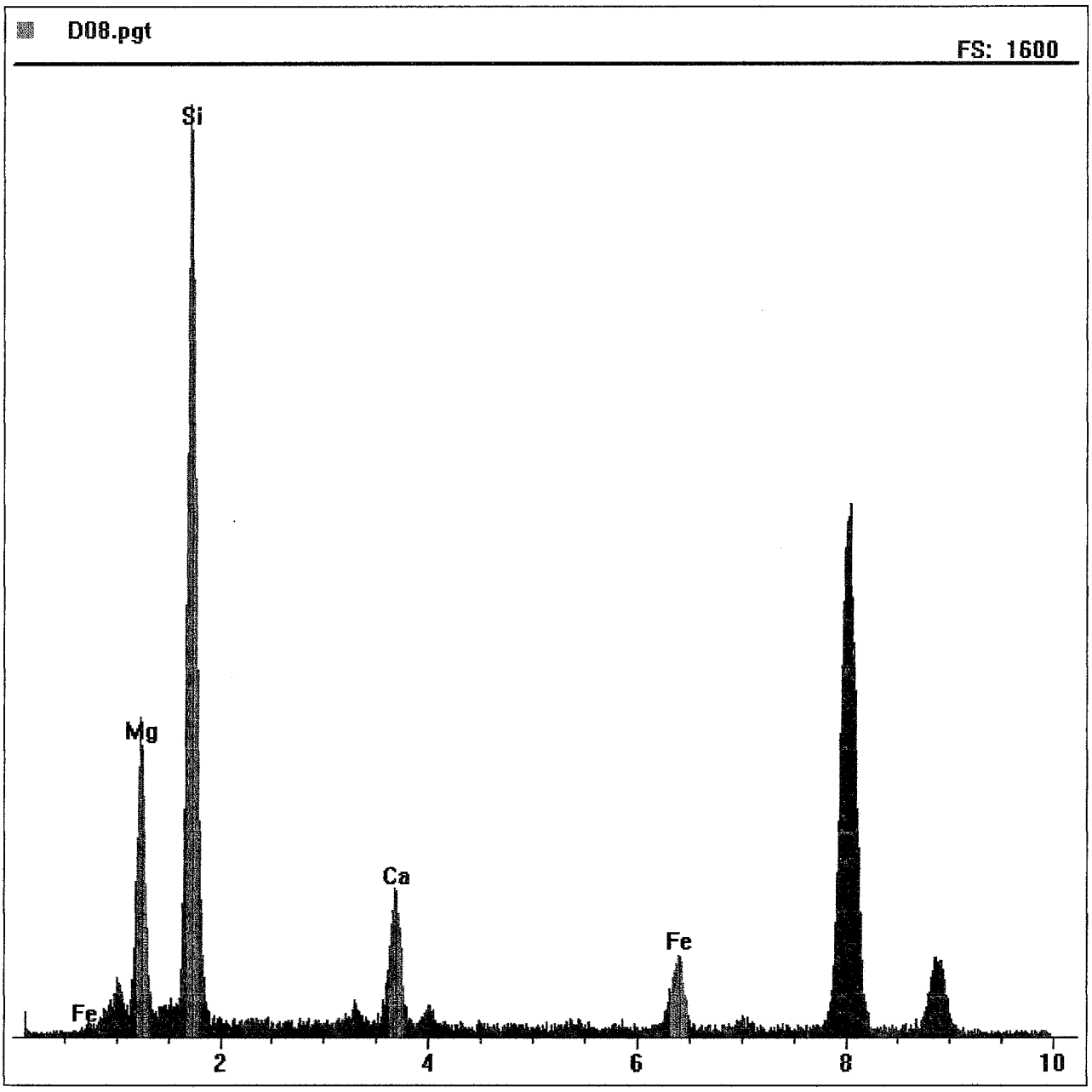


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01231\D08.pgt
Collected: September 24, 2013 09:48:02

Live Time:	173.64	Count Rate:	1409	Dead Time:	16.40 %
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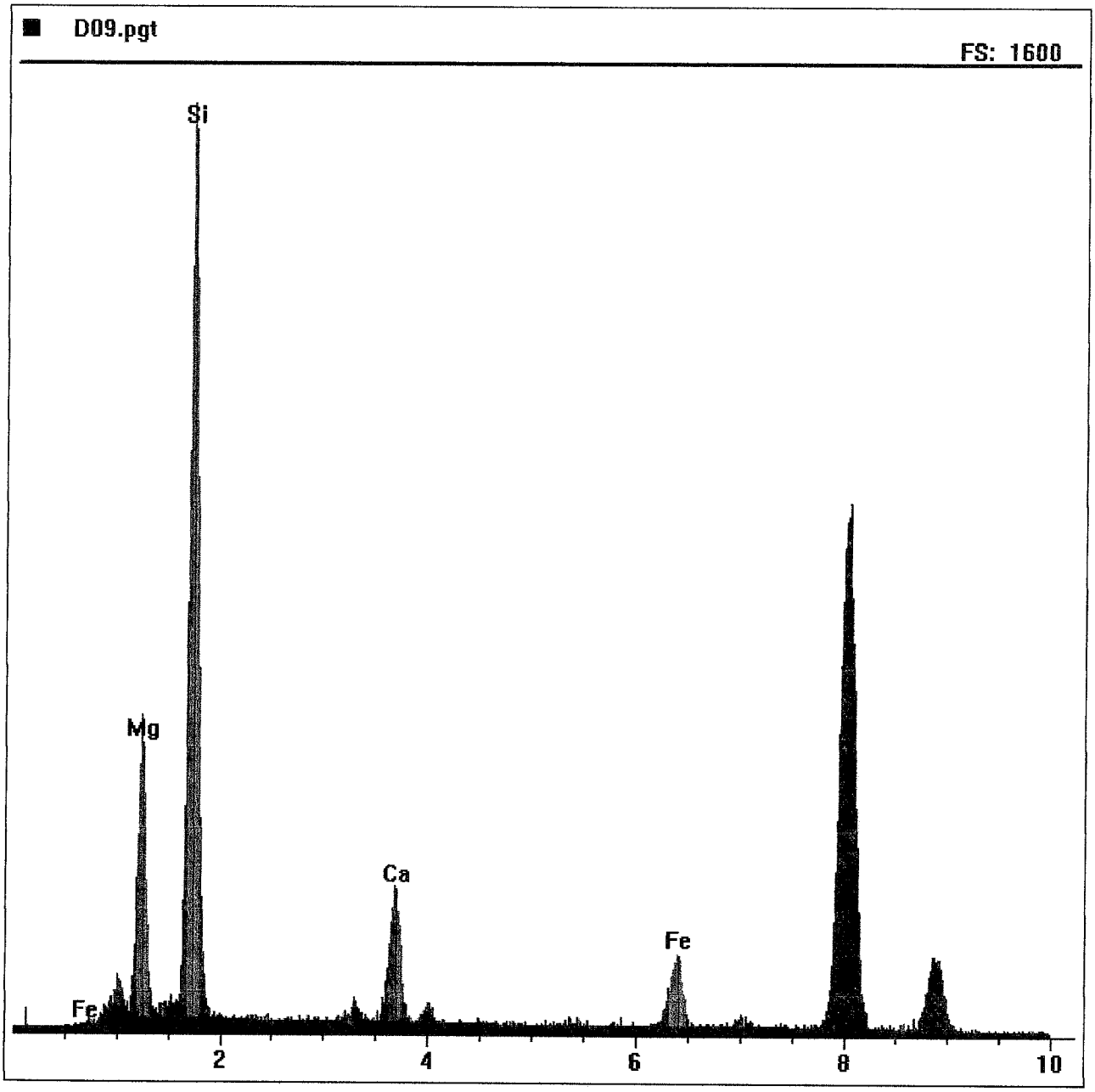


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01231\D09.pgt
Collected: September 24, 2013 09:48:02

Live Time:	173.64	Count Rate:	1409	Dead Time:	16.40 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

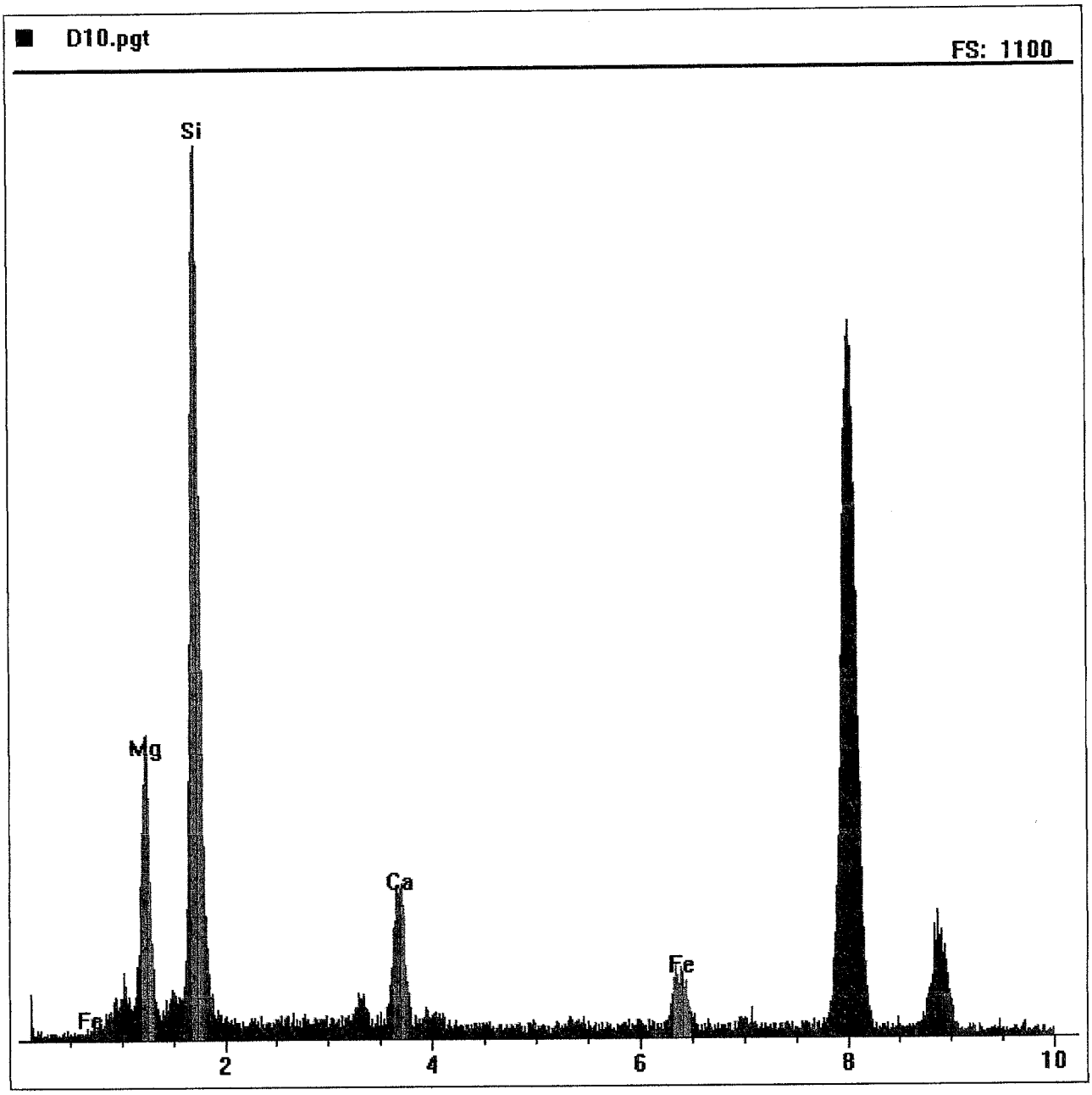


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01231\D10.pgt
Collected: September 24, 2013 09:48:02

Live Time:	209.32	Count Rate:	931	Dead Time:	12.20 %
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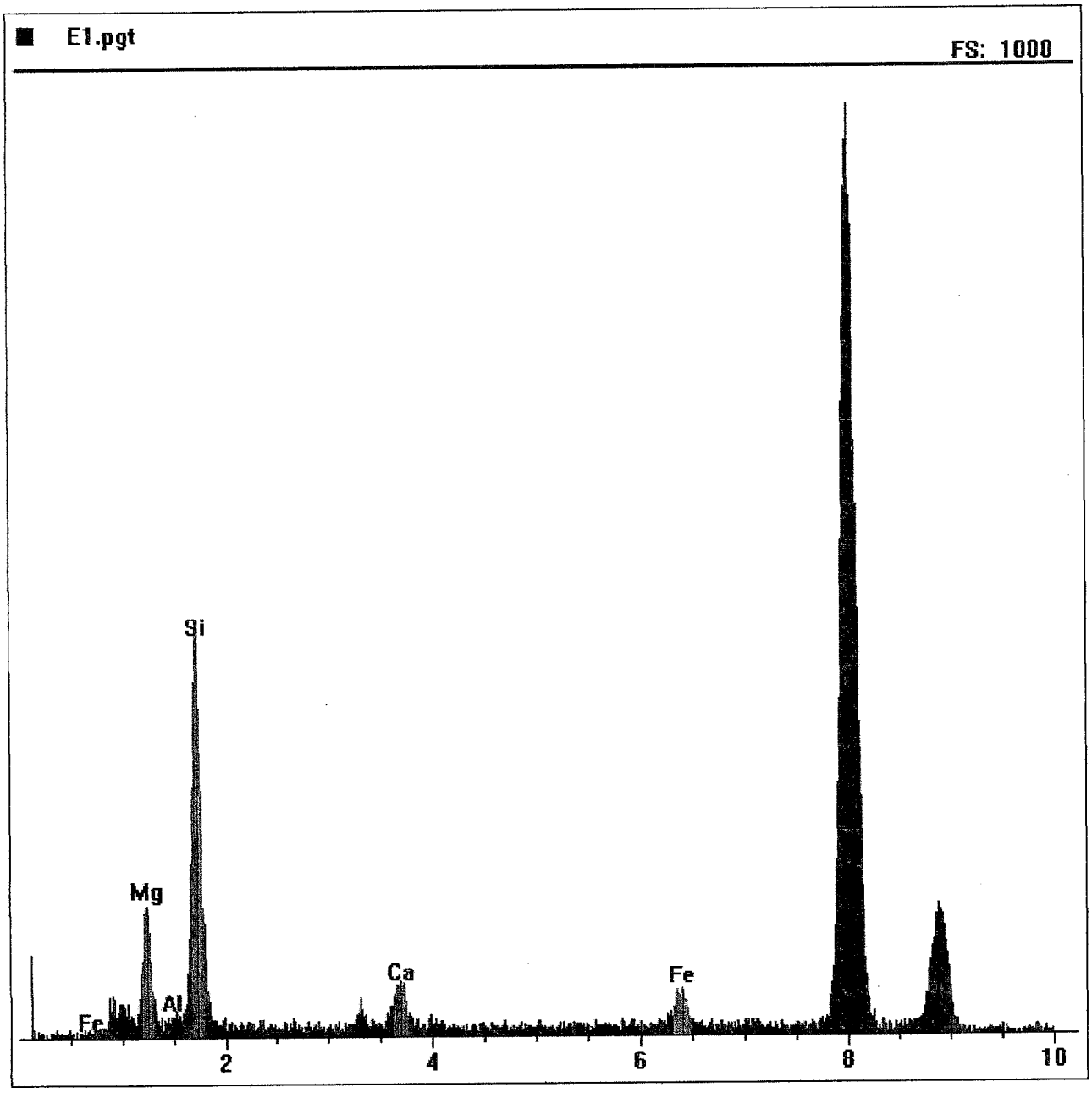


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW21281\E1.pgt
Collected: September 23, 2013 11:08:12

Live Time:	484.60	Count Rate:	284	Dead Time:	5.14 %
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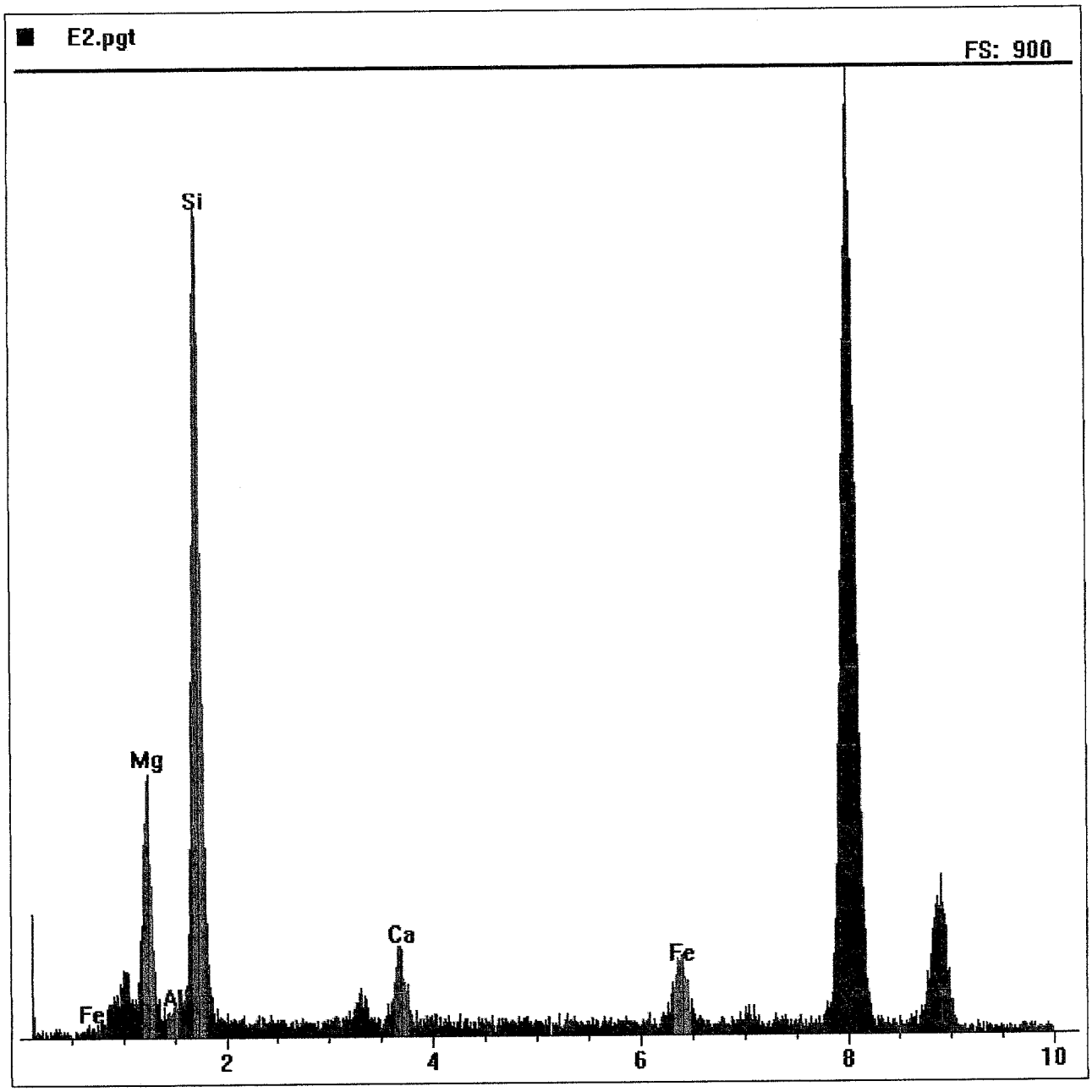


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW21281\E2.pgt
Collected: September 23, 2013 11:08:12

Live Time:	910.26	Count Rate:	177	Dead Time:	3.93 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

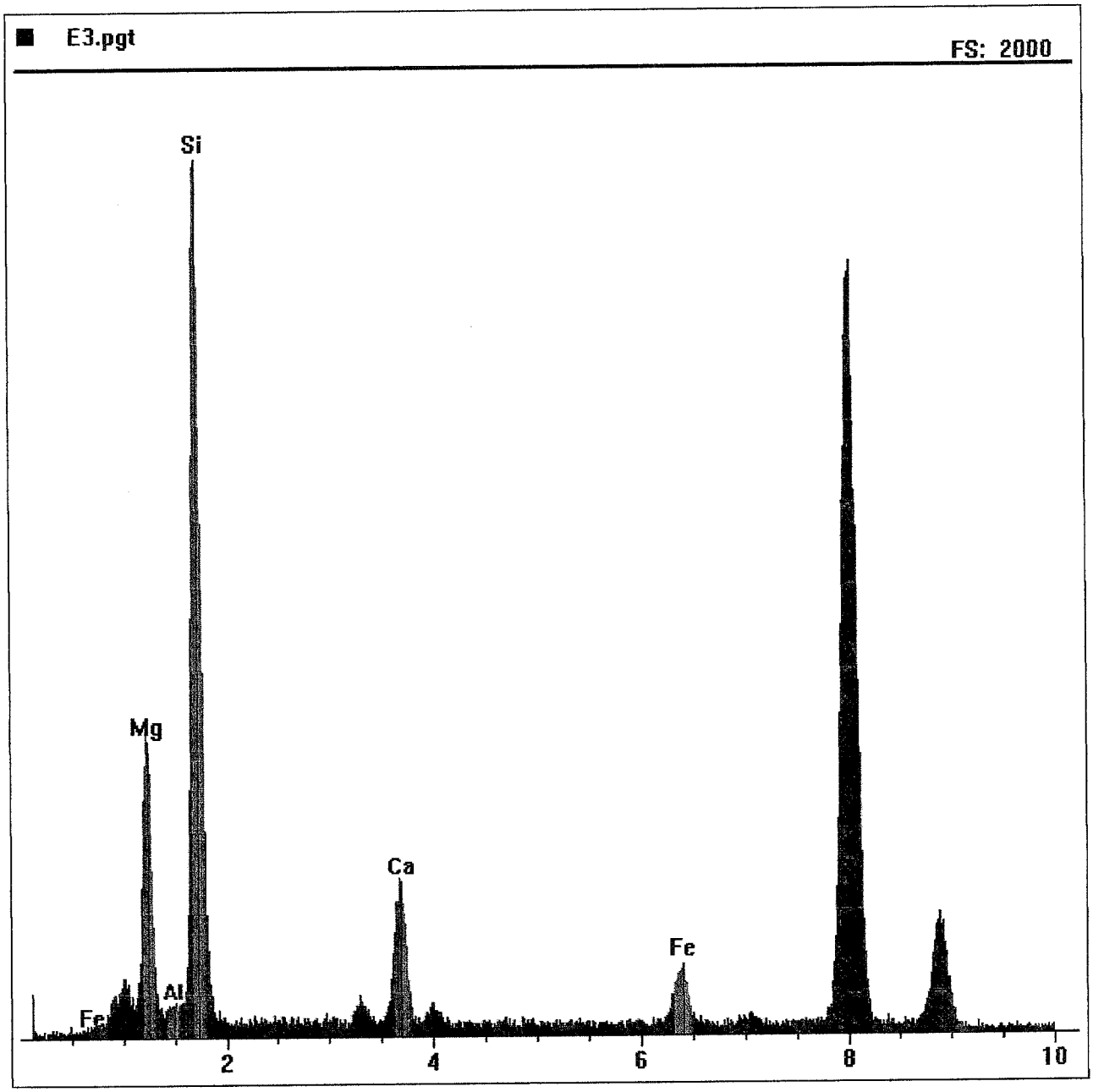


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW21281\E3.pgt
Collected: September 23, 2013 11:08:12

Live Time:	583.64	Count Rate:	607	Dead Time:	8.91 %
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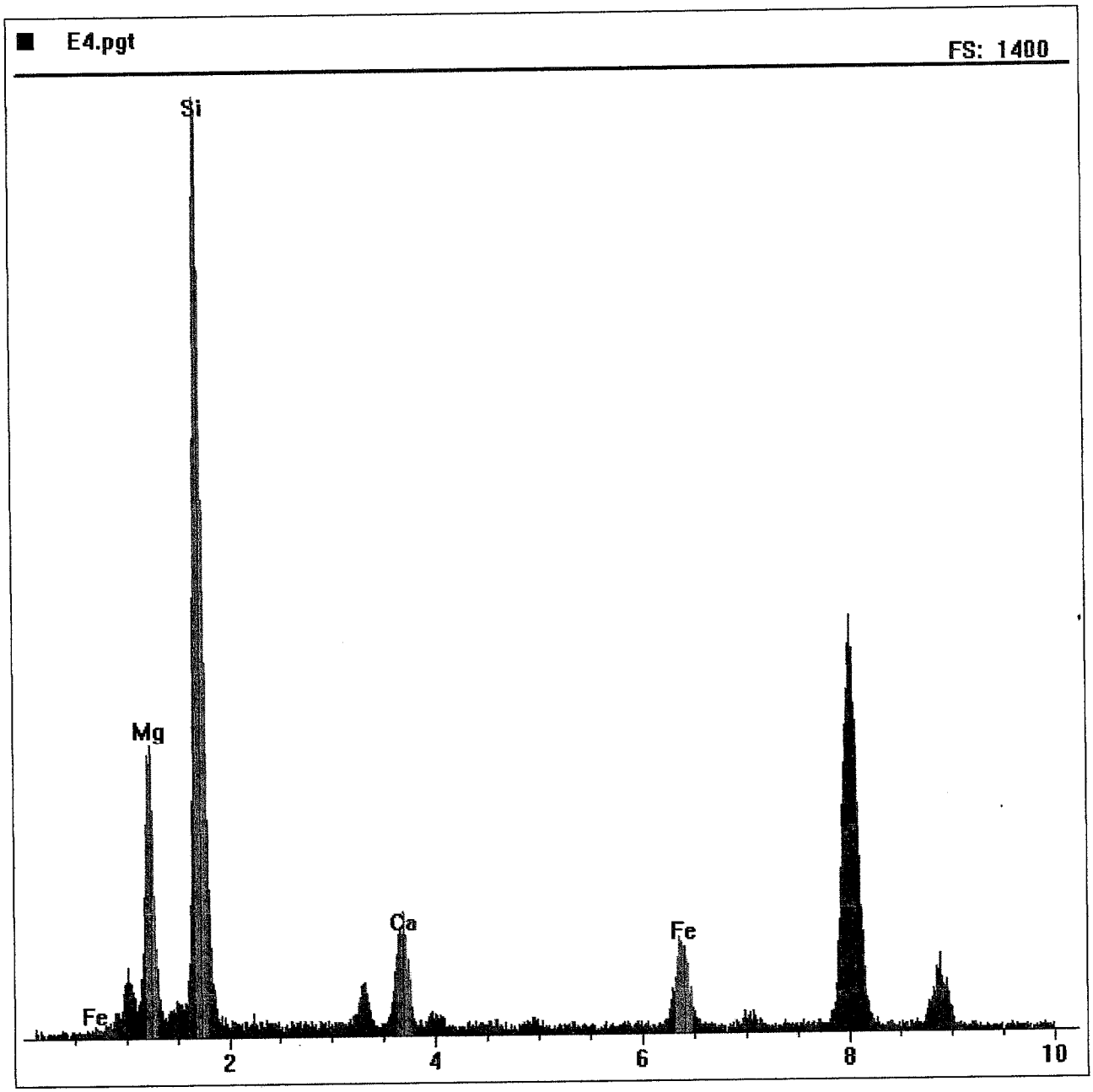


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW21281\E4.pgt
Collected: September 24, 2013 09:48:02

Live Time:	63.22	Count Rate:	3066	Dead Time:	30.24 %
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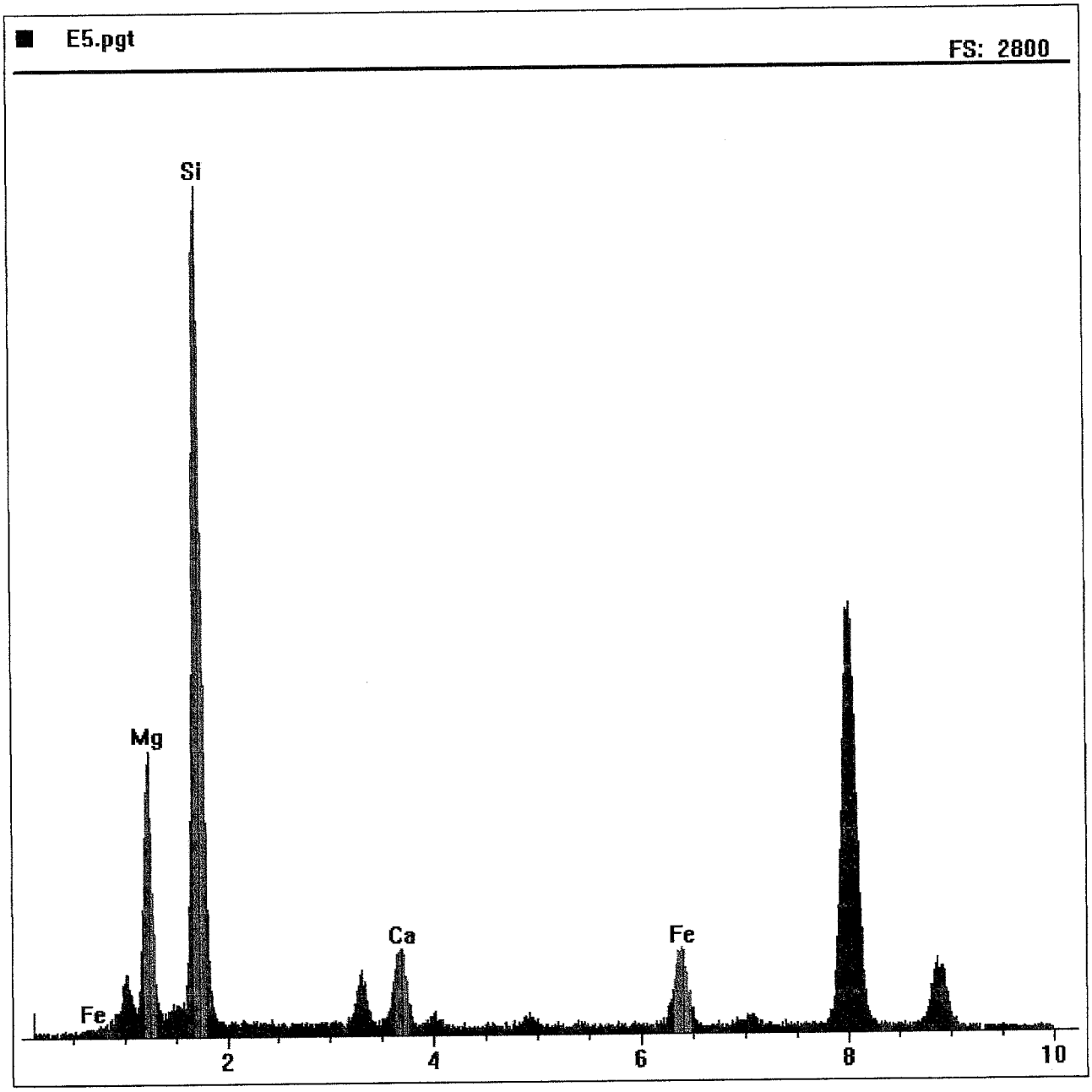


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW21281\E5.pgt
Collected: September 24, 2013 09:48:02

Live Time:	230.37	Count Rate:	1644	Dead Time:	19.08 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

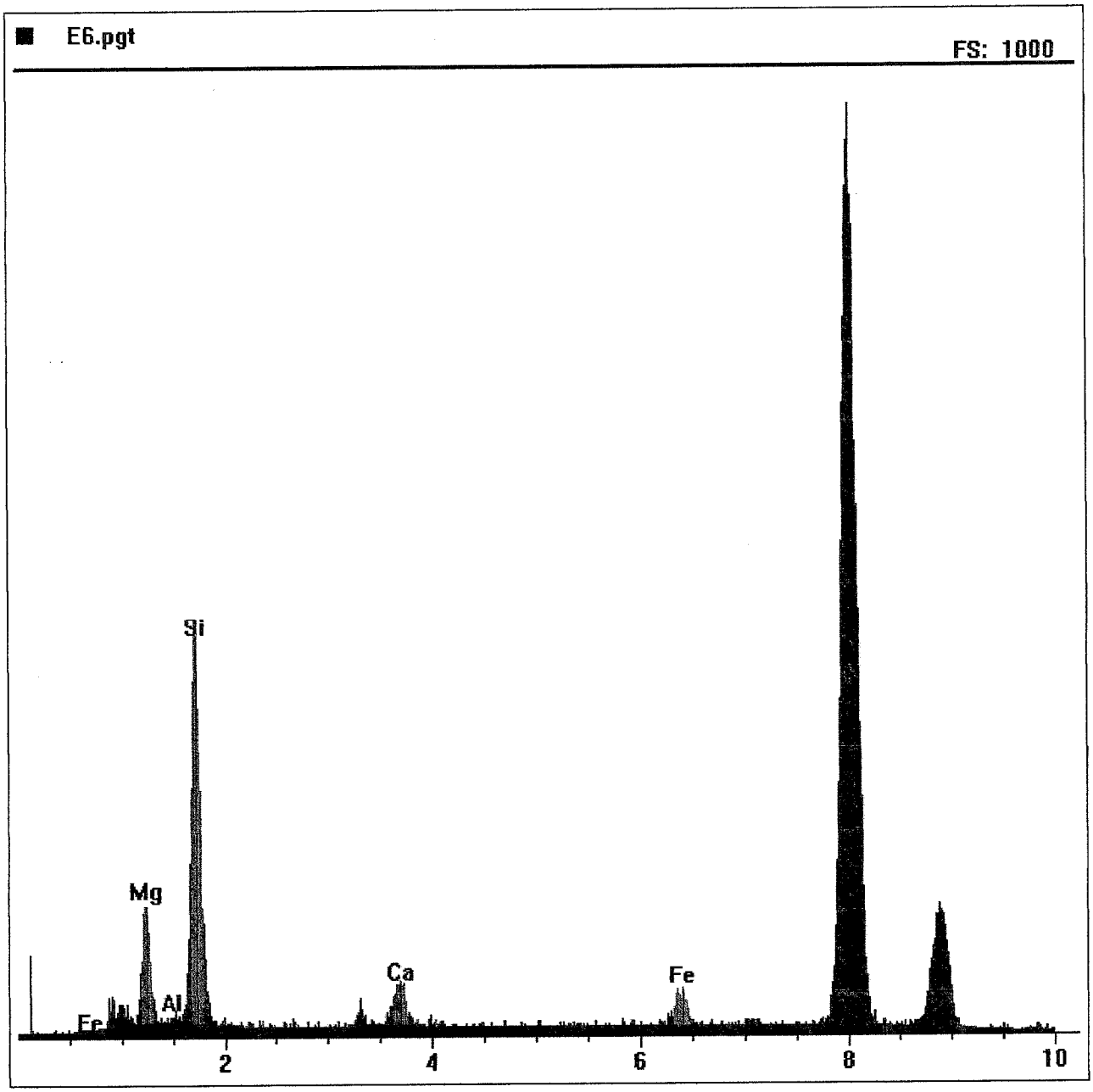


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW21281\E6.pgt
Collected: September 23, 2013 11:08:12

Live Time:	484.60	Count Rate:	284	Dead Time:	5.14 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

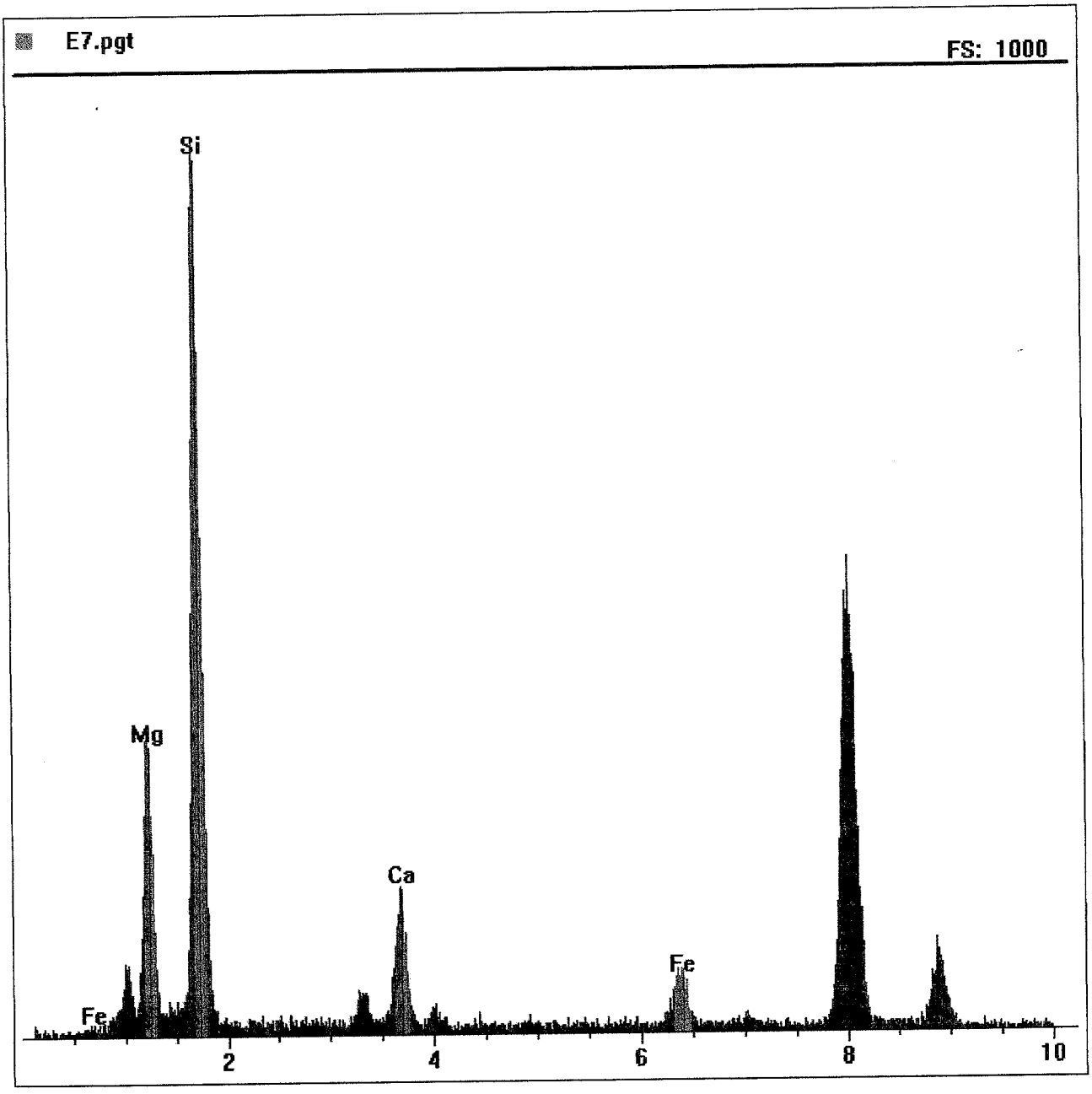


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW21281\E7.pgt
Collected: September 24, 2013 09:48:02

Live Time:	59.20	Count Rate:	2353	Dead Time:	24.49 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

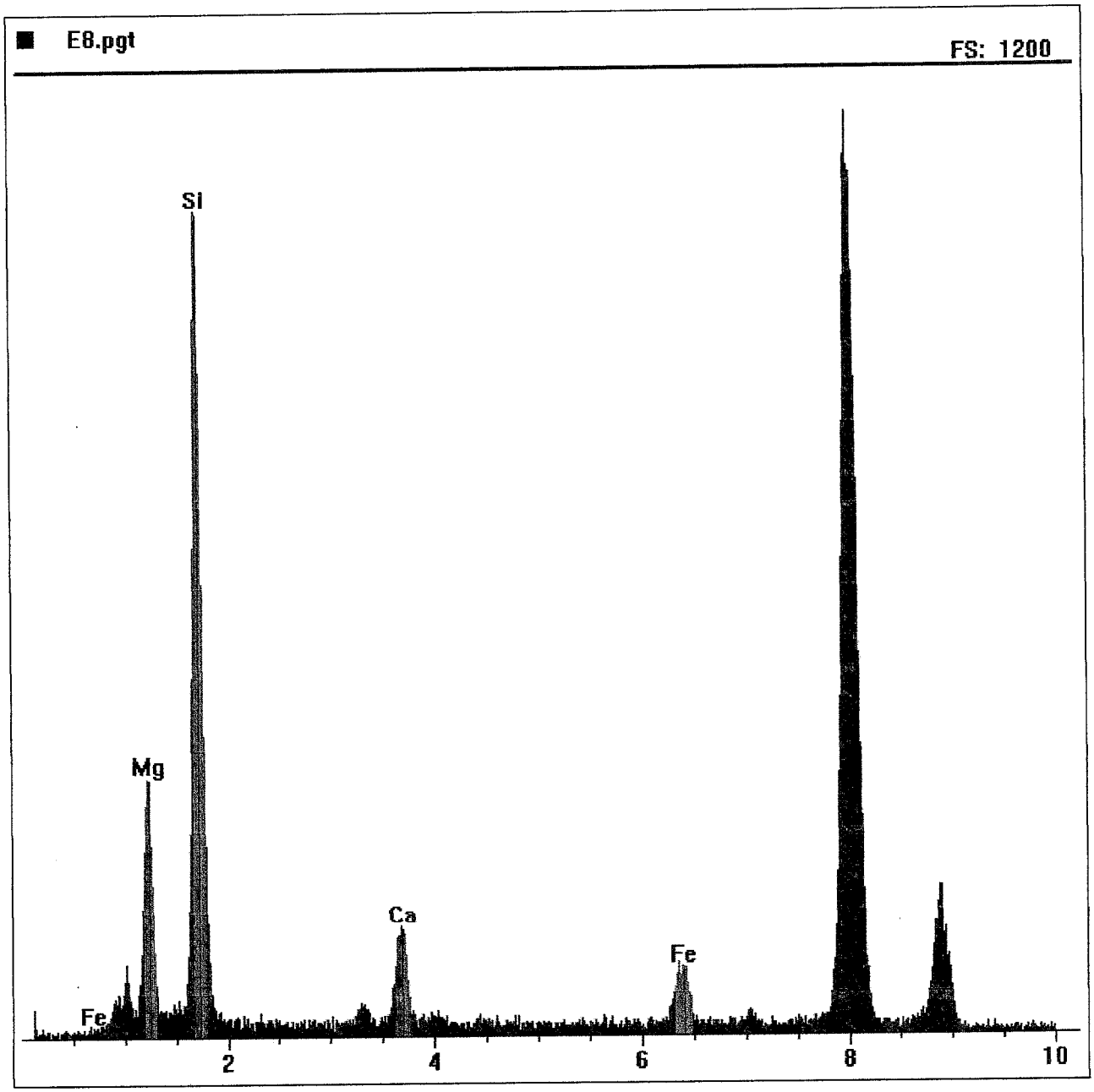


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW21281\E8.pgt
Collected: September 24, 2013 10:53:11

Live Time:	170.70	Count Rate:	1239	Dead Time:	15.00 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

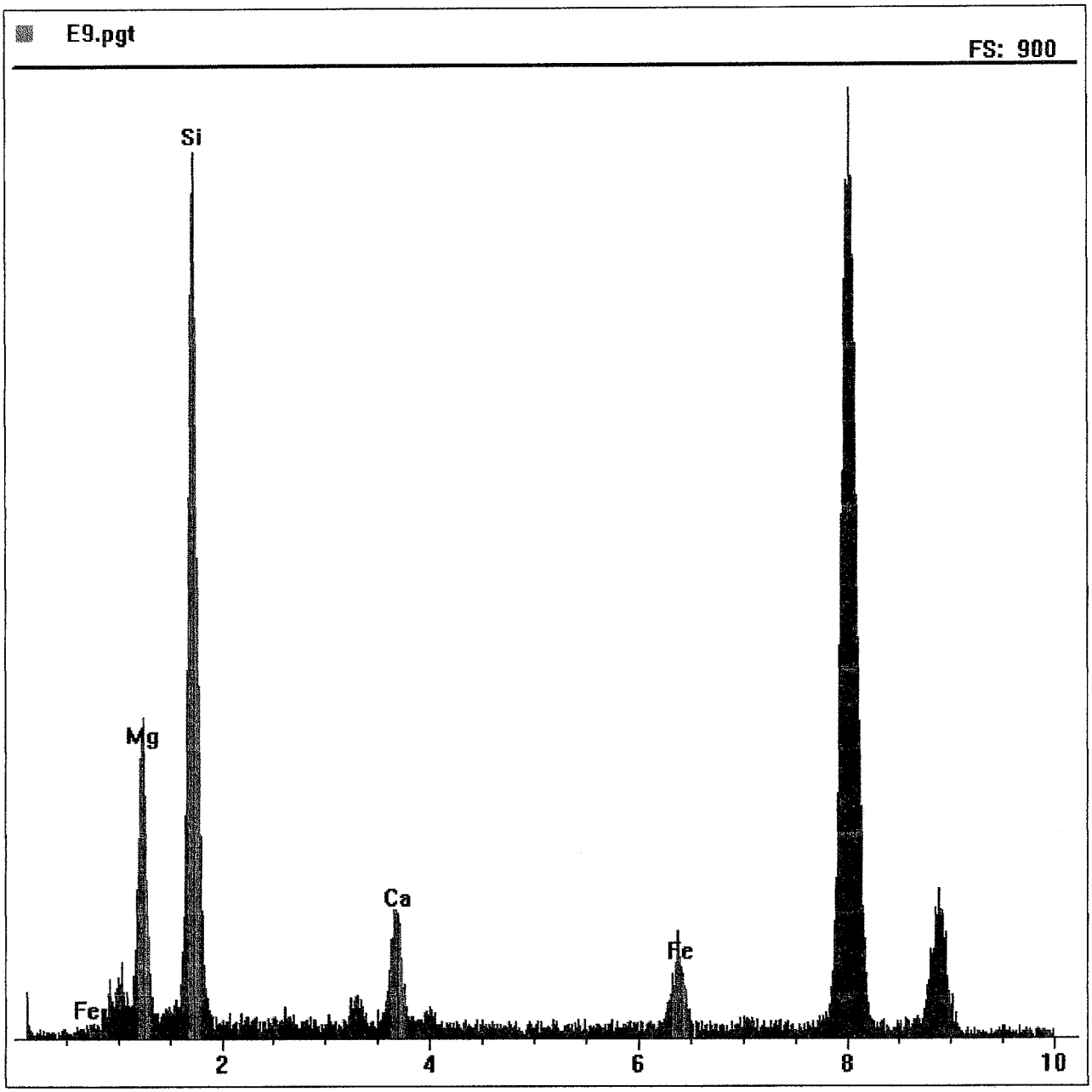


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW21281\E9.pgt
Collected: September 24, 2013 10:53:11

Live Time:	228.41	Count Rate:	742	Dead Time:	11.62 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

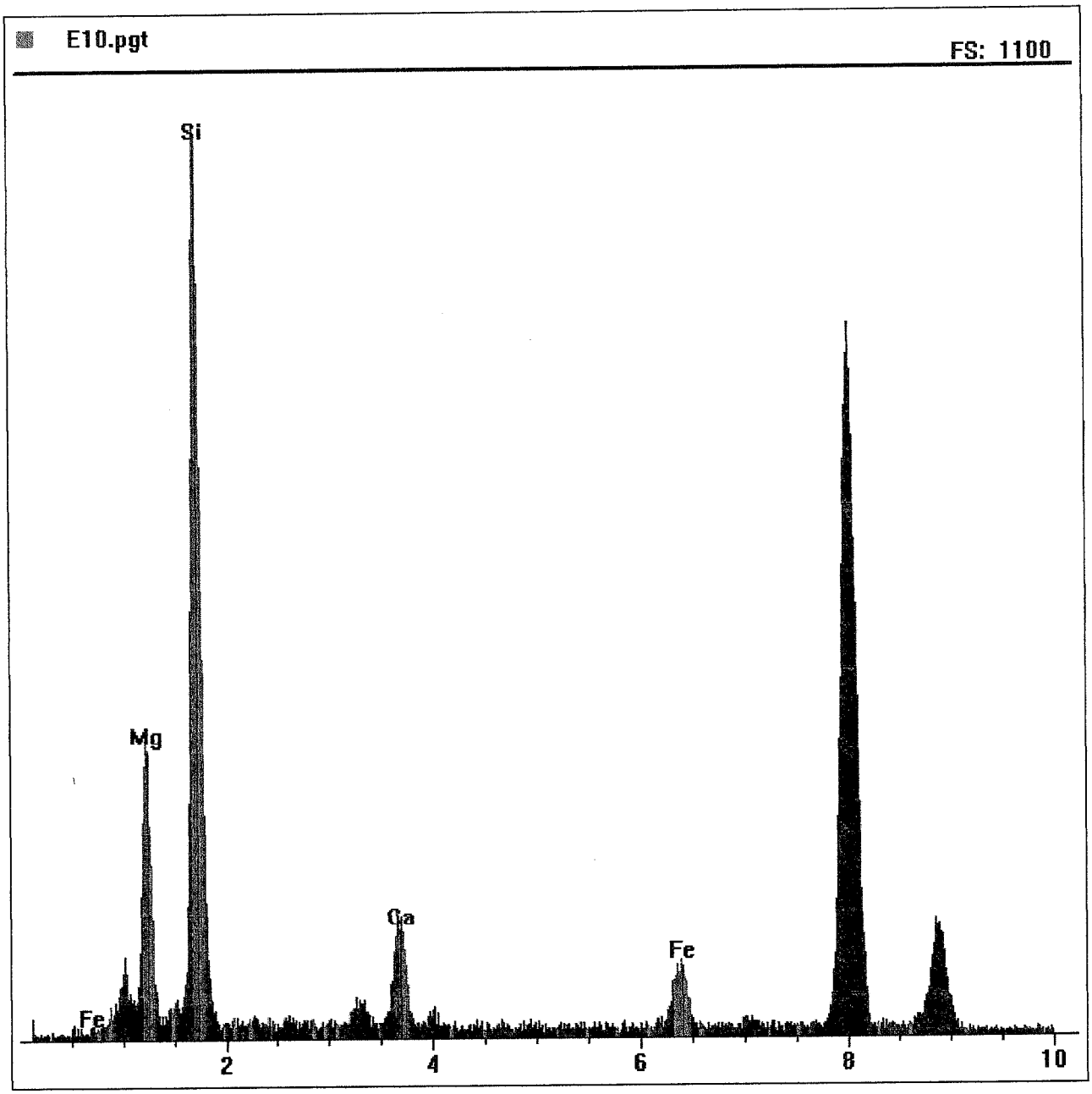


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW21281\E10.pgt
Collected: September 24, 2013 10:53:11

Live Time:	122.24	Count Rate:	1532	Dead Time:	17.59 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

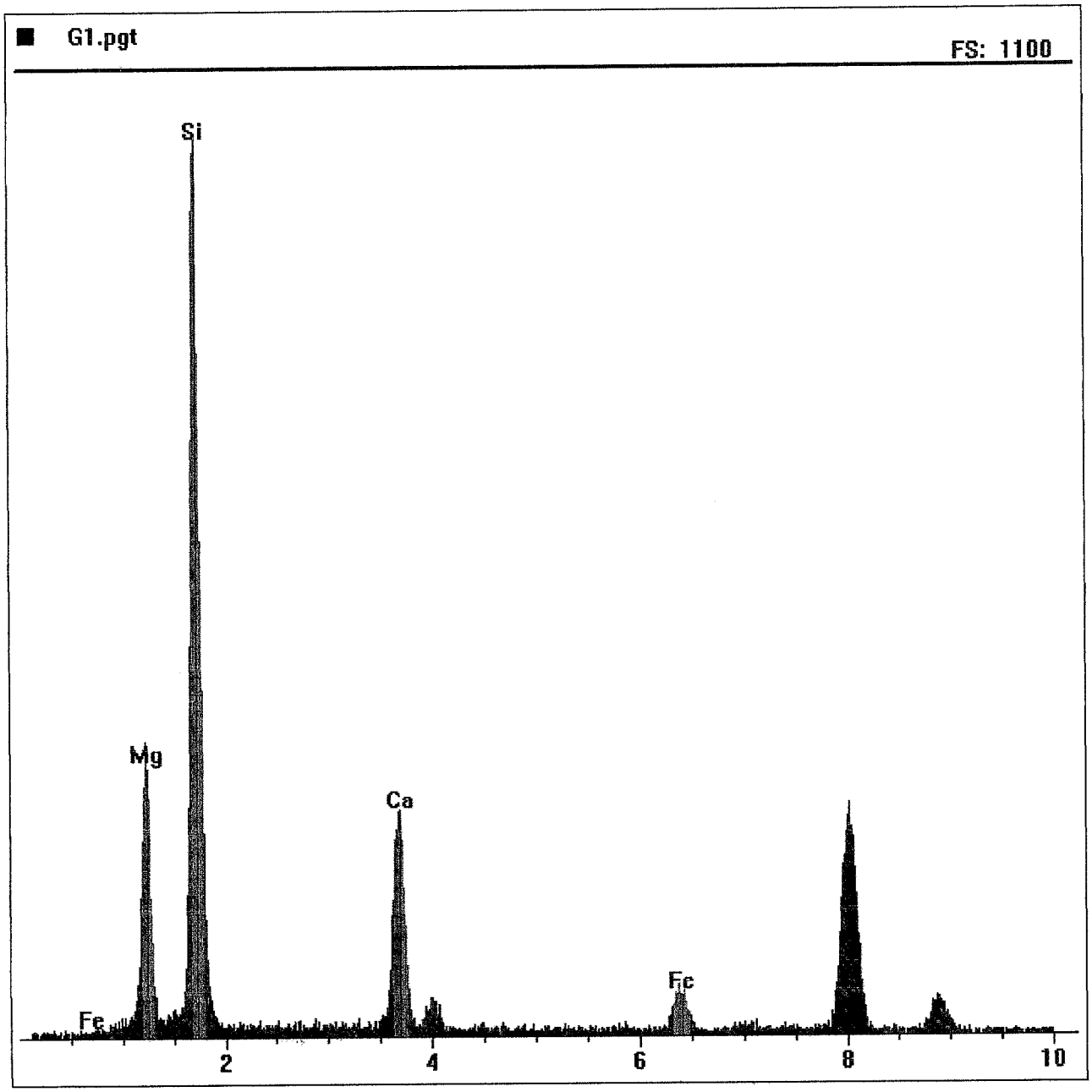


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01TR1\G1.pgt
Collected: September 24, 2013 11:11:27

Live Time:	21.99	Count Rate:	5806	Dead Time:	48.53 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

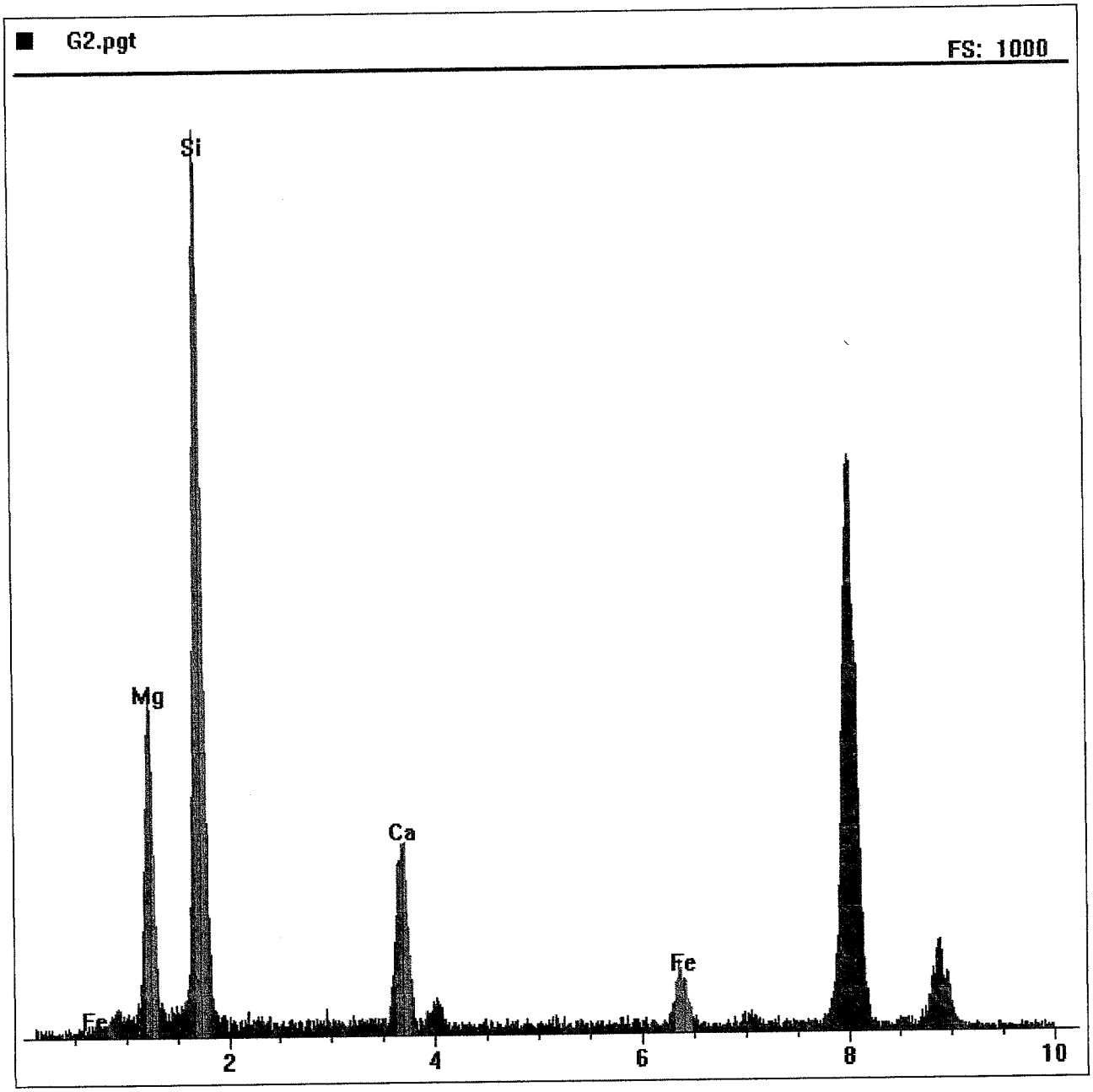


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01TR1\G2.pgt
Collected: September 24, 2013 11:11:27

Live Time:	104.25	Count Rate:	1461	Dead Time:	16.74 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

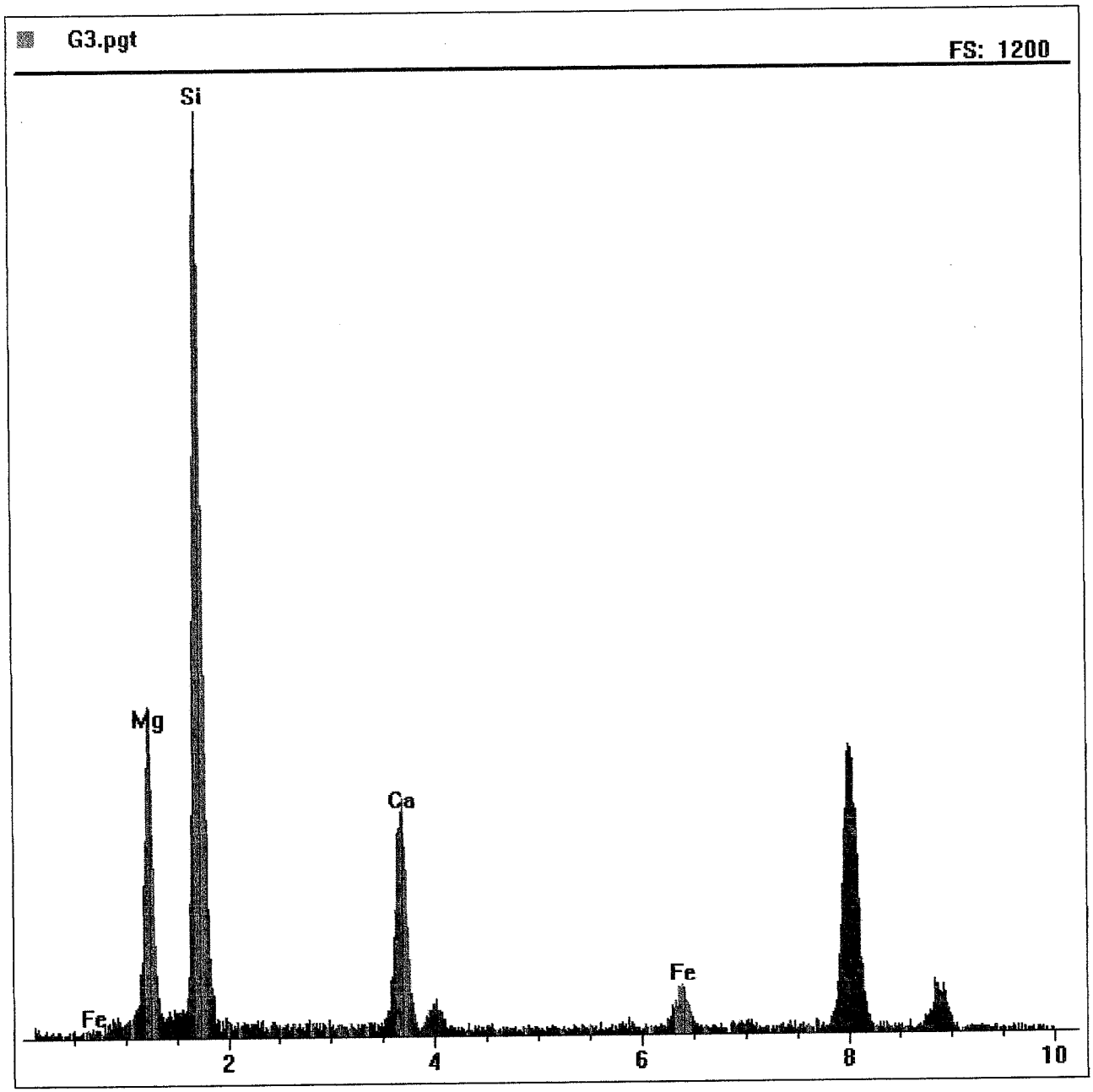


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01TR1\G3.pgt
Collected: September 24, 2013 11:11:27

Live Time:	45.92	Count Rate:	3193	Dead Time:	30.84 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

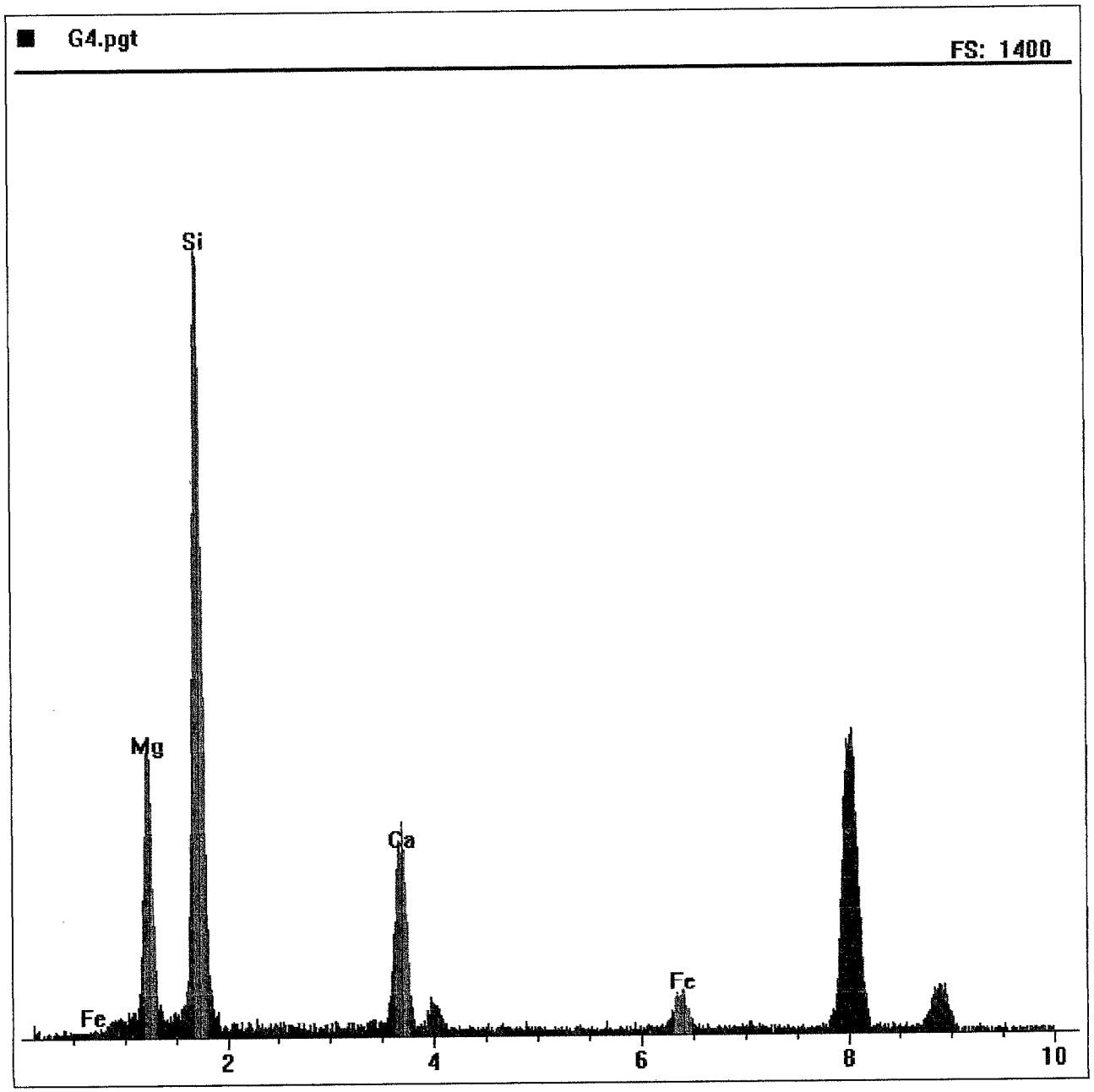


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01TR1\G4.pgt
Collected: September 24, 2013 11:17:49

Live Time:	65.85	Count Rate:	2492	Dead Time:	25.48 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

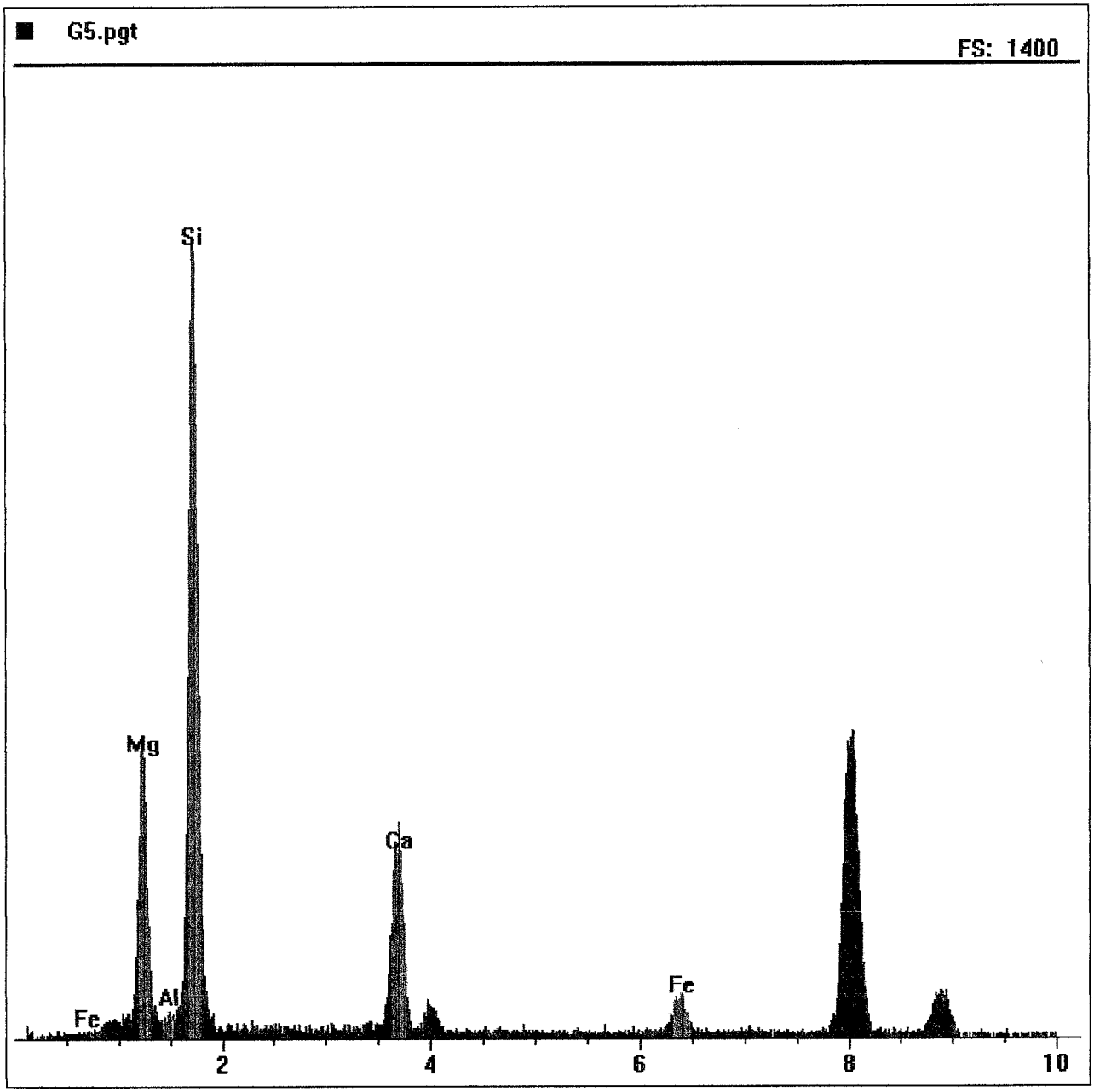


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01TR1\G5.pgt
Collected: September 24, 2013 11:17:49

Live Time:	65.85	Count Rate:	2492	Dead Time:	25.48 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

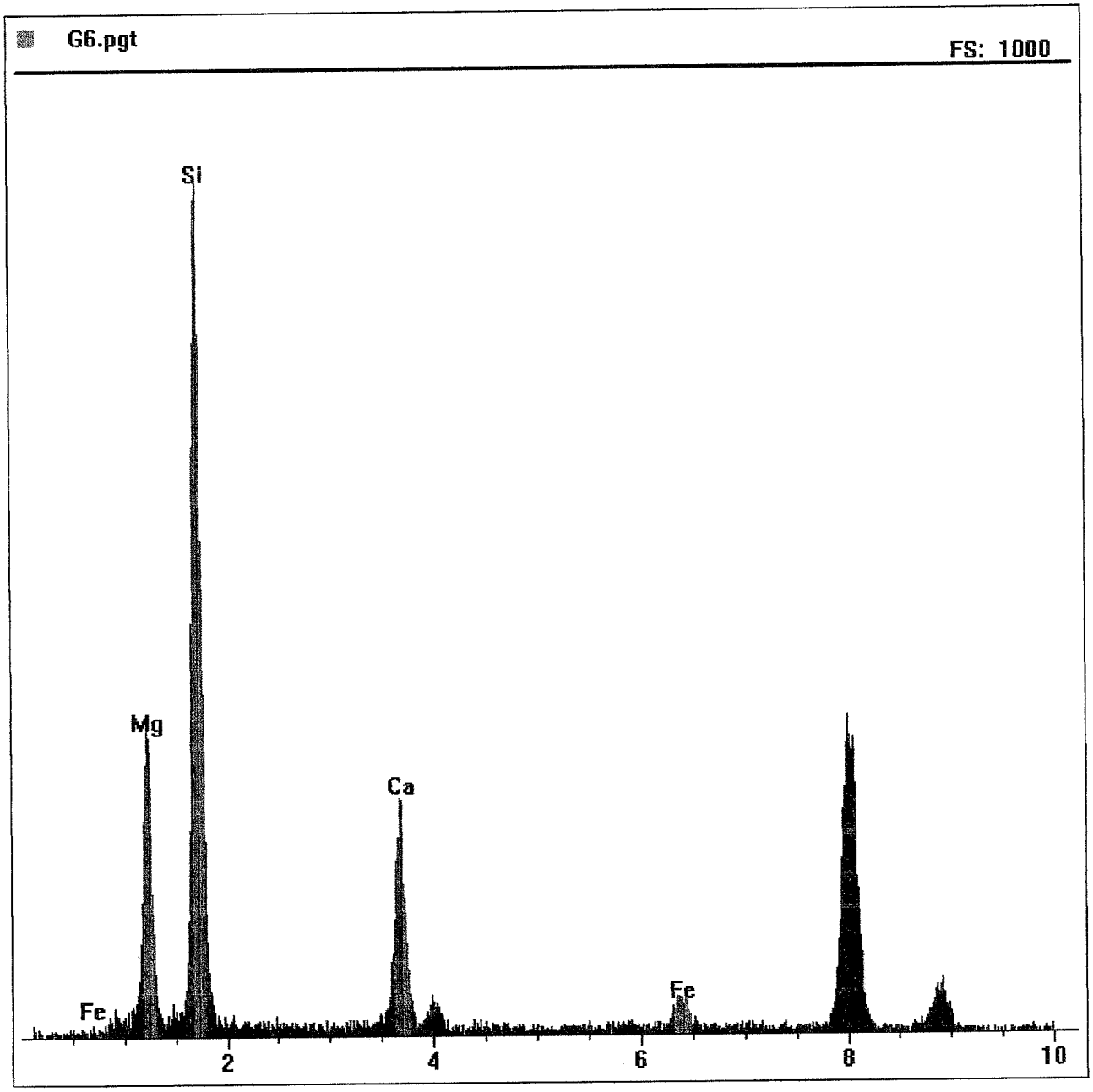


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01TR1\G6.pgt
Collected: September 24, 2013 11:17:49

Live Time:	43.25	Count Rate:	2735	Dead Time:	27.38 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

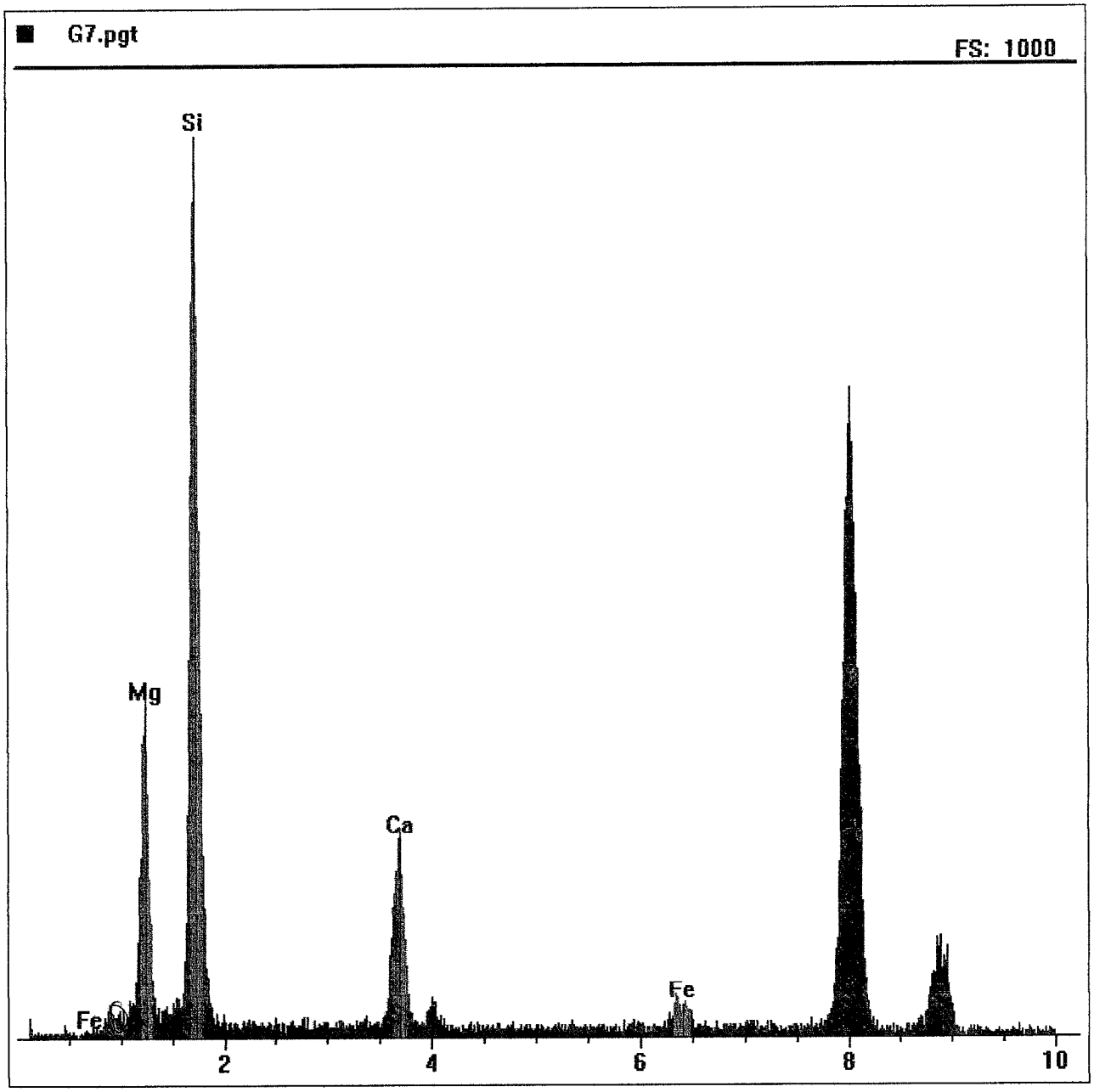


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01TR1\G7.pgt
Collected: September 24, 2013 11:21:56

Live Time:	104.15	Count Rate:	1460	Dead Time:	16.76 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

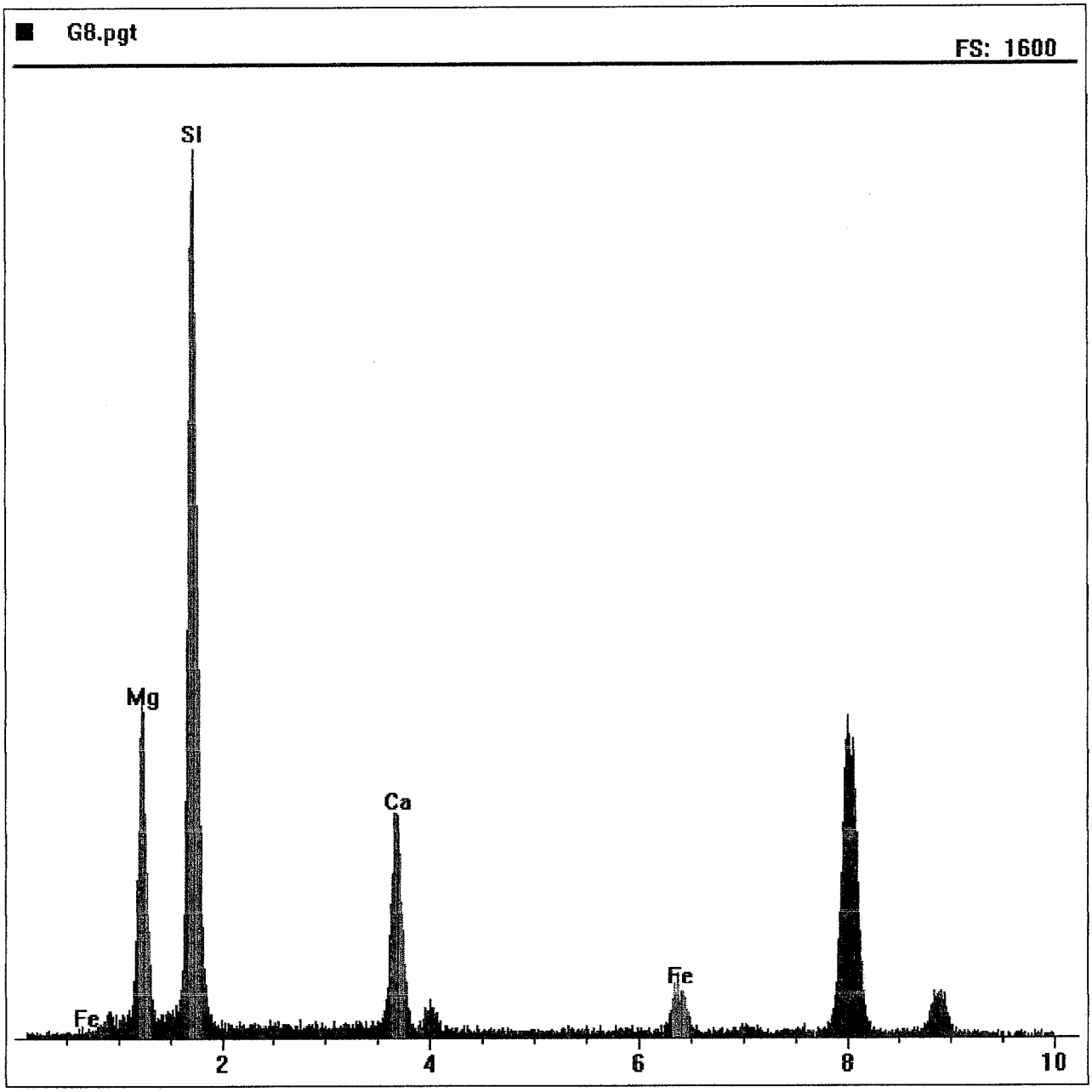


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01TR1\G8.pgt
Collected: September 24, 2013 11:21:56

Live Time:	48.97	Count Rate:	4057	Dead Time:	37.03 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

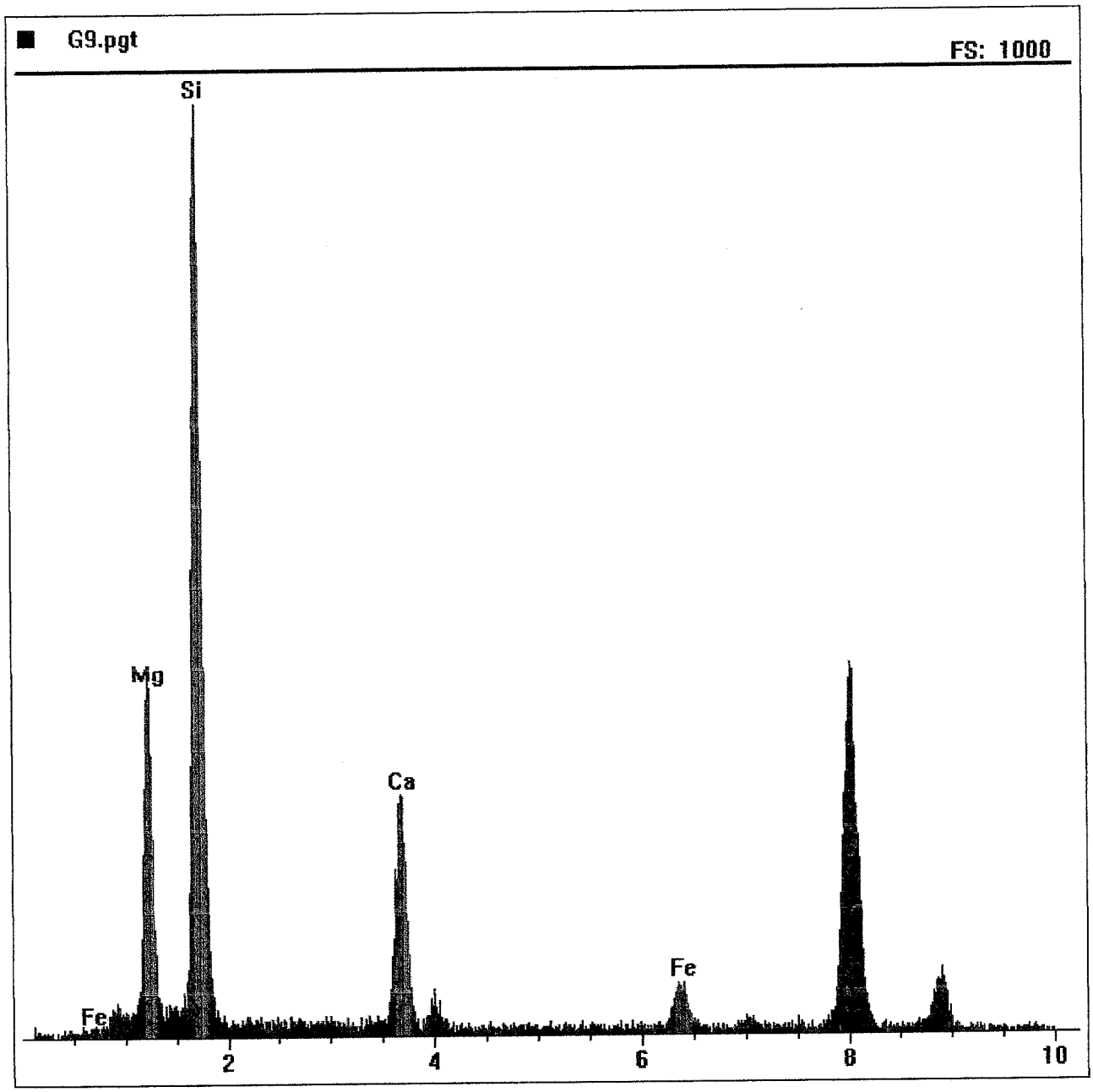


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...ecords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01TR1\G9.pgt
Collected: September 24, 2013 11:21:56

Live Time:	34.59	Count Rate:	3998	Dead Time:	36.75 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

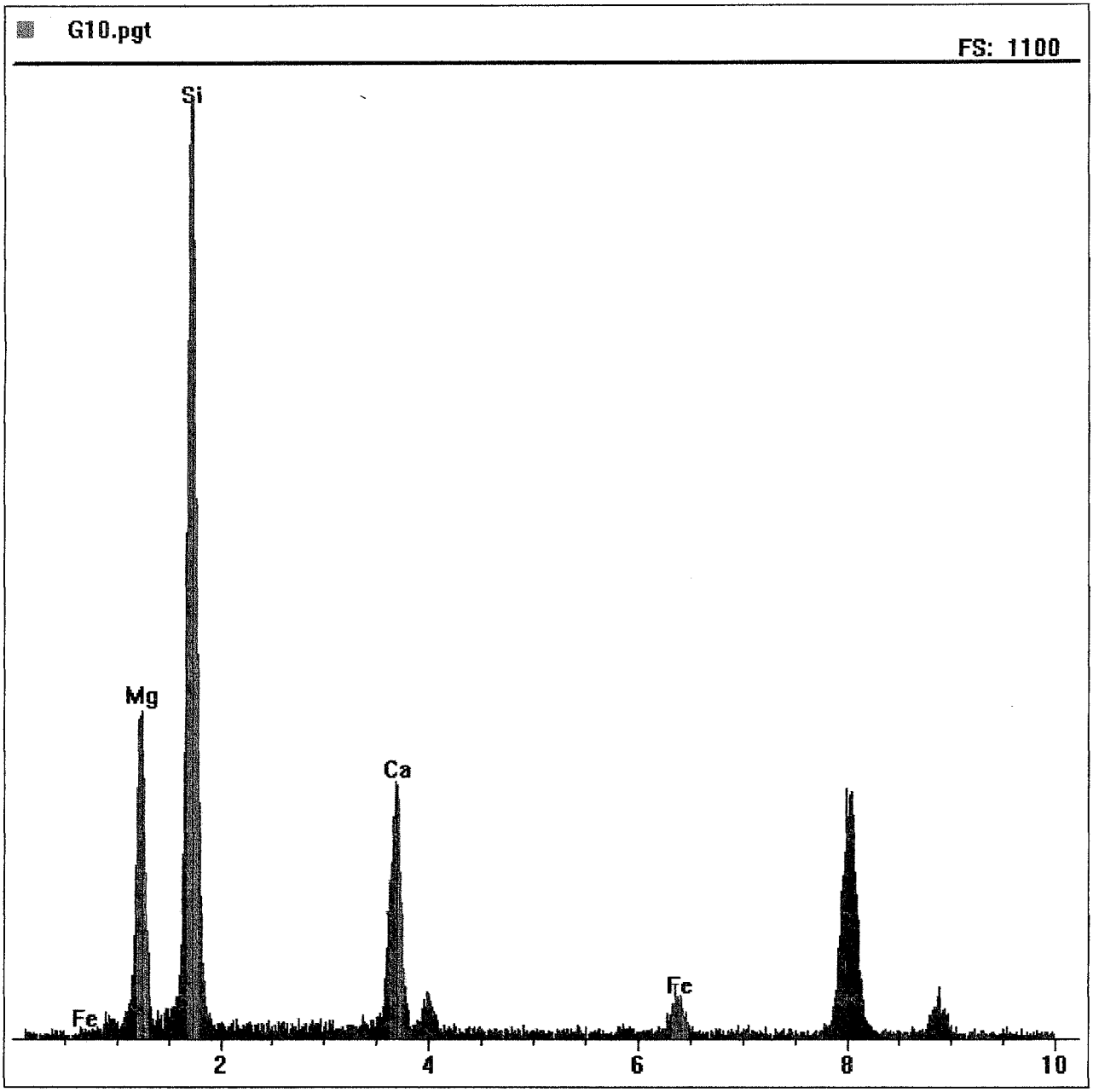


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...cords\PGT Files\EMSL27-2\EMSL27-2 2013\SW01TR1\G10.pgt
Collected: September 24, 2013 11:21:56

Live Time:	12.47	Count Rate:	11299	Dead Time:	72.57 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98

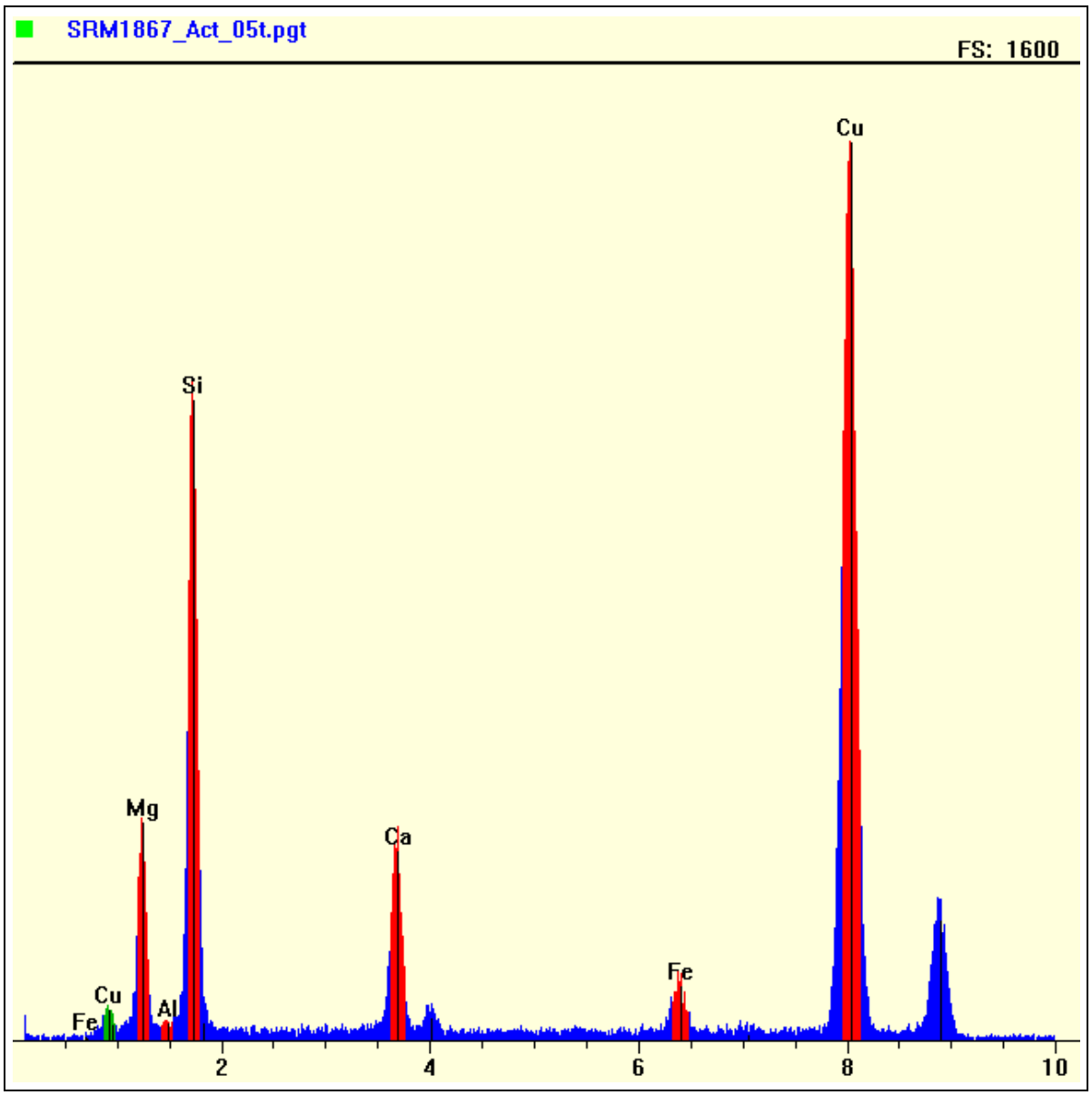


Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...2\EMSL27-2 2013\SRM1867 Actinolite\SRM1867_Act_05t.pgt
Collected: September 27, 2013 08:33:01

Live Time:	208.79	Count Rate:	1240	Dead Time:	14.68 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98



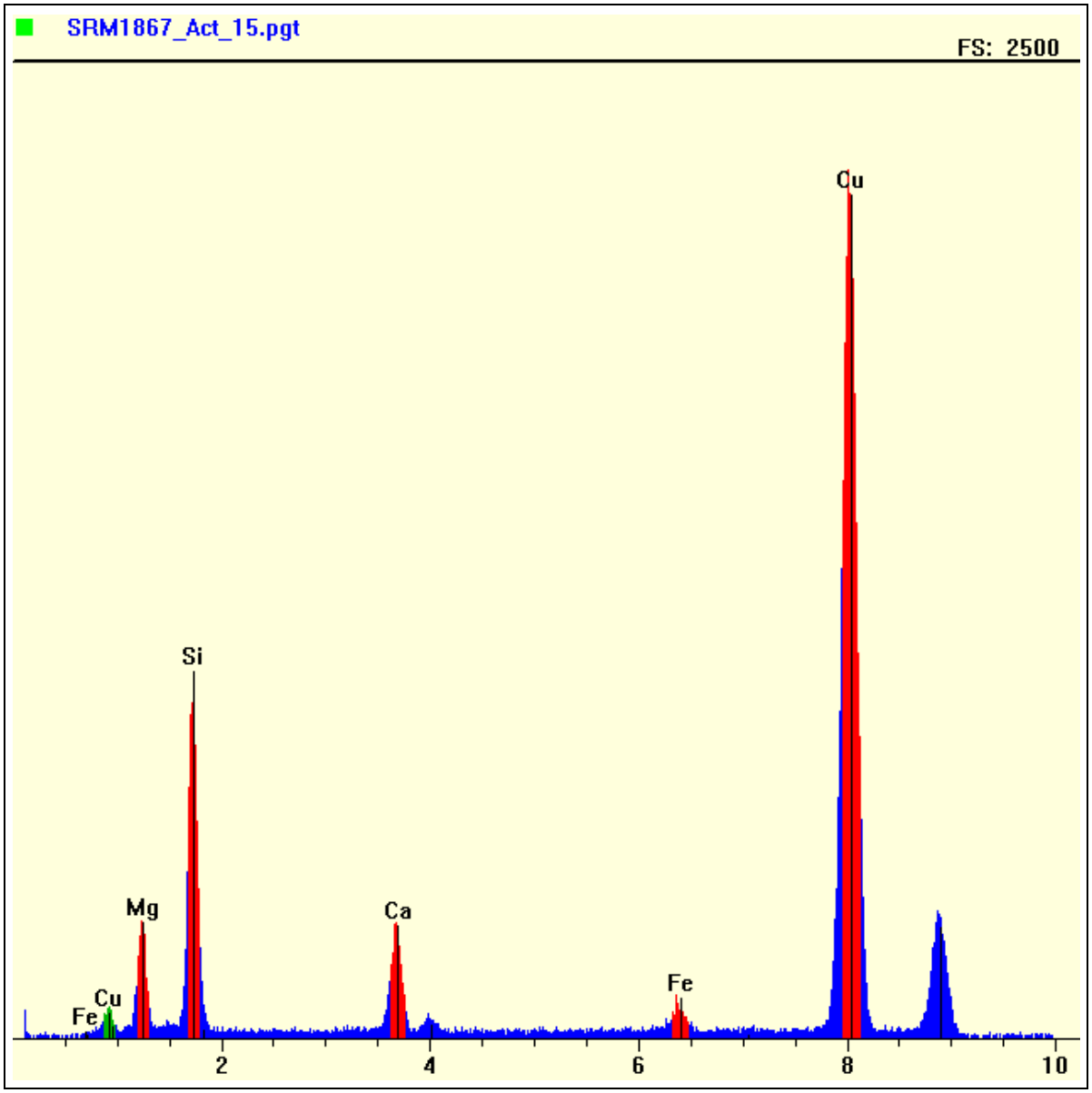
EDXA of NIST Actinolite Image 29019

Energy Dispersive X-Ray Analysis Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...-2\EMSL27-2 2013\SRM1867 Actinolite\SRM1867_Act_15.pgt
Collected: September 27, 2013 08:33:01

Live Time:	408.63	Count Rate:	777	Dead Time:	10.72 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98



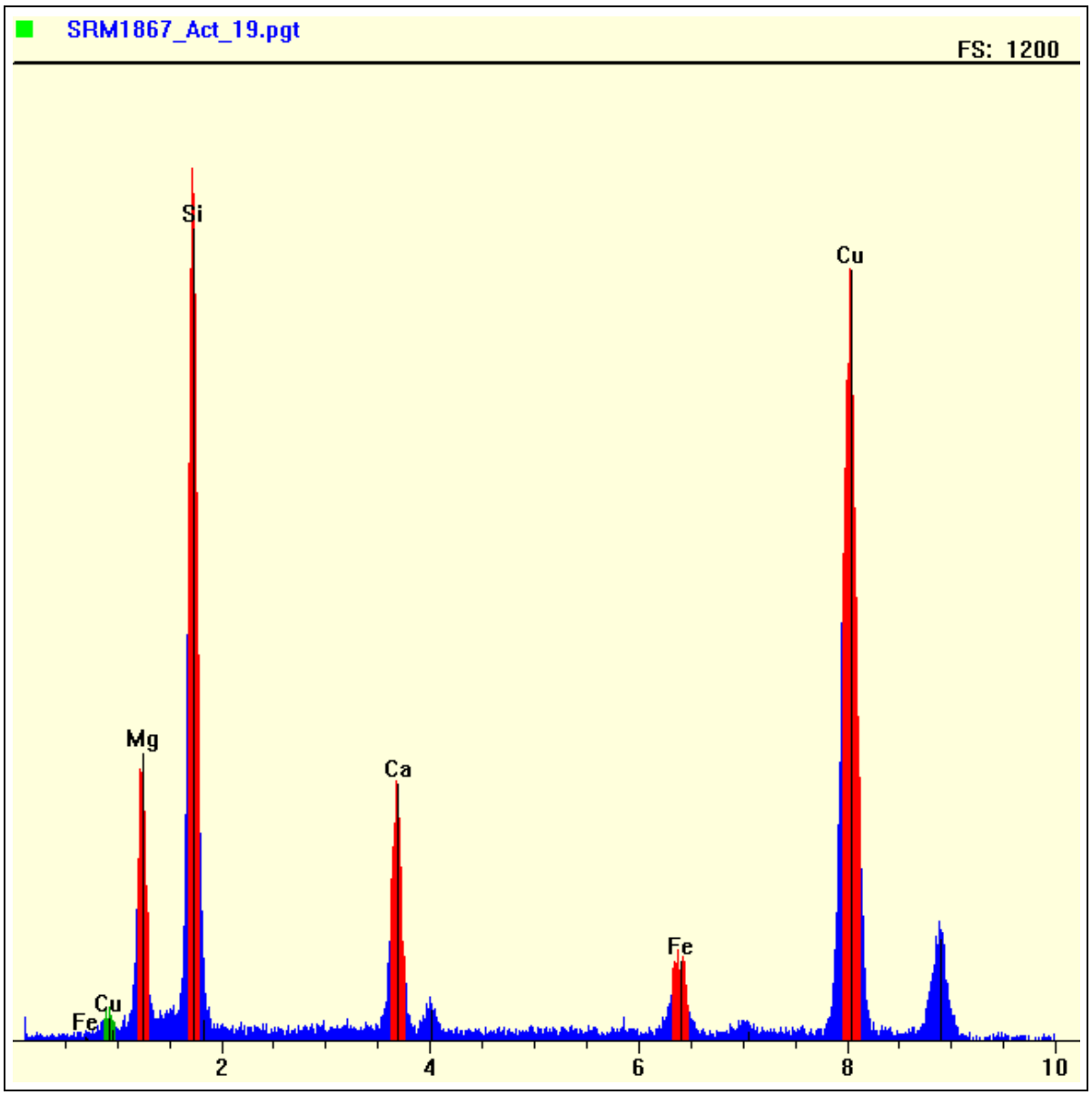
EDXA of NIST Actinolite Image 29031

Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...-2\EMSL27-2 2013\SRM1867 Actinolite\SRM1867_Act_19.pgt
Collected: September 27, 2013 08:33:01

Live Time:	104.32	Count Rate:	1895	Dead Time:	20.46 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98



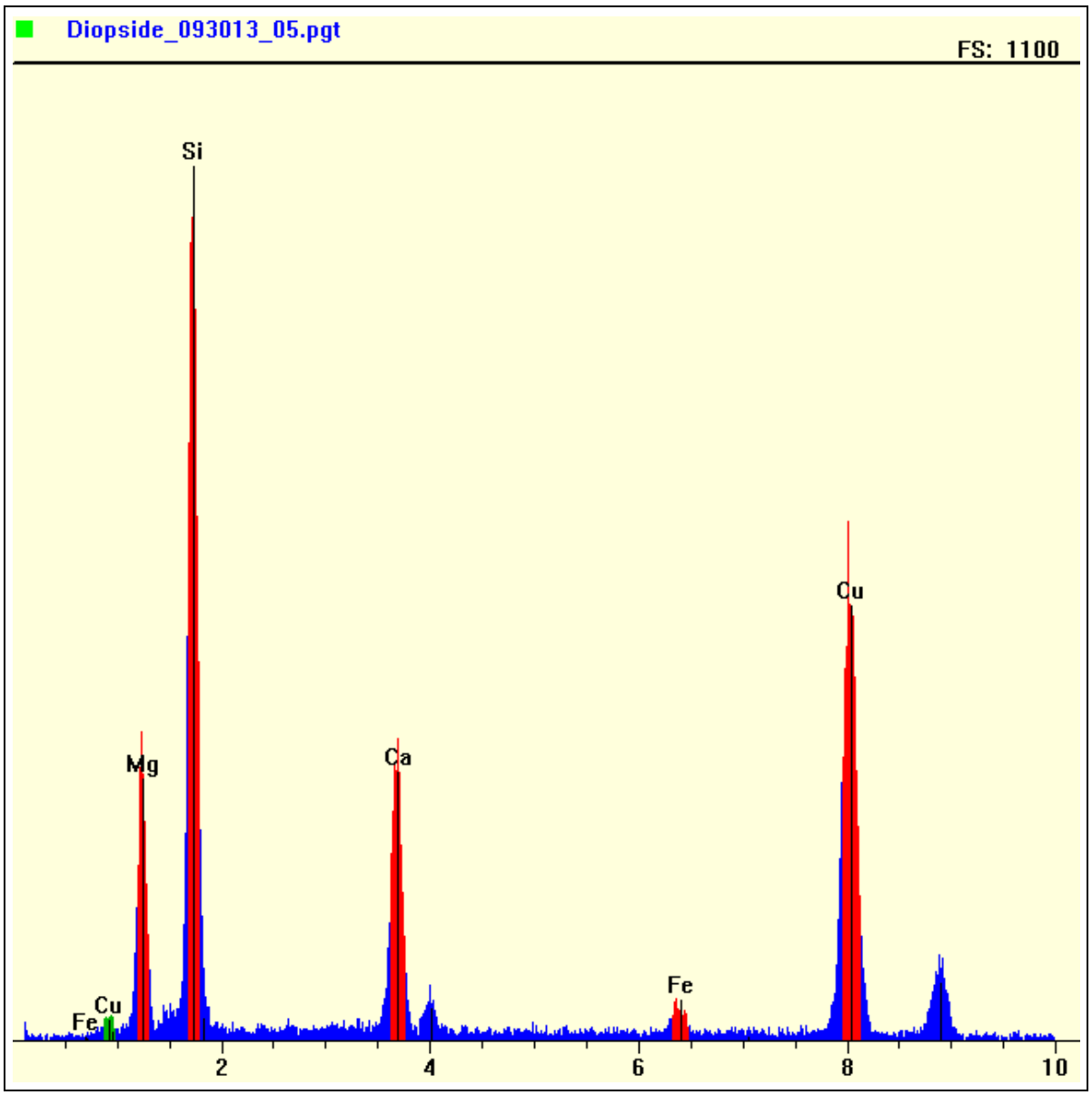
EDXA of NIST Actinolite Image 29035

Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...L27-2\EMSL27-2 2013\Diopside_01\Diopside_093013_05.pgt
Collected: September 30, 2013 10:16:44

Live Time:	108.71	Count Rate:	1426	Dead Time:	16.43 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98



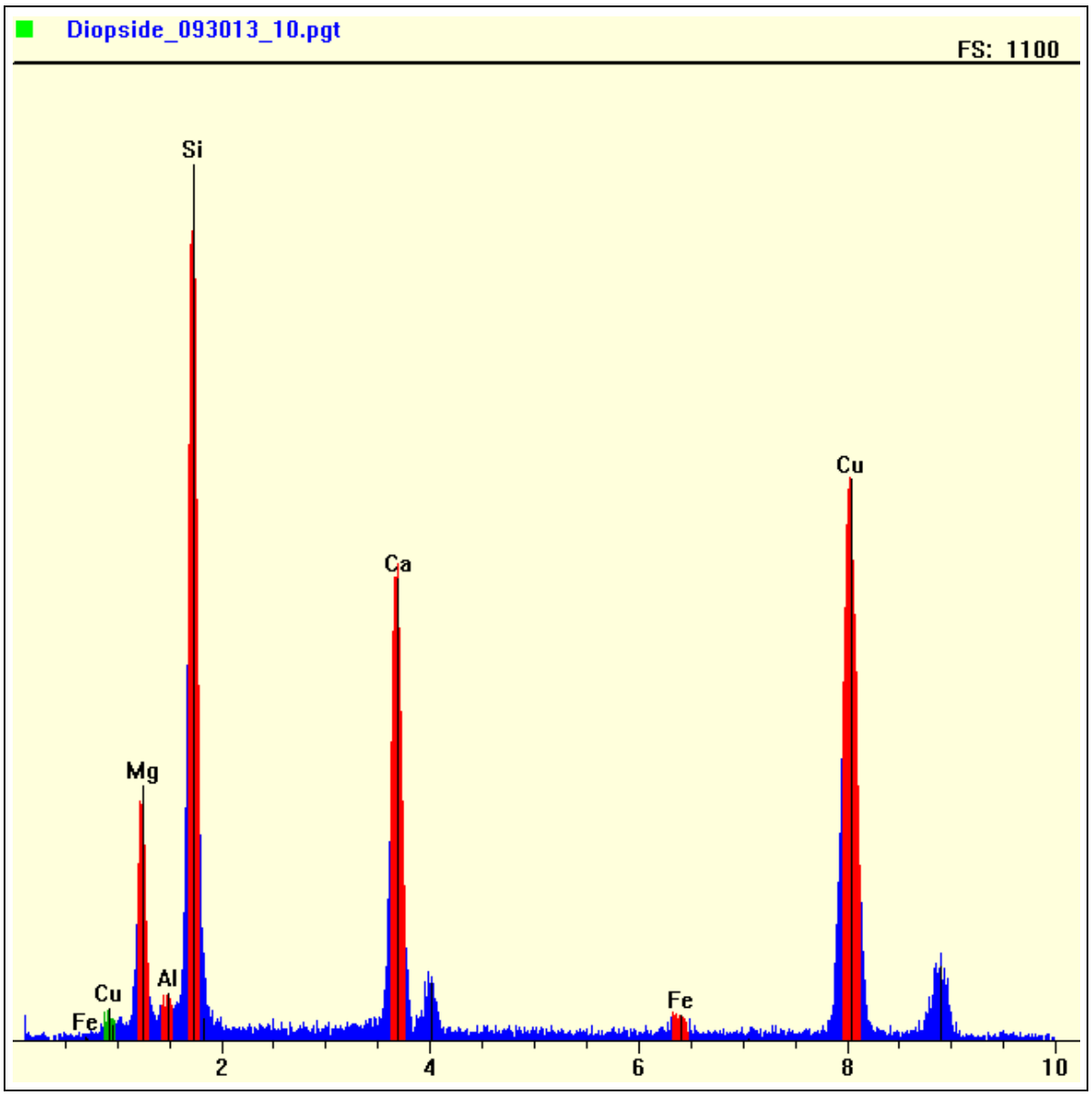
EDXA of Diopside Image 29041

Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...L27-2\EMSL27-2 2013\Diopside_01\Diopside_093013_10.pgt
Collected: September 30, 2013 10:16:44

Live Time:	150.73	Count Rate:	1174	Dead Time:	13.94 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98



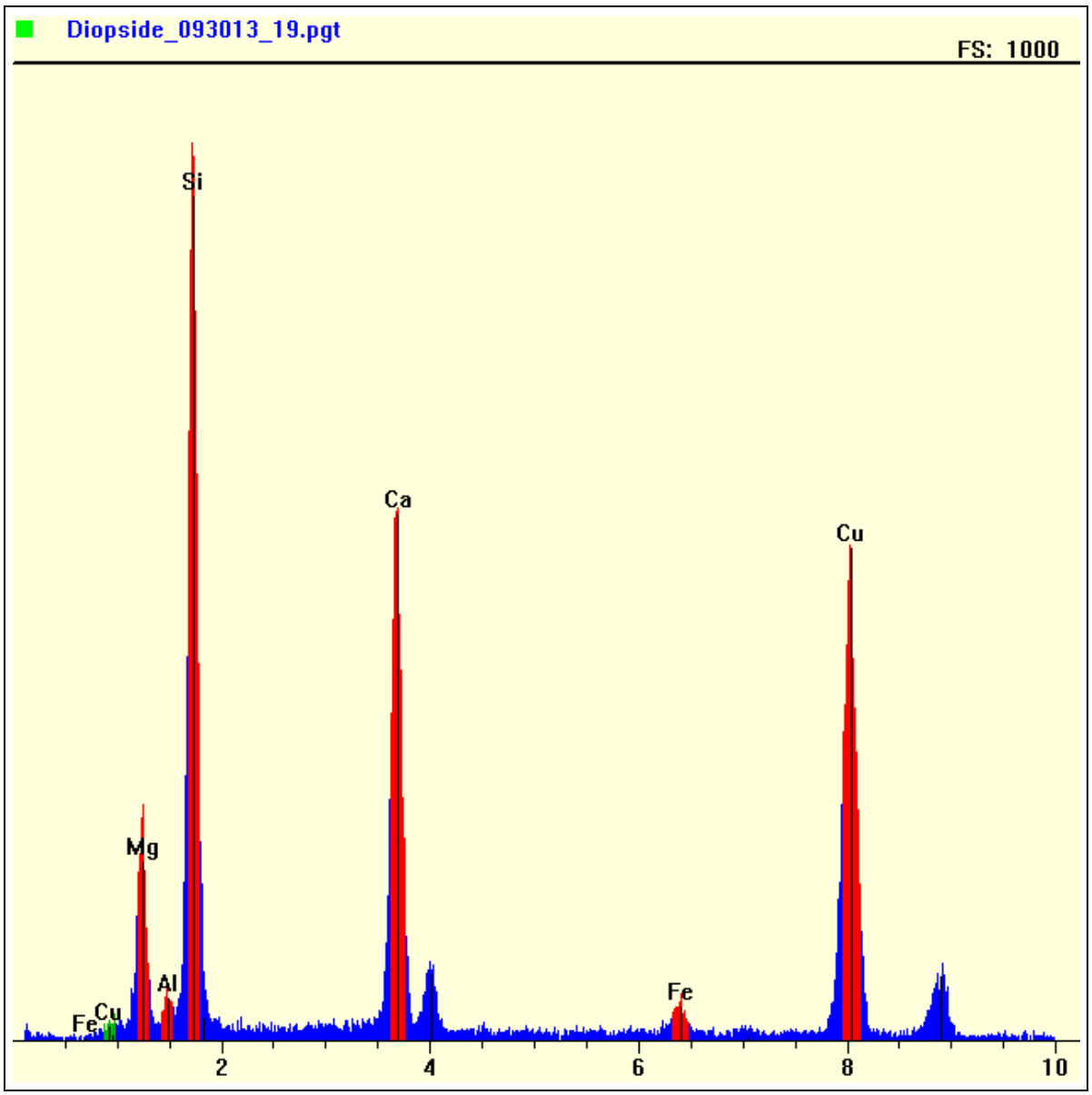
EDXA of Diopside Image 29047

Energy Dispersive X-Ray Analysis
Qualitative Spectrum

EMSL ANALYTICAL, INC.

File: F:\Documen...L27-2\EMSL27-2 2013\Diopside_01\Diopside_093013_19.pgt
Collected: September 30, 2013 10:16:44

Live Time:	104.09	Count Rate:	1515	Dead Time:	17.75 %
Beam Voltage:	20.00	Beam Current:	2.00	Takeoff Angle:	60.98



EDXA of Diopside Image 29057

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Actinolite DATE: 09/27/13

Indexing of negative number: 29019 SCOPE # 27-2

Reference / Sample Number: Actinolite

Preliminary ID: Actinolite By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.5 mm
Mean Distance between spots on Center row (d2): 4.55 mm
Mean distance between spots on slant vector (d1): 4.79 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	**5.07**	5.300	**5.035**	**5.565**
d2 or hk0 (Camera K/zero row dist.)	**5.02**	5.099	**4.844**	**5.354**
d1 or hk1 (Camera K/slant vector dist.)	**4.76**	4.931	**4.684**	**5.178**
Ratio of hk0/hk1	**1.05**	1.03	**0.979**	**1.082**
Angle of Slant Vector (Measured)	68.0	68.0	**64.600**	**71.400**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Actinolite (Reference JCPDS) By: EJWP EJWP
With a Zone Axis of: [3 1 2]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Actinolite DATE: 09/27/13

Indexing of negative number: 29031 SCOPE # 27-2

Reference / Sample Number: Actinolite

Preliminary ID: Actinolite By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.25 mm
Mean Distance between spots on Center row (d2): 2.5 mm
Mean distance between spots on slant vector (d1): 5 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.37	5.300	5.035	5.565
d2 or hk0 (Camera K/zero row dist.)	**9.13**	9.055	**8.602**	**9.508**
d1 or hk1 (Camera K/slant vector dist.)	**4.56**	4.482	**4.258**	**4.706**
Ratio of hk0/hk1	**2.00**	2.02	**1.919**	**2.121**
Angle of Slant Vector (Measured)	60.0	60.3	**57.314**	**63.347**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Actinolite (Reference JCPDS) By: EJWP EJWP 10/21/2013
With a Zone Axis of: [1 0 0]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Actinolite DATE: 09/27/13

Indexing of negative number: 29035 SCOPE # 27-2

Reference / Sample Number: Actinolite

Preliminary ID: Actinolite By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.37 mm
Mean Distance between spots on Center row (d2): 4.55 mm
Mean distance between spots on slant vector (d1): 8.92 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.22	5.300	5.035	5.565
d2 or hk0 (Camera K/zero row dist.)	**5.02**	5.099	**4.844**	**5.354**
d1 or hk1 (Camera K/slant vector dist.)	**2.56**	2.560	**2.432**	**2.688**
Ratio of hk0/hk1	**1.96**	1.03	**0.979**	**1.082**
Angle of Slant Vector (Measured)	85.0	83.0	**78.850**	**87.150**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Actinolite (Reference JCPDS) By: EJWP EJWP
With a Zone Axis of: [3 -1 -10]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Diopside DATE: 09/27/13

Indexing of negative number: 29041 SCOPE # 27-2

Reference / Sample Number: Diopside

Preliminary ID: Diopside By: RSP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.4 mm
Mean Distance between spots on Center row (d2): 3.63 mm
Mean distance between spots on slant vector (d1): 4.57 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.19	5.250	4.988	5.513
d2 or hk0 (Camera K/zero row dist.)	**6.29**	6.401	**6.081**	**6.721**
d1 or hk1 (Camera K/slant vector dist.)	**4.99**	5.042	**4.790**	**5.294**
Ratio of hk0/hk1	**1.26**	1.27	**1.207**	**1.334**
Angle of Slant Vector (Measured)	79.0	78.4	**74.480**	**82.320**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Diopside By: EJWP 2SWP

With a Zone Axis of: [-1 -1 0]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Diopside DATE: 09/27/13

Indexing of negative number: 29047 SCOPE # 27-2

Reference / Sample Number: DIOPSIDE

Preliminary ID: Diopside By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.33 mm
Mean Distance between spots on Center row (d2): 6.2 mm
Mean distance between spots on slant vector (d1): 9 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.27	5.250	4.988	5.513
d2 or hk0 (Camera K/zero row dist.)	**3.68**	3.621	**3.440**	**3.802**
d1 or hk1 (Camera K/slant vector dist.)	**2.54**	2.552	**2.424**	**2.680**
Ratio of hk0/hk1	**1.45**	1.42	**1.349**	**1.491**
Angle of Slant Vector (Measured)	85.0	84.4	**80.180**	**88.620**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Diopside By: EJWP ZSUP
With a Zone Axis of: [-4 2 2]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Diopside DATE: 09/27/13

Indexing of negative number: 29057 SCOPE # 27-2

Reference / Sample Number: Diopside

Preliminary ID: Diopside By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.37 mm
Mean Distance between spots on Center row (d2): 3.64 mm
Mean distance between spots on slant vector (d1): 8.92 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.22	5.250	4988	5.513
d2 or hk0 (Camera K/zero row dist.)	**6.27**	6.401	**6.081**	**6.721**
d1 or hk1 (Camera K/slant vector dist.)	**2.56**	2.550	**2.423**	**2.678**
Ratio of hk0/hk1	**2.45**	2.51	**2.385**	**2.636**
Angle of Slant Vector (Measured)	80.0	79.9	**75.905**	**83.895**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Diopside By: EJWP EJWP

With a Zone Axis of: [2 2 2]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Actinolite DATE: 9/27/13

Indexing of negative number: 29019 SCOPE # 27-2

Reference / Sample Number: _____

Preliminary ID: Actinolite By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.4 mm
Mean Distance between spots on Center row (d2): 4.52 mm
Mean distance between spots on slant vector (d1): 4.75 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.2	5.3	5.035	5.565
d2 or hk0 (Camera K/zero row dist.)	**5.05**	5.099	**4.844**	**5.354**
d1 or hk1 (Camera K/slant vector dist.)	**4.80**	4.931	**4.684**	**5.178**
Ratio of hk0/hk1	**1.05**	1.03	**0.982**	**1.086**
Angle of Slant Vector (Measured)	69.0	68.0	**64.591**	**71.390**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Actinolite (JCPDS) By: KCollery
With a Zone Axis of: [3 1 2]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Actinolite DATE: 09/27/13

Indexing of negative number: 29031 SCOPE # 27-2

Reference / Sample Number: Actinolite

Preliminary ID: Actinolite By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.29 mm
Mean Distance between spots on Center row (d2): 2.5 mm
Mean distance between spots on slant vector (d1): 4.99 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.32	5.300	5.035	5.565
d2 or hk0 (Camera K/zero row dist.)	**9.13**	9.055	**8.602**	**9.508**
d1 or hk1 (Camera K/slant vector dist.)	**4.57**	4.482	**4.258**	**4.706**
Ratio of hk0/hk1	**2.00**	2.02	**1.919**	**2.121**
Angle of Slant Vector (Measured)	60.5	60.3	**57.314**	**63.347**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Actinolite (JCPDS) By: KColberg
With a Zone Axis of: [1 0 0]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Actinolite DATE: 9/27/13

Indexing of negative number: 29035 SCOPE # 27-2

Reference / Sample Number: _____

Preliminary ID: Actinolite By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.38 mm
Mean Distance between spots on Center row (d2): 4.54 mm
Mean distance between spots on slant vector (d1): 8.88 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.21	5.300	5.035	5.565
d2 or hk0 (Camera K/zero row dist.)	**5.03**	5.099	**4.844**	**5.354**
d1 or hk1 (Camera K/slant vector dist.)	**2.57**	2.569	**2.441**	**2.697**
Ratio of hk0/hk1	**1.96**	1.99	**1.886**	**2.084**
Angle of Slant Vector (Measured)	83.0	83.0	**78.879**	**87.182**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Actinolite (JCPDS) KC 10/22/13 By: KCollberg

With a Zone Axis of: [3 -1 -10]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Diopside DATE: 9/27/13

Indexing of negative number: 29041 SCOPE # 27-2

Reference / Sample Number:

Preliminary ID: Diopside By: RSP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.45 mm
Mean Distance between spots on Center row (d2): 3.59 mm
Mean distance between spots on slant vector (d1): 4.55 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.12	5.250	4.988	5.513
d2 or hk0 (Camera K/zero row dist.)	**6.36**	6.401	**6.081**	**6.721**
d1 or hk1 (Camera K/slant vector dist.)	**5.02**	5.042	**4.790**	**5.294**
Ratio of hk0/hk1	**1.27**	1.27	**1.207**	**1.334**
Angle of Slant Vector (Measured)	79.0	78.4	**74.442**	**82.278**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Diopside By: KColberg
With a Zone Axis of: [-1 -1 0]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date:

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Diopside DATE: 09/27/13

Indexing of negative number: 29047 SCOPE # 27-2

Reference / Sample Number:

Preliminary ID: Diopside By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.4 mm
Mean Distance between spots on Center row (d2): 6.2 mm
Mean distance between spots on slant vector (d1): 8.9 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	**5.19**	5.250	**4.988**	**5.513**
d2 or hk0 (Camera K/zero row dist.)	**3.68**	3.621	**3.440**	**3.802**
d1 or hk1 (Camera K/slant vector dist.)	**2.56**	2.552	**2.424**	**2.680**
Ratio of hk0/hk1	**1.44**	1.42	**1.349**	**1.491**
Angle of Slant Vector (Measured)	84.5	84.4	**80.180**	**88.620**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Diopside By: KColburg
With a Zone Axis of: [-4 2 2]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date:

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Diopside DATE: 9/27/13

Indexing of negative number: 29057 SCOPE # 27-2

Reference / Sample Number:

Preliminary ID: Diopside By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.38 mm
Mean Distance between spots on Center row (d2): 3.51 mm
Mean distance between spots on slant vector (d1): 8.93 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.21	5.250	4.988	5.513
d2 or hk0 (Camera K/zero row dist.)	**6.50**	6.401	**6.081**	**6.721**
d1 or hk1 (Camera K/slant vector dist.)	**2.56**	2.526	**2.400**	**2.652**
Ratio of hk0/hk1	**2.54**	2.53	**2.407**	**2.661**
Angle of Slant Vector (Measured)	77.5	77.2	**73.378**	**81.102**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Diopside By: KColberg
With a Zone Axis of: [2 -2 2]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date:

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Actinolite DATE: 09/27/13

Indexing of negative number: 29019 SCOPE # 27-2

Reference / Sample Number: Actinolite

Preliminary ID: Actinolite By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.5 mm
Mean Distance between spots on Center row (d2): 4.45 mm
Mean distance between spots on slant vector (d1): 4.81 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.07	5.30	5.035	5.565
d2 or hk0 (Camera K/zero row dist.)	**5.13**	5.099	**4.844**	**5.354**
d1 or hk1 (Camera K/slant vector dist.)	**4.74**	4.931	**4.684**	**5.178**
Ratio of hk0/hk1	**1.08**	1.03	**0.979**	**1.082**
Angle of Slant Vector (Measured)	68.0	68.0	**64.600**	**71.400**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Actinolite By: RSP

With a Zone Axis of: [3 1 2]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Actinolite DATE: 09/27/13

Indexing of negative number: 29031 SCOPE # 27-2

Reference / Sample Number: Actinolite

Preliminary ID: Actinolite By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.25 mm
Mean Distance between spots on Center row (d2): 2.5 mm
Mean distance between spots on slant vector (d1): 5 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.37	5.30	6.035	5.565
d2 or hk0 (Camera K/zero row dist.)	**9.13**	9.055	**8.602**	**9.508**
d1 or hk1 (Camera K/slant vector dist.)	**4.56**	4.482	**4.258**	**4.706**
Ratio of hk0/hk1	**2.00**	2.02	**1.919**	**2.121**
Angle of Slant Vector (Measured)	60.0	60.3	**57.314**	**63.347**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Actinolite (JCPDS) By: RSP 10/24/13

With a Zone Axis of: [1 0 0]

Preliminary Identification was: [x] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Actinolite DATE: 09/27/13

Indexing of negative number: 29035 SCOPE # 27-2

Reference / Sample Number: Actinolite

Preliminary ID: Actinolite By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.5 mm
Mean Distance between spots on Center row (d2): 4.56 mm
Mean distance between spots on slant vector (d1): 8.88 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.07	5.30	5.035	5.565
d2 or hk0 (Camera K/zero row dist.)	**5.00**	5.099	**4.844**	**5.354**
d1 or hk1 (Camera K/slant vector dist.)	**2.57**	2.569	**2.441**	**2.697**
Ratio of hk0/hk1	**1.95**	1.99	**1.886**	**2.084**
Angle of Slant Vector (Measured)	85.0	83.0	**78.850**	**87.150**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Actinolite (JCPDS) By: RSP

With a Zone Axis of: [3 -1 -10]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Diopside DATE: 09/27/13

Indexing of negative number: 29041 SCOPE # 27-2

Reference / Sample Number: Diopside

Preliminary ID: Diopside By: RSP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.5 mm
Mean Distance between spots on Center row (d2): 3.68 mm
Mean distance between spots on slant vector (d1): 4.63 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.07	5.25	4.988	5.513
d2 or hk0 (Camera K/zero row dist.)	**6.20**	6.401	**6.081**	**6.721**
d1 or hk1 (Camera K/slant vector dist.)	**4.93**	5.042	**4.790**	**5.294**
Ratio of hk0/hk1	**1.26**	1.27	**1.207**	**1.334**
Angle of Slant Vector (Measured)	79.0	78.4	**74.480**	**82.320**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Diopside By: RSP

With a Zone Axis of: [-1 -1 0]

Preliminary Identification was: [x] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Diopside DATE: 09/27/13

Indexing of negative number: 29047 SCOPE # 27-2

Reference / Sample Number: Diopside

Preliminary ID: Diopside By: RSP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.5 mm
Mean Distance between spots on Center row (d2): 6.15 mm
Mean distance between spots on slant vector (d1): 8.87 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.07	5.25	4.988	5.513
d2 or hk0 (Camera K/zero row dist.)	**3.71**	3.621	**3.440**	**3.802**
d1 or hk1 (Camera K/slant vector dist.)	**2.57**	2.552	**2.424**	**2.680**
Ratio of hk0/hk1	**1.44**	1.42	**1.349**	**1.491**
Angle of Slant Vector (Measured)	85.0	84.4	**80.180**	**88.620**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Diopside By: RSP

With a Zone Axis of: [-4 2 2]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

AMPHIBOLE SAED INDEXING FORM

EMSL Order ID : Diopside DATE: 09/27/13

Indexing of negative number: 29057 SCOPE # 27-2

Reference / Sample Number: Diopside

Preliminary ID: Diopside By: EJWP

Using Camera Constant of: 22.82 mm Angstroms

Determined from negative number: 29010

Measured Inter-row spacing: 4.5 mm
Mean Distance between spots on Center row (d2): 3.54 mm
Mean distance between spots on slant vector (d1): 9 mm

	Calculated	Ref	- 5%	+ 5%
Inter-row spacing (Ångstroms)	5.07	5.25	4.988	5.513
d2 or hk0 (Camera K/zero row dist.)	**6.45**	6.401	**6.081**	**6.721**
d1 or hk1 (Camera K/slant vector dist.)	**2.54**	2.550	**2.423**	**2.678**
Ratio of hk0/hk1	**2.54**	2.51	**2.385**	**2.636**
Angle of Slant Vector (Measured)	80.0	79.9	**75.905**	**83.895**

From SAED Reference Book, "unknown" diffraction pattern was found to be that of: Diopside By: RSP

With a Zone Axis of: [2 2 2]

Preliminary Identification was: [X] CORRECT

[ ] INCORRECT

percent accuracy to date: _____

Corrective Action Form
Revision 9
Revision: Feb 29, 2012
Effective by: Mar 1, 2012

Non-conformance/Corrective Action Report

Section 1: Complete at time problem is identified		Lab:	EMSL27
Department:	Asbestos	**CAR#** (Assigned by Lab Mgr):	1310-01
Date Initiated:	10/10/13	**Person Initiating CAR:**	R. Pescador
Brief Problem Statement (30 Characters Max)	Documentation Issues		
Full Description of Non-conformance/ problem: (Note things like analyst names, order#, sample#, who reported, etc.)	Internal ILR 2713 271300800-0001. Grid opening and grid information was incorectly documented.		

Section 2: Complete when initial evaluation is performed			
Evaluation/ Investigation Details	From R. Denton: For Sample 271300800-0002 1 LA structure was listed on the benchsheet and Verified GO Map in GO C2: C8. The EDXA spectra you provided said that the structure was located in GO C1:G8. This structure was not located during the interlab verified analysis in either grid opening listed on the bench sheet/verified map or EDXA. During the reconciliation, the structure was located in GO C2:G8. This improper documentation lead to the false positive. Improper documentation. Labelling spectra based on the information collected from the benchsheet. The grid being analyzed (C2) was not recorded on the benchsheet at the time the spectrum as named and saved. I documented the grid on the spectrum to be C1 instead of C2 since C2 was not on the benchsheet at that time. GO C8 was recorded instead G8 du to the grid being oriented in a way that "G" looked like a "C".		
Evaluating Party & Date Completed:	R. Denton 10/10/13		
Remedial Actions Taken:	Have another personnel review paperwork before it is sent out or reported.		
Is Root Cause & Corrective Action Required (Yes/No)?	Yes	**If not, provide justification for this decision**	
Client notification required? *If yes, record contact details (who, when, how)?*	No		
Is Work Stop Necessary? *If yes, record details (who, when, until when)?*	**No**		
If Work Stop, record details of when it was lifted and who authorized:			

Section 3: Complete whenever a corrective action is required			
Root Cause:	Improper documentation was caused by not completing analytical worksheet correctly prior to moving to the next grid opening.		
Corrective Action:	When saving spectra and documenting GO's, switch to low mag and verify the correct opening is being documented. Analyst will ensure that directly upon moving to a new Grid, the grid ID will be documented before proceeding to a grid opening. Prior to recording the Grid opening the analyst will switch to low mag and ensure the GO ID. Once GO ID is confirmed the analyst will document it on the analytical worksheet.		
Corrective Action due date:	10/10/13	**Assigned to:**	R. Pescador
Evidence of commitment and compliance: *(e.g., revised documents, new documents, corrected records,etc. Docs can be inserted using Insert>Object)*	An extra level of QA will be performed at the lab level. There shall be 2 initials and date on the first page of the ICOC adjacent to the due date/time to show that at least 2 personnel have reviewed the paperwork.		
Manager Signoff:	R. Pescador	**Date:**	10/10/13

Section 4: Complete after implementation of corrective action					
Follow-Up Due Date:	10/10/13	**Follow-up Notes** (i.e., how was effectiveness determined, findings)**:**			
Follow-Up Completed By:	E.Wyatt-Pescador				
Date Completed:	10/10/13	**Outcome:**	Effective/ No Recurrences	**New CAR # (when necessary):**	

Matched Structures per GO

EMSL Order ID	271300573	Sample ID:	SM-10080	Original Lab/QC Lab	EMSL27/EMSL04	Printed: 10/29/2013

	Grid Opening ID	Re-preparation					Interlab					NISTIR 5351 QC CODE			Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	1st Read	2nd Read	RECONCILE	
1	E1 : B2		ND					ND							
2	E1 : B4		ND					ND							
3	E1 : B6		ND				0	F	2.6	0.5	LA	TN	TN		SAP references modification that coud not be determined or found on eRoom. Looking through other available documents, it was concluded that analysis was PCME >5.0um.
4	E1 : B8		ND					ND							
5	E1 : B10		ND					ND							
6	E2 : E1		ND					ND							
7	E2 : E3		ND					ND							
8	E2 : E5		ND					ND							
9	E2 : E7		ND					ND							
10	E2 : E9		ND					ND							
11	E3 : J1		ND					ND							
12	E3 : J3		ND					ND							
13	E3 : J5		ND					ND							
14	E3 : J7		ND					ND							
15	E3 : J9		ND					ND							

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
1	G1 : A1		ND					ND				Pass		
2	G1 : A2		ND					ND				Pass		
3	G1 : A3		ND					ND				Pass		
4	G1 : A4		ND					ND				Pass		
5	G1 : A5		ND					ND				Pass		
6	G1 : A6		ND					ND				Pass		
7	G1 : A7		ND					ND				Pass		
8	G1 : A8		ND					ND				Pass		
9	G1 : A9		ND					ND				Pass		
10	G1 : A10		ND					ND				Pass		
11	G1 : C1		ND					ND				Pass		
12	G1 : C2		ND					ND				Pass		
13	G1 : C3		ND					ND				Pass		
14	G1 : C4		ND					ND				Pass		

Comments:

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
15	G1 : C5		ND					ND				Pass		
16	G1 : C6		ND					ND				Pass		GRID TORN
17	G1 : C7		ND					ND				Pass		GRID TORN
18	G1 : C8		ND					ND				Pass		
19	G1 : C9		ND					ND				Pass		
20	G1 : C10		ND					ND				Pass		
21	G1 : E1		ND					ND				Pass		
22	G1 : E2		ND					ND				Pass		
23	G1 : E3		ND					ND				Pass		
24	G1 : E4		ND					ND				Pass		
25	G1 : E5		ND					ND				Pass		
26	G1 : E6		ND					ND				Pass		
27	G1 : E7		ND					ND				Pass		
28	G1 : E8		ND					ND				Pass		

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
29	G1 : E9		ND					ND				Pass		
30	G1 : E10		ND					ND				Pass		
31	G1 : G1		ND					ND				Pass		
32	G1 : G2		ND					ND				Pass		
33	G1 : G3		ND					ND				Pass		
34	G1 : G4		ND					ND				Pass		
35	G1 : G5		ND					ND				Pass		
36	G1 : G6		ND					ND				Pass		
37	G1 : G7		ND					ND				Pass		
38	G1 : G8		ND					ND				Pass		
39	G1 : G9		ND					ND				Pass		
40	G1 : G10		ND					ND				Pass		
41	G1 : I1		ND					ND				Pass		
42	G1 : I2		ND					ND				Pass		

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
43	G1 : I3		ND					ND				Pass		
44	G1 : I4		ND					ND				Pass		
45	G1 : I5		ND					ND				Pass		
46	G1 : I6		ND					ND				Pass		
47	G1 : I7		ND					ND				Pass		
48	G1 : I8		ND					ND				Pass		
49	G1 : I9		ND					ND				Pass		
50	G1 : I10		ND					ND				Pass		
51	G2 : B1		ND					ND				Pass		
52	G2 : B2		ND					ND				Pass		
53	G2 : B3		ND					ND				Pass		
54	G2 : B4		ND					ND				Pass		
55	G2 : B5		ND					ND				Pass		
56	G2 : B6		ND					ND				Pass		

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
57	G2 : B7		ND					ND				Pass		
58	G2 : B8		ND					ND				Pass		
59	G2 : B9		ND					ND				Pass		
60	G2 : B10		ND					ND				Pass		
61	G2 : D1		ND					ND				Pass		
62	G2 : D2		ND					ND				Pass		
63	G2 : D3		ND					ND				Pass		
64	G2 : D4		ND					ND				Pass		
65	G2 : D5		ND					ND				Pass		
66	G2 : D6		ND					ND				Pass		
67	G2 : D7		ND					ND				Pass		
68	G2 : D8		ND					ND				Pass		
69	G2 : D9		ND					ND				Pass		
70	G2 : D10		ND					ND				Pass		

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
71	G2 : F1		ND					ND				Pass		
72	G2 : F2		ND					ND				Pass		
73	G2 : F3		ND					ND				Pass		
74	G2 : F4		ND					ND				Pass		
75	G2 : F5		ND					ND				Pass		
76	G2 : F6		ND					ND				Pass		
77	G2 : F7		ND					ND				Pass		
78	G2 : F8		ND					ND				Pass		
79	G2 : F9		ND					ND				Pass		
80	G2 : F10		ND					ND				Pass		
81	G2 : H1		ND					ND				Pass		
82	G2 : H2		ND					ND				Pass		
83	G2 : H3		ND					ND				Pass		
84	G2 : H4		ND					ND				Pass		

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
85	G2 : H5		ND					ND				Pass		
86	G2 : H6		ND					ND				Pass		
87	G2 : H7		ND					ND				Pass		
88	G2 : H8		ND					ND				Pass		
89	G2 : H9		ND					ND				Pass		
90	G2 : H10		ND					ND				Pass		
91	G2 : J1		ND					ND				Pass		
92	G2 : J2		ND					ND				Pass		
93	G2 : J3		ND					ND				Pass		
94	G2 : J4		ND					ND				Pass		
95	G2 : J5		ND					ND				Pass		
96	G2 : J6		ND					ND				Pass		GRID TORN
97	G2 : J7		ND					ND				Pass		GRID TORN
98	G2 : J8		ND					ND				Pass		

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
99	G2 : J9		ND					ND				Pass		
100	G2 : J10		ND					ND				Pass		
101	H1 : B1		ND					ND				Pass		
102	H1 : B2		ND					ND				Pass		
103	H1 : B3		ND					ND				Pass		
104	H1 : B4		ND					ND				Pass		
105	H1 : B5		ND					ND				Pass		
106	H1 : B6		ND					ND				Pass		
107	H1 : B7		ND					ND				Pass		
108	H1 : B8		ND					ND				Pass		
109	H1 : B9		ND					ND				Pass		
110	H1 : B10		ND					ND				Pass		
111	H1 : C1		ND					ND				Pass		
112	H1 : C2		ND					ND				Pass		

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
113	H1 : C3		ND					ND				Pass		
114	H1 : C4		ND					ND				Pass		
115	H1 : C5		ND					ND				Pass		
116	H1 : C6		ND					ND				Pass		
117	H1 : C7		ND					ND				Pass		
118	H1 : C8		ND					ND				Pass		
119	H1 : C9		ND					ND				Pass		
120	H1 : C10		ND					ND				Pass		
121	H1 : E1		ND					ND				Pass		
122	H1 : E2		ND					ND				Pass		
123	H1 : E3		ND					ND				Pass		
124	H1 : E4		ND					ND				Pass		
125	H1 : E5		ND					ND				Pass		
126	H1 : E6		ND					ND				Pass		

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
127	H1 : E7		ND					ND				Pass		GRID TORN
128	H1 : E8		ND					ND				Pass		
129	H1 : E9		ND					ND				Pass		
130	H1 : E10		ND					ND				Pass		
131	H1 : F1		ND					ND				Pass		
132	H1 : F2		ND					ND				Pass		
133	H1 : F3		ND					ND				Pass		
134	H1 : F4		ND					ND				Pass		
135	H1 : F5		ND					ND				Pass		
136	H1 : F6		ND					ND				Pass		
137	H1 : F7		ND					ND				Pass		
138	H1 : F8		ND					ND				Pass		
139	H1 : F9		ND					ND				Pass		
140	H1 : F10		ND					ND				Pass		

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
141	H1 : G1		ND					ND				Pass		
142	H1 : G2		ND					ND				Pass		
143	H1 : G3		ND					ND				Pass		
144	H1 : G4		ND					ND				Pass		
145	H1 : G5		ND					ND				Pass		
146	H1 : G6		ND					ND				Pass		
147	H1 : G7		ND					ND				Pass		
148	H1 : G8	0	F	4.05	0.3	LA		ND				*Fail*	Length, Mineral	
149	H1 : G9		ND					ND				Pass		
150	H1 : G10		ND					ND				Pass		
151	H1 : H1		ND					ND				Pass		
152	H1 : H2		ND					ND				Pass		
153	H1 : H3		ND					ND				Pass		
154	H1 : H4		ND					ND				Pass		

Matched Structures per GO for Reconcilation Analysis

Printed: 10/29/2013

Reconciliation Analyst: _____

Date: _____

Scope: _____

EMSL Order ID *271300675* **Sample ID:** *P3-00774* **Original Lab/QC Lab** *EMSL27/EMSL04*

	Grid Opening ID	Re-preparation					Interlab					Results		Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	Conclusion	Failures due to	
155	H1 : H5		ND					ND				Pass		
156	H1 : H6		ND					ND				Pass		
157	H1 : H7		ND					ND				Pass		
158	H1 : H8		ND					ND				Pass		
159	H1 : H9		ND					ND				Pass		
160	H1 : H10		ND					ND				Pass		

Matched Structures per GO

EMSL Order ID *271300789* **Sample ID:** *4R-02146* **Original Lab/QC Lab** *EMSL27/EMSL04* Printed: 10/29/2013

	Grid Opening ID	Re-preparation					Interlab					NISTIR 5351 QC CODE			Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	1st Read	2nd Read	RECONCILE	
1	A1 : B5	0	F	4.15	0.2	NAM		ND				TN	TN		
2	A1 : B7		ND					ND							
3	A1 : B9		ND					ND							
4	A2 : E8		ND					ND							
5	A2 : E10		ND					ND							

Matched Structures per GO

EMSL Order ID *271300800-0002* **Sample ID:** *4R-02123* **Original Lab/QC Lab** *EMSL27/EMSL04* Printed: 10/29/2013

	Grid Opening ID	Re-preparation					Interlab					NISTIR 5351 QC CODE			Comments
	Grid:GO	Total Str #	Str Type	Length	Width	Mineral ID	Total Str #	Str Type	Length	Width	Mineral ID	1st Read	2nd Read	RECONCILE	
1	C1 : G6														
2	C1 : G8														
3	C1 : G10						0	F	3.9	0.76	NAM	TN	TN	TN	
4	C2 : C8	1	B	9.75	1.1	LA						FP	NL	NL	Reconcilation showed that fiber is go C2: G8
5	C2 : C10														

ATTACHMENT 4

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January 27, 2014

Ms. Dania Zinner
USEPA; Region 8
1595 Wynkoop Street (8EPR-SR)
Denver, CO 80202-1129

Document ID #: 3019-01272014-1

EPA CONTRACT NUMBER EP-W-10-033
TASK ORDER NUMBER 3019
QA SUPPORT FOR THE LIBBY ASBESTOS SITE

Dear Ms. Zinner:

Enclosed please find the Technical Memorandum for the EMSL-Libby TEM Inter-laboratory Study. This memorandum is a deliverable under Task 2 of Task Order 3019.

If you have any questions, please feel free to contact me.

Sincerely,

Jenny Vonnahme for MPL

Michael P. Lenkauskas
QATS Program
CB&I Federal Services, LLC
Phone: (619) 768-3602
E-Mail Address: michael.lenkauskas@cbifederalservices.com

cc: Shari Myer, EPA-ASB QATS Project Officer
Administrative Contracting Officer (letter only)
Audit Group Files

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Memorandum

From: Michael P. Lenkauskas
Date: January 27, 2014
Subject: EMSL Analytical (Libby, MT) Inter-labs

This memorandum summarizes the results of two separate TEM inter-laboratory studies, one performed between EMSL Analytical in Libby, Montana (EMSL27) and Reservoirs Environmental in Denver, Colorado (RESI), and the other between EMSL27 and Hygeia Environmental in Sierra Madre, California (Hygeia). Both of these studies were conducted to determine the ability of EMSL27 to analyze investigative samples collected from the Libby Superfund Site due to issues that were identified from this laboratory in 2013 by EPA and its contractors. These issues, summarized in a technical memo that the QATS Program prepared and submitted to EPA on September 20, 2013, included:

- TEM Inter-lab sample preparation issues
- Inadequate frequency of project-specific QC analyses
- Possible misidentification of samples
- Result discrepancies between TEM rapid TAT and full analysis of OU3 water samples

Not discussed in the memo was the tendency of analysts at EMSL27 to report the presence of Sodium (Na) and Potassium (K) and assign WRTA (Winchite, Richterite, Tremolite & Actinolite) designations for the majority of structures identified as Libby Amphibole (LA).

On September 25-26, 2013 ESAT Region 8 personnel provided additional Transmission Electron Microscopy (TEM) analysis training to EMSL27 staff. This occurred prior to the TEM Inter-laboratory studies described below. The laboratory is currently ineligible to receive investigative samples from Libby Superfund Site Operable Units (OUs) pending the outcome of these studies.

EMSL27/RESI Inter-laboratory Analysis

On October 23, 2013 ESAT Region 8 directed EMSL27 to prepare one sample (FB-00014) and provide the TEM grid preparation to RESI for inter-laboratory analysis. The sample was to be prepared, analyzed, and assessed based on the most current version of laboratory modification LB-000029. EMSL27 performed the re-preparation and shipped the sample to RESI on 10/31/2013; however, they did not submit the associated paperwork (i.e. structures maps and Grid Opening [GO] selection) to QATS for review, as required in LB-000029. Upon review of the paperwork, which QATS did receive prior to RESI beginning the inter-laboratory analysis, QATS discovered that EMSL27 had not selected the correct GOs to be analyzed. The laboratory selected GOs with non-asbestos materials (NAMS) and Chrysotile (CH) structures instead of those containing the highest number of LA structures as required by LB-000029. EMSL27 was contacted regarding the above discrepancies and was directed to review the re-preparation results, select the appropriate GOs, and provide RESI with the necessary revised documentation, which would allow them to proceed with the inter-laboratory analysis. The corrected paperwork was provided by EMSL27 to RESI on 11/11/2013. The completed inter-lab report and associated EDDs were uploaded to the FTP site by RESI on 1/10/2014. Note that the report delivered by

RESI was outside of the 10 day Turn-Around-Time (TAT) and nine (9) weeks after the November 6, 2013 sample receipt date.

The re-preparation and inter-laboratory results were reviewed by RESI and QATS on a GO by GO basis and a structure by structure basis to determine concordance with the criteria described in LB-000029 (refer to **Table 1**).

Table 1 - Recount Analysis Concordance Rules – LB-000029	
Measurement Parameter	**Concordance Rule**
Number of LA asbestos structures within each grid opening	For grid openings with 10 or fewer structures, counts must match exactly. For grid openings with more than 10 structures, counts must be within 10 percent (%) as calculated as RPD (((maximum count – minimum count)/average count)*100%).
Asbestos class of structure (LA, OA, CH)	Must agree 100% on CH vs. amphibole. For assignment of amphiboles to LA or OA bins, must agree on at least 90% of all amphibole structures.
LA Structure length	For fibers and bundles, must agree within 1 micron (µm) or 10% (whichever is less stringent). For clusters and matrices, must agree within 2 µm or 20% (whichever is less stringent).
LA Structure width	For fibers and bundles, must agree within 0.5 µm or 20% (whichever is less stringent). For clusters and matrices, there is no quantitative rule for concordance.
Presence of Sodium (Na) and Potassium (K)	There is no rule for concordance, but must be tabulated to identify potential trends that may indicate inconsistencies in recording practices or interpretation of spectra.

A summary of the FB-00014 sample inter-lab results are provided below by assessment comparison:

Number of LA Asbestos Structures Within Each Grid Opening - The inter-laboratory analysis performed by RESI identified four LA and one CH structures not identified by EMSL27 in the following GOs; A1-E8 (1 CH), A2-I8 (1 LA), A2-J7 (1 LA), A2-E11 (1 LA), A2-E13 (1 LA). Reconciliation was performed by RESI, which confirmed the presence of the missed structures. RESI also shipped the grids to EMSL Cinnaminson (EMSL04) in New Jersey, who also confirmed the presence of the structures not identified by EMSL27 during the re-preparation analysis. **Table 2** presents a GO by GO comparison between the two laboratories:

Table 2 - EPA Sample No. FB-00014 (Soil/Rock Flower Prep)							
	Interlab (RESI)			Reprep (EMSL27)			
GO	**LA**	**OA**	**CH**	**LA**	**OA**	**CH**	**Reconciliation Notes**
A1-D11	1	0	0	1	0	0	
A1-E8	1	0	1	1	0	0	Presence of CH structure confirmed by reconciliation performed by both RESI and EMSL04.
A1-F7	1	0	1	1	0	1	
A1-F15	0	0	0	0	0	0	
A2-F15	0	0	0	0	0	0	
A2-I8	2	0	0	1	0	0	Presence of LA structure confirmed by reconciliation performed by both RESI and EMSL04.
A2-J7	2	0	0	1	0	0	Presence of LA structure confirmed by reconciliation performed by both RESI and EMSL04.
A3-E11	2	0	0	1	0	0	Presence of LA structure confirmed by reconciliation

Table 2 - EPA Sample No. FB-00014 (Soil/Rock Flower Prep)							
	Interlab (RESI)			Reprep (EMSL27)			
GO	LA	OA	CH	LA	OA	CH	Reconciliation Notes
							performed by both RESI and EMSL04.
A3-E13	2	0	0	1	0	0	Presence of LA structure confirmed by reconciliation performed by both RESI and EMSL04.
A3-E15	1	0	0	1	0	0	

Asbestos Class of Structure - Both laboratories agreed on the assignment of amphiboles vs. CH, and amphiboles to LA or OA bins.

LA Structure Length - All fibers and bundles lengths agreed to within 1 micron (μm) or 10%, whichever was less stringent.

LA Structure Width - All fibers and bundles agreed to within 0.5 μm or 20%, whichever was less stringent.

Presence of Sodium (Na) and Potassium (K) – The EDXA spectra provided by both laboratories were in agreement regarding the presence or absence of Na and K, which for this sample was 100% XX (no Na or K detected) for both laboratories. However, a review of the spectra provided by both laboratories indicates that neither may have collected spectra for an appropriate amount of time. EDXA spectra from both laboratories were seldom collected for more than a few minutes and Silica (si) counts were consistently lower than the required 1,000 counts. RESI Si counts were as low as 40, with the majority below 500, and the EMSL27 Si counts were as low as 200 counts, with the majority below 400. These low Si counts may account for the observed absence of Na and K in the EDXA spectra for the identified LA structures.

Conclusion – The inter-laboratory analysis results of sample FB-00014 show that the asbestos class, length, and widths were consistent between the laboratories for common structures. However, and more significantly, the fact that EMSL27 missed five out of the 14 (36%) structures identified by RESI is cause for concern. This inter-laboratory analysis evaluation also revealed that neither EMSL27 nor RESI may be collecting EDXA spectra for a long enough period of time to accurately determine the presence of Na and K.

Hygeia/EMSL27 Inter-laboratory Analyses

On October 18, 2013 in response to direction from EPA, QATS selected several samples for a Hygeia/EMSL27 inter-laboratory study. Four samples were selected: FB-00004, FB-00009, AA-02777, and AA-02875. These samples were originally analyzed by Hygeia in 2013. Re-preparations were not performed for these samples; rather, ten GOs and the necessary alternate GOs were selected from the original “NOT QC” analysis of each of the four samples selected for Inter-laboratory analysis by EMSL27. The selection of GOs from the original “Not QC” analysis is a deviation from laboratory modification, but was done to expedite the process and reduce costs. On 10/31/2013, prior to shipping the TEM grids to EMSL27 to perform the inter-laboratory analyses, Hygeia provided the required paperwork (i.e. benchsheets and GO selection) to QATS for review and approval on 10/30/2013. Hygeia shipped the TEM grid preparations to EMSL27 on 10/31/2013. EMSL27 provided the inter-laboratory results on 11/14/2013. QATS compared the inter-laboratory results on a GO by GO basis and structure by structure basis to determine concordance using the same criteria applied above for inter-laboratory sample FB-00014. The following is a summary of the results for each of the four inter-laboratory sample analyses performed by EMSL27:

Number of LA Asbestos Structures within Each Grid Opening

FB-00004 – Eight LA structures identified by Hygeia in the original analysis were not identified by EMSL27 during the inter-laboratory analysis. LA structures by GO that were not identified by EMSL27 during the inter-laboratory analysis were: A1/G3-3 (1 LA), A1/G3-4 (1 LA), A1/E4-1 (1 LA), A1/G4-3 (3 LA), A2/E5-2 (1 LA), and A2/F4-3 (1 LA). During the reconciliation analysis performed by EMSL27, five NAM structures with similar length/width dimensions to that of the five LA structures identified by Hygeia were located. GO A1/G4-3 was damaged and could not be reconciled. **Table 3** presents a GO by GO comparison between the two laboratories:

Table 3 - EPA Sample No. FB-00004 (Soil/Rock Flower Prep.)

GO	Original Analysis (Hygeia)			Interlab (EMSL27)			Reconciliation Notes
	LA	OA	CH	LA	OA	CH	
A1/G3-3	2	0	0	1	0	0	A NAM structure with close length/width dimensions located during the reconciliation.
A1/G3-4	3	0	0	2	0	0	A NAM structure with close length/width dimensions located during the reconciliation.
A1/E4-1	3	0	0	2	0	0	A NAM structure with close length/width dimensions located during the reconciliation.
A1/E4-2	3	0	0	3	0	0	
A1/G4-3	4	0	0	1	0	0	GO damaged, could not be reconciled
A2/E5-1	2	0	0	2	0	0	
A2/E5-2	2	0	0	1	0	0	A NAM structure with close length/width dimensions located during the reconciliation.
A2/F4-3	3	0	0	2	0	0	A NAM structure with close length/width dimensions located during the reconciliation.
A2/F4-4	3	0	0	3	0	0	
A2/E4-4	4	0	0	4	0	0	

FB-00009 – Five LA structures identified by Hygeia in the original analysis were not identified by EMSL27 during the inter-laboratory analysis. LA structures by GO that were not identified by EMSL27 during the inter-laboratory analysis were: B1/H3-2 (1 LA), B1/E4-3 (1 LA), B2/F3-2 (1 LA), B2/H3-1 (1 LA), and B2/C4-1 (1 LA). During the reconciliation analysis performed by EMSL27, one NAM structure with similar length/width dimensions to that of the LA structure identified by Hygeia was located. GOs B1/E4-3 and B2/C4-1 were damaged and could not be reconciled. **Table 4** presents a GO by GO comparison between the two laboratories:

Table 4 - EPA Sample No. FB-00009 (Soil/Rock Flower Prep)

GO	Original Analysis (Hygeia)			Interlab (EMSL27)			Reconciliation Notes
	LA	OA	CH	LA	OA	CH	
B1/F2-4	2	0	0	2	0	0	
B1/E2-3	2	0	0	2	0	0	
B1/H3-2	3	0	0	2	0	0	Reconciliation reported as ND
B1/E4-3	2	0	0	1	0	0	Could not be reconciled, GO damaged.

Table 4 - EPA Sample No. FB-00009 (Soil/Rock Flower Prep)							
	Original Analysis (Hygeia)			Interlab (EMSL27)			
GO	LA	OA	CH	LA	OA	CH	Reconciliation Notes
B1/G2-4	1	0	0	1	0	0	
B2/E3-2	2	0	0	2	0	0	
B2/F3-2	2	0	0	1	0	2	Reconciliation confirmed IL analysis.
B2/G3-1	1	0	0	1	0	0	Reconciliation confirmed IL analysis.
B2/H3-1	2	0	0	1	0	0	A NAM structure with close length/width dimensions located during the reconciliation.
B2/C4-1	2	0	0	1	0	0	Could not be reconciled, GO damaged.

AA-02777 – One LA structure in GO D2/H4-1 that was identified by Hygeia in the original analysis was not identified by EMSL27 during the inter-laboratory analysis. During the reconciliation analysis performed by EMSL27, one NAM structure with similar length/width dimensions to that of the LA structure identified by Hygeia was located. **Table 5** presents a GO by GO comparison between the two laboratories:

Table 5 - EPA Sample No. AA-02777 (Air)							
	Original Analysis (Hygeia)			Interlab (EMSL27)			
GO	LA	OA	CH	LA	OA	CH	Reconciliation Notes
D1/F3-3	1	0	0	1	0	0	
D1/F4-3	1	0	0	1	0	0	
D1/G5-2	1	0	0	1	0	0	
D1/F4-2	0	0	0	0	0	0	
D1/G4-2	0	0	0	0	0	0	
D2/H4-1	1	0	0	0	0	0	A NAM structure with close length/width dimensions located during the reconciliation.
D2/E4-1	0	0	0	0	0	0	
D2/G4-4	1	0	0	1	0	0	
D2/C4-3	1	0	0	1	0	0	
D2/F5-1	0	0	0	0	0	0	

AA-02875 – Three LA structures identified by Hygeia in the original analysis were not identified by EMSL27 during the inter-laboratory analysis. LA structures by GO that were not identified by EMSL27 during the inter-laboratory analysis were: C1/E6-2 (1 LA), C1/E4-1(1 LA), and C2/K4-4 (1 LA). During the reconciliation analysis performed by EMSL27, one NAM structure with similar length/width dimensions to that of the LA structure identified by Hygeia was located. Note that three LA structures identified by EMSL27 during the inter-laboratory were not identified by Hygeia in the original analysis. **Table 6** presents a GO by GO comparison between the two laboratories:

Table 6 - EPA Sample No. AA-02875 (Air)							
	Original Analysis (Hygeia)			Interlab (EMSL27)			
GO	LA	OA	CH	LA	OA	CH	Reconciliation Notes
C1/E6-2	1	0	0	0	0	0	A NAM structure with close length/width dimensions located during the reconciliation.
C1/G5-1	0	0	0	0	0	0	
C1/G4-4	0	0	0	0	0	0	
C1/E4-1	1	0	0	0	0	0	IL results confirmed by reconciliation.
C1/E4-2	1	0	0	1	0	0	
C2/F4-1	1	0	0	2	0	0	IL results confirmed by reconciliation.
C2/K4-4	1	0	0	0	0	0	IL results confirmed by reconciliation.
C2/H4-4	1	0	0	2	0	0	IL results confirmed by reconciliation.
C2/K5-1	0	0	1	1	0	0	IL results confirmed by reconciliation.
C2/F5-3	1	0	0	1	0	0	

Asbestos Class of Structure - Both laboratories agreed on the assignment of amphiboles versus CH, and amphiboles to LA or OA bins for all four samples.

LA Structure Length – Slight structure length reporting anomalies in single structures in three of the four inter-laboratory samples were observed:

- FB-00004 – One LA structure did not meet the length criteria; however, the structure terminated in a non-countable grid bar for the inter-lab analysis and the length was doubled, which accounts for the difference. A review of the structure sketches on the bench sheets indicates the structure has moved into the grid bar over time, and therefore both measurements are accurate.
- FB-00009 – One structure, a LA structure identified by both laboratories in GO B1/E2-3, did not meet the length criteria of ≤ 1µm or ≤ 10% difference.
- AA-02777 - One structure, a LA structure identified by both laboratories in GO D1/G5-2, did not meet the length criteria of ≤ 1µm or ≤ 10% difference.
- AA-02875 - All concordant.

LA Structure Width - All fibers and bundles agreed to within 0.5 µm or 20%, whichever was less stringent, for all of matched structures in all four of the samples.

Presence of Sodium (Na) and Potassium (K) – EMSL27 reported far fewer spectra containing Na and K than Hygeia in the four inter-laboratory samples analyzed. **Table 7** provides a summary of the EDXA results for the LA structures identified for each sample:

Table 7 - Laboratory EDXA Spectra Comparison					
		EDXA Observation			
Sample No	Laboratory	NaK	NaX	XK	XX
FB-00004	Hygeia	29	0	0	0
	EMSL27	5	1	0	16
FB-00009	Hygeia	17	1	0	1
	EMSL27	1	0	0	13
AA-02777	Hygeia	6	0	0	0

Table 7 - Laboratory EDXA Spectra Comparison					
Sample No	Laboratory	EDXA Observation			
		NaK	NaX	XK	XX
	EMSL27	0	1	0	4
AA-02875	Hygeia	5	0	0	3
	EMSL27	0	0	1	5
Totals	**Hygeia**	**57**	**1**	**0**	**4**
	EMSL27	**6**	**2**	**1**	**38**

Hygeia reported 57 spectra as NaK versus 6 for EMSL27, and EMSL27 reported 38 spectra as XX (no Na or K) versus 4 for Hygeia.

Note that prior to the training provided to the EMSL27 staff by ESAT Region 8 on September 25-26, 2013, EMSL27 consistently reported NaK (WRTA), but seldom reported XX. However, this most current study indicates a potential reversal of that trend with XX being reported at a high frequency.

A review of the spectra provided by EMSL27 found that of the 30 spectra provided for structures determined to be LA structures, only seven (23%) had Si peaks that met or exceeded the 1,000 count criteria. A review of the spectra provided by Hygeia found that of the 34 spectra provided for LA identified structures, 17 (50%) had Si peaks that met or exceeded the 1,000 count criteria. Note that the detector on the Hygeia TEM is equipped with a high angle detector with a Beryllium window which may be more sensitive than the detector utilized by EMSL27. EMSL27 uses a detector that also has a beryllium window, but it is a horizontal detector.

Further investigation into those structures for which spectra that were available from both of the laboratories indicates that short spectral collection times can influence the amount of Na and K detected. Note that in **Table 8** for those samples with matching or partially matching spectra (highlighted), the Si peaks have roughly the same number of counts. However, the spectra for XX values reported by EMSL27 that were reported as NaK by Hygeia almost always have lower Si counts.

The results in the table below suggest that had EMSL27 collected spectra for a longer period of time, Na and K peaks could possibly have been identified; however, this observation is preliminary. More information needs to be gathered concerning detectors, etc., before a conclusion regarding spectral reporting can be made.

Table 8 - EDXA Silica Counts													
	Grid/GO		EMSL27					Hygeia					
Sample No.	Grid	GO	Str	Class	Desc	EDXA	Si Peak	Str	Class	desc	EDXA	Si Peak	NaK match
AA-02777	D1	F3-3	1	LA	AT	XX	400	1	LA	WRTA	NaK	555	No
AA-02777	D1	F4-3	2	LA	WRTA	NaX	400	2	LA	WRTA	NaK	476	Partial
AA-02777	D1	G5-2	3	LA	AT	XX	450	3	LA	WRTA	NaK	965	No
AA-02777	D2	G4-4	4	LA	AT	XX	100	6	LA	WRTA	NaK	654	No
AA-02875	C1	E6-2	0	NAM	UN	XX	200	1	LA	WRTA	NaK	1130	No
AA-02875	C1	E4-2	1	LA	AT	XX	1700	6	LA	TR	XX	1064	Yes
FB-00004	A1	G3-3	1	LA	WRTA	NaX	1100	2	LA	WRTA	NaK	927	Partial
FB-00004	A1	G3-4	2	LA	AT	XX	300	4	LA	WRTA	NaK	1028	No

Table 8 - EDXA Silica Counts													
	Grid/GO		EMSL27					Hygeia					
Sample No.	Grid	GO	Str	Class	Desc	EDXA	Si Peak	Str	Class	desc	EDXA	Si Peak	NaK match
FB-00009	B1	F2-4	1	LA	AT	XX	300	4	LA	WRTA	NaK	645	No
FB-00009	B1	F2-4	2	LA	WRTA	NaK	1000	3	LA	WRTA	NaK	864	Yes
FB-00009	B1	E2-3	3	LA	AT	XX	800	5	LA	WRTA	NaK	697	No
FB-00009	B1	E2-3	4	LA	AT	XX	275	6	LA	WRTA	NaK	779	No

Conclusion – A total of 17 LA structures detected by Hygeia during the original analysis of the four samples above were not detected by EMSL27 in either the inter-laboratory or reconciliation analyses. This concludes that either A) the structures were not present during the original analysis (highly doubtful); B) the grid preparations were damaged in such a way that structures were lost; or C) the structures are present, but were identified in neither the inter-laboratory or reconciliation analyses. Concerning the detection of Na and K from EDXA analysis, there appears to be some evidence that EMSL27 is not collecting spectra for an adequate amount of time.

Final Conclusions and Recommendations

The results from both of the above IL studies, one between EMSL27 and RESI, and the other between EMSL27 and Hygeia, indicate that EMSL27 has yet to demonstrate the necessary proficiency to accurately analyze Libby samples for LA. The number of potentially missed LA structures from the two IL studies, 22 total, is significant. In addition, EMSL27 consistently fails to follow the directions provided in laboratory modification LB-000029. Additional training for this laboratory is recommended. Another recommendation based on the results of these ILs is that all laboratories be further trained regarding the collection of EDXA spectra to ensure the detection of Na and K when present. Prior to that it might be useful to compile a list of the types of EDXA detectors used by each of the laboratories to evaluate whether detector type (i.e., high angle versus horizontal) has any bearing on the detection of Na and K.

ATTACHMENT 2

Annual Evaluation of TEM Inter-laboratory results (2013)

REPORT

FOR

TASK ORDER NUMBER 3021
QUALITY ASSURANCE SUPPORT FOR THE LIBBY ASBESTOS SITE

ANNUAL EVALUATION OF TEM INTER-LABORATORY RESULTS

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Attachment 1 – 2013 RP/IL Sample Distribution by Laboratory

EXECUTIVE SUMMARY

A Transmission Electron Microscopy (TEM) inter-laboratory (IL) study was performed on asbestos samples collected from OU3 site locations and originally analyzed in 2013. The coordination, data comparisons, and development of this report was performed by CB&I's Quality Assurance Technical Support Program (QATS) for EPA Region 8 under Task Order 3-021.

A total of 8 samples from 5 different matrices (air, water, ash, tree bark, and duff) that had been originally analyzed by four (4) Libby asbestos support laboratories were selected. The number of samples selected was performed in accordance with Laboratory Modification LB-000029E, which requires the selection of at least 1% of the total number of annual project site samples.

Approach

The study involved selection of the samples, sample re-preparation (RP) by those laboratories that analyzed the original samples, IL analysis of the re-preparations by other laboratories, and evaluation of the results. Following review and verification of the RP-laboratory re-preparation and analysis documentation, the RP laboratories shipped the TEM re-preparation grids to second laboratories to perform the IL sample analyses. The laboratories were instructed to apply the same analysis rules per LB-000029E that were used in the original analysis. IL study results on EDDs were uploaded by the IL laboratories to the eRoom. The RP results from the RP laboratories were provided to QATS. QATS performed structure match comparisons of the RP and IL analysis results in accordance with LB-000029E and recount (RC) program-wide acceptance criteria for structure attributes that include Mineral Class, Structure Length, Structure Width, and Structures per GO. NaK comparisons were also evaluated; however, no criteria are currently established for this attribute. Three types of comparisons were performed for matching structures: 1) all RP/IL pairs; 2) media-specific; and 3) laboratory-specific. In addition to raw structure comparisons, QATS also conducted comparisons following omission of ambiguous structures resulting from damaged grid openings (GO), structure migration due to heavy particulate presence, and other factors.

Results

All RP/IL Pairs – 38 structure pairs were evaluated for the all sample RP/IL comparisons for mineral class, structure length, structure width, and NaK; 74 GOs were evaluated for the structure per GO criteria. Corrected for ambiguous structures, structure pair comparisons for mineral class, structure length, and structure width fell into the LB-000029E defined "Acceptable" or "Good" categories. The pass percentage for structures per GO for all RP/IL pairs was 73%, which fell into the "Poor" category (<85%).

Media – The RP/IL result comparisons were performed by the five sample media types: duff, tree bark, water, ash, and air. Adjusted for ambiguous structures, structures per GO for duff (30%), tree bark (71.4%), water (80%), and ash (50%) fell into the "Poor" category (<85%), and mineral class for ash (83.3%) and air (71.4%) samples were below the acceptance criteria of ≥90%. The remaining comparisons for all other media types were in the "Acceptable" or "Good" categories after adjustment for ambiguous structures.

Laboratory – The RP/IL result comparisons were evaluated by laboratory for the 2013 OU3 RP/IL results received from EMSL03, EMSL04, EMSL22, and EMSL27. The structures per GO for EMSL04 (63.6%), EMSL22 (77.5%), and EMSL27 (72%) fell into the "Poor" category (<85%). All adjusted comparison results for EMSL03, and the other laboratories for Mineral Class, Structure length, and structure width were in the "Acceptable" or "Good" categories.

In addition to the matched structure comparisons, an evaluation of unmatched structures by laboratory was also performed. The two newer laboratories to the program, EMSL03 and EMSL22, had the highest numbers of unmatched structures for this IL study. However, recent on-site audits of these laboratories in April and May of 2014 revealed significant improvements in their analysts' understanding of LA structure identification requirements.

An assessment of the potential correlation between the number structures missed by laboratory against the total number of structures counted, and of the numbers of missed structures by sample versus the percent loading by sample was also performed. No trends were identified for either assessment.

For the two air samples, a PCMe structure comparison assessment was also performed as part of the 2013 OU3 TEM IL study. Structure match comparisons of the RP and IL pair analysis results Mineral Class, Structure Length, Structure Width, Structures per GO, and NaK were performed. All PCMe pair assessments fell into the "Good" category, except for Mineral Class, which at 71.4% was below the 90% requirement.

BACKGROUND

TEM utilizes analytical instruments that operate at high enough magnifications (typically about 20,000x) to detect structures much smaller than can be been seen by other methods (e.g., PLM and PCM) and can be used for air, water, and solid media (e.g., ash, duff, and tree bark). When a sample is analyzed by TEM, the analyst records the size (length, width) and structure type (e.g., fiber, bundle) of each individual asbestos structure that is observed, which is used to determine the concentration of asbestos structures in select media. In addition to recording the structure dimensions and type, the TEM analyst also records the mineral type of each individual asbestos structure that is observed, which is accomplished by an observation of the elemental spectra generated from Energy Dispersive Spectrometry (EDS), its crystalline structure by Selected Area Electron Diffraction (SAED), and general morphology of the structure. These TEM asbestos determination procedures can be subjective, analyst-dependent, and subject to variability unless specified procedures are strictly followed. To help ensure the consistency of TEM results generated for the Libby Asbestos Superfund Site, EPA uses inter-laboratory analyses to determine variability in structure measurements by media and laboratory. For inter-laboratory analyses, a previously analyzed sample is re-prepared and re-analyzed by the laboratory that performed the original analysis and then re-analyzed by a different laboratory.

PROCESS FOR EVALUATING TEM INTER-LABORATORY ANALYSES

For this evaluation, samples originally analyzed by laboratories in 2013 were selected for inter-laboratory analyses, which were scheduled and analyzed in 2014. This effort was directed by EPA Region 8 and was performed by the Quality Assurance Technical Support (QATS) Program.

For this 2013 TEM inter-laboratory study, a total of eight (8) sample analysis pairs were evaluated out of 212 total samples, which represents 3.8% of the total. The frequency of inter-laboratory analyses for Libby Superfund asbestos analysis is currently a minimum of one percent (1%) of the TEM analyses performed in the previous year. Because at least one sample for each media analyzed at each laboratory is required, the percentage for this study was often exceeded. Samples are primarily selected based on structures per Grid Opening Area (GOA), with preference given to those samples with the highest number of structures per GOA.

After preparing and analyzing the select samples, the originating laboratory selected 10 Grid Openings (GOs) with the highest number of Libby Amphibole (LA) structures, which were recorded on the applicable bench sheets and also mapped on a Structure Location form provided as Attachment 5 of Laboratory Modification LB-000029E. When the stopping rules have not been achieved prior to the analyzing the 10th GO for a given sample, the laboratories were required to select five alternate GOs should one of the original 10 GOs be damaged or unreadable. Once the analysis was completed and the necessary documentation prepared, all documents were scanned and e-mailed to QATS for review to ensure the following:

- The correct method was employed.
- The recording and stopping rules specified in the Analytical Summary were followed.
- Bench sheets were properly completed for all observed structures.
- The applicable laboratory modifications were observed.
- A grid orientation form (Attachment 4 of LB-000029E) was completed.
- Structure Location with GO Forms (Attachment 5 of LB-000029E) was provided for all GOs containing either LA or close-call non-asbestos material (NAM) structures.
- The correct GOs were selected for re-analysis by the laboratory performing the inter-laboratory analysis.

Once all of the above documents and procedures was reviewed and confirmed, the re-preparation laboratory was directed by EPA to ship the TEM grid preparations to the identified laboratory for inter-laboratory analysis. The re-preparation laboratory, at this point, also loaded the associated re-preparation (RP) electronic data deliverable (EDD) to the OU3 eRoom.

Upon receipt of the grid preparations at the laboratory scheduled to perform the second, inter-laboratory (IL) analysis, the GOs selected by the re-preparation laboratory were re-analyzed in accordance with the same rules applied to the RP analyses. If one of the GOs selected for re-analysis be damaged, the laboratories were instructed to analyze one of the alternate GOs (if available). As with the re-preparation, all structures were recorded on the appropriate bench sheets and also on the provided Structure Location GO Forms. Upon completion of the inter-laboratory analysis, the laboratories uploaded the IL EDD to the OU3 eRoom. The re-preparation results were subsequently requested from the RP laboratory to determine concordance with the following criteria described in Laboratory Modification LB-000029E and **Table 1** below:

Table 1 – Structure Concordance Criteria

Measurement Parameter	Concordance Rule
Number of LA structures within each grid opening[1]	For grid openings with 10 or fewer structures, counts must match exactly. For grid openings with more than 10 structures, counts must be within 10 percent (%) as calculated as RPD (maximum count – minimum count)/average count)*100%.
Asbestos mineral class of structures (LA, OA, CH)	Agreement of 100% on CH vs. amphibole is required. For assignment of amphiboles to LA or OA bins, agreement of at least 90% of all amphibole structures is required.
LA Structure length	For fibers and bundles (all methods) and CF, CB, MF, and MB structures (ISO), agreement within 1 micron (µm) or 10% (whichever is less stringent) is required. For clusters and matrices (AHERA and ASTM) and CFO, CBO, CC, MFO, MBO, and MC structures (ISO), agreement within 2 µm or 20% (whichever is less stringent) is required.

Table 1 – Structure Concordance Criteria

Measurement Parameter	Concordance Rule
LA Structure width	For fibers and bundles (all methods) and CF, CB, CFO, CBO, MF, MB, MFO, and MBO structures (ISO), agreement within 0.5 µm or 20% (whichever is less stringent) is required. For clusters and matrices (AHERA and ASTM) and CC and MC structures (ISO), there is no quantitative rule for concordance.
Presence of Sodium (Na) and Potassium (K)	There is no rule for concordance, but must be tabulated to identify potential trends that may indicate inconsistencies in recording practices or interpretation of spectra.

1) For air samples, concordance will be evaluated based on total and PCMe structure counts.

If a structure or GO does not meet one of the criteria described in Table 1, the IL laboratory was instructed to perform a reconciliation (RC) analysis in which the non-compliant GOs and/or structures are re-analyzed to again determine the cause of the non-compliance. In addition, the IL laboratory is required to also contact the RP laboratory to discuss any deficiencies between the RP and IL analyses and attempt to come to a consensus on which of the two analyses is correct. Once the necessary analyses were completed, the laboratories generated both a NIST (1994) IL summary report, used by NVLAP to determine overall concordance between the RP and IL analyses, and a comparison of matching structures summary to determine compliance with the criteria described in Table 1. Once completed, these reports were uploaded to the OU3 eRoom and also provided to the QATS contractor for review and generation of this report.

2013 TEM INTER-LABORATORY EVALUATION RESULTS SUMMARY

Eight (8) samples originally analyzed by four Libby asbestos contract laboratories were selected by the QATS contractor for the 2013 TEM inter-laboratory study. The matrices of the selected samples included air, water, duff, tree bark, and ash samples, which were prepared and analyzed in accordance with the applicable methodologies (i.e., ISO 10312, AHERA, and EPA 100.2), applicable project-specific analytical summaries, and laboratory modifications. The laboratories participating in the OU3 2013 TEM inter-laboratory study are shown in **Table 2**:

Table 2 – Laboratories for 2013 OU3 IL Study

Abbreviation	Full Name, Location
EMSL03	EMSL Analytical, Inc., Manhattan, NY
EMSL04	EMSL Analytical, Inc., Cinnaminson, NJ
EMSL22	EMSL Analytical, Inc., Denver, CO
EMSL27	EMSL Analytical, Inc., Libby, MT

The distribution of samples by RP and IL laboratory is shown in **Table 3** below and in **Attachment 1** of this report.

Table 3 - Samples Selected for 2013 OU3 IL Study

	Sample	Media	Original/RP Laboratory	IL Laboratory
1	SM-20001	Ash	EMSL04	EMSL22
2	CL-3-0007	Duff	EMSL04	EMSL27
3	CL-3-0004	Tree bark	EMSL04	EMSL03
4	P5-20325	Water	EMSL04	EMSL22
5	P4-00362	Air	EMSL22	EMSL27
6	SM-10068	Air	EMSL27	EMSL03
7	P1-00082	Tree bark	EMSL27	EMSL04
8	P5-20331	Water	EMSL27	EMSL22

Additionally, **Table 4** provides an illustration of the different media prepared and analyzed by the participating laboratories:

Table 4 – 2013 RP/IL Distribution Table 4 – 2013 RP/IL Distribution

	Analysis		Media				
Laboratory	RP	IL	Tree Bark	Water	Ash	Air	Duff
EMSL03	0	2	1	0	0	1	0
EMSL04	4	1	2	1	1	0	1
EMSL22	1	4	0	2	1	1	1
EMSL27	3	1	1	1	0	2	0
Totals	**8**	**8**	**4**	**4**	**2**	**4**	**2**

As illustrated above in **Table 4**, all four laboratories performed IL analyses for this study.

Due to a variety of problems encountered by the laboratories in locating and identifying structures, different approaches were used to assess the data. Some of the problems encountered by the laboratories included:

- Damaged (i.e., ripped or torn) grid openings preventing the IL laboratory from either locating or reconciling missed structures.
- Heavy particulate or melting of organic material causing replica to shift resulting in structures migrating into other GOs and onto grid bars.
- Structures burned during the original analyses resulting in identification by EDS and SAED being impossible.
- Chemical variability along structures, causing significant differences in EDS spectra and resulting in the same structure being recorded as a NAM in one analysis and as LA in the other analyses.
- Analysts new to the project (i.e., EMSL03 and EMSL22) being unfamiliar with the amount of impurities and variability of LA.

In order to best present how some of the issues described above might have affected the results of this TEM inter-laboratory study and subsequent compliance with the criteria described in Table 1, the following different approaches were used to summarize the data:

- Compliance using the data as presented, without making adjustments for ambiguous structures.
- Compliance with the data adjusted to exclude those structures determined to be ambiguous.

In addition, these approaches are summarized for the following data sets:

- All RP/IL pairs
- Sample media (e.g., duff and tree bark)
- Individual laboratory

Sample results are measured against the following program-wide goals in **Table 5**:

Table 5 – Program Wide Acceptance Criteria

QC Sample Type	Metric	Good	Acceptable	Poor
Recounts	Concordance on LA structure counts per grid opening	>95%	85%-95%	<85%
	Concordance on Mineral Class (chrysotile vs. amphibole)	>99%	95%-99%	<95%
	Concordance on LA length	>90%	80%-90%	<80%
	Concordance on LA width	>90%	80%-90%	<80%

Note that Tables 1 and 5 differ on the structure per grid opening criteria, with Table 1 describing structures, which could be LA or NAM, and Table 5 specifying LA. Due to the number of mineral discrepancies attributed to fibers having different spectra along their lengths, which can often be the difference between a NAM and an LA, this report will look at overall structures as described in Table 1, but apply the acceptance criteria listed in Table 5. For a summary of Unmatched LA structures refer to Charts 6 through 9. It should also be noted that only matching structure pairs, as reported by the IL laboratory, are summarized next in Tables 6 through 8 and Charts 1 through 5 of this report.

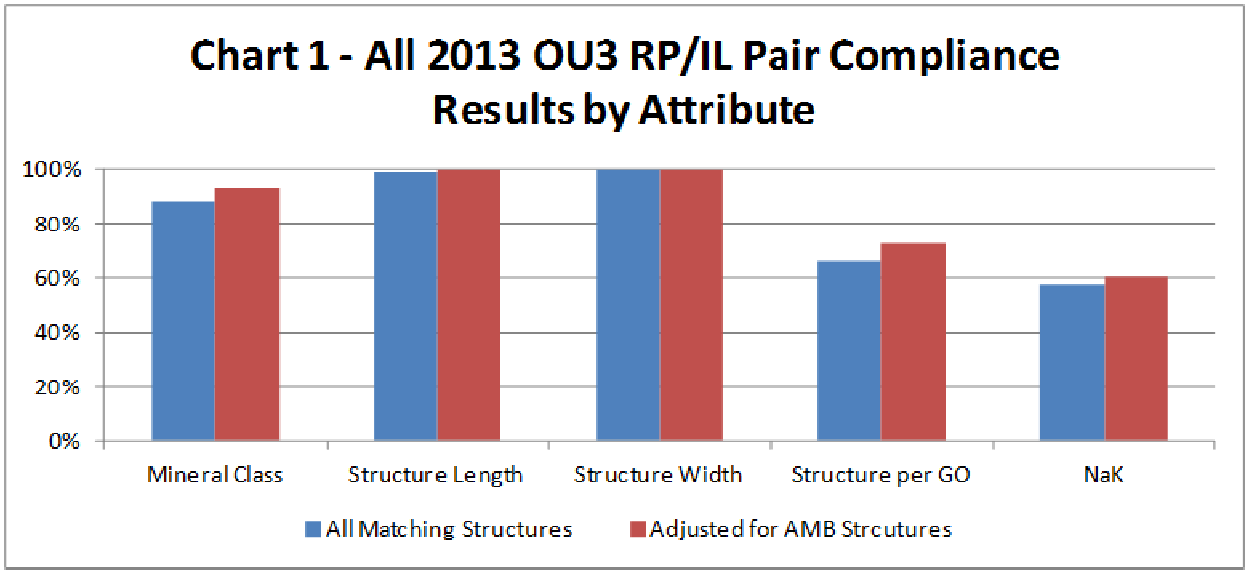
Summary of all 8 RP/IL Sample Pair Compliance Results

Table 6 provides a summary of the combined results of all 8 RP/IL pairs assessed, regardless of media or laboratory, and their compliance with the program-wide goals described above in Tables 1 and 5.

Table 6 – All 2013 OU3 RP/IL Pair Results

Unadjusted Structures				Adjusted for AMB Structures		
Attribute	**Total**	**Pass**	**%**	**Total**	**Pass**	**%**
Mineral Class	138	122	88.4%	131	122	93.1%
Structure Length	138	136	98.6%	131	130	99.2%
Structure Width	138	137	99.3%	131	130	99.2%
Structure per GO	74	49	66.2%	74	54	73.0%
NaK	138	80	58.0%	131	79	60.3%

As shown above in **Table 6,** with the exception of the highlighted percentages, all results were within the Good or Acceptable limits described in Table 5. Once the ambiguous structures were omitted, all of the results are within the “Good” range, with the exception of the Structures per GO (73%), which fall into the Poor (<85%) category described in Table 5. The NaK concordance, as described in Table 1, is being tracked for informational, trending purposes, with no criteria provided. The percentages in Table 6 are illustrated in **Chart 1** below:



Summary of RP/IL Sample Pair Compliance Results by Media Type

Tables 7A through 7E provide a summary, by media type, of concordance with the structure criteria described in Table 1 and measured against the program-wide goals summarized in Table 5:

Table 7A – Duff Sample RP/IL Pairs

Unadjusted Structures				Adjusted for AMB Structures		
Attribute	**Total**	**Pass**	**%**	**Total**	**Pass**	**%**
Mineral Class	36	32	88.9%	33	32	97.0%
Structure Length	36	35	97.2%	33	33	100.0%
Structure Width	36	36	100.0%	33	33	100.0%
Structure per GO	10	1	10.0%	10	3	30.0%
NaK	36	16	44.4%	33	15	45.5%

Table 7B – Tree Bark Sample RP/IL Pairs

Unadjusted Structures				Adjusted for AMB Structures		
Attribute	**Total**	**Pass**	**%**	**Total**	**Pass**	**%**
Mineral Class	51	43	84.3%	47	43	91.5%
Structure Length	51	51	100.0%	47	47	100.0%
Structure Width	51	51	100.0%	47	47	100.0%
Structure per GO	14	7	50.0%	14	10	71.4%
NaK	51	36	70.6%	47	36	76.6%

Table 7C – Water Sample RP/IL Pairs

Unadjusted Structures				Adjusted for AMB Structures		
Attribute	**Total**	**Pass**	**%**	**Total**	**Pass**	**%**
Mineral Class	32	32	100.0%	32	32	100.0%
Structure Length	32	31	96.9%	32	31	96.9%
Structure Width	32	32	100.0%	32	32	100.0%
Structure per GO	20	16	80.0%	20	16	80.0%
NaK	32	17	53.1%	32	17	53.1%

Table 7D – Ash Sample RP/IL Pairs

Unadjusted Structures				Adjusted for AMB Structures		
Attribute	**Total**	**Pass**	**%**	**Total**	**Pass**	**%**
Mineral Class	12	10	83.3%	12	10	83.3%
Structure Length	12	12	100.0%	12	12	100.0%
Structure Width	12	11	91.7%	12	11	91.7%
Structure per GO	10	5	50.0%	10	5	50.0%
NaK	12	7	58.3%	12	7	58.3%

Table 7E – Air Sample RP/IL Pairs

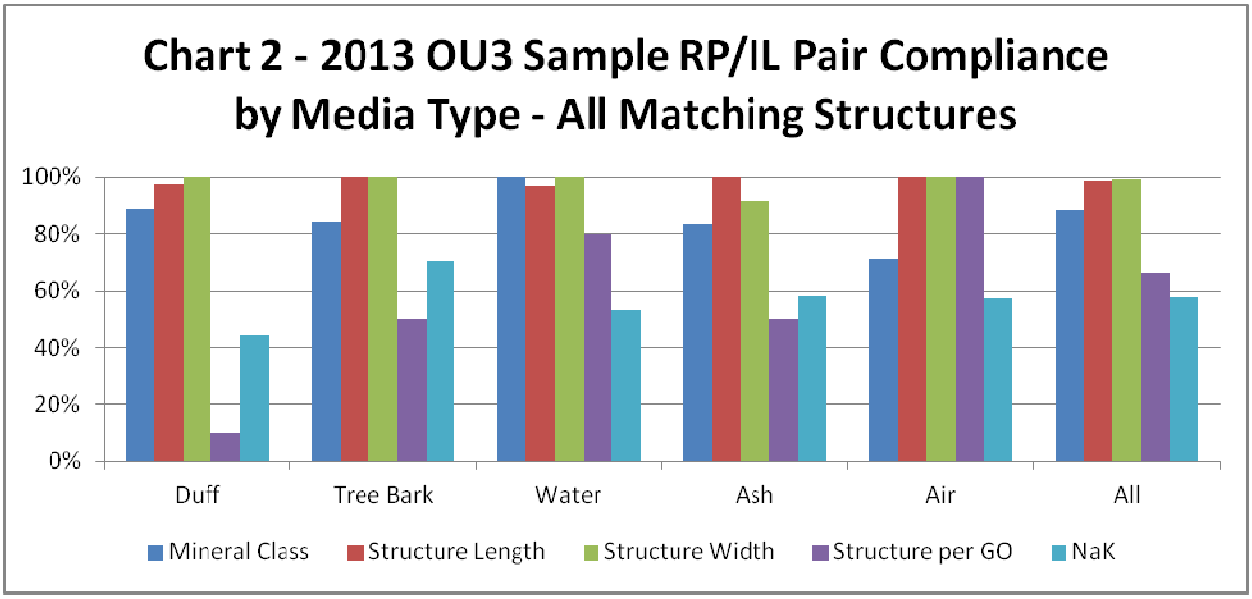
Unadjusted Structures				Adjusted for AMB Structures		
Attribute	**Total**	**Pass**	**%**	**Total**	**Pass**	**%**
Mineral Class	7	5	71.4%	7	5	71.4%
Structure Length	7	7	100.0%	7	7	100.0%
Structure Width	7	7	100.0%	7	7	100.0%
Structure per GO	20	20	100.0%	20	20	100.0%
NaK	7	4	57.1%	7	4	57.1%

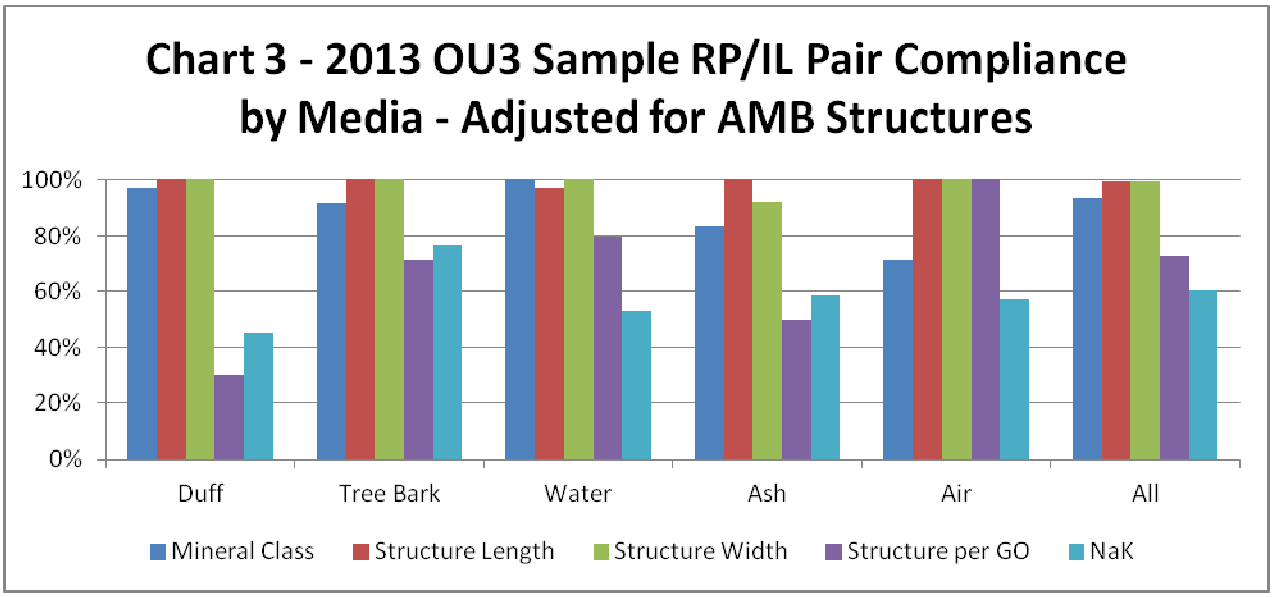
Tables 7A through 7E illustrate that, when taking into consideration ambiguous structures, the program-wide goals described in Tables 1 and 5 all are within the Good or Acceptable ranges, with the exception of the following:

- Duff – 30.0% of the grid openings were in concordance with the structure per GO criteria, which fell into the Poor category (<85% concordance) described in Table 5.
- Tree bark – 71.4% of the grid openings were in concordance with the structure per GO criteria, which fell into the Poor category (<85% concordance) described in Table 5.
- Water – 80.0 % of the grid openings were in concordance with the structure per GO criteria, which fell into the Poor category (<85% concordance) described in Table 5.
- Ash – 83.3 % of the structures were compliant for the mineral class criteria of greater than or equal to 90% described in Table 1.
- Ash – 50.0 % of the grid openings were in concordance with the structure per GO criteria, which fell into the Poor category (<85% concordance) described in Table 5.

- Air – 71.4 % of the structures were compliant for the mineral class criteria of greater than or equal to 90% described in Table 1.

It should also be noted that, for all RP/IL pairs, there was 100% agreement on Chrysotile versus Amphiboles. All the mineral class discrepancies were between Amphiboles and NAMs. The percentages in Tables 7A through 7E are illustrated in **Charts 2 and 3**. Note that no program-wide criteria from Table 5 apply to NaK.





Summary of RP/IL Sample Pair Compliance Results by Laboratory

Tables 8A through 8D provide the laboratory-specific results for each RP/IL pair where the laboratory either performed the initial (RP) analysis or the second (IL) analysis. Note that it is important when evaluating the data that these results are not just a reflection of the specified laboratory's performance, but also of the laboratory that had performed the paired, RP or IL, analysis. These tables provide a summary of concordance with the structure criteria described in Table 1 as measured against the program-wide goals summarized in Table 5:

Table 8A – RP/IL Compliance by Attribute – EMSL03

Unadjusted Structures				Adjusted for AMB Structures		
Attribute	**Total**	**Pass**	**%**	**Total**	**Pass**	**%**
Mineral Class	14	11	78.6%	12	11	91.7%
Structure Length	14	14	100.0%	12	12	100.0%
Structure Width	14	14	100.0%	12	12	100.0%
Structure per GO	14	12	85.7%	14	13	92.9%
NaK	14	11	78.6%	12	11	91.7%

Table 8B – RP/IL Compliance by Attribute – EMSL04

Unadjusted Structures				Adjusted for AMB Structures		
Attribute	**Total**	**Pass**	**%**	**Total**	**Pass**	**%**
Mineral Class	115	101	87.8%	108	101	93.5%
Structure Length	115	114	99.1%	108	108	100.0%
Structure Width	115	114	99.1%	108	107	99.1%
Structure per GO	44	23	52.3%	44	28	63.6%
NaK	115	68	59.1%	108	67	62.0%

Table 8C – RP/IL Compliance by Attribute – EMSL22

Unadjusted Structures				Adjusted for AMB Structures		
Attribute	**Total**	**Pass**	**%**	**Total**	**Pass**	**%**
Mineral Class	51	47	92.2%	51	47	92.2%
Structure Length	51	50	98.0%	51	50	98.0%
Structure Width	51	50	98.0%	51	50	98.0%
Structure per GO	40	31	77.5%	40	31	77.5%
NaK	51	28	54.9%	51	28	54.9%

Table 8D – RP/IL Compliance by Attribute – EMSL27

Unadjusted Structures				Adjusted for AMB Structures		
Attribute	**Total**	**Pass**	**%**	**Total**	**Pass**	**%**
Mineral Class	96	85	88.5%	91	85	93.4%
Structure Length	96	94	97.9%	91	90	98.9%
Structure Width	96	96	100.0%	91	91	100.0%
Structure per GO	50	32	64.0%	50	36	72.0%
NaK	96	53	55.2%	91	52	57.1%

Tables 8A through 8D illustrate that, when taking into consideration the ambiguous structures, the program-wide goals described in Tables 1 and 5 are within the Good or Acceptable ranges, with the exception of the following:

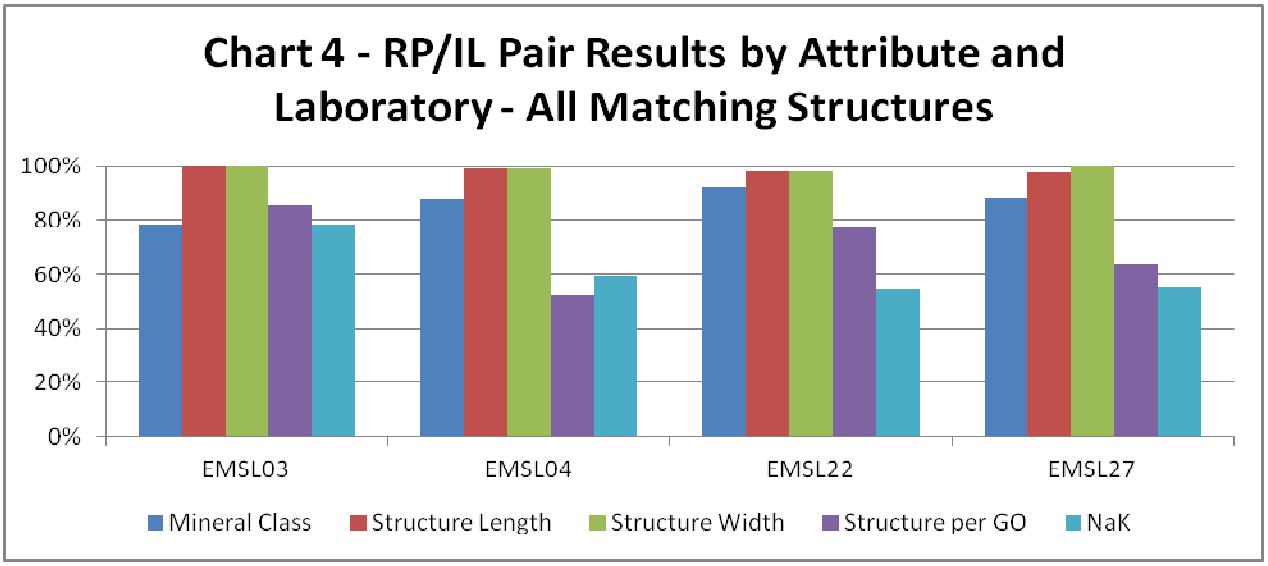
- EMSL04 – The percentage of structures meeting the mineral class criteria was 63.6%, which is less than the 90% concordance criteria described in Table 1.

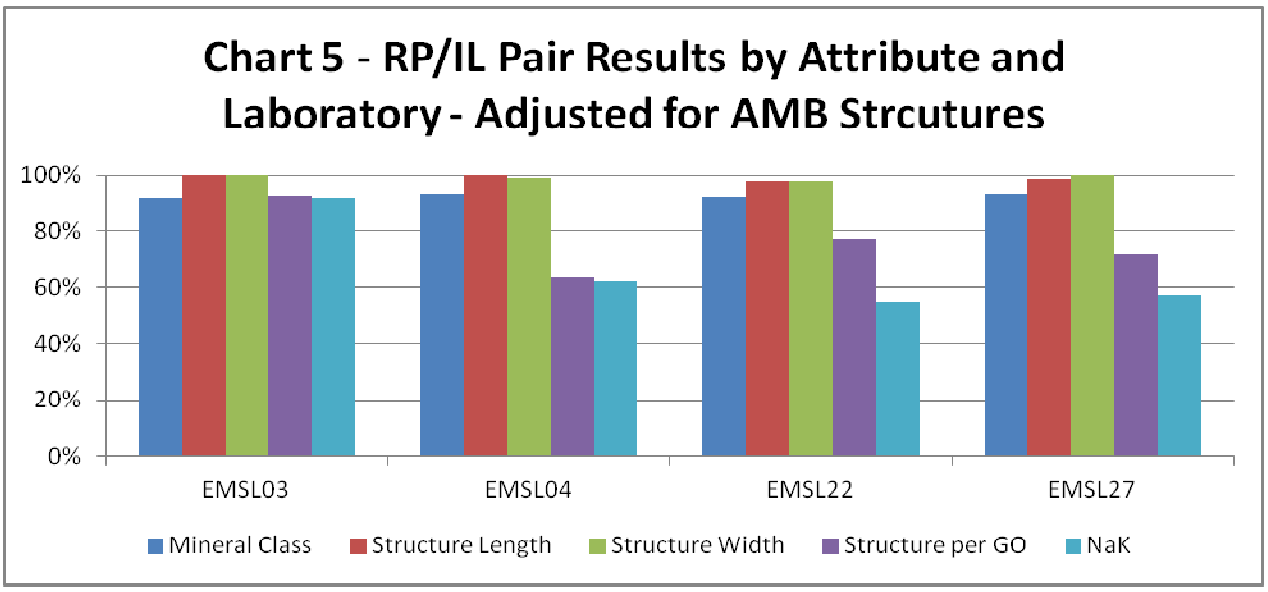
- EMSL22 – The percentage of structures meeting the mineral class criteria was 77.5%, which is less than the 90% concordance criteria described in Table 1.

- EMSL27 – The percentage of structures meeting the mineral class criteria was 72.0%, which is less than the 90% concordance criteria described in Table 1.

As was the case of RP/IL sample pair results by media type above, there was 100% agreement on Chrysotile versus Amphiboles by laboratory. All of the mineral class discrepancies were between Amphiboles and NAMs.

The percentage compliance by laboratory in Tables 8A through 8D is illustrated in **Chart 4 and Chart 5** below. Again, note that no program-wide criteria from Table 5 apply to NaK.





Unmatched Structures

With the exception of the Structures per GO criteria, the above tables only reflect those structures identified by both the RP and IL laboratories. The above tables do not reflect

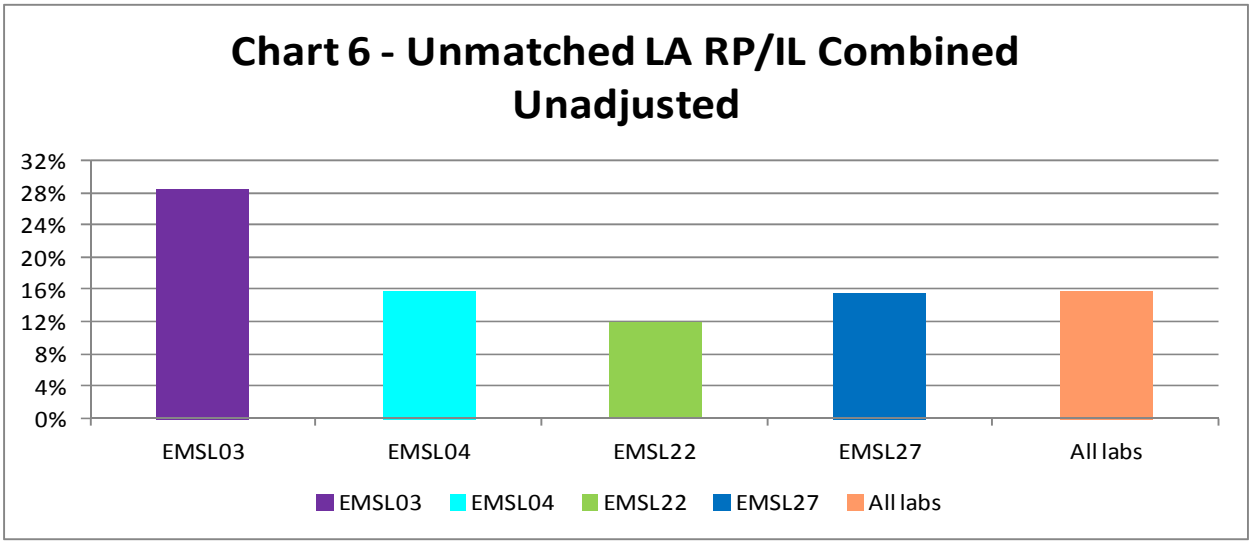
unmatched structures. Unmatched structures are those structures either identified by the RP laboratory, but not the IL laboratory, or those identified by the IL laboratory, but not the RP laboratory.

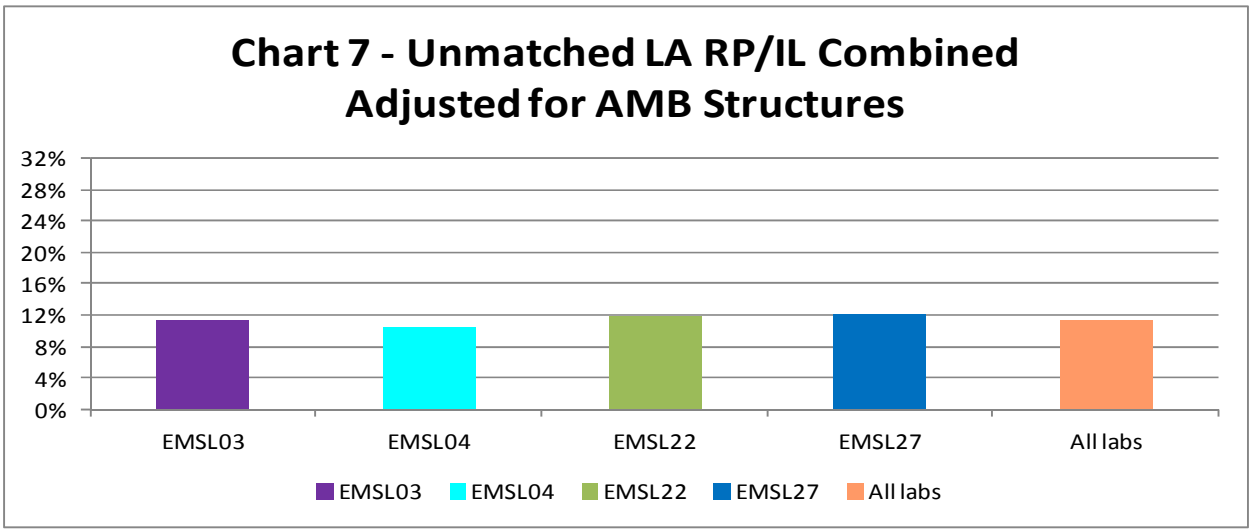
Combined Unmatched Structures

Table 9 and associated **Charts 6 and 7** below show the unmatched structure pairs for the RP and IL combined, both unadjusted and adjusted for ambiguous structures.

Table 9 – Unmatched LA RP/IL Combined

Unadjusted Structures				Adjusted for AMB Structures		
Laboratory	**Structures**	**Missed**	**%**	**Structures**	**Missed**	**%**
EMSL03	35	10	28.6%	26	3	11.5%
EMSL04	254	40	15.7%	230	24	10.4%
EMSL22	109	13	11.9%	109	13	11.9%
EMSL27	214	33	15.4%	199	24	12.1%
ALL LABS	612	96	15.7%	564	64	11.3%





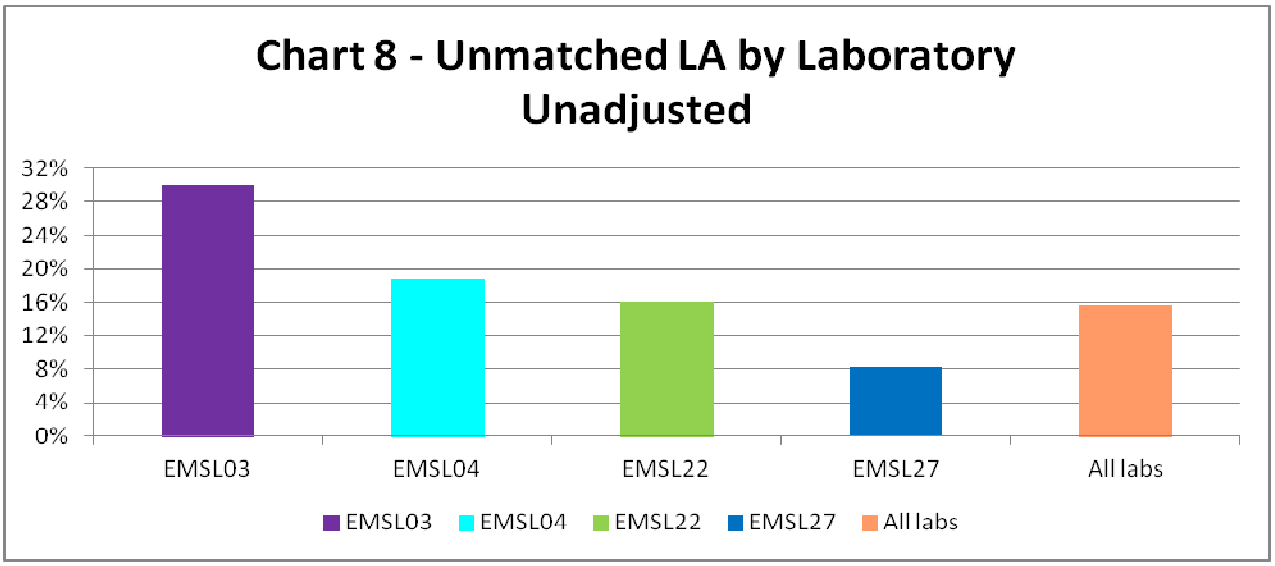
Charts 6 and 7 represent LA structures missed by both the RP laboratory and IL laboratory. For example, if EMSL04 and EMSL27 missed two structures each during the analysis of the same GOs for a given sample, it would be four missed LA structures. As has been done in previous data sets, Chart 6 includes all unmatched structures, and Chart 7 adjusts the percentage by not including ambiguous structures. Using EMSL03 as an example, which had approximately 30% unmatched structures included, that number dropped to below 12% when ambiguous structures are omitted.

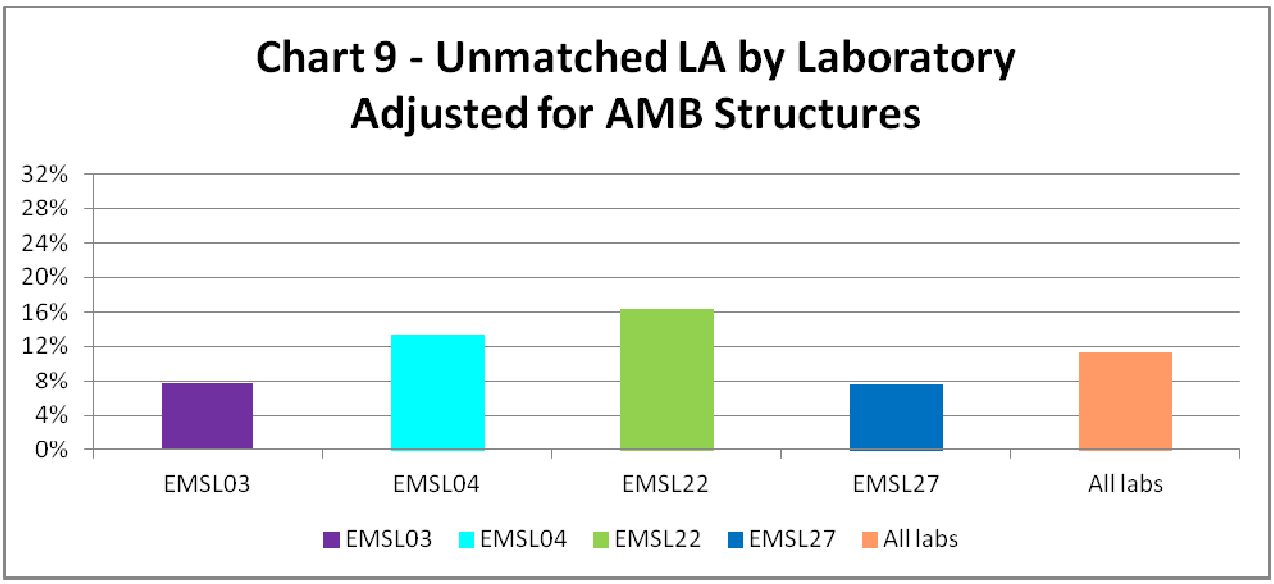
Laboratory-Specific Unmatched Structures

Table 10 and associated **Charts 8 and 9** below show the unmatched structures by laboratory, both unadjusted and adjusted for ambiguous structures. Note that the counts for all laboratories in Table 9 are twice those in Table 10 because Table 9 includes totals for both RP and IL.

Table 10 – Unmatched LA by Laboratory

Unadjusted Structures				Adjusted for AMB Structures		
Laboratory	**Structures**	**Missed**	**%**	**Structures**	**Missed**	**%**
EMSL03	20	6	30.0%	13	1	7.7%
EMSL04	133	25	18.8%	112	15	13.4%
EMSL22	56	9	16.1%	55	9	16.4%
EMSL27	97	8	8.2%	93	7	7.5%
ALL LABS	306	48	15.7%	282	32	11.3%





Unlike Charts 6 and 7, which summarize the combined missed structures of both the RP and IL laboratories, Charts 8 and 9 only include those structures missed by the laboratory in either the RP or IL analysis, resulting in a better assessment of an individual laboratory's proficiency. As was the case for Charts 6 and 7, Chart 8 includes all unmatched structures by the specified laboratory, and Chart 9 adjusts the percentage by not including ambiguous structures. As was illustrated in Charts 6 and 7, when the ambiguous structures are omitted, the percentage of unmatched LA structures drops significantly. It should also be noted that the two laboratories with the highest percentage of unmatched LA structures, EMSL03 (not adjusted) and EMSL22 (adjusted), are the newest laboratories to the program. Both of these laboratories, EMSL03 and EMSL22, were evaluated during on-site audits April 15-16, 2014 and May 8-9, 2014, respectively, during which time the analysts exhibited a significantly improved understanding of how to identify LA structures in difficult matrices.

An evaluation of samples with many structures and samples with a high percent loading was conducted to determine if these sample attributes had any influence of the number of missed LA structures. As with the previous evaluations, this evaluation involved assessing both total structure pairs and the exclusion of those determined to be ambiguous.

Table 11 shows the structures recorded versus missed by laboratory, for samples with many structures, and **Table 12** shows the number of missed structures by sample percent loading.

Table 11 – Structures Recorded vs. Missed by Laboratory

Unadjusted Structures				Adjusted for AMB Structures		
Laboratory	**Structures**	**Missed**	**%**	**Structures**	**Missed**	**%**
EMSL03	20	6	30.0%	13	1	7.7%
EMSL22	56	9	16.1%	55	9	16.4%
EMSL27	97	8	8.2%	93	7	7.5%
EMSL04	133	25	18.8%	112	15	13.4%

Table 12 – Missed Structures vs. % Loading

Sample Information			Unadjusted			Adjusted for AMB Structures		
Sample	Media	% Loading	Structures	Missed	%	Structures	Missed	%
SM-10068	Air	2	0	0	0.0%	0	0	0.0%
P5-20325	Water	3	30	0	0.0%	30	0	0.0%
P5-20331	Water	4	40	8	20.0%	40	8	20.0%
P4-00362	Air	5	12	0	0.0%	12	0	0.0%
CL-3-0007	Duff	6	85	17	20.0%	77	12	15.6%
CL-4-0004	Tree bark	10	35	10	28.6%	26	3	11.5%
P1-00082	Tree bark	10	77	8	10.4%	70	4	5.7%
SM-20001	Ash	12	27	5	18.5%	27	5	18.5%

The number of LA structures detected versus those missed as summarized in Table 11 provide little evidence that the number of structures detected has any direct correlation to structures missed. Similarly, Table 12 provides no evidence that the percent loading has a direct correlation to structures missed.

PCMe STRUCTURES IN AIR SAMPLES

In accordance with Laboratory Modification LB-000029E, an evaluation of the PCMe structures in air samples was also performed. A PCMe structure is defined as having an aspect ratio of 3:1 or greater, length longer than 5 Km, and width greater than or equal to 0.25 Km. There were two (2) air sample RP/IL pairs in the OU3 2013 TEM Inter-laboratory study, which were evaluated for accuracy with regard to mineral class, structure length, structure width, structure per grid opening, and the presence of Sodium and Potassium between RP/IL pairs. A summary of the accuracy between laboratories for these samples is provided in **Table 13** below:

Table 13 – 2013 OU3 RP/IL PCMe in Air Results (n=2)

Attribute	Total	Pass	%
Mineral Class	7	5	71.4%
Structure Length	7	7	100.0%
Structure Width	7	7	100.0%
Structure per GO	20	20	100.0%
NaK	7	4	57.1%

All of the above percentages fall into the program-wide “Good” range described in Table 5, with the exception of mineral class at 71.4 %, which is below the 90% criteria described in Table 1. As previously noted, NaK is evaluated for informational purposes only.

CONCLUSIONS

Thirty-eight (38) structure pairs were evaluated for the all sample RP/IL comparisons for mineral class, structure length, structure width, and NaK; 74 GOs were evaluated for the structure per GO criteria. Corrected for ambiguous structures, structure pair comparisons for mineral class, structure length, and structure width fell into the LB-000029E defined “Acceptable” or “Good” categories. The pass percentage for structures per GO for all RP/IL pairs was 73%, which fell into the “Poor” category (<85%).

The ability of the laboratories to accurately measure structure length and width was in the "Good" category. All RP/IL length and width measurements were above the program-wide "Good" criteria of 90% concordance, and 10 of the 18 combinations of length/width by media and laboratory had 100% concordance.

The RP/IL result comparisons were performed by the five sample media types: duff, tree bark, water, ash, and air. Adjusted for ambiguous structures, structures per GO for duff (30%), tree bark (71.4%), water (80%), and ash (50%) fell into the "Poor" category (<85%), and mineral class for ash (83.3%) and air (71.4%) samples were below the acceptance criteria of ≥90%. The remaining comparisons for all other media types were in the "Acceptable" or "Good" categories after adjustment for ambiguous structures. Also, the RP/IL result comparisons were evaluated by laboratory for the 2013 OU3 RP/IL results received from EMSL03, EMSL04, EMSL22, and EMSL27. The structures per GO for EMSL04 (63.6%), EMSL22 (77.5%), and EMSL27 (72%) fell into the "Poor" category (<85%). All adjusted comparison results for EMSL03 and the other laboratories for Mineral Class, Structure Length, and Structure Width were in the "Acceptable" or "Good" categories.

The 2013 OU3 TEM inter-laboratory study identified inconsistencies between the laboratories regarding how to differentiate between LA and NAM structures due to spectral interpretation of transitional fibers and back scatter from nearby matrix, and also the difficulty in meeting the structure per grid opening criteria in difficult matrices, samples with heavy loading, and those with a high number of structures per grid opening.

The large number of unmatched LA structures, particularly those GOs that had unmatched structures for both the RP and IL analyses (average of 15% and maximum of 30%, or average of 11% and maximum of 16%, adjusted for AMB), could lead one to question whether some of the structures were the same, but had moved from one position to another and were, therefore, not matched. There is no pattern to which individual laboratories have higher unmatched LA structures, as three of the four laboratories are above average in one or more of Charts 6 through 9, with only EMSL27 below average in all four charts. It would appear that the best assessment of the data, considering the different factors that lead to the many ambiguous structures, would be to pay closer attention to those data sets that exclude the ambiguous structures. Of course, the number of unmatched LA structures between the RP and IL laboratories should not be ignored. The number of unmatched LA structures should be investigated, and the appropriate corrective actions taken to improve the overall consistency of the analyses performed between the participating laboratories. An evaluation of unmatched structures by laboratory was also performed. The two newer laboratories to the program, EMSL03 and EMSL22, had the highest numbers of unmatched structures for this IL study. However, recent on-site audits of these laboratories in April and May of 2014 revealed significant improvements in their analysts' understanding of LA structure identification requirements.

For the two air samples, a PCMe structure comparison assessment was also performed as part of the 2013 OU3 TEM IL study. Structure match comparisons of the RP and IL pair analysis results Mineral Class, Structure Length, Structure Width; Structures per GO, and NaK were performed. All PCMe pair assessments fell into the "Good" category, except for Mineral Class, which at 71.4% was below the 90% requirement.

The inconsistencies described in this report will be investigated by QATS during the 2014 on-site audits, and the laboratory inconsistencies concerning EDS spectra interpretation will continue to be discussed during the monthly Libby Laboratory conference calls.

Attachment 1

2013 RP/IL Sample Distribution by Laboratory

ATTACHMENT 1

Originating Laboratory	Laboratory for Inter-lab Sample #1	Laboratory for Inter-lab Sample #2	Laboratory for Inter-lab Sample #3	Laboratory for Inter-lab Sample #4
EMSL03	EMSL04	EMSL22	EMSL27	EMSL04
Sample No.				
EMSL04	EMSL22	EMSL27	EMSL03	EMSL22
Sample No.	SM-20001	CL-3-0007	CL-3-0004	P5-20325
EMSL22	EMSL27	EMSL03	EMSL04	EMSL27
Sample No.	P4-00362			
EMSL27	EMSL03	EMSL04	EMSL22	EMSL03
Sample No.	SM-10068	P1-00082	P5-20331	

ATTACHMENT 3

Mentoring of EMSL Analytical Services, Inc., New York, NY

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To: Dania Zinner

From: Michael Lenkauskas

Date: 6/27/2013

Re: Mentoring of EMSL Analytical Services, Inc., New York, NY

This technical memorandum provides an assessment of the mentoring of EMSL Analytical Services, Inc. Laboratory, New York, NY (EMSL-NY) to perform asbestos analysis in support of the Libby Superfund activities. The mentoring support, conducted by Shaw Environmental, Inc., (a CB&I Company) involved an evaluation of inter-laboratory soil, air, and water samples analyzed for asbestos by Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM). The mentoring assessment results are discussed in two parts: 1) the Minimum Laboratory Acceptance Criteria; and 2) the EPA Approval Process. These items are defined in the document, Asbestos Laboratory Acceptance Criteria for Libby Asbestos Superfund Site provided in Attachment 1. EMSL- NY met all minimum acceptance criteria.

Minimum Laboratory Acceptance Criteria:

1. EMSL-NY is currently certified by the National Institute of Standards and Technology (NIST) National Voluntary Laboratory Accreditation Program (NVLAP) for the analysis of asbestos by PLM and TEM; with certification numbers and expiration dates as follows:

   - NVLAP Bulk Asbestos Analysis (PLM) certification: 101048-9 (expires 6/30/2013)
   - NVLAP Air Asbestos Analysis (TEM) certification: 101048-9 (expires 6/30/2013)

2. The laboratory has in place quality assurance documentation and written procedures, that include a Quality Management Plan (QMP) and all relevant Standard Operating Procedures (SOPs) for processing and analysis of Libby samples for asbestos by PLM and TEM:

   - Laboratory Quality Assurance Manual (Revision 16; 6/24/2013)
   - TEM AHERA Method (Revision 14.3; 4/19/2013)
   - ISO 10312 (Revision 9.1; 2/16/2013)
   - EPA Method 100.2 (Revision 14.2; 4/6/2012)
   - ASTM D5744-09 (Revision 3.1; 11/12/2012)
   - Sample Handling/Login (Revision 1; 2/11/2011)
   - Inter-laboratory Transfer of Libby Samples and Data (Revision 1; 6/13/2012)

3. The laboratory has one analyst trained to perform the Libby-specific PLM-Visual Estimation (PLM-VE) and PLM-Gravimetric (PLM-GRAV) procedures, and two analysts trained to perform TEM by ISO Methods 10312 and 13794, AHERA, ASTM Method 5755, and EPA Methods 100.1 and 100.2 as modified in the applicable Libby Laboratory modifications. Training and experience records for all analysts are maintained at the facility.

4. The personnel at the laboratory were interviewed and found to be familiar with standard TEM and PLM preparation methods as follows:

- TEM – The analysts interviewed demonstrated the ability to perform both the direct and indirect preparation techniques, using the equipment necessary to ash, carbon coat, and dry sample media as required by the applicable methodologies and Libby-specific modifications.
- PLM – The analyst interviewed demonstrated the ability to perform the PLM-VE and PLM-GRAV analysis of soil samples in accordance with the latest revisions of project–specific SOPs, SRC-Libby-03 and SRC-Libby-01. Note that while the analysts demonstrated proper technique for the Libby PLM analysis; the results from several of the PLM inter-laboratory samples provided were discordant. This indicates that additional training is necessary prior to receiving samples for the project-specific PLM-VE and PLM-GRAV procedures.

5. The laboratory has two TEM instruments, each with Energy Dispersive Spectroscopy (EDS) and Selected Area Electron Diffraction (SAED) capabilities:

   - Scope 3-1 – JEOL JEM-100 CX II with EDS, SAED, and photo capabilities.
   - Scope 3-2 – JEOL JEM-100 CX II with EDS, SAED, and photo capabilities.

   Note that although instrument-specific Libby Amphibole (LA) spectra have been generated for Scope 3-1, they have not for Scope 3-2. LA spectra must be generated on Scope 3-2 prior to analyzing samples for the Libby project.

6. The designated personnel from the laboratory have begun to participate in EPA monthly conference calls, and attended the most recent conference call on May 29, 2013.

7. The laboratory has participated in inter-laboratory studies for asbestos in air, soil (FBAS), and water by TEM, and in soils by PLM-VE. These results have been reviewed and are described in detail in the next section.

8. A Libby-specific on-site audit of EMSL-NY was conducted on May 22, 2013.

9. The laboratory has demonstrated the ability to complete Libby-specific bench sheets to record observations and capabilities to provide the necessary Libby-specific electronic data deliverables (EDDs).

10. The EMSL-NY laboratory was found to have sufficient personnel and equipment to meet the required delivery schedules and turn-around-times (TATs). The laboratory operates 24 hours a day, 7 days a week.

11. The EMSL-NY laboratory has designated the following primary and secondary points of contact for discussion of EPA/Laboratory issues:

    - Jim Hall - Primary contact for PLM/TEM issues
    - Jose Arriage - Secondary contact for PLM/TEM issues

EPA Approval Process:

1. Demonstrates proficiency in analysis of NIST/NVLAP performance evaluation samples (PESs) and inter-laboratory analyses.

EMSL-NY has successfully analyzed the necessary NIST/NVLAP PESs, which is reflected by virtue of their current NVLAP certifications to analyze bulk and air samples PLM and TEM, respectively. Regarding inter-laboratory analyses, EMSL-NY was provided with soil, air, and water samples previously analyzed for PLM and TEM by laboratories currently active in the program. Three performance evaluation samples (PESs) of different "LA" concentrations were also provided for analysis by PLM. The following is a summary of the results from these studies:

PLM-VE Inter-laboratory Study

The PLM-VE inter-laboratory study samples and analyzed by EMSL-NY includes four fine ground (FG) samples and three PESs, the results of which are summarized in the following table:

PLM Inter-Laboratory Results					
Sample No.	**Method**	**Original Result**	**EMSL Result**	**Within Criteria**	**Comment(s)**
3G-00471	PLM-VE	A (ND)	A	Y	PES - Concordant
3G-00472	PLM-VE	B2 (0.5%)	B1	Y	PES – Weakly discordant
3G-00473	PLM-VE	C (2%)	C (2%)	Y	PES – Concordant
3G-05761	PLM-VE	C (2%)	B1	N	Strongly discordant
EX-00497	PLM-VE	A	A	Y	Concordant
EX-00910	PLM-VE	B1	A	Y	Weakly discordant
NE-00072	PLM-VE	B2	A	N	Strongly discordant

Compared to the seven results from the original PLM-VE analyses, the laboratory's results were concordant for three (43%), weakly discordant for two (29%), and strongly discordant for two (29%). The laboratory has been informed of the anomalies and is taking the necessary corrective actions which include additional training for the PLM analysts. It is recommended that samples not be shipped to this facility for PLM analyses until proficiency has been demonstrated through the analysis of additional PLM inter-laboratory analyses.

TEM Inter-laboratory Study

Three samples, one air, one water, and one FBAS filter previously analyzed by ESAT Region 8 Laboratory were selected from the Scribe database by QATS for the TEM inter-laboratory study. Re-preparations of the selected samples were prepared by the ESAT Region Laboratory, which then analyzed the samples and selected in accordance with Laboratory Modification LB-000029D, the grid openings (GOs) to be read during the inter-laboratory analysis by EMSL-NY. Once completed the inter-laboratory analyses were compared to the original analyses as described in NISTIR 5351, *Airborne Asbestos Method: Standard Test Method for Verified Analysis of Asbestos by TEM – Version 2.0*, procedures using the following descriptors:

- TPU (true positive unmatched)
- TPM (true positive matched)
- TPV (true positive found by verifying analyst)
- FN (false negative)
- FNA (false negative type A)
- FNB (false negative type B)

- FP (false positive)
- TN (true negative)
- NL (not located structure)
- AMB (ambiguous)

The TEM inter-laboratory study results are presented in the three tables below.

Sample EX-01458 is an air filter (FBAS) sample analyzed in accordance with ISO 10312 (1995) and the applicable project-specific modifications.

Sample EX-01408 Matched Structures per GO									
Grid Opening ID	Re-preparation			Interlab			NISTIR 5351 QC CODE		
Grid: GO	Str#	Type	Mineral ID	Str#	Type	Mineral ID	RP	IL	REC
A10 : G3-4	2	F	LA	1	F	LA	TPM	TPM	
A10 : B3-4	4	F	LA	2	F	LA	TPM	TPM	
A10 : C4-1	9	F	LA	4	F	LA	TPM	TPM	
A10 : K5-3	14	F	LA	3	F	LA	TPM	TPM	
A10 : E6-4	16	F	LA		ND		AMB	NL	
A10 : E6-4	17	B	LA	R1	B	LA	TPU	FNB	
B10 : C2-3	21	F	LA	R6	F	LA	TPU	FNA	
B10 : C2-3	22	F	LA	R7	F	LA	TPU	FNB	
B10 : H3-1	24	F	LA	5	F	LA	TPM	TPM	
B10 : G3-6	27	F	LA	0	F	LA	TPU	FNA	
B10 : F3-6	28	F	LA		ND		AMB	NL	
B10 : C4-4	29	B	LA	R9	B	LA	TPU	FNB	

The following is an explanation of discrepancies as explained by EMSL-NY in the analytical narrative:

During the reconciliation analysis it was determined that the analyst, newer to the Libby project, did not account for small atypical asbestiform morphologies that LA sometimes has, and confused it with particulate. In addition, it was noted that the analyst misidentified some LA as close call NAM due to Aluminum and a higher than expected Calcium peak. However, after running some of the Libby standards and NIST Tremolite and Actinolite, it was determined that the higher amount of elements were within target to identify as LA. Lastly, one structure (#27) was identified as crossing a non-countable grid bar, because the analyst oriented the grid in a different manner than the re-preparation lab.

Sample AA-02559 is an air sample analyzed in accordance with ISO 10312 (1995) and the applicable project-specific modifications. No discrepancies were noted between the two analyses.

Sample No. AA-02559 Matched Structures per GO									
Grid Opening ID	Re-preparation			Interlab			NISTIR 5351 QC CODE		
Grid: GO	Str#	Type	Mineral ID	Str#	Type	Mineral ID	RP	IL	REC
A3 : E3-6		ND			ND		TN	TN	
A3 : C3-6		ND			ND		TN	TN	

Sample No. AA-02559 Matched Structures per GO									
Grid Opening ID	Re-preparation			Interlab			NISTIR 5351 QC CODE		
Grid: GO	Str#	Type	Mineral ID	Str#	Type	Mineral ID	RP	IL	REC
A3 : G4-3		ND			ND		TN	TN	
A3 : E4-3		ND			ND		TN	TN	
A3 : K5-1		ND			ND		TN	TN	
B9 : C2-6		ND			ND		TN	TN	
B9 : K3-3		ND			ND		TN	TN	
B9 : E3-3		ND			ND		TN	TN	
B9 : H4-3		ND			ND		TN	TN	
B9 : E4-6	1	F	LA	1	F	LA	TPM	TPM	

Sample 2W-00028 is a water sample analyzed in accordance with ISO 10312 (1995) and the applicable project-specific modifications.

Sample No. 2W-00028 - Matched Structures per GO									
Grid Opening ID	Re-preparation			Interlab			NISTIR 5351 QC CODE		
Grid: GO	Str#	Type	Mineral ID	Str#	Type	Mineral ID	RP	IL	REC
B11 : G2-3	0	F	NAM	R1	F	LA	AMB	AMB	
B11 : E4-1	1	B	LA	R2	F	LA	TPU	FNA	
B11 : E4-1	2	F	LA	R3	F	LA	TPU	FNB	
B11 : E4-1	0	F	LA		ND		AMB	NL	
B11 : E4-4	0	B	NAM	0	B	NAM	TN	TN	
B11 : K4-1	0	F	NAM	R4	F	LA	AMB	AMB	
C11 : F2-3		ND			ND		TN	TN	
C11 : E3-1	3	B	LA	R0	B	LA	TPU	FNB	
C11 : F3-4		ND			ND		TN	TN	
C11 : H3-1		ND			ND		TN	TN	
C11 : E3-3		ND			ND		TN	TN	
C11 : H4-3	0	F	NAM		ND		TN	TN	
C11 : H4-3	4	MF	LA	R0	MF	NAM	AMB	AMB	

The following is an explanation of discrepancies as explained by EMSL-NY in the analytical narrative:

During the reconciliation analysis it was determined that the analyst, newer to the Libby project, did not account for small atypical asbestiform morphologies that LA sometimes has, and confused it with particulate. In addition, it was noted that the analyst misidentified some LA as close call NAM, due to Aluminum and a higher than expected Calcium peak. However, after running some of the Libby standards and NIST Tremolite and Actinolite, it was determined that the higher amount of elements were within target to identify as LA. There were a few instances where EMSL did not agree with the ESATs calls. These structures are marked as Ambiguous. We felt that the uncertainty on these structure identities was due to inter-scope variability. We also attributed the higher Aluminum to backscatter from the surrounding Aluminum rich particulate.

The results of the TEM inter-lab study comparisons were reported back to EMSL-NY. The observed discrepancies prompted the laboratory to provide their analysts with additional training. The training included discussion amongst the EMSL-NY analysts and other analysts from other EMSL laboratories with experience analyzing Libby samples of procedures and problems, including an in-depth discussion of the variability of LA encountered during analysis.

2. The Performance of an EPA (QATS) On-site Audit.

An asbestos on-site audit of the EMSL-NY was performed on May 22, 2013. Areas assessed included facilities, equipment, personnel, and documentation as related to the laboratory's capability to process samples collected from the Libby Superfund Site and tested for asbestos in accordance with Libby-specific requirements. The on-site audit identified nine deficiencies which are summarized by laboratory area below:

- A HEPA hood is needed in the sample receiving area to minimize the potential for laboratory contamination caused by the receipt and the processing of samples. At the time of the audit the laboratory was preparing to install a HEPA hood in this area.

- The laboratory lacks a drying oven specifically for the drying of air filter samples. Although drying ovens are available, they are mainly used for the processing of solid samples, which are not compatible with filter samples that require drying. The Audit Team recommends the acquisition of a drying oven for the drying of air filter samples.

- The laboratory currently has only one plasma asher, which is used continuously for the etching of MCE filters, with little available time for the ashing of filter samples and debris for indirect preparations. The Audit Team recommends the laboratory acquire a second plasma asher to be used as both a back-up and also for the ashing of filter samples as described in the indirect preparation procedure.

- Two analytical balances were labeled with the same ID (Balance #4), which could make traceability difficult between the balances and their respective calibration records. The Audit Team recommends changing the ID of one of the balances and revising the associated calibration records as necessary.

- The laboratory does not have the reference weights necessary to calibrate for the weighing of samples analyzed by the project-specific PLM gravimetric procedures. The Audit Team recommends the laboratory purchase the necessary reference weights.

- The laboratory does not currently have the necessary disposable filtration funnels to perform the project-specific indirect preparation procedure. The Audit Team recommends the laboratory procure the same disposable funnels used by the other laboratories in the program; a stock number was provided.

- EMSL laboratories, including EMSL-NY, may receive Libby samples, prepare the samples, and ship them to another EMSL facility for analysis. However, only one laboratory blank is initiated at the beginning of sample preparation. Subsequent blanks are not prepared by the receiving laboratory. As a result, any observed contamination cannot be definitively traced to either of the laboratories involved. In

order to determine the source of contamination for samples prepared in separate laboratories, a second laboratory blank should be prepared by the receiving laboratory.

- Internal audits had not been performed at the frequency described in the QAM; however, the laboratory was in the process of moving to a new facility at the time the internal audit should have been performed. The internal audit was performed at a later date. This observation has already been addressed by the laboratory and no action is required.

- Although a LA spectral study for Scope 3-1 has been performed, no LA spectral study has been performed for Scope 3-2, the designated Libby back-up scope. Prior to analyzing samples on Scope 3-2 ensure the required LA spectral study has been completed.

Conclusion

The non-concordance of several PLM-VE Inter-laboratory QC results suggest that additional analyst training is necessary prior to the receipt by the laboratory of additional Libby soil samples for PLM analysis. The other mentoring results show that EMSL-NY laboratory has the capabilities to receive and analyze samples for TEM in accordance with project-specific requirements. The corrective actions initiated by laboratory management to explain and address discrepancies identified during the review of the TEM inter-laboratory study data appear to be appropriate. None of the findings identified by the Audit Team in the May 2013 on-site evaluation are of such significance to preclude them from receiving samples for TEM analysis.

Concerning the PLM inter-laboratory study results, it is recommended that additional inter-laboratory samples be selected for analysis by the laboratory upon receipt of the corrective action report from EMSL-NY to address the described issue.

ATTACHMENT 1

APPENDIX I

ASBESTOS LABORATORY ACCEPTANCE CRITERIA

FOR LIBBY ASBESTOS SUPERFUND SITE

MINIMUM LABORATORY ACCEPTANCE CRITERIA

1. Must be certified by the National Institute of Standards and Technology (NIST) National Voluntary Laboratory Accreditation Program (NVLAP) for the analysis of asbestos by PLM[1] and/or TEM[2].

2. Must have a laboratory-specific Quality Management Plan and all relevant SOPs in place for asbestos environmental sample processing and analysis.

3. Must have multiple experienced analysts on staff capable of running PLM visual area estimation methods [NIOSH 9002, EPA 600] and/or TEM methods [ISO 10312, ISO 13794, AHERA, ASTM 5755, EPA Method 100.2] (a minimum of 2 analysts within each laboratory are needed to assess within-laboratory reproducibility). Must have documentation in place demonstrating all analysts work experience and training related to analyses performed.

4. Must be familiar with standard TEM and PLM preparation methods. TEM laboratories must have ability to perform indirect preparation and ashing (for the analysis of air, dust, other media) and/or ozonation/UV/sonication treatment (for the analysis water). PLM laboratories must have the ability to dry samples (for PLM-NIOSH 9002 analysis). If the PLM laboratory wishes to perform soil sample preparation in support of the Libby-specific PLM methods (i.e., PLM-VE and PLM-Grav), the laboratory must have the ability to sieve and grind soil samples in accordance with the Libby-specific preparation method.

> Note: Not all laboratory facilities need to have all preparation capabilities; media analysis could be segregated based on facility capability (i.e. one laboratory does water, another does soil, etc.).

5. TEM laboratories must have Energy Dispersive Spectroscopy (EDS) and Selected Area Electron Diffraction (SAED) capability incorporated into their microscope(s).

6. Must participate in monthly EPA laboratory calls for the Libby project.

7. Must participate in inter-laboratory analyses with other Libby project laboratories.

8. Must participate in annual EPA (QATS) audits and in other laboratory and/or data audits if data quality issues arise, as deemed appropriate by EPA.

9. Must be capable of using Libby-specific bench sheets to record observations and utilizing Libby-specific electronic data deliverables (EDDs) to report analytical results.

10. Must have the capacity to meet the required delivery schedules and turn-around times.

11. Must designate laboratory primary and secondary points of contact for discussion of EPA/laboratory issues.

EPA APPROVAL PROCESS

1. Once potential laboratories are identified that meet the minimum acceptance criteria, they must show proficiency in analysis of NIST/NVLAP performance evaluation samples and inter-laboratory samples

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[1] http://www.nist.gov/nvlap/upload/NIST-HB-150-3-2006-1.pdf
[2] http://www.nist.gov/nvlap/upload/NIST-HB-150-13-2006-1.pdf

(standard PLM visual area estimation and TEM only, no Libby-specific method modifications and requirements).

2. If proficiency is documented, an EPA (QATS) audit will be performed.

3. If any deficiencies found during the audit are sufficiently resolved to EPA's satisfaction, then project-specific mentoring will be conducted to ensure laboratories are proficient in the Libby-specific methods, modifications, and requirements.

4. Once a laboratory has passed all of these steps, EPA will approve the use of the laboratory and documentation to this effect will be sent to the laboratory. Samples can then be sent to the laboratory for analysis.

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ANNUAL QA/QC SUMMARY REPORT (2014)

FOR TASK ORDER 3021
QUALITY ASSURANCE (QA) SUPPORT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) AT SITE OU3

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November 3, 2015

QATS Contract Number: EP-W-10-033

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ATTACHMENT

Attachment 1 - 2014 Commercial Logging, Nature & Extent, and Geotechnical Validation and Quality Control Review (Revision, February 2015)

Attachment 2 - Annual Evaluation of PLM Inter-laboratory and PES Results Report (2014)

Acronym List

<	Less Than
≥	Greater Than or Equal To
%	Percent
AHERA	Asbestos Hazard Emergency Response Act
ABS	Activity-based Sampling
AOC	Administrative Order on Consent
ASTM	American Society for Testing and Materials
CB	Compact Bundle
CB&I	Chicago Bridge and Iron Company
CBO	Compact Bundle Obscured
CC	Compact Cluster
CF	Compact Fiber
CFO	Compact Fiber Obscured
CH	Chrysotile
CI	Confidence Interval
COC	Chain-Of-Custody
CSF	Close Support Facility
EDD	Electronic Data Deliverable
EDS	Electron Diffraction System
EPA	Environmental Protection Agency
ESAT	Environmental Services Assistance Team
f/cc	Fibers per Cubic Centimeter
f/mm^2	Fibers per Square Millimeter
FB	Field Blank
FBAS	Fluidized Bed Asbestos Segregator
FG	Finely Ground
GO	Grid Opening
IL	Inter-laboratory
ISO	International Organization for Standardization
ISSI	ISSI Consulting Group, Inc.
LA	Libby Amphibole
LB	Laboratory Blank
LC	Laboratory Coordinator
LDC	Laboratory Duplicate Cross-check
LDS	Laboratory Duplicate Self-check
MAS	Material Analytical Services, LLC
MB	Matrix Bundle
MBO	Matrix Bundle Obscured
MC	Matrix Cluster
MFL	Million Fibers per Liter
MF	Matrix Fiber
MFO	Matrix Fiber Obscured
NA	Not Applicable
NAM	Non-asbestos material
ND	Non-Detect
NIOSH	National Institute for Occupational Safety and Health
NVLAP	National Voluntary Laboratory Accreditation Program
OA	Other Amphibole
OU	Libby Operable Unit
PC	Point Count
PCM	Phase Contrast Microscopy
PCME	PCM-Equivalent
PES	Performance Evaluation Sample
PLM	Polarized Light Microscopy
PLM-GRAV	Polarized Light Microscopy Gravimetric
PLM-VE	Polarized Light Microscopy-Visual Area Estimation
QAM	Quality Assurance Manager
QAPP	Quality Assurance Project Plan
QA	Quality Assurance
QARD	Quality Assurance Reference Document
QATS	Quality Assurance Technical Support
QC	Quality Control
RD	Recount Different
RI/FS	Remedial Investigation/Feasibility Study
RP	Re-preparation
RPD	Relative Percent Difference
RS	Recount Same
SAED	Selected Area Electron Diffraction
SAP	Sampling and Analysis Plan
s/cc	Structures per Cubic Centimeter
SOP	Standard Operating Procedure
SPF	Soil Preparation Facility
SRM	Solid Reference Material
TAT	Turn-around Time
TEM	Transmission Electron Microscopy
VA	Verified Analysis

1.0 Introduction

1.1 Purpose of this Report

This Annual Summary Report provides a summary of the Quality Assurance (QA) activities applied to asbestos sample data collected from Libby Superfund Site Operable Unit (OU) that occurred in 2014. The QC activities include the assessment of QC data, asbestos sample data validation, on-site laboratory audits, laboratory mentoring, and recommendations for improvements. Operable Unit 3 (OU3) is one (1) of eight (8) OUs designated by EPA for the Libby Remedial Investigation/Feasibility Study (RI/FS), which encompasses the mine property and surrounding areas impacted by releases from the mine, such as creeks, the Kootenai River, settling ponds, nearby forests, and Rainy Creek Road. The primary contaminant at OU3 is Libby Amphibole (LA) which is a form of asbestos present in the vermiculite that was mined at the site from 1919 to 1990. The Libby RI/FS at OU3 is being conducted through an Administrative Order on Consent (AOC) entered into by EPA with respondents W.R. Grace and Co. and Kootenai Development Corporation (KDC). This report was prepared for the U.S. Environmental Protection Agency (EPA) Region 8 by CB&I Federal Services LLC's Quality Assurance Technical Support (QATS) Program under Task 9 of Task Order 3-021, *QA Support for RI/FS at Site OU3.*

1.2 Report Outline

The 2014 OU3 QA/QC assessments described in this report include:

- QC Data Evaluated
- Asbestos Data Validation
- Laboratory On-site Audits
- Laboratory Mentoring Program
- Conclusions and Recommendations

2.0 QC Data Evaluated

The QC data described in this section are from samples which were collected from the OU3 site and analyzed in 2014 by the EPA contract laboratories listed in **Table 1**, below.

Table 1 – 2014 Libby Laboratories

Abbreviation	Name, Location
EMSL03	EMSL Analytical, Inc., New York, NY
EMSL04	EMSL Analytical, Inc., Cinnaminson, NJ
EMSL22[1]	EMSL Analytical, Inc., Denver, CO
EMSL27	EMSL Analytical, Inc., Libby, MT
ESATR8	ESAT Region 8, Golden, CO

[1] Although EMSL22 did not directly analyze field samples from OU3 in 2014, they did participate in the TEM Inter-laboratory study for samples analyzed in 2014.

In 2014 EPA initiated three studies, or investigation phases, at the OU3 site. These include Nature and Extent (NE), Commercial Logging (CL), and Geotechnical (GT). **Table 2** presents the investigation phases with titles and the approximate dates in which they were performed at the Libby OU3 Superfund Site.

Table 2 – Libby OU3 Site Investigation Phases

Phase	SAP Phase Title	Date
Nature and Extent (NE)	Forest Activity-Based Sampling Quality Assurance Project Plan, Revision 1	August 2014
Commercial Logging (CL)	2014 Commercial Logging Activity-Based Sampling, Revision 1	August 2014
Geotechnical (GT)	Geotechnical Characterization in Support of Creek Diversion at Libby Asbestos Superfund Site OU3, Part B, Revision 0	June 2014

In 2014 EPA Region 8 contracted 252 field sample analyses from Libby OU3 site locations in support of the three investigation phases, identified in **Table 2**. Of these, 66 field samples were for Nature and Extent, 61 field samples were for Commercial Logging, and 125 field samples were for Geotechnical studies. The samples varied in media (air, tree bark, duff, soil, and ABS) and were analyzed by EPA contract laboratories using four different methods: Polarized Light Microscopy – Visual Estimation (PLM-VE), PLM Gravimetric (PLM-Grav), Phase contrast Microscopy (PCM, and Transmission Electron Microscopy (TEM).

To determine and document the quality of the asbestos analyses conducted in support of these phases, EPA requires Quality Control (QC) analysis to accompany field sample analysis at frequencies and criteria goals as specified in Libby OU3 Laboratory Modifications and Sampling and Analysis Plans (SAPs). Four types of QC analyses are applied to the Libby OU3 samples collected in 2014:

- Field QC Analyses
- Sample Preparation Facility (SPF) QC Analyses
- Laboratory QC Analyses
- Performance Evaluation Sample (PES) Analyses

2.1 Field QC Analyses

Two types of field QC analyses were applied to Libby OU3 samples analyzed in 2014: field duplicates and field blanks.

Field QC samples were analyzed by the Polarized Light Microscopy-Visual Estimation (PLM-VE), PLM-Gravimetric (PLM-Grav), Transmission Electron Microscopy (TEM), and Phase Contrast Microscopy (PCM) analysis samples.

2.1.1 Field Duplicates

A field duplicate is an additional sample collected at the same location or coordinates and at approximately the same time as the original field sample. Field duplicates are used to evaluate analytical precision and sample variability due to small-scale media heterogeneity. Because field duplicate samples have inherent random variability, there is no quantitative requirement for the agreement of field duplicates; rather, results are used to evaluate data usability based upon the magnitude of variability between original and field duplicate samples.

2.1.1.1 Polarized Light Microscopy (PLM) Field Duplicates

2.1.1.1.1 PLM-VE Field Duplicates

The soil field duplicate samples collected for PLM-VE analysis, for the OU3 2014 GT investigation phase, represents a field QC to sample ratio of 11%, which meets the collection rate of one (1) field duplicate per ten (10) field samples (10%) required for the GT field QC. **Table 3** provides a summary of the PLM-VE field QC collected by Investigation Phase.

Table 3 – 2014 OU3 PLM-VE Field Duplicate QC

Phase	Media	Field Samples	Field Duplicates	
			#	%
GT	Soil	81	9	11%
Totals		**81**	**9**	**11%**

Field duplicate results from analysis by PLM-VE are ranked as concordant, or in agreement, if both the original sample result and the field duplicate sample result report the same semi-quantitative classification. Results are ranked as weakly discordant if the original sample result and the field duplicate result differ by one semi-quantitative classification (e.g., Bin A vs. Bin B1). Results are ranked as strongly discordant if the original and the field duplicate results differ by more than one semi-quantitative classification (e.g., Bin A vs. Bin B2).

Table 4 summarizes the results of the PLM-VE original and field duplicate QC analyses performed in 2014. Six (6) of the nine (9) field duplicate pairs (67%) were in concordance, three (33%) were ranked as discordant, with all three (3) classified as weakly discordant. The weakly discordant results fall into the "Acceptable" range of 20-40% for EPA-defined program-wide performance, while the strongly discordant results fall into the "Good" category at <5%, which aligns with each of the three quarterly report results **(Attachment 2)**.

Table 4 – 2014 OU3 SPF PLM-VE Field Duplicate QC Summary

		Comparison as Total Number of Analyses				
		Preparation Duplicate Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	1	1	0	0	**2**
	Bin B1 (Tr)	0	5	0	0	**5**
	Bin B2 (<1%)	0	1	0	1	**2**
	Bin C (≥1%)	0	0	0	0	**0**
	Totals:	**1**	**7**	**0**	**1**	**9**

	# of Samples	% of Samples
Total Pairs	**9**	**100%**
Concordant	6	67%
Weakly Discordant	3	33%
Strongly Discordant	0	0%

2.1.1.1.2 PLM-Grav Field Duplicates

PLM-Grav samples are not collected, but generated during the sieving process of soil samples at the Troy SPF. **Table 5** provides a summary of the PLM-Grav field duplicate samples, which for 2014 apply to the GT investigation phase only.

Table 5 – 2014 OU3 PLM-Grav Field Duplicate QC

Phase	Media	Field Samples	Field Duplicates	
			#	%
GT	Soil	44	6	14%
Totals		**44**	**6**	**14%**

The six (6) PLM-Grav field duplicates to 44 field samples gives a frequency of 14%, which exceeds the goal.

2.1.1.2 Transmission Electron Microscopy (TEM) Field Duplicates

In 2014 two (2) field duplicate pairs were collected in the OU3 CL phase for the ten (10) samples prepared and analyzed by TEM, resulting in a QC frequency of 20%. **Table 6** shows the type, number, and frequency of TEM field duplicate QC samples by investigation phase.

Table 6 – 2014 OU3 TEM Field Duplicate QC

Phase	Media	Field Samples	Field Duplicates	
			#	%
CL	Tree Bark	5	1	20%
	Duff	5	1	20%
Totals		**10**	**2**	**20%**

Note: No rinsate blanks, lot blanks, or field splits were collected as 2014 OU3 field QC.

Note that the 2014 OU3 TEM field QC samples include both field duplicate samples and field blanks, which are discussed in the next section. Of the 99 field samples collected from the OU3 site for TEM analysis during 2014, 10 total field QC samples were collected, representing 10% of the total.

The 2014 TEM field duplicate results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). As presented in **Table 7**, two (2) TEM field duplicate sample pairs were analyzed in 2014 in the OU3 CL phase. Of the two (2) duplicate pairs collected for TEM analysis, no samples resulted in parent and field duplicates which were considered to be statistically different. Unless otherwise noted, where the structure (str) counts are different between the first and second evaluations, the 90% Confidence Interval (CI) requirement is still met.

Table 7 – Statistical Comparison of 2014 TEM Field Duplicate Results Using Two Poisson Rates

Phase	Media	Parent ID	Field Dup. ID	Parent Sample (Rate 1)			Field Duplicate (Rate 2)			Poisson Ratio Rate Comparison (CI=90%)
				Str	Sens [a]	Conc [a]	Str	Sens [a]	Conc [a]	
CL	Duff	CL-40009	CL-40011	1	2.91E+05	6.97E+07	4	3.39E+05	1.36E+06	[0.01-1.65] The rates are not different
	Tree Bark	CL-40010	CL-40012	0	1.59E+05	0.00E+00	0	1.65E+05	0.00E+00	Both counts are 0; The rates are not different

Str = Structure count Sens = Analytical sensitivity Conc = Concentration [a] Water sensitivity units: $(L)^{-1}$

2.1.2 Field Blanks

A field blank is an aliquot of the same medium as the field samples in which it is associated. Field blank QC samples are used to determine the occurrence of cross-contamination during sample collection and/or analysis. Collection frequency requirements for field blanks are specified in the associated Sampling and Analysis Plans (SAPs). In 2014, OU3 field blanks were collected for air samples-only.

As shown in **Table 8** above, a total of eight (8; 9.0%) and three (3; 11%) field blanks were collected and analyzed for analyses by TEM and PCM, respectively, for OU3 in 2014. The results of all 2014 OU3 field blank samples were reported as non-detect (ND) for the presence of asbestos structures.

Table 8 – 2014 OU3 TEM and PCM Field Blank QC

Method	Phase	Media	Field Samples	Field Blanks	
				#	%
TEM	NE	Air	60	6	10%
	CL	Air	29	2	6.9%
Totals			**89**	**8**	**9.0%**
PCM	NE	Air	6	1	17%
	CL	Air	22	2	9.1%
Totals			**28**	**3**	**11%**

2.1.3 Additional Field QC Types

Three other types of field QC samples are identified in Libby laboratory modifications, field splits, rinsate blanks, and lot blanks. However, these field QC samples were not collected in 2014.

Similar to the 2013 period, because only dedicated sampling equipment was used to collect the 2014 OU3 soil characterization samples during the removal action, no equipment rinsate blank samples were collected or analyzed.

Lot blanks are typically selected at random from each group of cassettes to be used for collection of air samples. Before air filter cassettes can be used for asbestos sampling, though, the lot must be asbestos-free. The selected lot blanks are analyzed for asbestos fibers by the same method used for field sample analysis. If any asbestos fibers are detected on the lot blanks, the entire batch of cassettes is rejected. Only lots of filters with acceptable lot blank results are placed in the general supply area for use by project personnel. In all 2014 OU3 phases, no lot blanks for air cassettes were collected.

2.2 Sample Preparation Facility (SPF) QC Analysis

The SPF, approximately 19 miles from the Libby Superfund site in Troy, MT, is used by EPA to prepare samples from the Libby OU3 site for Polarized Light Microscopy (PLM) analysis. In 2014, the EPA Region 8 ESAT contractor, which operates the Troy SPF, prepared 90 OU3 samples, consisting of 81 field samples and nine (9) field duplicate samples. All 90 samples were prepared in support of the Geotechnical (GT) phase.

Soil samples delivered to the Troy SPF are processed in accordance with the latest revision of Standard Operating Procedure (SOP) ISSI-LIBBY-01, which includes procedures for drying, splitting, sieving, grinding, and archiving soil samples. Once processed, the resulting fine ground and/or coarse fractions are submitted to analytical laboratories for analysis by the Libby-specific PLM methods, PLM-GRAV and PLM-VE. Grinding the samples to a uniform size prior to shipping for analysis removes the potential variability introduced by each laboratory grinding their own samples. In order to ensure proper sample handling and decontamination of soil sample preparation equipment at the Troy SPF, preparation QC samples are also collected. These samples are assigned unique field identifiers and are submitted blindly to the analytical laboratories along with the fine ground and/or coarse fractions processed from the field samples. The preparation QC samples that were utilized for PLM analyses at the SPF include preparation blanks, which include drying blanks and grinding blanks, and preparation duplicates. Note that grinding and drying blanks were not always performed specifically with OU3 samples; however the required blanks were available in the site wide database.

Of the 90 OU3 GT samples prepared for PLM-VE analysis in 2014, 10 (11.1%) were preparation QC samples. Of these, three (3.3%) were grinding blank, three (3.3%) were drying blanks, and four (4.4%) were preparation duplicate samples. A total of 50 OU3 GT samples were also prepared for PLM-Grav analysis. Of these, two (4.0%) were PLM-Grav preparation duplicate QC samples (see **Table 9**).

Table 9 – 2014 SPF PLM-VE and PLM-Grav Preparation QC

Method	Phase	Media	Field Samples	Prep Duplicates (Freq. Goal = 5.0%)		Grinding Blanks[1]		Drying Blanks[2]	
				#	%	#	Pass/Fail	#	Pass/Fail
PLM-VE	GT	Soil	90	4	4.4%	3	PASS	3	PASS
PLM-Grav	GT	Soil	50	2	4.0%	NA	NA	NA	NA

[1] Processed at a frequency of 1 grinding blank per day.
[2] Processed at a frequency of 1 drying blank per drying oven used in the drying process.

2.2.1 Preparation Duplicate Frequency

The two (2) types of preparation blanks used at the Troy SPF, drying blanks and grinding blanks, are both made from asbestos-free quartz sand obtained from Premier Silica, in Colorado Springs, Colorado. The material was verified by ESAT Region 8 in 2013 to be suitable for use as a blank matrix, with all results reported in the Bin A, non-detect (ND) category. The frequency goal for preparation duplicates is 5.0%, which, as shown in **Table 9** was narrowly missed for the GT phase due to the next field sample threshold not having been met to induce an additional preparation duplicate (100 and 60 for PLM-VE and PLM-Grav, respectively). Note that although two (2) preparation duplicates were prepared by the Troy SPF for PLM-Grav analysis, no requirement to prepare such a sample is indicated in the SPF Soil Processing SOP 16-ASB-06.02.

2.2.1.1 Drying Blanks

Drying blanks are used to determine if cross-contamination is occurring during the sample drying process. Drying blanks consist of one (1) aliquot of asbestos-free quartz sand placed in each of the drying ovens used during the drying process. As shown in **Table 9**, three (3) drying blanks in total were prepared with GT samples, representing 3.3% of the field samples processed in 2014. The GT drying blank samples were processed at a frequency of one (1) drying blank per drying oven used in the drying process, meeting the project requirements, and all were reported as non-detects (NDs; Bin A) by PLM-VE, suggesting that the procedures utilized to dry the samples did not introduce LA contamination.

2.2.1.2 Grinding Blanks

Like drying blanks, grinding blanks are used to determine if cross-contamination has occurred during or after the PLM grinding process. Grinding blanks consist of asbestos-free quartz sand and are processed at a frequency of one (1) per day. As shown in **Table 9**, three (3) grinding blanks were prepared with GT samples, representing 3.3% of the field samples processed in 2014. The GT grinding blank samples were processed at a frequency of one (1) grinding blank per day, meeting the project requirements, and all results were reported as ND (Bin A) by PLM-VE, suggesting that the procedures utilized to grind the samples did not introduce LA contamination.

Note: During the 2014 on-site audit of the Troy SPF, it was observed that both the drying and grinding blanks were split, sieved, and ground on clean equipment, prior to any of the field samples. Through this process, the drying oven and/or grinder decontamination applied between field samples cannot be effectively measured, which may explain why no fibers were detected in either the drying or grinding blanks in 2014. This observation and the recommended corrective action (to process the drying and grinding blanks after field samples) are detailed in the 2014 Troy SPF On-site Audit Report.

2.2.2 Preparation Duplicate Comparison Results

Preparation duplicates are created by dividing a sample designated for PLM analysis into two (2) parts after drying, but prior to sieving and grinding. Preparation duplicates are prepared at a frequency of 5.0% of processed field samples. Comparison of the preparation duplicate results with the paired original field sample results is used to evaluate variability that may occur during preparation and analysis.

Table 10 – 2014 OU3 Geotechnical SPF PLM-VE Preparation Duplicates

		Comparison as Total Number of Analyses				
		Preparation Duplicate Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	0	0	0	0	**0**
	Bin B1 (Tr)	1	2	0	0	**3**
	Bin B2 (<1%)	0	0	0	0	**0**
	Bin C (≥1%)	0	0	0	1	**1**
	Totals:	**1**	**2**	**0**	**1**	**4**

	# of Samples	**% of Samples**
Total Pairs	**4**	**100%**
Concordant	3	75%
Weakly Discordant	1	25%
Strongly Discordant	0	0%

The results of the 2014 OU3 preparation duplicate processed soil samples are illustrated in **Table 10** above. Of the four (4) preparation duplicate pairs analyzed by PLM-VE, three (75%) were concordant, one (25%) was weakly discordant, and none (0%) were strongly discordant. Of the two (2) preparation duplicates performed for PLM-GRAV, both pairs were reported as trace (Tr), and 100% concordant. Though the SPF QC preparation duplicate analyses by PLM-VE for weakly discordant results of 25% exceeds the <20% requirement specified in the Soil Sample Preparation at the Troy SPF ESAT Region 8 SOP, the limited number of analytical results reduces the statistical significance of this evaluation. Given the small number of SPF PLM-VE preparation duplicates, the concordant results for these QC samples analyzed under each of the PLM methods is a good indication that the samples are being processed in a consistent manner.

2.3 Laboratory QC Analysis

A variety of laboratory-based QC analyses are performed for TEM and PLM sample analyses, which are used to assess the quality of the associated sample data. The contract laboratories used by EPA Region 8 to analyze Libby OU3 samples in 2014 are listed in **Table 1** of this report. The results of laboratory QC applied to samples collected from the Libby OU3 Superfund site and analyzed in 2014, are described for TEM and PLM in the sections below.

2.3.1 TEM Laboratory QC

The laboratory QC requirements for TEM analyses at the Libby OU3 site are patterned after the requirements set forth by NVLAP, which include:

- TEM Laboratory Blanks (LBs)
- TEM Recount Analyses (RS, RD and VA)
- TEM Re-preparations (RPs)
- TEM Inter-laboratory (IL) Analyses

Each of these TEM laboratory QC types have Phase-specific, program-wide frequency goal requirements as a percentage of the field samples analyzed. **Table 11** provides summaries of

the number and frequency of TEM laboratory QC analyses performed by laboratory and investigation phase in 2014.

Table 11 – 2014 OU3 TEM Laboratory QC Summary

Laboratory	Phase	Media	Field Samples	Lab Blanks (Freq. Goal=4%)		Recount Same (Freq. Goal=1%)		Recount Different (Freq. Goal=2.5%)		Verified Analysis (Freq. Goal=1%)		Re-preparations (Freq. Goal=1%)		Inter-laboratory[1] (Freq. Goal=1%)	
				Blanks	%	RS	%	RD	%	VA	%	RP	%	IL	%
EMSL03	NE	ABS	6	1	16.7%	1	16.7%	1	16.7%	1	16.7%	1	16.7%	1	16.7%
EMSL04	CL	Tree bark	6	3	50.0%	1	16.7%	1	16.7%	1	16.7%	1	16.7%	1	16.7%
EMSL04	NE	ABS	7	1	14.3%	1	14.3%	1	14.3%	1	14.3%	1	14.3%	1	14.3%
EMSL27	CL	Duff	6	3	50.0%	0	0.0%	1	16.7%	1	16.7%	1	16.7%	1	16.7%
EMSL27	CL	ABS	31	2	6.5%	1	3.2%	1	3.2%	1	3.2%	2	6.5%	1	3.2%
EMSL27	NE	ABS	33	2	6.1%	0	0.0%	1	3.0%	1	3.0%	1	3.0%	0	0.0%
ESATR8	NE	ABS	20	2	10.0%	1	5.0%	1	5.0%	1	5.0%	1	5.0%	1	5.0%
Totals			**109**	**14**	12.8%	**5**	4.6%	**7**	6.4%	**7**	6.4%	**8**	7.3%	**6**	5.5%

[1] The IL frequency goal of 1% represents the overall program goal, and not the goal for each individual laboratory.

As summarized in **Table 11,** a total of five (5) RS, six (6) IL, seven (7) each of RD and VA, and eight (8) RP TEM analyses were performed in 2014 across the OU3 phases, for an overall frequency of recount analyses of approximately 30% (5% RS, 6% RD, 6% VA, 7% RP, and 6% IL). It should also be noted that the referenced IL analyses are those that were performed on samples analyzed by the laboratories in 2014, which were analyzed in early 2015. The IL analyses associated with the samples analyzed from 2013, which were analyzed in early 2014, are not included in these tallies since they are associated with the samples analyzed from 2013 and not 2014.

Areas of discordance between the required frequencies and the percentage actually performed are highlighted in yellow. As illustrated in **Table 11**, the TEM Laboratory QC sample frequency requirements for RS, RD, VA, and RP QC samples were exceeded by all laboratories, with the exception of EMSL27, for the 2014 OU3 CL and NE sampling events. These frequency requirements were only met as a result of EPA direction to ESAT to request that the participating laboratories analyze additional QC samples post-hoc in order to meet the TEM RS, RD, VA, and RP sample analysis frequency requirements, as described in the 2014 *Commercial Logging, Nature & Extent, and Geotechnical Validation and Quality Control Review Memo* **(Attachment 1)**.

Note that for the EMSL04 tree bark samples presented in **Table 11** above, and as documented in the Job-specific Laboratory Modification LB-000102, Chrysotile was detected in the first two (2) samples processed. The job was run on a new muffle furnace with appropriate calibration and no asbestos (Chrysotile or Libby Amphibole) was detected in the QC blanks processed and analyzed with these samples. Because the QC blanks were asbestos-free, the field sample contamination appears to have been introduced from a source outside of the laboratory.

2.3.1.1 TEM Laboratory Blanks

Laboratory Blanks (LBs) for TEM analysis are prepared from new, unused filters and analyzed using the same procedures as applied to field samples. The purpose of a LB is to determine the presence of asbestos contamination during sample preparation and analysis in the TEM laboratory. As specified in Libby Laboratory Modification LB-000029 and the applicable SAPs (see **Section 8.0 References** of this report), LBs are to be analyzed at a frequency of 4%. As illustrated in **Table 11**, all individual laboratories met the frequency goals for performing LBs, with 14 LBs analyzed for an overall frequency of 12.8%. No asbestos structures were found in any of the 2014 OU3 LB analyses.

2.3.1.2 TEM Recount Analyses

A recount analysis is a re-examination of the original TEM grid openings (GOs) to verify the reported asbestos structure counts and characteristics. Three (3) types of recount analyses were performed by the TEM analytical laboratories:

- Recount Same (RS) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by the same microscopist who performed the initial examination.
- Recount Different (RD) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by a microscopist within the same laboratory who did not perform the initial examination.
- Verified Analysis (VA) – Similar to RD but with different documentation requirements, a VA must be recorded in accordance with the NIST (1994) protocol requirements.

Recount analyses were compared with the original analysis on a GO-by-GO, and structure-by-structure basis, with only those GOs that were able to be re-examined during the recount analysis included in the evaluation; in some instances grid openings may have been damaged with no alternates available. The degree of concordance between the original analysis and the recount analysis was evaluated based on the total number of countable LA structures observed for each grid opening that was re-examined. The concordance metrics, as defined in LB-000029, are summarized in **Table 12**.

Table 12 – TEM Recount Analysis Concordance Rules

Measurement Parameter	Concordance Rule
Number of LA structures within each grid opening	For grid openings with 10 or fewer structures, counts must match exactly. For grid openings with more than 10 structures, counts must be within 10 percent (%) as calculated as relative percent difference (RPD) (((maximum count – minimum count)/average count)*100%).
Asbestos class of structure (LA, OA, CH)	Must agree 100% on Chrysotile (CH) vs. amphibole. For assignment of amphiboles to LA or other amphibole (OA) bins, must agree on at least 90% of all amphibole structures.

Table 12 – TEM Recount Analysis Concordance Rules

Measurement Parameter	Concordance Rule
LA Structure length	For fibers and bundles (all methods) and compact fiber (CF), compact bundle (CB), matrix fiber (MF), and matrix bundle (MB) structures (ISO), must agree within 1 micron (µm) or 10% (whichever is less stringent). For clusters and matrices (AHERA and ASTM) and compact fiber obscured (CFO), compact bundle obscured (CBO), compact cluster (CC), matrix fiber obscured (MFO), matrix bundle obscured (MBO), and matrix cluster (MC) structures (ISO), must agree within 2 µm or 20% (whichever is less stringent). The above percentages (%) are to be calculated as RPD (((1st analysis length – 2nd analysis length)/average length)*100%).
LA Structure width	For fibers and bundles (all methods) and CF, CB, CFO, CBO, MF, MB, MFO, and MBO structures (ISO), must agree within 0.5 µm or 20% (whichever is less stringent). For clusters and matrices (AHERA and ASTM) and CC and MC structures (ISO), there is no quantitative rule for concordance. The above percentage (%) is to be calculated as RPD (((1st analysis width – 2nd analysis width)/average width)*100%).
Presence of Sodium (Na) and Potassium (K)	There is no rule for concordance, but must be tabulated to identify potential trends that may indicate inconsistencies in recording practices or interpretation of spectra.

The TEM recount program-wide concordance criteria, as defined in LB-000029, are summarized in **Table 13**.

Table 13 – TEM Recount Program-Wide criteria

QC Sample Type	Metric	Program-Wide Criteria		
		Good	Acceptable	Poor
Lab Blanks	% with ≥1 asbestos structures	0% - 0.1%	0.2% - 0.5%	>0.5%
Recounts	Concordance on LA count	>95%	85-95%	<85%
	Concordance on type (chrysotile vs. amphibole)	>99%	95%-99%	<95%
	Concordance on type (LA vs. other amphibole)	>99%	95%-99%	<95%
	Concordance on type (LA vs. NAM)	>99%	95%-99%	<95%
	Concordance on LA length	>90%	80%-90%	<80%
	Concordance on LA width	>90%	80%-90%	<80%
Re-preparations	Concordance on LA concentration/loading	>95%	90-95%	<90%

Table 14 shows the TEM recount analysis results for the five (5) RD and seven (7) RS (12 recounts total) OU3 analyses performed in 2014. The recount results for all media and phase were combined, and are shown by mineral class, structure length, structure width, and matched structures per grid opening.

Table 14 – 2014 OU3 CL and NE TEM Recount Results

Results for Matched LA Structures				
Media	**Attribute**	**Total**	**Pass**	**%**
ABS, Duff, Tree Bark	Mineral Class	12	12	100%
	Structure Length	12	12	100%
	Structure Width	12	10	83%
	Structures per GO[1]	15	12	80%
	Structures per GO[2]	178	175	98%
	Na/K Presence	12	10	83%

Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.

As illustrated in **Table 14** above, the recount attributes for mineral class and structure length were 100% and in the "Good" category, structure width was in the "Acceptable" range at 83%, and concordance on LA count (structures per GO) was in the "Poor" category at 80%. It should also be noted that, for all recount pairs, there was 100% agreement on Chrysotile versus Amphiboles. Though there is no rule for concordance for the presence of Na/K, they are tabulated to identify potential trends which may indicate inconsistencies in recording practices or interpretation of spectra. Those samples not concordant on LA count (structures per GO) were the following:

- Duff sample CL-40005 – Two (2) LA structures missed in the recount analysis, both of which were located during the reconciliation analysis.

- Duff sample CL-40001 – Four (4) LA structures missed in the recount analysis, with each missed structure located during the reconciliation analysis.

2.3.1.3 TEM Re-preparations

A TEM re-preparation (RP) is the re-analysis of a sample from which new grids have been prepared using a different portion of the same field sample filter used to prepare the original grids. The 2014 RP results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). RPs provide information on analysis precision, as well as within-filter variability.

In 2014, eight (8) sample RPs were prepared out of 109 TEM samples analyzed across all OU3 phases, for a frequency of 7.3% (see **Table 11**). Of these eight (8) RPs, none were found to be statistically different from the original analyses (see **Table 15**) with 100% of RP analyses results within the established criteria. When compared to the program-wide goals, the 100% acceptable RP analyses rates as "Good" (>95%). Note that, unless otherwise indicated, where the LA structure (str) counts are different between the first and second evaluations, the 90% CI requirement is still met.

Table 15 – 2014 OU3 Statistical Comparison of TEM Re-preparation (RP) Analyses

Lab	Index ID	Method	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	CL-40003	ISO	Tree bark	1	5.43E+04	6	5.57E+04	[0.01-1.06] The rates are not different
EMSL27	CL-40009	ISO	Duff	1	2.91E+05	3	2.86E+05	[0.01-3.08] The rates are not different
EMSL27	CL-40018	ISO	ABS	1	6.47E-03	0	6.47E-03	[0-19] The rates are not different
EMSL27	CL-40031	ISO	ABS	1	6.50E-03	2	6.18E-03	[0.02-6.72] The rates are not different
ESATR8	NE-20005	ISO	ABS	2	9.72E-04	1	9.76E-04	[0.16-57.75] The rates are not different
EMSL04	NE-20062	ISO	ABS	0	9.75E-04	0	9.75E-04	Both counts are 0; the rates are not different
EMSL03	NE-20099	ISO	ABS	0	9.78E-04	0	9.80E-04	Both counts are 0; the rates are not different
EMSL27	NE-20129	ISO	ABS	0	9.79E-04	0	9.70E-04	Both counts are 0; the rates are not different

[a] Tree bark $(cm)^{-2}$, Duff, $(g)^{-}$, ABS $(CC)^{-1}$

2.3.1.4 TEM Inter-laboratory Analyses

Six (6) OU3 samples for the 2014 TEM re-preparation/inter-laboratory (RP/IL) analyses were selected in accordance with the most recent revision of Laboratory Modification LB-000029. These samples included four (4) air samples and one each of tree bark and duff samples. The list was provided to each of the Libby contract laboratories, who then retrieved the samples from archive storage, prepared the TEM grids, analyzed the samples, prepared the paperwork, and shipped the grids to the laboratory selected to perform the IL analyses. The criteria for TEM IL analyses are the same as those for the other recount analyses, described in Section 2.3.1.2 above. **Table 16** provides a summary of the overall 2014 OU3 TEM IL results, across all laboratories, by media.

Note that **Table 16** includes those structures determined to be ambiguous, as described in the attached 2014 TEM IL report.

Table 16 – 2014 OU3 TEM Inter-laboratory Analyses – All Matching Structures

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
ABS	LA vs. NAM	3	3	100%	Duff	LA vs. NAM	2	2	100%
	LA vs. OA	3	3	100%		LA vs. OA	2	2	100%
	LA vs. CH	3	3	100%		LA vs. CH	2	2	100%
	Structures per GO[1]	6	4	67%		Structures per GO[1]	1	1	100%
	Structures per GO[2]	40	38	95%		Structures per GO[2]	4	4	100%
	Structure Length	3	3	100%		Structure Length	2	2	100%
	Structure Width	3	3	100%		Structure Width	2	2	100%
	Na/K Presence	3	1	33%		Na/K Presence	2	2	100%
Tree Bark	LA vs. NAM	0	0	NA	**Totals**	**LA vs. NAM**	**5**	**5**	**100%**
	LA vs. OA	0	0	NA		**LA vs. OA**	**5**	**5**	**100%**
	LA vs. CH	0	0	NA		**LA vs. CH**	**5**	**5**	**100%**
	Structures per GO[1]	0	0	NA		**Structures per GO[1]**	**7**	**5**	**71%**

Table 16 – 2014 OU3 TEM Inter-laboratory Analyses – All Matching Structures

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
	Structures per GO[2]	10	10	100%		**Structures per GO[2]**	**54**	**52**	**96%**
	Structure Length	0	0	NA		**Structure Length**	**5**	**5**	**100%**
	Structure Width	0	0	NA		**Structure Width**	**5**	**5**	**100%**
	Na/K Presence	0	0	NA		**Na/K Presence**	**5**	**3**	**60%**

Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.

As presented in **Table 16**, with the exception of the following, IL analyses were all within the "Good" or "Acceptable" range of the program-wide criteria (**Table 13**) specified for Asbestos Class of Structure (LA vs. NAM, OA, or CH), Structure Length, Structure Width, and Structures per GO. The exceptions, as highlighted in **Table 16**, include:

- Structures per GO
  - Air – 67% of the GOs (excluding NDs) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 13**.
  - Totals – 71% of the GOs (excluding NDs) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 13**.

In addition to the LB-000029 requirements, 66.7% (4 out of 6) RP/IL sample pair results were within the applicable NISTR (NVLAP) requirements.

The discordances presented above may be attributed to false negative results potentially caused by analyst error and/or misinterpretation, chemical variability among structures, tears in the film replicate causing the relocation of fibers, etc. Note that no program-wide criteria from **Table 12** apply to NaK.

Unmatched structures are those structures either identified by the RP laboratory, but not the IL laboratory, or those identified by the IL laboratory, but not the RP laboratory. **Table 17** below shows the unmatched structures by laboratory, unadjusted for ambiguous structures.

Table 17 – 2014 OU3 TEM IL Analyses Missed Structures

Lab	Total Structures	Structures Missed	
		#	%
EMSL03	4	1	25%
EMSL04	2	0	0%
EMSL22	0	0	NA
EMSL27	5	1	20%
ESATR8	1	0	0%
All Labs	12	2	17%

In the 2014 OU3 TEM IL study, matched structures were identified with 100% confirmation by three (3) of the five (5) participating laboratories (EMSL04, EMSL22, and ESATR8). For EMSL03 and EMSL27, one (1) LA structure was missed by each laboratory resulting in percentages of missed structures of 25% (1 of 4 missed) and 20% (1 of 5 missed), respectively. With two (2) of 12 missed overall, 17% of structures were missed program-wide for OU3. Note that a larger sample size would be required to make a more statistically significant assessment of laboratory performance based on the percentage of LA structures missed.

The limited number of structures found in the 2014 OU3 TEM IL samples do not warrant such evaluations, however additional considerations for laboratory performance can be made by excluding ambiguous structures, thereby basing the analyses upon only those results considered most appropriate. Reasons for structures to be identified as ambiguous include:

- Damaged (i.e., ripped or torn) grid openings preventing the IL laboratory from either locating or reconciling missed structures.
- Heavy particulate or melting of organic material causing replica to shift resulting in structures migrating into other GOs and onto grid bars.
- Structures burned during the original analyses resulting in inability to identify by EDS and SAED.
- Chemical variability along structures, causing significant differences in EDS spectra, and resulting in the same structure recorded as a NAM in one (1) analysis and LA in the other.

2.3.2 PLM Laboratory QC

Three types of PLM Laboratory QC analyses were performed on the 2014 OU3 samples, Laboratory Duplicate Samples (LDSs), Laboratory Duplicate Cross-check Re-preparation (LDCR) samples, and PLM Recount IL analyses. Two (2) LDS, seven (7) LDCR, and eight (8) IL analyses were performed on PLM-VE GT phase samples. These Laboratory QC analyses are defined as follows:

- LDS – A reanalysis of a sample by the same analyst.
- LDCR – A reanalysis of a sample by a different analyst.
- IL – A separate Fine Ground (FG) aliquot of a previously-analyzed sample analyzed by a different laboratory, with the Bin results compared.

Table 18 below provides the OU3 program-wide concordance criteria for PLM-VE Recount Analyses. PLM-GRAV recount results were compared based on a relative percent difference (RPD) calculation (RPD (%) = (Original - IL) / [(Original + IL)/2] * 100); however, to-date, no project-specific RPD acceptance criteria or OU3 program-wide goals have been established.

Table 18 – OU3 Program-Wide Criteria for PLM-VE Recount Analysis Concordance

Metric	Good	Acceptable	Poor
% of IL pairs ranked as strongly discordant	<5%	5-10%	>10%
% of IL pairs ranked as weakly discordant	<20%	20-40%	>40%

Table 19A and **Table 20** provide a summary of the frequency at which these analyses were performed for OU3 2014 PLM-VE and PLM-Grav analyses, respectively. **Tables 19B, 19C, and 19D** provide the concordance results between the original and recount analyses for the PLM-VE analyses for LDS, LDCR, and IL samples, respectively:

Table 19A – 2014 OU3 PLM-VE Laboratory QC Sample Frequency

Investigation Phase	Field Samples	LDCR (Freq. Goal=8%)		LDS (Freq. Goal=2%)		Inter-laboratory (Freq. Goal=1%)	
		LDCR	%	LDS	%	IL	%
GT	98	7	7.1%	2	2.0%	8	8.2%

Note: 8 of the field samples presented in table 19A were SPF QC samples (preparation blank or preparation duplicates). A total of 81 field samples, 9 field duplicates, and 8 SPF preparation duplicate/blanks are presented.

Table 19B – 2014 OU3 Geotechnical PLM-VE LDS Analysis Summary

		LDS Analysis Results:			
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
Original Analysis	Bin A (ND)	0	0	0	0
	Bin B1 (Tr)	0	1	0	0
	Bin B2 (<1%)	0	0	1	0
	Bin C (≥1%)	0	0	0	0

	# of Samples	% of Samples
Total Pairs	**2**	**100%**
Concordant	2	100%
Weakly Discordant	0	0%
Strongly Discordant	0	0%

Table 19C – 2014 OU3 Geotechnical PLM-VE LDCR Analysis Summary

		LDCR Analysis Results:			
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
Original Analysis	Bin A (ND)	0	0	0	0
	Bin B1 (Tr)	0	1	0	0
	Bin B2 (<1%)	0	0	1	0
	Bin C (≥1%)	0	0	0	0

	# of Samples	% of Samples
Total Pairs	**7**	**100%**
Concordant	4	57%
Weakly Discordant	2	29%
Strongly Discordant	1	14%

Table 19D – 2014 OU3 PLM-VE IL and Original Analysis Summary

		Comparison as Total Number of Analyses			
		Inter-laboratory Analysis Bin:			
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
Original Analysis Bin:	Bin A (ND)	1	0	0	0
	Bin B1 (Tr)	0	1	1	1
	Bin B2 (<1%)	0	0	1	0
	Bin C (≥1%)	0	0	0	3

	# of Samples	% of Samples
Total Pairs	8	100.0%
Concordant	6	75.0%
Weakly Discordant	1	12.5%
Strongly Discordant	1	12.5%

Table 20 – 2014 OU3 PLM-Grav Laboratory QC Sample Frequency

Investigation Phase	Field Samples	LDCR (Freq. Goal=8%)		LDS (Freq. Goal=2%)		Inter-laboratory (Freq. Goal=1%)	
		LDCR	%	LDS	%	IL	%
GT	52	4	7.7%	1	1.9%	1	1.9%

Seventeen (17) total PLM-VE QC samples were analyzed by PLM-VE for the 2014 GT project, including seven (7) LDCR samples, two (2) LDS samples, and eight (8) IL samples. Of the six (6) total PLM-Grav QC samples analyzed by PLM-GRAV for the GT project, four (4) were LDCR samples, one (1) was an LDS sample, and one (1) was an IL sample.

As highlighted in **Tables 19A** and **20**, the number of PLM QC analyses performed in 2014 was slightly below the required frequencies for all sample analyses and QC types, with the exception of LDS by PLM-VE and the IL samples for PLM-VE and PLM-Grav.

As illustrated in **Table 19B**, both of the LDS analyses performed in 2014 were concordant, placing the PLM-VE LDS analyses in the "Good" category (<20% and <5%) for weakly and strongly discordant results, respectively, as described in **Table 18**.

For the seven (7) total LDCR pairs summarized in **Table 19C**, 57% are concordant, 29% are weakly discordant, and 14% are strongly discordant. These results fall into the "Acceptable" and "Poor" ranges of 20-40% and >10% weakly and strongly discordant, respectively. A calculation of the average concordance shows the original results to be biased low relative to the duplicate results.

As described in further detail in **Attachment 1** of this report, EPA determined that reanalyses would be requested for the 55 PLM-VE analyses for which the station did not contain at least one (1) sample above 1%. This was due to laboratory duplicate analysis concordance discrepancies, in which original sample analyses were below 1% (Bin C) while LDCR analysis results were above 1%. Further, the reanalysis was to be performed by EMSL04, and not EMSL27, since EMSL27 (the original analysis laboratory) appeared to be bias low when comparing the original results to the LDCR results.

The results from EMSL04 for the 55 reanalyses were found to be "Good" and/or "Acceptable". Due to low bias results provided by EMSL27, it was determined by EPA that the 55 reanalyses performed by EMSL04 will be changed to "NOT QC", and the associated 55 analyses provided by EMSL27 will be rejected.

As illustrated in **Table 19D**, six (6) of the eight (8) IL pairs (75.0%) were in concordance and two (25.0%) were ranked as discordant, with one (1) considered weakly discordant (12.5%) and one (12.5%) considered strongly discordant. The weakly discordant results (12.5%) fall into the "Good" range of <20% for EPA-defined program-wide performance. One (1) IL analysis pair was identified as strongly discordant (12.5%; red shading) falling into the EPA-defined "Poor" category for strong discordance at <10%. An average concordance of -0.38 was calculated for the 2014 OU3 IL PLM-VE analyses, which shows the original laboratory results to be bias low relative to the IL results.

One (1) of the eight (8) samples prepared in 2014 OU3 IL study for PLM-VE analysis yielded a coarse fraction which was analyzed using the PLM-Grav procedure following the same 1% selection frequency as was used with the PLM-VE samples and is described in the PLM-VE Laboratory Modification. For the OU3 study, the IL coarse sample is produced by sieving the

archive sample, and not the same coarse sample used during the original PLM-Grav analysis. This is described in Section 7.5 of SOP 16-ASB-06.02 Troy SPF Soil Preparation. The single PLM-Grav sample was confirmed as containing percentage levels of LA, though at different concentrations, resulting in an RPD of 101% which exceeds the ≤100% RPD laboratory concordance requirement. Note that this requirement, from PLM-VE SOP Section 16.4.6, is for samples where the original and QC analysis result are ≥1% asbestos.

2.3.3 PCM Laboratory QC

In 2014, PCM Replicate Analysis QC samples were analyzed in the CL and NE phases for OU3, as presented in **Table 21**.

Table 21 – 2014 OU3 PCM QC Sample Frequency

Lab	Phase	Field Samples	Replicate Analysis (Freq. Goal=10%)	
			Number	%
EMSL27	CL	24	2	8.3%
EMSL27	NE	7	1	14.3%
Totals		**31**	**3**	**9.7%**

A total of three (3) PCM QC RA samples (8.3%) were prepared. As highlighted in **Table 21** above, the EMSL27 laboratory did not meet the 10% RA frequency requirement in the CL phase. This is due to the third replicate in the CL phase not having been initiated, which would take place subsequent to the 30th sample analysis. Seven (7) field samples were analyzed by PCM for the NE sampling event, with one (1) RA QC sample (14.3%) prepared. Due to the CL phase RA QC analysis shortcoming, the overall frequency also fell slightly below the 10% frequency requirement. All of the RA results were reviewed by the QATS Program and were found to be within the specifications described in the applicable method.

2.4 Performance Evaluation Sample Results

Performance Evaluation Samples (PESs) are synthetic man-made laboratory-based QC test samples that are prepared by "spiking" a known concentration of asbestos into a media similar to that collected in the field. A total of 22 PLM-VE PESs were distributed and analyzed by the four (4) Libby OU3 contract laboratories in 2014. The PESs, along with the true values against which the laboratory results were evaluated, were provided by the United States Geological Survey (USGS) via the Troy SPF. Each of the four (4) participating laboratories, with the exception of EMSL27, analyzed a high concentration and a low concentration PES in Q1/Q2, in Q3, and again in Q4 of 2014, totaling four (4) analytical results per laboratory for the year. EMSL27 did not perform any analyses for the third set of 2014 PES samples as the laboratory was no longer in service at the time of 2014 OU3 IL sample distribution.

The reported values were evaluated against the true values for concordance. As illustrated in **Table 22** below, eight (8) of the 22 PES pairs (36%) were in concordance and 14 (64%) were ranked as discordant, with all 14 considered weakly discordant. The weakly discordant results fall into the "Poor" category of >40% for EPA-defined program-wide performance, while the strongly discordant results fall into the "Good" category at <5%. In all but one (1) instance, the laboratory results were bias low relative to the PES True Values.

Table 22 – 2014 OU3 PLM-VE PES Summary

		Comparison as Total Number of Analyses				
		Laboratory Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
PES True Values	Bin A (ND)	0	0	0	0	**0**
	Bin B1 (Tr)	0	0	0	0	**0**
	Bin B2 (<1%)	0	6	4	1	**11**
	Bin C (≥1%)	0	0	7	4	**11**
	Totals:	**0**	**6**	**11**	**5**	**22**

	# of Samples	**% of Samples**
Total Pairs	**22**	**100%**
Concordant	8	36%
Weakly Discordant	14	64%
Strongly Discordant	0	0%

Of the four laboratories evaluated for the 2014 PES study, EMSL03 reported the lowest percentage of discordant results (17%), followed by EMSL04 with 50% discordance, and EMSL22 and EMSL27 which reported no concordant results for 100% discordance. No results in any of the 22 PES evaluations were found to be strongly discordant. Note that due to the limited number of PESs evaluated, no statistically significant trends can be identified.

3.0 Asbestos Data Validation

In 2014, asbestos data from 122 Libby OU3 samples were validated by the QATS Program for media that included air, tree bark, duff, and soil. Data validation of these samples was performed in accordance with the applicable method, SAP Analytical Requirements Summaries, Laboratory Modifications, and QATS Libby-specific data validation SOPs. The methods include ISO 10312 and EPA Method 100.2 for TEM, and PLM-VE and PLM-GRAV for PLM analysis. The validation SOPs applied by the QATS Program include SOP QATS-70-094 (Validation of Polarized Light Microscopy (PLM) Data Deliverables), SOP QATS-70-095 (Validation of Libby Transmission Electron Microscopy (TEM) Data Deliverables), and SOP QATS-70-096 (Validation of Phase Contrast Microscopy (PCM) Data Deliverables).

The validation process involves evaluating asbestos data based on the analytical requirements in the applicable method or SOP used by EPA for analysis of samples collected at Libby Superfund Site OUs. Criteria that are evaluated and reported include sample receipt, sample preparation, microscope alignment, instrument calibrations, stopping rules, structure recording and identification, blank analysis (if applicable), recount/re-preparation analysis (if applicable), and overall assessment of data.

Data are qualified if the daily or monthly calibrations associated with a sample set were not performed at the required frequency, or if the calibrations fail to meet method requirements. The equipment alignment and calibration documentation from each of the Libby support laboratories are provided separately on a quarterly basis. This calibration information is entered into laboratory-specific spreadsheets, where the data validators can access the information and verify that the calibrations were acceptable and performed at the correct frequency for the analyses being evaluated.

B-qualifiers for blank contamination are applied during the validation process for those blanks directly associated with field samples (i.e., provided with a particular deliverable selected for validation). In addition to those QC analyses reviewed during the validation of select deliverables, QC analyses are also reviewed and evaluated on a program-wide basis to ensure they are both performed at the required frequency and that they are within the applicable criteria. With the exception of QC analyses directly associated with a particular set of samples, laboratory QC analyses are performed to determine the quality of the collective data, and not the quality of any specific single set of samples.

The data validation process also includes a comparison of the information reported on the bench sheets to the entries in the associated laboratory method-specific EDDs to ensure that the reported results are complete, compliant with the specified methodology, and accurate. These comparison discrepancies are noted in a separate table of the data validation report. An EPA-approved QATS Data Review Checklist is used to document the data validation process.

Selection of the 2014 OU3 sample results to validate was performed by randomly choosing sample results by laboratory, method, and media. A total of 122 samples from 11 Laboratory Job Numbers, analyzed by four (4) different laboratories for the CL, GT, and NE Libby OU3 analytical events, were selected for validation. The projects, laboratories, chain-of-custody (COC) numbers, Laboratory Job Numbers, method, matrix, and sample counts are presented, as follows, in **Table 23**:

Table 23 – 2014 OU3 Sample Data Validation Summary

Phase	Laboratory	COC Number	Laboratory Job Number	Method	Matrix	Total Samples	Field Samples (not QC)	Blanks & QC Samples
CL	EMSL04	25533	041426125	TEM-ISO	Tree Bark	9	6	3
CL	EMSL27	25534	271400476	TEM-ISO	Duff	9	6	3
CL	EMSL27	25559	271400472	PCM 7400	Air	6	5	1
CL	EMSL27	25572	271400487	TEM-ISO	Air	6	5	1
GT	EMSL27	14-1214	271400216	PLM-Grav	Soil	18	17	1
GT	EMSL27	14-1214	271400217	PLM-VE	Soil	39	36	3
NE	EMSL27	25513	271400454	TEM-ISO	Air	7	6	1
NE	EMSL04	25514	041425592	TEM-ISO	Air	8	6	2
NE	EMSL03	25516	031434043	TEM-ISO	Air	7	6	1
NE	EMSL27	25404	271400392	PCM 7400	Air	8	6	2
NE	ESATR8	25519	A140463	TEM-ISO	Air	5	4	1
					Totals:	**122**	**103**	**19**

The 122 total samples validated consisted of 103 field samples, three (3) field blanks, nine (9) laboratory blanks, and seven (7) QC samples. The QC samples consisted of one (1) each of RD, LDS, and LDC samples, and two (2) RA and LDCR samples, each.
Qualifiers were applied to six (6) field samples, or approximately 4.9% of the 122 asbestos samples validated. All six (6) samples qualified were the result of sample preparation issues from one laboratory. EMSL04 encountered problems during the burning and expansion of the tree bark core samples during the muffle furnace ashing portion of the sample preparation for Laboratory Job Number 041426125. As a result, five (5) samples were qualified “J” and one (1) sample was qualified “UJ”, as presented in **Table 24** below.

Table 24 – 2014 OU3 Samples Qualified by Data Validation

Laboratory	EPA Sample ID	Lab Job No.	Date Analyzed	Method/Matrix	Qualifier Reason	Qualifier*
EMSL04	CL-40002 CL-40003 CL-40006 CL-40008 CL-40012	041426125	09/17/2014 – 09/19/2014	TEM-ISO/Tree Bark	Sample Prep.	J
	CL-40010					UJ

*J - The result (concentration) is estimated. *UJ - The non-detect result may be inaccurate or imprecise.

The EDD/bench sheet information comparisons found that of the 122 sample results validated, one (0.8%) contained some type of EDD/bench sheet discrepancy. The single discrepancy identified was considered minor (i.e., typographical errors or omissions in fields) and was considered by the validators to have no impact on the sample results. Note that the EDD was corrected by EMSL04 personnel to reflect the correct information subsequent to this validation, and so no further action is required.

4.0 Laboratory On-site Audits

On-site audits of all laboratories and soil preparation facilities used by EPA for analytical support at the Libby Superfund Site were conducted in 2014. During this period, a total of six (6) on-site audits were performed as related to OU3, including five (5) asbestos laboratory audits and one (1) asbestos SPF audit. **Table 25** lists the audits performed by laboratory/facility, audit type, and date.

Table 25 – Asbestos Laboratory and Soil Preparation Facility On-site Audits

Laboratory	Location	Audit Type	Audit Date(s)
EMSL Analytical, Inc. (EMSL04)	Cinnaminson, NJ	Asbestos Laboratory	03/25-26/2014
EMSL Analytical, Inc. (EMSL03)	New York, NY	Asbestos Laboratory	04/15-16/2014
ESAT Region 8 (ESATR8)	Golden, CO	Asbestos Laboratory	05/06-07/2014
EMSL Analytical, Inc. (EMSL22)	Denver, CO	Asbestos Laboratory	05/08-09/2014
EMSL Analytical, Inc. (EMSL27)	Libby, MT	Asbestos Laboratory	06/10-11/2014
ESAT Region 8 SPF (ESATR8 SPF)	Troy, MT	Soil Preparation Facility	06/12/2014

4.1 On-site Audit Process

On-site audits are used by EPA to verify that samples analyzed by their contract facilities are processed in accordance with EPA requirements. Each on-site audit involves the general elements of preparation, on-site support, and report generation, which are modified as needed to fit the type of audit being performed. Preparation for asbestos laboratory audits typically involves ensuring the on-site audit checklist to be used is updated to reflect the latest methods and modifications required for Libby sample preparation and analysis; coordination with Region 8 to receive the most recent copies of the laboratory's SOPs, Quality Assurance Manual (QAM) and other needed documentation; and coordination with the EPA representative attending the audit with regard to travel logistics. If there are any anticipated problem areas based on prior evaluation of QC/QA data or validation reports, the auditor will discuss these with the EPA member of the Audit Team prior to the audit. The on-site audit generally starts with an entrance debriefing to the laboratory regarding the areas to be evaluated and the anticipated duration of

the audit. This is followed by evaluating areas throughout the laboratory to verify adherence to Libby project analysis requirements, the laboratory preparation and analysis SOPs, and adherence to the requirements in the laboratory QAM. The areas typically audited in an asbestos laboratory include: Sample Receipt, Log-in, Storage, and Chain-of-Custody (COC) procedures; Indirect and Direct Preparation of Samples; Transmission Electron Microscopy (TEM) Analysis; Polarized Light Microscopy (PLM) Analysis; Data Management; and Quality Control/Quality Assurance. As part of the QA/QC assessment, the laboratory's internal audit and air monitoring programs are evaluated. All laboratory staff involved with handling, preparing, analyzing, reporting, and performing QC on Libby samples are interviewed. Findings are identified and reported to the laboratory at the exit debriefing. On-site audit reports detailing the findings are prepared and submitted to EPA typically within a month and, following EPA approval, are sent to the laboratories by EPA. Audited laboratories are required to provide corrective action responses to EPA regarding the on-site audit findings. Areas where findings were identified are evaluated during the subsequent on-site audit to determine the degree to which the laboratories have applied corrective action.

The results from the above-listed laboratory and SPF on-site audits performed in 2014 are summarized by the following sections:

- Deficiencies by Laboratory (5 laboratories)
- Laboratory Trends (5 laboratories)
- Deficiencies by Laboratory Process Area (5 laboratories)
- Laboratory Responses (5 laboratories)
- SPF Audits (ESATR8 SPF)
- Laboratory Internal Audits (5 laboratories)
- Air Monitoring (2 laboratories)

4.2 On-site Audit Deficiencies by Laboratory

A total of 27 deficiencies were identified from the five (5) laboratory on-site audits performed in 2014. Deficiencies from the SPF audit are not included in this total because it did not involve the preparation and analysis of asbestos samples. The results from the SPF on-site audit are discussed separately in Section 4.6. For the laboratory audits conducted in 2014, an average of 5.4 deficiencies per audit was observed. The laboratory with the lowest number of on-site audit deficiencies was ESATR8 with two (2), and the laboratory with the highest number of deficiencies was EMSL27 with nine (9). The 2014 Libby OU3 asbestos on-site audit deficiencies by laboratory are provided in **Table 26**.

Table 26 – 2014 Asbestos On-site Audit Deficiencies by Laboratory

Laboratory	Year	Total Deficiencies	Percentage
EMSL27	2014	9	33%
EMSL22	2014	5	19%
EMSL04	2014	6	22%
EMSL03	2014	5	19%
ESATR8	2014	2	7%
Total		**27**	
Average		**5.4**	

4.3 Deficiency Trends by Laboratory

A deficiency comparison between the 2014 on-site audits and the same laboratories audited in 2013 was performed to determine corrective action trends. A total of 21 deficiencies were identified in the five asbestos on-site laboratory audits performed during 2013, as compared to the 27 defects observed in the on-site audits of the same five laboratories in 2014 (see **Table 27**). It should be noted that the 2014 on-site audits were full 2-day audits and the 2013 audits were 1-day follow-up audits, primarily focused on assessing the corrective actions applied by the laboratories in response to the 2012 on-site audits.

Table 27 – 2013 & 2014 On-site Audit Total Defects by Laboratory

Laboratory	Deficiencies		Change In Defects per Audit	
	2013	2014	Increase/(Decrease)	%Increase/(%Decrease)
EMSL27	5	9	4	80%
EMSL22	4	5	1	25%
EMSL04	3	6	3	100%
EMSL03	7	5	(2)	(29%)
ESATR8	2	2	0	0%
Totals	**21**	**27**	**6**	**29%**
Averages	**4.2**	**5.4**	**1.2**	**29%**

As **Table 27** shows, the average of 5.4 defects per on-site audit in 2014 represents a 29% increase from the 4.2 average number of defects per on-site audit recorded in 2013. All five laboratories audited in 2013 and again in 2014 showed an increase in the number of defects with the exception of EMSL03, which was audited as part of the Libby Laboratory On-site Audit Program in 2013. Again, this increase is likely due to the increased audit scope rather than a decrease in overall laboratory performance.

During the 2014 on-site audits, QATS personnel evaluated the defects identified in the previous audits to determine whether corrective action had been applied. **Table 28** provides a summary of the degree to which each laboratory addressed the deficiencies from the 2013 on-site audits. For all laboratories, findings from the previous audit were at least partially addressed when reviewed during the on-site audit for the current contract year.

Table 28 – Summary of 2014 Follow-up On-site Audit Deficiencies

Laboratory	Location	2013 Findings Addressed			New Deficiencies in 2014
		Completely	Partially	Not Addressed	
EMSL04	Cinnaminson, NJ	2 of 3	1 of 3	0	6
EMSL03	New York, NY	7 of 7	NA	0	5
ESATR8	Golden, CO	2 of 2	NA	0	2
EMSL22	Denver, CO	4 of 4	NA	0	5
EMSL27	Libby, Montana	4 of 5	1 of 5	0	9
ESATR8 SPF	Troy, Montana	6 of 6	NA	0	2

Laboratory responses to the deficiencies identified in the 2014 on-site audits will be reviewed when received. The reported corrective actions will be evaluated in the 2015 on-site audit cycle.

4.4 Deficiencies by Laboratory Process Area

The 27 asbestos on-site audit deficiencies identified in the five (5) on-site laboratory audits performed in 2014 were trended by seven (7) laboratory process areas. The laboratory process categories in which the majority of the observed deficiencies occurred included indirect and direct preparation of air filter and dust samples and TEM analysis. Categories with the least frequently occurring deficiencies included PCM analysis and sample receipt, storage, log-in, and chain-of-custody.

Table 29 shows the laboratory process categories evaluated, the number of deficiencies observed in each of the 2014 on-site audits, and the percentage of deficiencies observed by category.

Table 29 – 2014 On-site Laboratory Audit Deficiencies by Laboratory Process Area

Laboratory Area	# of Deficiencies	% of Deficiencies
Indirect and Direct Preparation of Air Filter & Dust Samples	10	37.0%
Transmission Electron Microscopy (TEM) Analysis	9	33.3%
Polarized Light Microscopy (PLM) Analysis	2	7.4%
Data Management	2	7.4%
Quality Assurance and Quality Control (QA/QC)	2	7.4%
Phase Contrast Microscopy (PCM) Analysis	1	3.7%
Sample Receipt, Storage, Log-in, and Chain-of-custody	1	3.7%
Total	**27**	**100%**

A summary of the deficiencies by laboratory process category that were observed in the five (5) on-site audits performed in 2014 are as follows:

Indirect and Direct Preparation of Air Filter and Dust Samples – A total of 10 preparation-related deficiencies from five (5) laboratories were identified during the 2014 on-site audits, as follows:

1. Sample preparation for air and bulk samples performed in same area (EMSL27).
2. Water sample preparation blanks which do not address potential contamination from the UV light source (EMSL27).
3. Drying oven and muffle furnace not calibrated at the correct temperatures for bulk samples (EMSL27; partial repeat).
4. Technique issues were identified for the direct preparation of filter samples for TEM analysis (EMSL22).
5. Lack of required equipment for direct and indirect procedures (EMSL22).
6. The effective filtration area (EFA) of disposable filter assemblies is not performed on a lot-by-lot basis (ESATR8).
7. The effective filtration area (EFA) of disposable filter assemblies are not recorded on the containers in which they are stored (EMSL03).
8. A small bag of TEM grids, which did not have a lot number, was observed in a drawer separate from the other TEM grids (EMSL03).
9. Lack of trained personnel to prepare duff and tree bark samples for analysis by TEM (EMSL04; partial repeat).
10. Balances lacking updated calibration labels (EMSL04).

TEM Analysis – A total of nine (9) TEM-related deficiencies from three (3) laboratories were identified during the 2014 on-site audits, as follows:

1. TEM analysts untrained and unfamiliar with project-specific requirements as described in most recent revisions of the Laboratory Modifications (EMSL22).
2. Failure to perform beam dose calibrations at the required frequencies (EMSL22).
3. Failure to consistently record instrument maintenance activities in the maintenance logbook (EMSL22 & EMSL27).
4. Failure to properly calibrate TEM instrument(s) during client sample analysis (EMSL27 & EMSL03).
5. The grid bars were incorrectly identified as non-countable for water samples (EMSL27).
6. Failure to perform instrument-specific LA spectral studies on TEM instruments 27-2 and 27-4, following new detector installation (EMSL27).
7. Failure to record all analysis dates for samples analyzed over multiple days (EMSL03).

PLM Analysis – A total of two (2) PLM-related deficiencies from two (2) laboratories were identified during the 2014 on-site audits, as follows:

1. Failure to follow the Laboratory Modification indicated on the chain-of-custody record for the PLM Inter-laboratory study (EMSL03).
2. Failure to apply corrective action for strongly discordant PLM-VE quality control analyses as described in the project-specific SOP (ESATR8).

Data Management – Two (2) data management deficiencies from two (2) laboratories were identified, as follows:

1. The electronic spreadsheets used to track electronic and hardcopy deliverable due dates did not contain a column for tracking the due dates of hardcopy deliverables (EMSL04).
2. Two (2) sets of RD and RS analyses for the same samples were observed in the Scribe database (EMSL27).

Quality Control and Quality Assurance – Two (2) QA/QC deficiencies from two (2) laboratories were identified, as follows:

1. Failure to review the Internal Audit SOP at the required 3-year frequency as described in the Laboratory's QAM (EMSL04).
2. No AIHI certification despite participating in the Proficiency Analytical Testing rounds (EMSL27).

PCM Analysis – One (1) PCM deficiency was identified for one (1) laboratory (EMSL04) for failure to document the results of the daily PCM reference slide analyses.

Sample Receipt, Storage, Log-in, and COC – One (1) deficiency was identified for one (1) laboratory (EMSL04) for failure to have written procedures describing the remote login procedures.

4.5 Laboratory Responses

EPA requires that laboratories provide responses to on-site audit reports identifying their proposed corrective action to each of the findings. These laboratory responses assist EPA in "closing the loop" on laboratory deficiencies, and help resolve method interpretation issues. Laboratory responses to all of the 2014 on-site audit reports have been received from all four (4)

of the current Libby support laboratories. All laboratories provided proposed corrective actions for the identified findings, along with objective evidence as applicable. No findings were contested. The laboratory-proposed corrective actions will be verified during the next round of scheduled audits.

4.6 Soil Preparation Facility (SPF) Audits

In 2014, EPA also selected an on-site audit of the ESATR8 SPF in Troy, MT. In 2014, two (2) deficiencies were identified from the SPF on-site audit as compared to the six (6) deficiencies identified in 2013, which represents a 67% decrease. Note that both the 2013 and 2014 SPF audits were 1-day on-site audits. **Table 30** shows the on-site audit deficiencies identified in the 2013 and 2014 SPF on-site audits by five (5) facility process areas. Deficiency reductions were observed in each of the laboratory areas evaluated, as shown in the table below.

Table 30 – 2013 & 2014 SPF On-site Audit Deficiencies by Process Area

Laboratory Area	Deficiencies		%Increase/ (%Decrease)
	2013	2014	
Bulk Drying	2	1	(50%)
Grinding and Splitting	2	1	(50%)
QC/QA	0	0	(0%)
Sample Receiving	1	0	(100%)
Sieving of Preparation Samples	1	0	(100%)
Totals	**6**	**2**	**(67%)**

4.7 Laboratory Internal Audits

As part of the 2014 on-site laboratory audits, the EPA Audit Team evaluated the internal audit program for each of EPA's Libby asbestos support laboratories. All were found to continue to have active internal audit programs in place, which involve conducting internal audits of their specific operations on an annual basis using standardized checklists. During the 2014 EPA on-site laboratory audits, the Audit Team reviewed with the laboratory staff any significant findings noted in their internal audit reports. **Table 31** presents the 2014 internal audit history for the five (5) laboratories that provided support to Libby OU3 investigation activities in 2014.

Table 31 – 2014 Laboratory Internal Audit Dates by Laboratory

	Laboratory				
	EMSL03	EMSL04	EMSL22	EMSL27	ESATR8
Date:	12/2014	08/2014	09/2014	06/2014	07/2014

4.8 Air Monitoring Samples

During the 2014 on-site laboratory audits, the Audit Team also evaluated whether contract-required environmental contamination monitoring programs were in place at each laboratory that analyzes samples from Libby. The requirements of the laboratory monitoring programs for each laboratory are described in the laboratory-specific Quality Management Plans (QMPs). These include immediate notification by the laboratory QAM to the LC and the QATS contractor of any laboratory contamination monitoring results that are outside of the appropriate acceptance criteria. Air monitoring samples were verified during the on-site audits to have been

collected on a quarterly basis at the EMSL Laboratories in New York (EMSL03), New Jersey (EMSL04), Denver (EMSL22) and Libby (EMSL27) in 2013. These samples are collected from various locations in each of the laboratories, including the sample receiving, PLM and TEM sample preparation, and the TEM analysis areas. Air monitoring samples at the Troy SPF are collected on a monthly basis. Air monitoring results were reviewed during the 2014 annual on-site audits. No LA structures were observed by the Audit Team.

In addition to internal laboratory air monitoring, in 2014 CDM Smith collected monthly blank samples at the Troy SPF and the EMSL27 laboratories. In all, 133 samples were collected and blindly analyzed by the participating laboratories. Eighty-four (84) samples were collected at the Troy SPF and 49 samples collected at the EMSL27 laboratory. All analyses were non-detects, with the exception of a single positive detection from EMSL27 for Chrysotile (CH) on 04/17/2014. Because the laboratory is only notified when LA fibers are detected, no action was taken.

5.0 Laboratory Mentoring Program

EPA Region 8's mentoring program for laboratory's supporting Libby OU3 projects include training, site-specific reference materials, technical discussions, monthly EPA/laboratory calls, electronic data audits, and the use of laboratory modification forms.

To ensure that new laboratories have properly trained staff to perform analysis of Libby site samples, EPA established training programs that allow laboratories and/or analysts who are experienced with the analysis of LA provide training and mentoring to new laboratories prior to the receipt and analysis of Libby field samples. This training program for new laboratories includes a rigorous 2-3 day period of on-site training provided by senior personnel from those laboratories who are highly experienced with the Libby project. Training includes a review of morphological, optical, chemical, and electron diffraction characteristics of LA, as well as training on the project-specific analytical methodology, documentation, and administrative procedures required for the Libby site. Although no new laboratories were mentored during 2014, the EMSL03 laboratory was approved to receive soil samples for the PLM-VE and PLM-Grav methods based upon the laboratory's 2014 PLM IL results.

For those laboratories and analysts already analyzing samples from the Libby site, the following reference materials, EDD tools, SOPs, laboratory modification, and meeting participation are in place to ensure consistency and continued training:

<u>Site-specific Reference Materials</u>

- TEM - Because LA is not a common form of asbestos, USGS prepared site-specific reference materials using LA collected at the Libby mine site (EPA 2008a), which each laboratory must analyze in order to become familiar with the physical and chemical appearance of LA and establish a reference library of instrument-specific LA EDS spectra.

- PLM - USGS has also prepared site-specific reference materials of LA in soil for use during PLM-VE analyses, which are mounted on slides at concentrations of 0.2% and 1.0% by weight and used to assist in determining visual area estimation of LA levels in soil.

Monthly Technical Discussions

To ensure that all laboratories are aware of technical or procedural issues and requirements, monthly teleconference calls are held between EPA, their contractors, and each of the participating laboratories. These calls cover all aspects of the analytical process, including sample flow, information processing, technical issues, analytical method procedures and development, documentation issues, project-specific laboratory modifications, and pertinent asbestos publications.

Electronic Data Deliverable (EDD) Reporting

Standardized data entry spreadsheets (electronic data deliverables, or EDDs) have been developed specifically for the Libby project to ensure consistency between laboratories in the presentation and submittal of analytical data. In general, a unique Libby-specific EDD was developed for each type of analytical method. Each EDD contains a variety of built-in QC functions that improve the accuracy of data entry and help maintain data integrity.

Laboratory Modification Forms

When changes or revisions are needed to improve or document specifics about analytical methods or procedures used by the Libby laboratory team, these changes are documented using laboratory modification forms, which provide a standardized format for tracking procedural changes in sample analysis, allowing project managers to assess potential impacts on the quality of the data being collected. A list of current, active modifications is provided in Section 6.0.

6.0 Laboratory Modifications

Ten (10) project-specific laboratory modifications were current and active in 2014, as presented in **Table 32**. Summary descriptions and the applicable effective and/or revision dates of those laboratory modifications which were developed, revised, or reviewed in 2014 follow the table.

Table 32 – 2014 Active Laboratory Modifications

Lab Mod	Effective/ Revision Date	Description
LB-000016H	03/19/2012	TEM-ISO
LB-000020C	01/27/2014	TEM Water
LB-000029E LB-000029F	01/16/2014 01/27/2015	TEM QC
LB-000066E	08/15/2013	Structure photos, spectra, and NaK codes
LB-000067C	04/01/2013	General TEM recording rules (sketch structures, ND stands for “Not Detected”, list of valid values for Structure ID, lab blanks always have LQ-00001 as sample number, Prep Date is when prep starts)
LB-000073C	12/06/2012	PLM Inter-Labs
LB-000085A	05/04/2012	TEM Calibrations
LB-000091	07/16/2013	Indirect prep lab mod
LB-000097A	10/22/2014	PLM-VE Procedures
LB-000098	01/07/2014	PLM-Grav QC Procedures

a) LB-000020C (01/27/2014) – This modification applies to the preparation and analysis of water samples for the Libby Project for TEM by method ISO 10312. As of 07/27/2010, it

requires all water samples associated with the Libby Superfund Site to undergo treatment with ozone/UV light and sonication prior to filtration as specified in Section 6.2 of EPA Method 100.1 (EPA 1983a). Only polycarbonate (PC) or mixed cellulose ester (MCE) filters with a pore size of 0.22 µm or smaller should be used for filtering water samples. At each stage in the preparation process, a QC check will be performed by a second person. On the bench sheets, the preparation date should be recorded as the filtration date, not the grid preparation date. Recording rules will be as described in the ISO 10312 (ISO 1995) method, except that the aspect ratio and minimum length requirements will be specified in the applicable governing Analytical Requirements Summary Sheet.

b) LB-000029E (01/16/2014) and LB-000029F (01/27/2015) – This modification provides permanent clarifications to laboratory-based quality control (QC) analysis requirements for TEM. The purpose is to standardize the frequency of analysis and procedures for the selection and interpretation of the results for laboratory-based TEM QC analyses (regardless of sample medium). Note that LB-000029F was applicable to the 2014 TEM IL study analyses.

c) LB-000097A (10/22/2014) – This modification specifies procedures which must be followed using PLM-VE SOP SRC-LIBBY-03. Requirements related to items such as the type of sample dish used, contamination checks, LDS preparation, LDC frequencies, RC analyses, recording of LA Habit, use of compensator plates, and use of laboratories with only one analyst for LDC analyses.

d) LB-000098 (01/07/2014) - This modification specifies procedures which must be followed using PLM-Grav SOP SRC-LIBBY-01, Revision 3. Requirements addressed are related to LDC and LDS procedures.

7.0 Conclusions and Recommendations

QC Data Evaluated

Field QC

The field QC samples collected for the 2014 OU3 studies included field blanks for TEM and PCM for the NE and CL studies and field duplicates for the PLM GT and TEM CL phases. Field duplicate frequencies were met; field blank frequencies are SAP-specific. Field splits, rinsate blanks, and lot blanks were not collected. Because each OU3 phase requires different QC sample processing frequencies based upon the applicable SAP, the QATS Program recommends that field SAPs be read and acknowledged by all field personnel, and that COCs are reviewed to ensure that field QC are collected at the frequencies required by the investigation-specific SAPs. Additionally, to ensure that the filters used to collect air samples are from the lots evaluated in 2010, the applicable FSDSs should be checked to ensure that the filter lot numbers recorded match those that have been previously verified.

SPF QC

In 2014, preparation QC samples collected at the Troy SPF, which include preparation duplicates, grinding blanks, and drying blanks, for OU3 PLM analysis in the GT phase were performed at a frequency of 8.9% of the 90 total field samples for PLM-VE and 4.0% of the 50 total field samples for PLM-Grav. Of the 10 SPF PLM-VE QC samples, three (3) were a

grinding blank, three (3) were drying blanks, and four (4) were preparation duplicates. Both of the SPF PLM-Grav QC samples were preparation duplicate samples. All of the blank sample-types were reported in the Bin A (non-detect) category. Three (3) of the four (4) preparation duplicates analyzed by PLM-VE were concordant (75%) while one was found to be weakly discordant. The two (2) PLM-Grav preparation duplicate QC samples were found to be concordant. Three (3) PCM field blanks were also collected for the 2014 OU3 samples, resulting in an overall frequency of 11%. No structures were reported in any of the PCM field blanks. Note that grinding and drying blanks were not always performed specifically with OU3 samples; however the required blanks were available in the site wide database, and all grinding and drying blank samples were reported as ND. The QATS Program recommends that the SPF performs grinding blanks and drying blanks specific to OU3 samples.

During the 2014 on-site audit of the Troy SPF, the EPA Audit Team observed that both the drying and grinding blanks were processed at the beginning of each day, prior to samples, on equipment which was cleaned the previous day, thereby rendering the evaluation of potential for cross-contamination with field samples ineffective. To effectively monitor for grinder contamination process, and in response to the QATS Program recommendation, the grinding blank are processed only after field samples have already been processed.

Laboratory Analysis QC - TEM

TEM QC Frequency

As illustrated in **Table 11**, 32 of 35 of the OU3 program-wide TEM QC sample frequencies for LB, RS, RD, VA, RP, and ILs in 2014 met the requirements described in Laboratory Modification LB-0000029. This is an improvement over the previous year when the requirement failures were likely attributed to laboratories not having received sufficient samples to trigger the requirement to perform QC analyses. To ensure an appropriate number of QC analyses were performed in 2014, specifically those with frequency requirements of 1.0%, Laboratory Modification LB-000029 was modified, following the QATS Program recommendation, to ensure adequate QC analyses are performed when less than the number of samples necessary to trigger these analyses are reached.
Fourteen (14) TEM LBs were analyzed by participating laboratories in 2014, with no asbestos structures observed. This suggests that asbestos contamination was not introduced during preparation or analyses of TEM samples. All individual laboratories met the OU3 program frequency requirements without exception, and the overall program frequency of LB analyses is approximately 13%, exceeding the Laboratory Modification LB-000029 frequency requirement of 4%.

Laboratory TEM QC Concordance

Overall, the 2014 TEM intra-laboratory recount analyses presented in **Table 14** (i.e. RS and RD) fell into the “Good” and “Acceptable” ranges described in **Table 13** with the exception of the “Poor” categorization for structures per GO (excluding NDs; 80%). Statistical analysis of the RP results detailed in **Table 15** shows that 100% of the eight (8) RP analyses were within the 90% CI established for their evaluation, falling into the “Good” rating category, as established by the program-wide goals.

Though limited in number, the majority of the six (6) inter-laboratory (IL) analyses fell into the “Good” or “Acceptable” category ranges described in the **Table 13**, the exceptions being failures for structures per GO (excluding NDs) concordance for air and overall (<85% concordance).

Laboratory Analysis QC - PLM

PLM QC Frequency

Seventeen (17) PLM-VE QC samples, comprised of seven (7) LDCR, two (2) LDS, and eight (8) IL samples, and six (6) PLM-Grav QC samples, including four (4) LDCR, one (1) LDS, and one (1) IL samples, were analyzed in 2014. As illustrated in **Tables 19A and 20**, the 2014 program-wide PLM QC frequency met only the requirements described in the PLM SOP for IL samples (PLM-VE and PLM-Grav) and LDS samples (PLM-VE) of 2% in the GT investigation phase. Due to the limited number of field samples analyzed for OU3-only, the 2014 PLM-VE QC samples analyzed are not representative of all QC evaluations, with many QC samples processed and reported with the site-wide (all other OUs) data. Regardless, the laboratories should be reminded of the importance of performing OU3-specifc QC to avoid the observed QC deficiencies.

Laboratory PLM QC Concordance

Both of the OU3 PLM-VE LDS analyses performed in 2014 were concordant and considered "Good" (<20% and <5%) for weakly and strongly discordant results, respectively.

For the seven (7) total pairs of LDCRs, with 57% concordant, 29% weakly discordant, and 14% strongly discordant, the results fall into the "Acceptable" and "Poor" ranges of 20-40% and >10% weakly and strongly discordant, respectively. A calculation of the average concordance shows the original results to be biased low relative to the duplicate results.

Attachment 1 of this report details the laboratory duplicate analysis concordance discrepancies related to 55 PLM-VE samples originally analyzed by EMSL27. As a result of LDCR reanalysis by EMSL04, the bias low concordance discrepancies resulting from the EMSL27 analyses were no longer present, and the EMSL04 results replaced the EMSL27 original NOT QC results. Because the EMSL27 laboratory ceased operation in November of 2014, no further corrective action was taken.

Phase Contrast Microscopy QC

Three (3) PCM QC replicate analysis samples were analyzed in the NE and CL phases for OU3 in 2014 as presented in **Table 20**. The frequency goals were not met for the CL phase due to the 30th sample not being reached, thereby not initiating the next QC sample for analysis. All of the RA results were found to meet the applicable method specifications

PES Result Concordance

A total of 22 PLM-VE PESs were analyzed in 2014 by all four (4) laboratories (four PESs were analyzed by each laboratory) in three (3) events: Q1 and 2, Q3, and Q4. Note that EMSL27 did not analyze PESs in Q4, as the laboratory was no longer in service. The overall PES evaluation resulted in ratings of concordant for 36% of sample results and weakly discordant for 64% of sample results. The weakly and strongly discordant results fell into the "Poor" and "Good" categories, respectively, as defined by EPA.

Asbestos Data Validation

In 2014, data validation was performed on 122 Libby OU3 samples. 95.1% of the Libby OU3 asbestos results for samples analyzed in 2014 required no qualification. Qualifiers were applied to six (6) field samples, as the result of laboratory preparation issues related to the burning and expansion of tree bark core samples.

Bench sheet/EDD comparisons were also conducted on all samples validated in 2014. Of the 122 sample results validated, 1 (0.8%) contained a bench sheet/EDD discrepancy, which was considered minor (i.e., typographical errors or omissions in fields) and to have no impact on the sample results.

Laboratory On-site Audits

The 2014 on-site laboratory audits consisted of full 2-day audits. A total of 27 audit defects were identified in the five (5) on-site laboratory audits performed in 2014. The deficiencies by laboratory from high to low include: EMSL27 (9), EMSL04 (6), EMSL22 and EMSL03 (5 each), and ESATR8 (2). The laboratory process categories in which the majority of the observed deficiencies for the audits performed in 2014 occurred include: Sample Preparation and TEM Analysis. For the 2014 on-site audits there was a 29% increase observed in the average number of defects per on-site audit as compared to 2013 for the same five (5) laboratories audited in both 2013 and 2014. This increase is primarily due to the audit scope, with full 2-day audits performed in 2014, while the 2013 on-site audits were follow-up, single day audits. Laboratory responses, in the form of proposed corrective actions to the identified deficiencies, were submitted by the laboratories for both the 2013 and 2014 audits. No findings were contested. The laboratory-proposed corrective actions in response to the 2014 audits will be verified during the next round of scheduled audits.

In 2014, the CB&I QATS Program also supported one (1) SPF on-site audit of the Troy SPF in Troy, MT. Two (2) deficiencies were identified in the Troy SPF on-site audit performed in 2013 as compared to the six (6) defects observed at the same facility in 2013, representing a 67% decrease.

It is recommended that the on-site audit program continue, with at least biennial full, 2-day on-site audits scheduled at the Libby asbestos support laboratories and sample preparation facilities. The QATS Program will use information gathered from the validation process, PLM and TEM Inter-laboratories, and feedback from data users to further enhance the on-site audit process.

8.0 References

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Attachment 1

2014 Commercial Logging, Nature & Extent, and Geotechnical Validation and Quality Control Review (Revision, February 2015)

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February 19, 2015

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Document ID #: 3021-02192015-1

EPA CONTRACT NUMBER EP-W-10-033
TASK ORDER NUMBER 3021
QA SUPPORT FOR RI/FS AT THE LIBBY ASBESTOS SITE OU3

Dear Ms. Progess:

Enclosed please find the revised finalized version of the memorandum entitled "2014 Commercial Logging, Nature & Extent, and Geotechnical Validation and Quality Control Review (Revision, February 2015)."

As explained in greater detail in the memorandum, the revision encompasses data presented in Table 6A (and related text) and Table 10. None of the corrections made in this revision impacted the outcomes of the data evaluation presented in the January 2015 revision of this memorandum.

This memorandum is a deliverable under Task 6 of Task Order 3021.

If you have any questions, please feel free to contact me.

Sincerely,

Lyndsay K. Gensler
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Memorandum

To: Christina Progess, USEPA Region 8
From: Michael P. Lenkauskas
Date: February 19, 2015
Subject: 2014 Commercial Logging, Nature & Extent, and Geotechnical Validation and Quality Control Review (Revision, February 2015)

The following is a review of the Quality Control (QC) analyses and data validation performed on sample analyses associated with the 2014 Commercial Logging (CL), Nature & Extent (NE), and Geotechnical (GT) sampling events. The elements in this memorandum include:

- Troy Sample Preparation Facility (SPF) QC
- QC Data Evaluated
- Asbestos Data Validation
- Conclusions and Recommendations

This memorandum is an update of the revised final version issued on January 20, 2015. It was revised for the following reasons:

- Upon receipt of revised deliverables for the samples presented below, it was noted that the original Core and drill bore diameters of 1-7/8 and 3/8-inch, respectively, were taken from the Chain-of-Custody on page 4 of the report; however, the measurements (in centimeters) performed by the laboratory, and available on page 118 of the report, should have been used. As a result, both the concentration and analytical sensitivity for all associated samples and associated QC analyses were revised to reflect the laboratory-reported measurements. The samples include: CL-40012 (NOT QC & VA), CL-40010, CL-40008 (NOT QC & RS), CL-40006, CL-40003 (NOT QC & RP), and CL-40002 (NOT QC & RD). Note that although the concentrations of these samples changed, the VA, RS, and RD are unaffected, and the RP remained concordant.

- While reviewing the database for the 2014 annual QA/QC report, it was determined that samples for which an EDD was generated, but not analyzed due to overloading or damage, were inadvertently included. The result was a reduction of air samples from 27 to 20 from ESATR8 as illustrated in **Table 6A**. Note, again this change had no negative effect on QC results, and raised the overall and ESATR8 QC frequencies.

The QC data described in this section were collected from the OU3 site and analyzed by the EPA contract laboratories listed in **Table 1** below.

Table 1 – 2014 Libby OU3 Laboratories

Abbreviation	Name, Location
EMSL03	EMSL Analytical, Inc., New York, NY
EMSL04	EMSL Analytical, Inc., Cinnaminson, NJ
EMSL27	EMSL Analytical, Inc., Libby, MT
ESATR8	ESAT Region 8, Golden, CO

The SAP Summaries used to determine QC frequency were the following:

- Nature and Extent – Forest Activity-Based Sampling Quality Assurance Project Plan, Revision 1, August 8, 2014.
- Libby Asbestos Site, Quality Assurance Project Plan, 2014 Commercial Logging Activity-Based Sampling, Revision 1, August 29, 2014.
- Work Plan for Geotechnical Characterization in Support of Creek Diversion at Libby Asbestos Superfund Site OU3 – Part B – SAP/QAPP, Revision 0, June 4, 2014.

Troy SPF QC

Soil samples delivered to the Troy Sample Preparation Facility (SPF) in 2014 were processed in accordance with ESAT SOP 16-ASB-06.01 (Soil Sample Preparation at the Troy SPF), which includes processes for drying, splitting, sieving, grinding, and archiving of soil sample collected from OU3. Once processed, the resulting fine ground and/or coarse fractions are submitted to the laboratories for analysis by the Libby-specific PLM methods (PLM-GRAV and PLM-VE). Grinding the samples to a uniform size prior to shipping for analysis removes the potential variability introduced by each laboratory grinding their own sample. In order to ensure proper sample handling and decontamination of soil/sediment sample preparation equipment at the Troy SPF, preparation QC samples are also processed. These samples are assigned unique field identifiers and are submitted blindly to the analytical laboratories along with the associated field samples. Two types of preparation QC samples were processed for PLM-VE and PLM-GRAV analyses at the preparation facilities: preparation blanks, which include drying and grinding blanks, and preparation duplicates. Of the eight (8) total PLM-VE QC samples for the 2014 Libby OU3 GT event, one (1.1%) was a grinding blank, three (3.3%) were drying blanks, and four (4.4%) were preparation duplicate samples (see **Table 2A**). A total of two (4.0%) QC samples were PLM-GRAV preparation duplicate samples (see **Table 2B**).

Table 2A – 2014 OU3 PLM-VE Geotechnical SPF QC

Laboratory	Field Samples	Grinding Blanks[1]		Drying Blanks[2]		Prep Duplicates (Freq. Goal=5%)	
		No. of Samples	%	No. of Samples	%	No. of Samples	%
Troy SPF	90	1	1.1%	3	3.3%	4	4.4%

Table 2B – 2014 OU3 PLM-GRAV Geotechnical SPF QC

Laboratory	Field Samples	Prep Duplicates (Freq. Goal=5%)	
		No. of Samples	%
Troy SPF	50	2	4.0%

[1] Processed at a frequency of 1 grinding blank per day.
[2] Processed at a frequency of 1 drying blank per drying oven used in the drying process.

Drying Blanks

Drying blanks are used to determine if cross-contamination is occurring during sample processing, specifically the sample drying process. Drying blanks consist of one (1) aliquot of asbestos-free quartz sand placed in each of the drying ovens used during the drying process. As shown in **Table 2A**, three (3) drying blanks in total were prepared with GT samples, representing 3.3% of the field samples processed in 2014. All of the GT drying blank sample results were reported as non-detects (NDs; Bin A) by PLM-VE, suggesting that the procedures utilized to dry the samples did not introduce LA contamination.

Grinding Blanks

Like drying blanks, grinding blanks are used to determine if cross-contamination has occurred during or after the PLM grinding process. Grinding blanks consist of asbestos-free quartz sand and are processed at a frequency of one (1) per day. As shown in **Table 2A**, a single grinding blank was prepared with GT samples, representing 1.1% of the field samples processed in 2014. The single geotechnical grinding blank sample result was reported as ND (Bin A) by PLM-VE, suggesting that the procedures utilized to grind the samples did not introduce LA contamination.

Preparation Duplicates

Preparation duplicates are created by dividing a sample designated for PLM analysis into two (2) parts after drying, but prior to sieving and grinding. Preparation duplicates are prepared at a frequency of 5.0% of processed field samples. Comparison of the preparation duplicate results with the paired original field sample results is used to evaluate variability that may occur during preparation and analysis. Note that the frequency goals presented in **Tables 2A** and **2B** are not met, though the numbers of field samples have not reached the next thresholds of 100 and 60 analyses for the PLM-VE and PLM-GRAV methods, respectively. An increase in the number of field samples would instigate additional preparation duplicates, allowing both sets of preparation duplicate QC analyses to meet the 5% frequency requirement.

Table 3 – 2014 OU3 Geotechnical SPF PLM-VE Preparation Duplicates

		Duplicate Analysis Results:			
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
Original Analysis	Bin A (ND)	0	0	0	0
	Bin B1 (Tr)	1	2	0	0
	Bin B2 (<1%)	0	0	0	0
	Bin C (≥1%)	0	0	0	1

Total Pairs	**4**
N Concordant	**3**
N Weakly Discordant	**1**
N Strongly Discordant	**0**
Concordant	75%
Weakly Discordant	25%
Strongly Discordant	0%

The results of the 2014 OU3 preparation duplicate processed soil samples are described in **Table 3** above. Of the four (4) preparation duplicate pairs analyzed by PLM-VE, three (75%) were concordant, one (25%) was weakly discordant, and none (0%) were strongly discordant.

Of the two (2) preparation duplicates performed for PLM-GRAV, both pairs were reported as trace (Tr), and 100% concordant. Though the SPF QC preparation duplicate analyses by PLM-VE for weakly discordant results of 25% exceeds the <20% requirement specified in the Soil Sample Preparation at the Troy SPF ESAT Region 8 SOP, the limited number of analytical results reduces the statistical significance of this evaluation. Given the small number of SPF PLM-VE preparation duplicates, the concordant results for these QC samples analyzed under each of the PLM methods is a good indication that the samples are being processed in a consistent manner.

TEM and PCM QC Frequency

This technical memorandum was initially submitted in November 20, 2014. Within the original evaluation, TEM QC sample analysis frequency for the CL and NE projects did not meet the EPA-defined frequency requirements in most cases, spurring corrective action. At EPA direction and in order to meet the defined frequency criteria, QATS personnel selected additional QC samples for post-hoc analyses by participating OU3 laboratories. **Table 4** below presents the selected QC samples which were distributed to the laboratories, as indicated, for QC analysis. The reported results for these additional samples were compiled with the original results, and evaluated in this memorandum.

Table 4 – 2014 OU3 Commercial Logging and Nature and Extent Post-hoc Required TEM QC Sample Analysis

Laboratory	Project	Media	QC Type
EMSL04	CL	Tree bark	RS
EMSL04	CL	Tree bark	RD
EMSL04	CL	Tree bark	VA
EMSL04	CL	Tree bark	RP
EMSL27*	CL	Duff	RD
EMSL27*	CL	Duff	VA
EMSL27*	CL	Duff	RP
EMSL03	NE	ABS Air	RS
EMSL03	NE	ABS Air	RD
EMSL03	NE	ABS Air	VA
EMSL03	NE	ABS Air	RP
EMSL04	NE	ABS Air	RS
EMSL04	NE	ABS Air	VA
EMSL04	NE	ABS Air	RP
EMSL27*	NE	ABS Air	VA
EMSL27*	NE	ABS Air	RP
ESATR8	NE	ABS Air	RS

* QC analyses assigned to EMSL27 performed by EMSL03 or EMSL04.

To track the frequency of QC performed under the CL and NE sampling events in 2014, various tables (listed below) are presented throughout this report.

- Table 5A – 2014 OU3 TEM Commercial Logging QC Sample Frequency
- Table 5B – 2014 OU3 PCM Commercial Logging QC Sample Frequency
- Table 6A – 2014 OU3 TEM Nature and Extent QC Sample Frequency
- Table 6B – 2014 OU3 PCM Nature and Extent QC Sample Frequency

Commercial Logging QC Sample Analysis Frequency

Forty-three (43) and 24 samples, for a total of 67, were collected and analyzed by Transmission Electron Microscopy (TEM) and Phase Contrast Microscopy (PCM), respectively, for the 2014 OU3 CL sampling event as presented in **Table 5A** and **Table 5B** below.

Table 5A – 2014 OU3 TEM Commercial Logging QC Sample Frequency

Lab	Media	Field Samples	Lab Blanks (Freq. Goal=4%)		Recount Same (Freq. Goal=1%)		Recount Different (Freq. Goal=2.5%)		Verified Analysis (Freq. Goal=1%)		Re-preparations (Freq. Goal=4%)	
			Blanks	%	RS	%	RD	%	VA	%	RP	%
EMSL04	Tree bark	6	3	50.0%	1	16.7%	1	16.7%	1	16.7%	1	16.7%
EMSL27	Duff	6	3	50.0%	0	0.0%	1	16.7%	1	16.7%	1	16.7%
EMSL27	ABS	31	2	6.5%	1	3.2%	1	3.2%	1	3.2%	2	6.5%
Totals		**43**	**8**	18.6%	**2**	4.7%	**3**	7.0%	**3**	7.0%	**4**	9.3%

Of the 20 total TEM QC samples that were analyzed by TEM for the CL sampling event, eight (8) were laboratory blanks (18.6%), two (2) were RS samples (4.7%), three each were RD and VA samples (7.0% each), and four (4) were RPs (9.3%). Areas of discordance between the required frequencies and the percentage actually performed are highlighted in yellow. The overall frequencies were performed at the required frequencies on an OU3 program-wide basis, as illustrated in **Table 5A** above. Because no RS, RD, or RP analyses were performed for either the Tree Bark or Duff samples prepared and analyzed by EMSL laboratories initially, thereby missing the individual laboratory frequency goals, seven (7) additional CL project QC samples, as indicated in **Table 4**, were sent to the laboratories post-hoc to meet the frequency requirements outlined in parentheses in **Table 5A** above. The additional QC sample analyses performed for the CL event increased the per-laboratory and overall frequencies, meeting the applicable frequency requirements.

Table 5B – 2014 OU3 PCM Commercial Logging QC Sample Frequency

Lab	Field Samples	Replicate Analysis (Freq. Goal=10%)	
		Number	%
EMSL27	24	2	8.3%

A total of two (2) PCM QC RA samples (8.3%) were prepared. As highlighted in **Table 5B** above, the EMSL27 laboratory did not meet the 10% RA frequency requirement. This is due to the third replicate not having been initiated, which would take place subsequent to the 30th sample analysis. Both RAs reviewed by the QATS Program were found to be within the specifications described in the applicable method.

Nature and Extent QC Sample Analysis Frequency

Sixty-six (66) and seven (7) samples, for a total of 73, were collected and analyzed by TEM and PCM, respectively, for the 2014 OU3 NE sampling event as presented in **Table 6A** and **Table 6B** below.

Table 6A – 2014 OU3 TEM Nature & Extent QC Sample Frequency

Lab	Media	Field Samples	Lab Blanks (Freq. Goal=4%)		Recount Same (Freq. Goal=1%)		Recount Different (Freq. Goal=2.5%)		Verified Analysis (Freq. Goal=1%)		Re-preparations (Freq. Goal=1%)	
			Blanks	%	RS	%	RD	%	VA	%	RP	%
EMSL03	ABS	6	1	16.7%	1	16.7%	1	16.7%	1	16.7%	1	16.7%
EMSL04	ABS	7	1	14.3%	1	14.3%	1	14.3%	1	14.3%	1	14.3%
EMSL27	ABS	33	2	6.1%	0	0.0%	1	3.0%	1	3.0%	1	3.0%
ESATR8	ABS	20	2	10.0%	1	5.0%	1	5.0%	1	5.0%	1	5.0%
Totals		**66**	**6**	9.1%	**3**	4.5%	**4**	6.1%	**4**	6.1%	**4**	6.1%

Of the 21 total TEM QC samples analyzed by TEM for the 2014 OU3 NE sampling event, six (6) were laboratory blanks (9.1%), three (3) were RS samples (4.5%), and four (4) each were RD, VA, and RP samples (6.1% each).

Areas of discordance between the required frequencies and the percentage actually performed are highlighted in yellow. The overall frequencies were performed at the required frequencies on an OU3 program-wide basis, as illustrated in **Table 6A** above. As was the case with the CL QC samples, the number of applicable field samples was not reached to initiate the preparation of QC samples at the frequencies required, leading EPA to request the analyses of additional QC samples. Ten (10) additional QC samples were assessed for the NE project following the initial evaluation presented in the original version of this memo (November 2014), as reflected in **Table 6A** above, increasing the analysis frequencies to meet the applicable frequency goals.

Table 6B – 2014 OU3 PCM Nature & Extent QC Sample Frequency

Lab	Field Samples	Replicate Analysis (Freq. Goal=10%)	
		Number	%
EMSL27	7	1	14.3%

In addition, seven (7) field samples were analyzed by PCM for the NE sampling event, with one (1) RA QC sample (14.3%) prepared. The single RA was reviewed by the QATS Program and was found to be within the specifications described in the applicable method

Note that applying these NE PCM samples to the totals for the CL samples, which were performed by the same laboratory (EMSL27) during the same time period, the overall percentage of 9.7% narrowly misses the 10% frequency requirement. The replicate analysis were reviewed and found to be within the specifications described in the applicable method.

As illustrated in the **Tables 5A** and **6A**, the QC sample frequency requirements were exceeded by the individual laboratories in most cases for RS, RD, VA, and RP QC samples for the 2014 OU3 CL and NE sampling events. The frequency requirements were only met as a result of EPA direction to ESAT to request that the participating laboratories analyze additional QC samples post-hoc in order to meet the TEM RS, RD, VA, and RP sample analysis frequency requirements for the aforementioned Libby OU3 projects, as described in the previously submitted version (November 2014) of this memo.

Note that for the EMSL04 tree bark samples presented in **Table 5A** above, and as documented in the Job-specific Laboratory Modification LB-000102, Chrysotile was detected in the first two (2) samples processed. The job was run on a new muffle furnace with appropriate calibration and no asbestos (Chrysotile or Libby Amphibole) was detected in the QC blanks processed and

analyzed with these samples. Because the QC blanks were asbestos-free, the field sample contamination appears to have been introduced from a source outside of the laboratory.

TEM Recounts & Re-preparations

A recount analysis is a re-examination of select original TEM grid openings (GOs) to verify the reported asbestos structure counts and characteristics. Three (3) types of recount analyses were performed by the TEM analytical laboratories:

- Recount Same (RS) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by the same microscopist who performed the initial examination.
- Recount Different (RD) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by a microscopist within the same laboratory who did not perform the initial examination.
- Verified Analysis (VA) – Similar to RD but with different documentation requirements, a VA must be recorded in accordance with the NIST (1994) protocol requirements.

Recount analyses were compared with the original analysis on a GO-by-GO, and structure-by-structure basis. The degree of concordance between the original analysis and the recount analysis was evaluated based on the total number of countable LA structures observed for each grid opening that was re-examined. The concordance metrics, as defined in LB-000029E, are summarized in **Table 7**:

Table 7 – TEM Recount Analysis Concordance Rules

Measurement Parameter	Concordance Rule
Number of LA structures within each grid opening	For GOs with 10 or fewer structures, counts must match exactly. For GOs with more than 10 structures, counts must be within 10 percent (%) as calculated as RPD (((maximum count – minimum count)/average count)*100%).
Asbestos class of structure (LA, OA, CH)	Must agree 100% on CH vs. amphibole. For assignment of amphiboles to LA or OA bins, must agree on at least 90% of all amphibole structures.
LA Structure length	For fibers and bundles (all methods) and CF, CB, MF, and MB structures (ISO), must agree within 1 micron (µm) or 10% (whichever is less stringent). For clusters and matrices (AHERA and ASTM) and CFO, CBO, CC, MFO, MBO, and MC structures (ISO), must agree within 2 µm or 20% (whichever is less stringent).
LA Structure width	For fibers and bundles (all methods) and CF, CB, CFO, CBO, MF, MB, MFO, and MBO structures (ISO), must agree within 0.5 µm or 20% (whichever is less stringent). For clusters and matrices (AHERA and ASTM) and CC and MC structures (ISO), there is no quantitative rule for concordance.
Presence of Sodium (Na) and Potassium (K)	There is no rule for concordance, but must be tabulated to identify potential trends that may indicate inconsistencies in recording practices or interpretation of spectra.

The TEM recount OU3 program-wide concordance criteria, as defined in LB-000029E, are summarized in **Table 8**.

Table 8 – TEM Recount OU3 Program-wide Criteria

QC Sample Type	Metric	OU3 Program-Wide Criteria		
		Good	Acceptable	Poor
Recounts	Concordance on LA count	>95%	85-95%	<85%
	Concordance on type (chrysotile vs. amphibole)	>99%	95%-99%	<95%
	Concordance on LA length	>90%	80%-90%	<80%
	Concordance on LA width	>90%	80%-90%	<80%

TEM Recounts

As shown in **Tables 5A and 6A**, a total of nineteen (19) recount analyses comprised of five (5) RS, seven (7) RD, and seven (7) VA samples were performed for the 2014 CL and NE projects. **Table 9** presents the results for matched LA structures from these 19 recount analyses. The recount attributes for mineral class and structure length were 100% and in the "Good" category as described in **Table 8**. The attribute structure width was in the "Acceptable" range at 83%, and concordance on LA count (structures per GO) was in the "Poor" category at 80%. It should also be noted that, for all recount pairs, there was 100% agreement on Chrysotile versus Amphiboles. Though there is no rule for concordance for the presence of Na/K, they are tabulated to identify potential trends which may indicate inconsistencies in recording practices or interpretation of spectra.

Table 9 – 2014 OU3 Commercial Logging and Nature and Extent TEM Recount Results

Results for Matched LA Structures				
Media	**Attribute**	**Total**	**Pass**	**%**
ABS, Duff, Tree Bark	Mineral Class	12	12	100%
	Structure Length	12	12	100%
	Structure Width	12	10	83%
	Structures per GO[1]	15	12	80%
	Structures per GO[2]	178	175	98%
	Na/K Presence	12	10	83%

Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.

Those samples not concordant on LA count (structures per GO) were the following:

- Recount Different on Duff sample CL-00005 – Two (2) LA structures missed in the RD analysis, both of which were located during the reconciliation analysis.
- Verified Analysis on Duff sample CL-40001 – Four (4) LA structures missed in the RD analysis, with each missed structure located during the reconciliation analysis.

TEM Re-preparations

A TEM re-preparation (RP) is the re-analysis of a sample from which new grids have been prepared using a different portion of the same filter that was used to prepare the original grids. The 2014 RP results were compared to the original analyses using the method for comparison

of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). RPs provide information on analysis precision, as well as within-filter variability. As shown in **Tables 5A and 6A**, a total of eight (8) RP pairs were analyzed in 2014, with four (4) for each the 2014 CL and NE projects. All eight (100%) of the RP pair results were within the 90% CI. **Tables 10 and 11** below present statistical comparisons between the original (first evaluation) and RP (second evaluation) analyses, as identified by project and sample number (Index ID). Note that even where the structure counts differ between the first and second evaluations, Poisson ratio rate comparisons for all eight (8) CL and NE samples in **Tables 9 and 10** still met the 90% CI requirement.

Table 10 – 2014 OU3 Commercial Logging Re-preparation Statistical Comparison Using Two Poisson Rates

Lab	Index ID	Method	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	CL-40003	ISO	Tree bark	1	5.43E+04	6	5.57E+04	[0.01-1.06] The rates are not different
EMSL27	CL-40009	ISO	Duff	1	2.91E+05	3	2.86E+05	[0.01-3.08] The rates are not different
EMSL27	CL-40018	ISO	ABS	1	6.47E-03	0	6.47E-03	[0-19] The rates are not different
EMSL27	CL-40031	ISO	ABS	1	6.50E-03	2	6.18E-03	[0.02-6.72] The rates are not different

Table 11 – 2014 OU3 Nature & Extent Re-preparation Statistical Comparison Using Two Poisson Rates

Lab	Index ID	Method	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
ESATR8	NE-20005	ISO	ABS	2	9.72E-04	1	9.76E-04	[0.16-57.75] The rates are not different
EMSL04	NE-20062	ISO	ABS	0	9.75E-04	0	9.75E-04	Both counts are 0; the rates are not different
EMSL03	NE-20099	ISO	ABS	0	9.78E-04	0	9.80E-04	Both counts are 0; the rates are not different
EMSL27	NE-20129	ISO	ABS	0	9.79E-04	0	9.70E-04	Both counts are 0; the rates are not different

PLM Recounts

Two types of laboratory-based PLM QC analyses were performed on the 2014 OU3 GT samples, Laboratory Duplicate Samples (LDSs) and Laboratory Duplicate Cross-check Re-preparation (LDCR) samples. These sample-types are defined as follows:

- LDS – A reanalysis of a client sample by the same analyst.

  LDCR – A reanalysis of a client sample by a different analyst.

The LDS and LDCR PLM QC analyses performed in 2014 were by PLM-VE and/or PLM-GRAV, as presented in **Tables 12A and 12B**. Note that although LDCR analysis is normally performed within the same laboratory, the originating laboratory, EMSL in Libby, MT (EMSL27), only has

one analyst trained to perform the Libby-specific PLM procedures, and so the samples were shipped to EMSL laboratory in Cinnaminson, NJ (EMSL04) for the LDCR evaluation.

Table 12A and **Table 12B** provide a summary of the frequency at which these analyses were performed for this project:

Table 12A – 2014 OU3 Geotechnical PLM-VE QC Sample Frequency by Laboratory

Laboratory	Field Samples	LDCR (Freq. Goal=8%)		LDS (Freq. Goal=2%)	
		LDCR*	%	LDS	%
EMSL27/EMSL04*	98	7	7.1%	2	2.0%

Table 12B – 2014 OU3 Geotechnical PLM-GRAV QC Sample Frequency by Laboratory

Laboratory	Field Samples	LDCR (Freq. Goal=8%)		LDS (Freq. Goal=2%)	
		LDCR*	%	LDS	%
EMSL27/EMSL04*	52	4	7.7%	1	1.9%

Of the nine (9) total PLM-VE QC samples analyzed by PLM-VE for the 2014 GT project, seven (7.1%) were LDCR samples and two (2.0%) were LDS samples. Of the five (5) total PLM-GRAV QC samples analyzed by PLM-GRAV for the GT project, four (7.7%) were LDCR samples and one (1.9%) was an LDS sample.

As highlighted in **Tables 12A** and **12B**, the number of PLM QC analyses performed in 2014 was slightly below the required frequencies for all sample analyses and QC types, with the exception of LDS by PLM-VE.

PLM Recount OU3 Program-wide Criteria

Table 13 below provides the OU3 program-wide concordance criteria for PLM-VE Recount Analyses. PLM-GRAV recount results were compared based on a relative percent difference (RPD) calculation (RPD (%) = (Original - IL) / [(Original + IL)/2] * 100); however, to-date, no project-specific RPD acceptance criteria or OU3 program-wide goals have been established.

Table 13 – OU3 Program-Wide Criteria for PLM-VE Recount Analysis Concordance

Metric	Good	Acceptable	Poor
% of IL pairs ranked as strongly discordant	<5%	5-10%	>10%
% of IL pairs ranked as weakly discordant	<20%	20-40%	>40%

Table 14A and **Table 14B** below provides a summary of 2014 GT PLM-VE LDS and LDCR, respectively, for concordance between the original and recount analyses.

Table 14A – 2014 OU3 Geotechnical PLM-VE LDS Analysis Summary

		LDS Analysis Results:			
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
Original Analysis	Bin A (ND)	0	0	0	0
	Bin B1 (Tr)	0	1	0	0
	Bin B2 (<1%)	0	0	1	0
	Bin C (≥1%)	0	0	0	0

Total Pairs	**2**
N Concordant	**2**
N Weakly Discordant	**0**
N Strongly Discordant	**0**
Concordant	100%
Weakly Discordant	0%
Strongly Discordant	0%

As illustrated in **Table 14A**, both of the LDS analyses performed in 2014 were concordant, placing the PLM-VE LDS analyses in the "Good" category (<20% and <5%) for weakly and strongly discordant results, respectively, as described in **Table 13**.

Table 14B – 2014 OU3 Geotechnical PLM-VE LDCR Analysis Summary

		LDCR Analysis Results:			
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)
Original Analysis	Bin A (ND)	0	1	0	0
	Bin B1 (Tr)	0	1	0	1
	Bin B2 (<1%)	0	0	0	1
	Bin C (≥1%)	0	0	0	3

Total Pairs	**7**
N Concordant	**4**
N Weakly Discordant	**2**
N Strongly Discordant	**1**
Concordant	57.1%
Weakly Discordant	28.6%
Strongly Discordant	14.3%

For the seven (7) total pairs of LDCRs summarized in **Table 14B**, 57.1% are concordant, 28.6% are weakly discordant, and 14.3% are strongly discordant. These results fall into the "Acceptable" and "Poor" ranges of 20-40% and >10% weakly and strongly discordant, respectively. A calculation of the average concordance shows the original results to be biased low relative to the duplicate results. Due to these concordance discrepancies, in which original sample analyses were below 1% (Bin C) while LDCR analysis results were above 1%, EPA determined that reanalyses would be requested for the 55 PLM-VE analyses for which the station did not contain at least one (1) sample above 1%. Further, the reanalysis was to be performed by EMSL04, and not EMSL27, since EMSL27 appeared to be bias low when comparing the original results to the LDCR results.

Table 15 below provides a summary of the original versus reported results by EMSL27 versus those reported by EMSL04 for the reanalyses.

Table 15 – 2014 OU3 PLM-VE Reanalysis Results Summary

Station	Index ID	Sample Type	Parent ID	EMSL27	PLM-VE QC		EMSL04	Weakly Discordant	Strongly Discordant
				Fine (PLM-VE)	LDS	LDCR	Re-analysis Result		
GT-01	GT-10086	Field Sample		Tr		Tr	Tr		
	GT-10087	Field Sample		Tr			Tr		
	GT-10088	Field Sample		ND			Tr		
GT-02	GT-10082	Field Sample		ND			ND		
	GT-10083	Field Duplicate	GT-10082	ND			Tr	1	
	GT-10085	Field Sample		Tr			Tr		
GT-03	GT-10077	Field Sample		ND			Tr	1	
	GT-10078	Field Sample		Tr			<1	1	
	GT-10080	Field Sample		Tr			Tr		
GT-07	GT-10099	Field Sample		Tr			Tr		
	GT-10100	Field Sample		ND		Tr	Tr	1	
	GT-10101	Field Sample		Tr			Tr		
	GT-10103	Field Duplicate	GT-10101	Tr			Tr		
	GT-10102	Field Sample		Tr			<1	1	
GT-08	GT-10095	Field Sample		Tr			Tr		
	GT-10096	Field Sample		Tr			Tr		
	GT-10097	Field Duplicate	GT-10096	ND			Tr	1	
GT-09	GT-10091	Field Sample		Tr			Tr		
	GT-10092	Field Sample		Tr			Tr		
	GT-10093	Field Sample		Tr			<1	1	
GT-16	GT-10130	Field Sample		< 1			1	1	
	GT-10132	Field Sample		< 1			<1		
GT-17	GT-10128	Field Sample		Tr			<1	1	
	GT-10129	Field Sample		Tr			Tr		
GT-18	GT-10126	Field Sample		Tr			<1	1	
	GT-10127	Field Sample		Tr			<1	1	
GT-19	GT-10122	Field Sample		ND			ND		
	GT-10124	Field Duplicate	GT-10122	ND			ND		
	GT-10123	Field Sample		< 1			1	1	
GT-20	GT-10116	Field Sample		< 1		2	1	1	
	GT-10117	Field Sample		< 1			1	1	
	GT-10118	Field Sample		Tr			<1	1	
	GT-10120	Field Sample		Tr			1		1
GT-21	GT-10016	Field Sample		Tr			Tr		
	GT-10019	Field Sample		Tr			Tr		
	GT-10021	Field Sample		Tr			Tr		
GT-22	GT-10009	Field Sample		Tr			Tr		
	GT-10010	Field Duplicate	GT-10009	Tr			Tr		
	GT-10013	Field Sample		Tr			Tr		
	GT-10014	Field Sample		Tr			Tr		
GT-23	GT-10003	Field Sample		Tr			Tr		
	GT-10004	Field Sample		Tr			Tr		
	GT-10006	Field Sample		Tr	Tr		<1	1	
	GT-10008	Field Sample		< 1			<1		

Table 15 – 2014 OU3 PLM-VE Reanalysis Results Summary

Station	Index ID	Sample Type	Parent ID	EMSL27	PLM-VE QC		EMSL04	Weakly Discordant	Strongly Discordant
				Fine (PLM-VE)	LDS	LDCR	Re-analysis Result		
GT-24	GT-10031	Field Sample		Tr			Tr		
	GT-10032	Field Sample		Tr			Tr		
	GT-10033	Field Sample		Tr			Tr		
GT-25	GT-10035	Field Sample		ND			Tr	1	
	GT-10036	Field Sample		Tr			Tr		
	GT-10038	Field Duplicate	GT-10036	Tr			Tr		
	GT-10040	Field Sample		Tr			Tr		
RECON	GT-10074	Field Sample		Tr			Tr		
	GT-10075	Field Sample		< 1			1	1	
	GT-10076	Field Sample		< 1			1	1	
	GT-10121	Field Sample		Tr			1		1
							% Total:	34.5%	3.6%

Notes:

ND – non-detect (Bin A)

Tr – trace (Bin B1)

<1 – less than 1% (Bin B2)

≥1 – greater than or equal to 1% (Bin C)

Results are discordant, as indicated by shaded cells:

Discordant

Discordant & previously <1%

Of the 55 reanalyses performed by EMSL04 in 2014 and compared to the original results from EMSL27, 3.6% were strongly discordant (<5% = “Good”), and 34.5% were weakly discordant (20-40% = “Acceptable”). The eight (8) reanalyzed samples highlighted red in **Table 15** were originally reported by EMSL27 at trace (Tr) or <1% LA; however, these results were reported by EMSL04 as 1% or greater, indicating that proposed corrective action was warranted. Due to low bias results provided by EMSL27, it was determined by EPA that the 55 reanalyses performed by EMSL04 will be changed to "NOT QC", and the associated 55 analyses provided by EMSL27 will be rejected.

Asbestos Data Validation

Selection of five percent (5%) of the 2014 OU3 sample results to validate was performed by randomly choosing sample results by laboratory, method, and media. A total of 122 samples from 11 Laboratory Job Numbers, analyzed by four (4) different laboratories for the CL, GT, and NE Libby OU3 analytical events, were selected for validation. The projects, laboratories, chain-of-custody (COC) numbers, Laboratory Job Numbers, method, matrix, and sample counts are presented, as follows, in **Table 16**:

Table 16 – 2014 OU3 Sample Data Validation Summary

Project	Laboratory	COC Number	Laboratory Job Number	Method	Matrix	Total Samples	Field Samples (not QC)	Total QC Samples
CL	EMSL04	25533	041426125	TEM-ISO	Tree Bark	9	6	3
CL	EMSL27	25534	271400476	TEM-ISO	Duff	9	6	3
CL	EMSL27	25559	271400472	PCM 7400	Air	6	5	1
CL	EMSL27	25572	271400487	TEM-ISO	Air	6	5	1
GT	EMSL27	14-1214	271400216	PLM-Grav	Soil	18	17	1
GT	EMSL27	14-1214	271400217	PLM-VE	Soil	39	36	3

Table 16 – 2014 OU3 Sample Data Validation Summary

Project	Laboratory	COC Number	Laboratory Job Number	Method	Matrix	Total Samples	Field Samples (not QC)	Total QC Samples
NE	EMSL27	25513	271400454	TEM-ISO	Air	7	6	1
NE	EMSL04	25514	041425592	TEM-ISO	Air	8	6	2
NE	EMSL03	25516	031434043	TEM-ISO	Air	7	6	1
NE	EMSL27	25404	271400392	PCM 7400	Air	8	6	2
NE	ESATR8	25519	A140463	TEM-ISO	Air	5	4	1
					Totals:	**122**	**103**	**19**

The 122 total samples validated consisted of 103 field samples, three (3) field blanks, nine (9) laboratory blanks, and seven (7) QC samples. The QC samples consisted of one (1) each of RD, LDS, and LDC samples, and two (2) RA and LDCR samples, each.

Qualifiers were applied to six (6) field samples, or approximately 4.9% of the 122 asbestos samples validated. All six (6) samples qualified were the result of sample preparation issues. EMSL04 encountered problems during the burning and expansion of the tree bark core samples during the muffle furnace ashing portion of the sample preparation for Laboratory Job Number 041426125. As a result, five (5) samples were qualified "J" and one (1) sample was qualified "UJ", as presented in **Table 17** below.

Table 17 – 2014 OU3 Samples Qualified by Data Validation

Laboratory	EPA Sample ID	Lab Job No.	Date Analyzed	Method/Matrix	Qualifier Reason	Qualifier*
EMSL04	CL-40002 CL-40003 CL-40006 CL-40008 CL-40012	041426125	09/17/2014 – 09/19/2014	TEM-ISO/Tree Bark	Sample Prep.	J
	CL-40010					UJ

*J - The result (concentration) is estimated. *UJ - The non-detect result may be inaccurate or imprecise.

The bench sheet/EDD information comparisons found that of the 122 sample results validated, one (0.8%) contained some type of bench sheet/EDD discrepancy. The single discrepancy identified was considered minor (i.e., typographical errors or omissions in fields) and was considered by the validators to have no impact on the sample results. Note that the EDD was corrected by EMSL04 personnel to reflect the correct information subsequent to this validation, and so no further action is required.

Conclusions and Recommendations

The updated 2014 OU3 analytical results provided by the participating laboratories and the soil samples processed at the Troy SPF were generally found to be accurate and of acceptable quality, meeting the quality requirements specified in the applicable methods and project-specific SOPs and Laboratory Modifications.

The updated TEM tables presented in this memorandum show that all frequency goals were met overall and by each individual laboratory with the exception of EMSL27 for RS QC samples

in the CL project for Duff media and in the NE project for ABS media, the result of laboratory closure prior to the selection of the post-hoc QC analyses

Because limited QC sample analyses were performed for the Tree Bark, Duff, and ABS samples prepared and analyzed by EMSL laboratories initially, thereby missing the individual laboratory frequency goals, seven (7) and 10 additional CL and NE project QC samples, respectively, as indicated in **Table 4** of this report, were sent to the laboratories post-hoc to meet the identified frequency requirements. The additional QC sample analyses performed for the CL and NE events increased the per-laboratory and overall frequencies, meeting the applicable frequency requirements.

For the CL project, two (2) PCM QC RA samples (8.3%) were prepared by EMSL27 falling short of the 10% RA frequency requirement. This is due to the third replicate not having been initiated, which would take place subsequent to the 30th sample analysis. Both RAs reviewed by the QATS Program were found to be within the specifications described in the applicable method. The sample frequency requirement for PCM in the NE project was met at 14.3%.

Of the nine (9) total PLM-VE QC samples analyzed by PLM-VE for the 2014 GT project, seven (7.1%) were LDCR samples and two (2.0%) were LDS samples. Of the five (5) total PLM-GRAV QC samples analyzed by PLM-GRAV for the GT project, four (7.7%) were LDCR samples and one (1.9%) was an LDS sample.

For the GT project, PLM recounts for LDC and LDCR QC samples were evaluated by PLM-VE and/or PLM-GRAV procedures. The number of PLM QC analyses performed in 2014 was slightly below, but within 1% of, the required frequencies for all sample analyses and QC types, with the exception of LDS by PLM-VE which exceeded the applicable frequency requirement. Upon initial evaluation, of the seven (7) total pairs of LDCR QC samples reported, the weakly and strongly discordant results fell into the “Acceptable” and “Poor” categories, respectively. As a result of the discrepancy described in the PLM section of this memo, in which the original PLM-VE analyses for the GT soil samples were considered low bias by the EMSL27 laboratory, EPA requested the reanalysis of 55 PLM-VE analyses. EMSL04 was tasked with the reanalyses, the results of which are summarized in **Table 15**, which placed eight (8) additional samples at or above 1%. Due to low bias results provided by EMSL27, the 55 reanalyses performed by EMSL04 will be changed to "NOT QC", and the associated 55 analyses provided by EMSL27 will be rejected.

A total of 122 samples, analyzed by four (4) different laboratories for the 2014 CL, GT, and NE Libby OU3 analytical events, were selected for validation. Of the 122 samples validated, six (6) were qualified “J” or “UJ” due to sample preparation issues. All six (6) were tree bark samples from the CL project which were qualified as a result of sample loss during the ashing process.
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Attachment 2

Annual Evaluation of PLM Inter-laboratory and PES Results Report (2014)

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June 1, 2015

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Document ID #: 3021-06012015-1

EPA CONTRACT NUMBER EP-W-10-033
TASK ORDER NUMBER 3021
QA SUPPORT FOR RI/FS AT THE LIBBY ASBESTOS SITE OU3

Dear Ms. Progess:

Enclosed please find the final version of the Annual Evaluation of PLM Inter-laboratory and PES Results Report (2014). This report is a deliverable under Task 6 of Task Order 3021.

If you have any questions, please feel free to contact me.

Sincerely,

Lyndsay K. Gensler
Task Leader, QATS Program
CB&I Federal Services LLC
Phone: (702) 895-8730
E-Mail Address: lyndsay.gensler@cbifederalservices.com

cc: Dania Zinner, USEPA, Region 8
David Berry, USEPA, Region 8
Administrative Contracting Officer (letter only)
Audit Group Files

REPORT

FOR

TASK ORDER NUMBER 3021
QUALITY ASSURANCE SUPPORT FOR THE RI/FS LIBBY ASBESTOS SITE AT OU3

2014 POLARIZED LIGHT MICROSCOPY (PLM)
INTER-LABORATORY AND PERFORMANCE EVALUATION SAMPLE (PES)
RESULTS REPORT

Prepared by:

The Data Auditing Group
Quality Assurance Technical Support Program
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June 1, 2015

QATS Contract Number: EP-W-10-033

Prepared for:

Christina Progess
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EXECUTIVE SUMMARY

The Task Order 3021 2014 OU3 Polarized Light Microscopy (PLM) Inter-Laboratory (IL) study for the RI/FS Libby Superfund Asbestos Program was coordinated in January of 2015 by EPA Region 8 and Quality Assurance Technical Support (QATS) Program personnel. A total of eight (8) soil samples analyzed in 2014 were selected by QATS personnel for the 2014 OU3 PLM IL study. These eight (8) samples, with eight (8) IL analyses by PLM-VE and one (1) by PLM-Grav represent approximately 4.9% of the 184 total OU3 PLM analyses in 2014, exceeding the EPA 1% IL frequency requirement. The samples selected had been originally analyzed by PLM Visual Estimation (PLM-VE) and PLM Gravimetric (PLM-Grav) by two (2) of the four (4) asbestos laboratories supporting EPA Region 8 Libby OU3 site activities. The eight (8) IL samples were analyzed by the four (4) OU3 support laboratories for PLM-VE, and one (1) IL sample was analyzed by PLM-Grav. Following analysis, the laboratories submitted the IL results for input into the OU3 Project database, via an EDD, and QATS personnel conducted the result comparisons.

PLM Performance Evaluation Samples (PESs) from the USGS were also used to support this annual OU3 PLM IL study. Two sets of PESs, one at low concentration and the other at a higher concentration were distributed to each of the participating laboratories during the first and second combined, third, and fourth quarters. The results were evaluated as an IL study, with the true values used as the original analysis.

The IL results were evaluated two ways, overall (i.e., OU3 program-wide) and between laboratories. The reports values were placed in bins and evaluated for concordance per Libby Laboratory Modification LB-000073C, effective December 7, 2012.

Potential weaknesses for consideration in the review of these study results include: only two (2) of the four (4) laboratories performed original analyses on the selected samples; one (1) of the laboratories involved in this study accounted for half of the sample analyses evaluated, and few data points were derived from the study, limiting the significance of trending and results conclusions.

OU3 program-wide results are summarized as follows:

- Six (6) of the eight (8) OU3 PLM-VE IL results (75%) were found to be in concordance with the original analyses, one (1) of eight (8) results (12.5%) was weakly discordant, and one (1) of the eight (8) results (12.5%) was strongly discordant.
- For OU3 PLM-VE, the 12.5% weakly discordant results place the IL data in the EPA-defined “Good” category (<20%) for weakly discordant results, and the 12.5% strongly discordant IL results place the data in the “Poor” category (>10%) for strongly discordant results.
- Each of the discordant results were bias high in the IL analyses. The single strongly discordant result was bias high due to the IL laboratory reporting a 1% or higher level of LA (Bin C), and the original laboratory reporting a trace level of LA (Bin B1). No trends were evident.
- For the single 2014 OU3 PLM-Grav sample, the original laboratory reported the presence of LA at 19%, while the IL analysis resulted in only 6% LA presence, resulting in a relative percent difference of 101%.
- For the PES results, eight (8) of the 22 results (36%) were found to be concordant with the true values, and the other 14 were weakly discordant (64%). None of the PES results were strongly discordant.

Between-laboratory results are summarized as follows:

- The weakly discordant results of 12.5%, 0.0%, and 0.0% for EMSL04, EMSL22, and EMSL27, respectively, in the 2014 OU3 PLM-VE IL evaluation fall into the EPA-defined "Good" category (<20%) and the weakly discordant results from EMSL03 of 25.0% are in the "Acceptable" (20-40%) category. Two of the four laboratories are considered "Good" (<5%), with no strongly discordant results. EMSL03 and EMSL04, the two laboratories responsible for the single strongly discordant IL sample pair in the 2014 OU3 PLM-VE IL study, are classified as "Poor" (>10%) for strongly discordant results.
- For PES analyses, one of the four participant laboratories (EMSL03) reported results that were concordant with the true values for five (5) of the six (6) low and high PESs, one laboratory (EMSL04) reported weakly discordant results for 50% of the PESs analyzed, and two laboratories (EMSL22 and EMSL27) reported weakly discordant results for all of the low and high-level PESs analyzed.

BACKGROUND

Polarized light microscopy using the visual area estimation technique (PLM-VE) is used for semi-quantitative analysis of asbestos in soil or soil-like samples from the Libby Superfund site. The reference document providing specifications for Libby PLM sample analyses is SOP SRC-LIBBY-03; changes from this SOP are specified in Laboratory Modification LB-000097. The results of PLM-VE analyses are reported in the form of "Bins" that categorize the concentration levels of Libby amphibole (LA) identified in samples, and are based on the analysts' visual evaluations. PLM-VE analyses, with the exception of Bin C which is reported as a percentage (%), are semi-quantitative; therefore, they do not yield specific concentrations or counts of LA. The four bins for PLM-VE are defined in **Table 1**.

Table 1 – Libby PLM-VE Bin Definitions

Bin	Libby Amphibole Level Detected
A	Not detected
B1	Detected below 0.2%, by mass fraction
B2	Detected at or above 0.2% but below 1%
C	Detected at or above 1%

One of the QA/QC tools used by EPA in determining the consistency of PLM-VE results generated for the Libby Asbestos Superfund site is through the use of inter-laboratory (IL) analyses. For PLM IL analyses, a separate Fine Ground (FG) aliquot of a previously-analyzed sample is analyzed by a different laboratory, and the Bin results are compared. EPA has defined the concordance levels for comparisons of paired original PLM-VE analysis results and IL results, as shown in **Table 2**:

Table 2 – Libby PLM-VE IL Concordance Definitions

Concordance Level	Comparison between Original and IL Analyses
Concordant	Same bins reported for original and IL analyses
Weakly Discordant	Reported bins differ by one level (e.g., A vs. B1, or C vs. B2)
Strongly Discordant	Reported bins differ by more than one level

In Libby Laboratory Modification LB-000073C, effective December 6, 2012, EPA established program-wide goals for PLM-VE IL sample analyses as shown in **Table 3**:

Table 3 – Libby PLM-VE IL Program-wide Goals

Concordance Level	Good	Acceptable	Poor
Percent of IL pairs ranked as strongly discordant	<5%	5-10%	>10%
Percent of IL pairs ranked as weakly discordant	<20%	20-40%	>40%

PROCESS FOR EVALUATING PLM-VE INTER-LABORATORY ANALYSES

The frequency goal of OU3 PLM IL analyses established by EPA is one percent (1%) of the original samples analyzed during 2014, per Bin category for each individual laboratory. Note that the sample selection process for the IL study involves rounding Bin categories up to the nearest whole number, by laboratory, to meet the EPA-established requirement, generally resulting IL sample analyses at a frequency of greater than 1%. For example, if one laboratory had two (2) Bin B2 results for original samples, one (1) Bin B2 sample would be selected for the IL study, so as to ensure that the 1% frequency requirement is met. A rotating sequence, provided as **Attachment 1** to this report, is used for distributing IL samples so that each laboratory will, over time, receive IL samples originally analyzed by every other laboratory.

The analytical results for original and IL analyses are retrieved from the Libby OU3 Project database and the analyses are paired based on the sample identification (ID) number (i.e., both analyses will have the same sample ID, but the aliquot suffix identifier differs [FG1, FG2, etc.]) Comparisons are then tabulated to display the concordance of the paired analyses. Since the semi-quantitative results of PLM-VE analyses are reported as one of the four semi-quantitative Bins, A, B1, B2, or C, the comparison consists of identifying those paired analysis results reporting the same bins (concordant data) and those paired analyses reporting bins that differ by one (weakly discordant) or two to three (strongly discordant) bin levels. Each of the paired analyses is included in the program-wide assessment. For assessment of individual laboratories, the paired analyses are evaluated in both directions: comparing original laboratory analyses against IL analyses and comparing IL analyses against original laboratory analyses. As such, the total number of paired analyses in individual laboratory evaluations is twice that for the program-wide evaluation.

The discordance direction and magnitude are also evaluated utilizing the evaluation techniques outlined in Laboratory Modification LB-000073C, and as illustrated in the **Table 4**:

Table 4 – Libby PLM-VE IL Concordance Analysis

		IL Analysis			
		Bin A	Bin B1	Bin B2	Bin C
Original Analysis	Bin A	0	-1	-2	-3
	Bin B1	+1	0	-1	-2
	Bin B2	+2	+1	0	-1
	Bin C	+3	+2	+1	0

Weakly discordant pairs are assigned a value of -1 or +1 based on the direction of discordance. Strongly discordant pairs are assigned positive (+) and negative (-) values of 2 or 3, depending on the direction and magnitude of the difference in the reported bins. As defined in Laboratory Modification LB-000073C, positive values are assigned to original analyses which are reported as a higher bin, while negative values are assigned to IL analyses that are reported as a higher bin. Bin C is considered the highest bin with a presence of LA detected at 1% or more, and Bin A is considered the lowest bin with LA not detected (ND). If the level of LA in the IL analysis is lower (closer to Bin A) than the level in the original analysis, then the direction is positive, and the original analysis is considered bias high. For example, when comparing an IL analysis reported as Bin A (ND) with an original analysis reported as Bin B1 (detected below 0.2%), the

difference in the number of bins is 1 and the discordance value is +1, showing that the original laboratory was bias high when compared with the IL analysis.

The discordance directions and magnitudes are tabulated for the OU3 overall program and for each laboratory. The tabulations by laboratories are used for trend analysis. If a laboratory were to have a bias to reporting either lower or higher bins relative to the other laboratories, the average of the discordance values for that laboratory would deviate from zero. Such a bias would also be identifiable by opposing discordance directions when comparing IL data where that laboratory performed the original analyses versus when it performed the IL analyses. For example, if one laboratory's data were persistently low, then the discordance direction would be negative when that laboratory performed the original analyses (other laboratories would later report higher bins) while the discordance direction would be positive when that laboratory performed the IL analyses (other laboratories would have reported higher bins in the original analyses).

An additional evaluation of IL data is performed by grouping Bins B1, B2, and C together (detected LA, at any concentration) for comparison against Bin A (no LA detection reported). The purpose of this evaluation is to determine if any single laboratory has a higher propensity for detecting or not detecting LA relative to the laboratories as a group.

2014 OU3 PLM IL RESULTS – PROGRAM-WIDE

This evaluation represents PLM analysis data entered into the Libby OU3 Project database during 2014.

The four laboratories shown in **Table 5** performed PLM-VE and PLM-Grav analyses of samples for OU3 in 2014, and/or participated in the 2014 OU3 PLM IL study. Presented in the table, by laboratory, are the total number of OU3 soil samples analyzed during 2014, along with the number of samples selected for the 2014 OU3 PLM IL study.

Table 5 – Laboratories Participating in the 2014 OU3 PLM-VE IL Study

Laboratory Code	Name, Location	2014 Samples	Samples Selected for IL Analysis	% of Total
EMSL03	EMSL Analytical, Inc., New York, NY	0	NA	NA
EMSL04	EMSL Analytical, Inc., Cinnaminson, NJ	70	4	5.7%
EMSL22	EMSL Analytical, Inc., Denver, CO	0	NA	NA
EMSL27	EMSL Analytical, Inc., Libby, MT	57	4	7.0%
Totals:	**4 Laboratories**	**127**	**8**	**6.3%**

To assist in the understanding of how samples are distributed between the laboratories, the distribution sheet for the 2014 OU3 PLM IL study is provided as **Attachment 1**. Note that, although the EMSL03 and EMSL22 laboratories did not analyze any samples in 2014, they did participate in the IL and PES analyses related to this study. Due to low bias results provided by EMSL27 in its analyses of three (3) samples used in this IL study, the samples were reanalyzed by EMSL04. It was determined by EPA that the reanalyses performed by EMSL04 are to be treated as the original "NOT QC" sample results, as represented herein, and the associated analyses provided by EMSL27 were rejected. The memo entitled "*2014 Commercial Logging, Nature & Extent, and Geotechnical Validation and Quality Control Review (Revision, February 2015)*" submitted to EPA on February 19, 2015 further expands upon the EMSL27 analyses issues.

A total of eight (8) original analyses were selected for OU3 PLM-VE IL analysis for the 2014 study, which represents 5.0% of the 159 samples analyzed in 2014. The composite PLM-VE results across all laboratories for this program-wide evaluation are summarized in **Table 6**.

Table 6 – Comparison of OU3 PLM-VE IL and Original Analysis Bins: Composite Results Across All Laboratories for 2014

		Comparison as Total Number of Analyses				
		Inter-laboratory Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	1	0	0	0	**1**
	Bin B1 (Tr)	0	1	1	1	**3**
	Bin B2 (<1%)	0	0	1	0	**1**
	Bin C (≥1%)	0	0	0	3	**3**
	Totals:	**1**	**1**	**2**	**4**	**8**

	# of Samples	% of Samples
Total Pairs	8	100.0%
Concordant	6	75.0%
Weakly Discordant	1	12.5%
Strongly Discordant	1	12.5%

As illustrated in **Table 6**, six (6) of the eight (8) IL pairs (75.0%) were in concordance and two (25.0%) were ranked as discordant, with one (1) considered weakly discordant (12.5%) and one (12.5%) considered strongly discordant. Of the six (6) concordances, one sample was ND and five (5) were detects. The single weakly discordant pair was considered bias high in the IL analyses. The single strongly discordant sample was reported as containing more LA (Bin C) in the IL analysis when compared with the original analysis in which trace amounts of LA (Bin B1) were reported. Due to the low number of samples evaluated, no significant trends related to bias are identified for the original vs. IL analyses comparison, though in each case of discordance, the IL analyses reported more LA than the original laboratory.

The weakly discordant results (12.5%) fall into the “Good” range of <20% for EPA-defined program-wide performance. One (1) IL analysis pair was identified as strongly discordant (12.5%; red shading) falling into the EPA-defined “Poor” category for strong discordance at <10%.

As calculated from the equation presented in Laboratory Modification LB-000073C, average concordance is a summary statistic which combines data across laboratories to determine bias tendencies between original and IL analysis results. From the **Table 6** data, an average concordance of -0.38 was calculated, which shows the original laboratory results to be bias low relative to the IL results.

One (1) of the eight (8) samples prepared in 2014 OU3 IL study for PLM-VE analysis yielded a coarse fraction which was analyzed using the PLM-Grav procedure following the same 1% selection frequency as was used with the PLM-VE samples and is described in the PLM-VE Laboratory Modification. For the OU3 study, the IL coarse sample is produced by sieving the archive sample, as described in Section 7.5 of SOP 16-ASB-06.02 Troy SPF Soil Preparation, and is not the same coarse sample used during the original PLM-Grav analysis. The composite PLM-Grav results across all laboratories for this OU3 evaluation are summarized in **Table 7**.

Table 7 – Comparison of OU3 PLM-Grav IL and Original Analysis Results: Composite Results Across All Laboratories for 2014

	Original Analysis		IL Analysis		
Sample	**Laboratory**	**Result (% LA)**	**Laboratory**	**Result (% LA)**	**RPD (%)**
GT-10030	EMSL27	19.1	EMSL04	6.3	101

As presented in **Table 7**, sample GT-10030 was confirmed as containing percentage levels of LA, though at different concentrations, with the original laboratory reporting 19.1% LA and the IL laboratory reporting 6.3% LA, resulting in an RPD of 101% which exceeds the ≤100% RPD laboratory concordance requirement . Note that this requirement, from PLM-VE SOP Section 16.4.6 for samples where the original and QC analysis result are ≥1% asbestos, laboratories should defer to their own internal QA/QC system (such as control charting or similar tool) to determine QC acceptance criteria.

Table 8 – Comparison of OU3 PLM-VE IL and Original Analysis Detections: Composite Results Across All Laboratories for 2014

		Comparison as Total Number of Analyses		
		Inter-lab Detection Type		
		Non-detect (Bin A)	Detect (Bins B1, B2, C)	**Totals:**
Original Detection Type	Non-detect (Bin A)	1	0	**1**
	Detect (Bins B1, B2, C)	0	7	**7**
	Totals:	**1**	**7**	**8**

Table 8 shows that, with the exception of a single IL sample pair which was confirmed as ND by both laboratory analyses, of the seven (7) original analyses in which asbestos was detected (Bins B1, B2, or C), all seven (7) of the associated IL results (100%) were also detects.

Contributing Factors to Discordant Results

In addition to the limited number of data points available for this evaluation, as well as the limited number of laboratories performing original and IL analyses, two factors that can contribute to inconsistencies and discordant results should be considered when evaluating OU3 PLM IL results, including how samples are processed and analyst subjectivity.

- Sample Processing. OU3 samples are sent through the Troy SPF to ensure proper grinding prior to being delivered to the laboratories for sample analyses. Though homogenization of all aliquots of a given sample is expected, sample splitting presents the potential for any given aliquot to differ from its counterparts. As such, a single additional structure present in one sample aliquot could mean the difference between a report of Bin A vs. Bin B1.
- Analyst Subjectivity. The microscopic evaluation process for PLM determination can be subjective, which may result in perception differences by individual PLM analysts performing the determinations. These differences and subjectivity may become even more pronounced when examining and measuring very low percentages of asbestos through comparison with reference standards, which themselves do not contain exact quantities, but estimated percentages.

2014 OU3 PLM IL RESULTS – COMPARISIONS BETWEEN LABORATORIES

Table 9 presents a comparison of concordant and discordant results for the individual laboratories participating in the 2014 OU3 PLM IL study.

Table 9 – Concordance of PLM-VE IL 2014 OU3 Original Analysis Bins with IL Analysis, by Laboratory

Concordance, by Laboratory	EMSL03	EMSL04	EMSL22	EMSL27	All 4 Labs
% Concordant (same bin)	50.0%	75.0%	100.0%	100.0%	75.0%
% Weakly Discordant (1 bin difference)	25.0%	12.5%	0.0%	0.0%	12.5%
% Strongly Discordant (2-3 bin difference)	25.0%	12.5%	0.0%	0.0%	12.5%
Total Number of Analyses Evaluated *	4	8	3	1	16

* Total number of analyses includes both original and IL analyses for the listed laboratory.
Note: EMSL27 did not perform any IL analyses, as laboratory was no longer in service at the time of 2014 OU3 IL sample distribution.

Consistent with **Table 6**, **Table 9** shows that 75.0% of the OU3 PLM-VE IL results across all laboratories are concordant, 12.5% are weakly discordant (in orange shading), and 12.5% are strongly discordant (red shading) with individual laboratory overall discordance ranging from 0.0% to 50.0%. As illustrated in the table above, EMSL04 and EMSL27 with 0.0% and EMSL04 with 12.5% of reported IL study results considered weakly discordant fall into the EPA-defined "Good" category (<20%) for OU3 PLM IL analyses. EMSL03 with 25.0% of weakly discordant results places the laboratory into the "Acceptable" (20-40%) category for weakly discordant results. EMSL03 and EMSL04 were the two laboratories responsible for the single strongly discordant IL sample pair in the 2014 OU3 PLM-VE IL study classifying the laboratories' as "Poor" (>10%) for this discordance category. EMSL22 and EMSL27, with no strongly discordant results reported fall into the "Good" (<5%) category.

Discordance comparisons have the potential to show systemic differences between laboratories. **Table 10** presents such a comparison for the 2014 OU3 PLM-VE IL study, when evaluating the original analyses against the IL analyses. With only eight (8) OU3 IL analyses and 12 comparisons possible (four laboratories each compared against the other three laboratories), **Table 10** is sparsely populated.

Table 10 – Comparison by Laboratory of Average Discordance, as Numbers of Bins: 2014 OU3 PLM-VE IL Analyses

		Inter-laboratory Analysis				
		EMSL03	**EMSL04**	**EMSL22**	**EMSL27**	**Weighted Average**
Original Analysis	**EMSL03**					
	EMSL04	-0.8 (n=4)		0.0 (n=3)		-0.4 (n=7)
	EMSL22					
	EMSL27		0.0 (n=1)			0.0 (n=1)
	Weighted Average	-0.8 (n=4)	0.0 (n=1)	0.0 (n=3)		-0.4 (n=16)

NA; No analyses performed (n=0).
IL analysis reported the higher bin (more LA).
Original analysis reported the higher bin.

As presented earlier in this report, the original analyses report lower bins than the IL analyses, overall. This is further reflected in **Table 10**, which shows that including all eight (8) IL analysis pairs from 2014 OU3, the weighted average of the difference between the original and IL analyses is -0.4 bin ranks. That is, on average the IL analyses are generally bias in reporting higher bins when compared with the original analyses by a magnitude of -0.4. Note that EMSL27 did not perform any IL analyses, as the laboratory was no longer in service at the time of 2014 OU3 IL study sample distribution.

As illustrated in **Table 10**, all laboratories showed neutral or negative average concordances when performing either original or IL analyses, indicating that higher levels of asbestos were reported in the OU3 IL analyses. Only a single original laboratory, EMSL04, resulted in a reporting bias (-0.4 weighted average concordance) between laboratories. A single IL analysis laboratory, EMSL03, resulted in a reporting bias (-0.8 weighted average concordance) between laboratories. EMSL03 and EMSL04's high weighted averages can be attributed, in part, to the strongly discordant result reported from the EMSL04-EMSL03 sample.

Few additional generalizations for individual laboratories can be substantiated with **Table 10**, given the limited quantity of data available. The potential cause of any low or high bias by individual laboratories is not discernible solely from statistical analysis of IL data, but if evaluated over an extended period of time these trends may merit further assessment from a program management perspective.

2014 OU3 PLM IL RESULTS – PES ANALYSES

Performance Evaluation Samples (PESs) are synthetic man-made test samples that are prepared by "spiking" a known concentration of asbestos into a media similar to that collected in the field. PLM PESs were used as part of the 2014 OU3 PLM IL Study. The PESs, along with the true values against which the laboratory results were evaluated, were provided by the United States Geological Survey (USGS) via the Troy SPF. Comprised of LA and prepared for analysis by PLM, the PES results are used to evaluate laboratory accuracy and analytical precision. The laboratories were required to use the same analytical method as the associated field samples.

PESs were analyzed by the four active IL participating laboratories in 2014, with the results located in the site-wide Libby Scribe database. Note that EMSL27 did not perform any analyses for the third set of 2014 PES samples as the laboratory was no longer in service at the time of 2014 OU3 IL sample distribution. Each laboratory analyzed two equivalent PESs, with one at a lower concentration and one at a higher concentration, as specified by EPA. **Table 11** presents the composite comparison of all PES results, low and high concentration, for the 2014 OU3 study. In the table, the PES True Value bins are presented on the left and the reported laboratory analysis bin results are presented across the top.

Table 11 – Comparison of PES True Values and Laboratory Analysis Bins: Composite Results Across All OU3 Laboratories for 2014

		Comparison as Total Number of Analyses				
		Laboratory Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
PES True Values	Bin B2 (<1%)	0	6	4	1	**11**
	Bin C (≥1%)	0	0	7	4	**11**
	Totals:	**0**	**6**	**11**	**5**	**22**

	# of Samples	% of Samples
Total Pairs	**22**	**100%**
Concordant	8	36%
Weakly Discordant	14	64%
Strongly Discordant	0	0%

As illustrated in **Table 11**, eight (8) of the 22 PES pairs (36%) were in concordance and 14 (64%) were ranked as discordant, with all 14 considered weakly discordant. The weakly discordant results fall into the "Poor" category of >40% for EPA-defined program-wide performance, while the strongly discordant results fall into the "Good" category at <5%. In all but one (1) instance, the laboratory results were biased low relative to the PES True Values.

Table 12 presents the lower concentration and higher concentration PLM-VE PES results for the 2014 OU3 analyses.

Table 12 – Summary Evaluation of OU3 PLM-VE PES Results for the 2014 Analyses

Laboratory	First PES Set		Second PES Set		Third PES Set	
	Low	High	Low	High	Low	High
EMSL03	Concordant	Weakly Discordant (-1)	Concordant	Concordant	Concordant	Concordant
EMSL04	Weakly Discordant (-1)	Weakly Discordant (-1)	Concordant	Concordant	Weakly Discordant (+1)	Concordant
EMSL22	Weakly Discordant (-1)	Weakly Discordant (-1)	Weakly Discordant (-1)	Weakly Discordant (-1)	Weakly Discordant (-1)	Weakly Discordant (-1)
EMSL27	Weakly Discordant (-1)	Weakly Discordant (-1)	Weakly Discordant (-1)	Weakly Discordant (-1)	NA	NA

Low: 0.5% concentration with PES of true value of Bin B2 **-1**: Laboratory reported a lower bin (less LA)
High: 2.0% concentration with PES true value of Bin C **+1**: Laboratory reported a higher bin (more LA)

As illustrated in **Table 12**, 14 of the 22 (64%) PESs analyzed in 2014 were discordant, seven (7) each from the low and high-level PESs. EMSL03 was the only laboratory to correctly identify the correct bins associated with the low concentration level PESs, in each PES set. For the lower level PESs, seven (7) of the 11 laboratory evaluations (64%) were considered weakly discordant, with all but one (1) reported by the laboratory as a lower bin (bias low) than the PES true value. Each laboratory reported weakly discordant results for at least one (1) of the lower and higher PES concentration levels. Like the low concentration PESs, seven (7) of the 11 high-level PES evaluations were found to be weakly discordant, with all laboratories being bias low.

Of the four laboratories evaluated for the 2014 PES study, EMSL03 reported the lowest percentage of discordant results (17%), followed by EMSL04 with 50% discordance, and EMSL22 and EMSL27 which reported no concordant results for 100% discordance. No results in any of the 22 PES evaluations were found to be strongly discordant.

CONCLUSIONS AND RECOMMENDATIONS

An OU3 PLM IL study was conducted for soil samples analyzed in 2014. For OU3 2014 overall, six (6) of the eight (8) PLM-VE IL pairs (75%) were in concordance and two (2; 25%) were ranked as discordant, with one (1) considered weakly discordant and one (1) considered strongly discordant. The weakly discordant results fall into the “Good” at less than 20% for EPA-defined program-wide performance, while the single strongly discordant result is categorized as “Poor” at greater than 10%. Due to the limited number of samples evaluated in this study, no specific trends, overall, can be attributed to original vs. IL analyses although both of the discordant results were bias high (more LA reported) in the IL analyses.

For the single OU3 PLM-Grav IL result, both original and IL analyses were reported containing LA; however the original analyses reported 19% LA while the IL analyses reported 6% LA. The resulting RPD of 101% exceeds the <100% RPD laboratory-defined requirement.

EMSL04, EMSL22, and EMSL27 with 12.5%, 0.0%, and 0.0% of reported IL study results, respectively, considered weakly discordant, fall into the EPA-defined “Good” category (<20%) for OU3 PLM IL analyses. EMSL03 with 25.0% of weakly discordant results places the laboratory into the “Acceptable” (20-40%) category. EMSL03 and EMSL04 were the two

laboratories responsible for the single strongly discordant IL sample pair in the 2014 OU3 PLM-VE IL study. Due to the limited number of samples analyzed by these two laboratories, the single strongly discordant result significantly impacted the laboratories' "Poor" (>10%) classification for this discordance category. EMSL22 and EMSL27 reported no strongly discordant results, identifying their results as "Good" (<5%) for this category.

Only 16 total analyses were performed for the 2014 OU3 PLM-VE IL study, and EMSL04 reported results for half of the samples. All laboratories showed neutral or negative average concordances when performing either original or IL analyses, with discordant results routinely reporting higher levels of LA in the OU3 IL analyses. Only a single original laboratory, EMSL04, resulted in a reporting bias (-0.4 weighted average concordance) between laboratories. A single IL analysis laboratory, EMSL03, resulted in a reporting bias (-0.8 weighted average concordance) between laboratories. EMSL03 and EMSL04's high weighted averages can be attributed, in part, to the strongly discordant result reported from the EMSL04-EMSL03 sample.

For the 2014 PLM IL PES evaluation, no laboratory results were found to be strongly discordant when compared with the PES true values. The PES study found eight (8) of the 22 reported results as concordant and 14 discordant. Thirteen (13) of the 14 total discordant results as one bin lower and one (1) was reported at a higher bin. Note that the small number of PESs analyzed limits the significance of the performance trending evaluation. The weakly discordant results (64%) fall into the "Poor" category of >40% for EPA-defined program-wide performance, while the strongly discordant results (0%) fall into the "Good" category at <5%.

All PESs evaluated during 2014 by EMSL22 and EMSL27 (100% discordance) were classified as weakly discordant, while EMSL04 reported three (3) weakly discordant results (50% discordance), and EMSL03 correctly identified the appropriate bin for all PESs analyzed.

The PLM-VE PESs analyzed to-date are only suggestive as to the quality of data produced by the laboratories, due to limitations in character and number of PESs used. No strongly discordant results have been reported with the analyses of PESs to-date. Future use of PESs on an on-going basis is strongly encouraged to enable better evaluation of potential deficiencies in laboratory reported results.

As detailed in the *2014 Commercial Logging, Nature & Extent, and Geotechnical Validation and Quality Control Review* (Revision, February 2015) technical memorandum submitted to EPA Region 9 on February 19, 2015, the EMSL27 laboratory reported a high number of low bias results. At the direction of EPA, EMSL04 re-analyzed 55 of the EMSL27 samples. Based on the results of these re-analyses, the subsequent EMSL04 results replaced the original EMSL27 analyses, which were rejected (i.e., the EMSL04 results were retained as the "NOT QC" analysis and the associated 55 EMSL27 results were R-qualified). The EMSL04 "NOT QC" results were utilized in this 2014 PLM IL study evaluation. As of November 2014, the EMSL27 laboratory has is no longer in operation.

The limited number of analyses evaluated in this report limits the conclusions that can be drawn from these assessments. An increased number of IL data would provide more useful, significant analyses of OU3 program and individual laboratory progress. Though corrective action is not required for weakly discordant results, as described in SOP SRC-LIBBY-03 and Laboratory Modification LB-000073C, it is recommended that the trends revealed in this study be further investigated through continued OU3 PLM IL studies and through on-site audits as a mechanism of management oversight by EPA over issues such as changes in performance category.

REFERENCES

CDM Smith, Libby Laboratory Modification LB-000073C, December 6, 2012.

ESAT Region 8, Libby Laboratory Modification LB-000097, June 11, 2014.

CB&I Federal Services LLC, Technical Memorandum *2014 Commercial Logging, Nature & Extent, and Geotechnical Validation and Quality Control Review (Revision, February 2015)*, February 19, 2015.

United States Environmental Protection Agency, *Analysis of Asbestos Fibers in Fine Soil by Polarized Light Microscopy*. Libby Asbestos Superfund Site Standard Operating Procedure SRC-LIBBY-03 (Revision 3), July 27, 2012.

ATTACHMENT 1

2014 OU3 PLM IL Study Sample Selection Sheet

Attachment 1 – 2014 OU3 PLM IL Study Sample Selection Sheet

	Laboratory for IL	Laboratory for IL	Laboratory for IL	Laboratory for IL	Laboratory for IL
Originating Laboratory	**Sample #1**	**Sample #2**	**Sample #3**	**Sample #4**	**Sample #5**
EMSL03	EMSL04	EMSL22	EMSL04	EMSL22	EMSL04
Sample No.					
EMSL04	EMSL22	EMSL03	EMSL22	EMSL03	EMSL22
Sample No.	GT-10124 (FG2)	GT-10033 (FG4)	GT-10008 (FG2)	GT-10075 (FG3)	
EMSL22	EMSL03	EMSL04	EMSL03	EMSL04	EMSL03
Sample No.					
EMSL27	EMSL03	EMSL04	EMSL22	EMSL03	EMSL04
Sample No.	GT-10083 (FG4)	GT-10030* (FG3&A)	GT-10076 (FG2)	GT-10129 (FG3)	

* Represents a sample with a coarse fraction to be analyzed by PLM-VE and PLM-Grav. Archived sample sieved at the laboratory and performed as described in Section 7.5 of SOP 16-ASB-06.02_Troy SPF Soil Preparation (available in the eRoom).

NOTE: Sample Numbers GT-10076, GT-10083, and GT-10129 were re-analyzed post-hoc by EMSL04 due to low reporting bias in the original analyses by EMSL27. At EPA direction, the EMSL04 post-hoc results replaced the EMSL27 “NOT QC” results. The EMSL04 results for these three (3) samples were utilized in this evaluation.

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May 25, 2016

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Document ID #: 3021-05252016-1

EPA CONTRACT NUMBER EP-W-10-033
TASK ORDER NUMBER 3021
QA SUPPORT FOR RI/FS AT THE LIBBY ASBESTOS SITE OU3

Dear Ms. Progess:

Enclosed please find the Annual Laboratory QA/QC Summary Report (2015). This report is a deliverable under Task 9 of Task Order 3021.

If you have any questions, please feel free to contact me.

Sincerely,



Lyndsay K. Gensler
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ANNUAL QA/QC SUMMARY REPORT (2015)

FOR TASK ORDER 3021
QUALITY ASSURANCE (QA) SUPPORT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) AT SITE OU3

Prepared by:

The Data Auditing Group
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May 25, 2016

QATS Contract Number: EP-W-10-033

Prepared for:

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ATTACHMENT

Attachment 1 - 2015 Slash Pile Burn and Understory Burn Validation and Quality Control Review (December 2015)
Attachment 2 - 2015 Trespasser and Surface Water and Groundwater Validation and Quality Control Review (April 2016)

Acronym List

<	Less Than
≥	Greater Than or Equal To
%	Percent
AHERA	Asbestos Hazard Emergency Response Act
ABS	Activity-based Sampling
AOC	Administrative Order on Consent
ASTM	American Society for Testing and Materials
CB	Compact Bundle
CB&I	Chicago Bridge and Iron Company
CBO	Compact Bundle Obscured
CC	Compact Cluster
CF	Compact Fiber
CFO	Compact Fiber Obscured
CH	Chrysotile
CI	Confidence Interval
COC	Chain-of-Custody
CSF	Close Support Facility
EDD	Electronic Data Deliverable
EDS	Electron Diffraction System
EPA	Environmental Protection Agency
ESAT	Environmental Services Assistance Team
f/cc	Fibers per Cubic Centimeter
f/mm^2	Fibers per Square Millimeter
FB	Field Blank
FBAS	Fluidized Bed Asbestos Segregator
FG	Finely Ground
GO	Grid Opening
IL	Inter-laboratory
ISO	International Organization for Standardization
ISSI	ISSI Consulting Group, Inc.
LA	Libby Amphibole
LB	Laboratory Blank
LC	Laboratory Coordinator
LDC	Laboratory Duplicate Cross-check
LDS	Laboratory Duplicate Self-check
MAS	Material Analytical Services, LLC
MB	Matrix Bundle
MBO	Matrix Bundle Obscured
MC	Matrix Cluster
MFL	Million Fibers per Liter
MF	Matrix Fiber
MFO	Matrix Fiber Obscured
NA	Not Applicable
NAM	Non-asbestos material
ND	Non-Detect
NIOSH	National Institute for Occupational Safety and Health
NVLAP	National Voluntary Laboratory Accreditation Program
OA	Other Amphibole
OU	Libby Operable Unit
PC	Point Count
PCM	Phase Contrast Microscopy
PCMe	PCM-Equivalent
PES	Performance Evaluation Sample
PLM	Polarized Light Microscopy
PLM-Grav	Polarized Light Microscopy Gravimetric
PLM-VE	Polarized Light Microscopy-Visual Area Estimation
QAM	Quality Assurance Manager
QAPP	Quality Assurance Project Plan
QA	Quality Assurance
QARD	Quality Assurance Reference Document
QATS	Quality Assurance Technical Support
QC	Quality Control
RD	Recount Different
RI/FS	Remedial Investigation/Feasibility Study
RP	Re-preparation
RPD	Relative Percent Difference
ROM	Record of Modification
RS	Recount Same
SAED	Selected Area Electron Diffraction
SAP	Sampling and Analysis Plan
s/cc	Structures per Cubic Centimeter
SOP	Standard Operating Procedure
SPF	Soil Preparation Facility
SRM	Solid Reference Material
TAT	Turn-around Time
TEM	Transmission Electron Microscopy
VA	Verified Analysis

1.0 Introduction

1.1 Purpose of this Report

This Annual Summary Report provides a summary of the Quality Assurance (QA) activities applied to asbestos sample data collected from Libby Superfund Site Operable Unit (OU) that occurred in 2015. The QC activities include the assessment of QC data, asbestos sample data validation, on-site laboratory audits, laboratory mentoring, and recommendations for improvements. Operable Unit 3 (OU3) is one (1) of eight (8) OUs designated by EPA for the Libby Remedial Investigation/Feasibility Study (RI/FS), which encompasses the mine property and surrounding areas impacted by releases from the mine, such as creeks, the Kootenai River, settling ponds, nearby forests, and Rainy Creek Road. The primary contaminant at OU3 is Libby Amphibole (LA) which is a form of asbestos present in the vermiculite that was mined at the site from 1919 to 1990. The Libby RI/FS at OU3 is being conducted through an Administrative Order on Consent (AOC) entered into by EPA with respondents W.R. Grace and Co. and Kootenai Development Corporation (KDC). This report was prepared for the U.S. Environmental Protection Agency (EPA) Region 8 by CB&I Federal Services LLC's Quality Assurance Technical Support (QATS) Program under Task 9 of Task Order 3-021, *QA Support for RI/FS at Site OU3.*

1.2 Report Outline

The 2015 OU3 QA/QC assessments described in this report include:

- QC Data Evaluated
- Asbestos Data Validation
- Laboratory On-site Audits
- Laboratory Mentoring Program
- Conclusions and Recommendations

2.0 QC Data Evaluated

The QC data described in this section are from samples which were collected from the OU3 site and analyzed in 2015 by the EPA contract laboratories listed in **Table 1**, below.

Table 1 – 2015 Libby Laboratories

Abbreviation	Name, Location
EMSL03	EMSL Analytical, Inc., New York, NY
EMSL04	EMSL Analytical, Inc., Cinnaminson, NJ
EMSL22	EMSL Analytical, Inc., Denver, CO
EMSL45*	LA Testing, Inc., Sierra Madre, CA
ESATR8	ESAT Region 8, Golden, CO

* Formerly Hygeia Laboratories, Inc. (HYGEIA)

In 2015 EPA initiated five studies, or investigation phases, at the OU3 site. These include Slash Pile Burn (SB), Understory Burn (UB), Trespasser (TS), Surface Water and Groundwater (WT), and Wildfire (SM) studies. **Table 2** presents the investigation phases with titles and the approximate dates in which they were performed at the Libby OU3 Superfund Site.

Table 2 – Libby OU3 Site Investigation Phases

Phase	SAP Phase Title	Date
Slash Pile Burn (SB)	Slash Pile Burn Activity-Based Sampling Quality Assurance Project Plan, Revision 1	May 2015
Understory Burn (UB)	Low-Intensity Prescribed Understory Burn Activity-Based Sampling Quality Assurance Project Plan, Revision 2	June 2015
Trespasser (TS)	Trespasser Activity-Based Sampling Quality Assurance Project Plan, Revision 0	September 2015
Surface Water and Groundwater (WT)	Surface Water and Groundwater Sampling and Analysis Plan/Quality Assurance Project Plan, Revision 1	April 2015
Wildfire (SM)	Wildfire Quality Assurance Project Plan, Revision 2	September 2015

In 2015 EPA Region 8 contracted 620 field sample analyses from Libby OU3. Of these 99 field samples were for the SB, 81 field samples were for the UB, 191 field samples were for the TS, 216 field samples were for the WT, and 33 field samples were for the SM studies. The samples varied in media (air, water, tree bark, duff, soil, and ash) and were analyzed by EPA contract laboratories using four different methods: Polarized Light Microscopy – Visual Estimation (PLM-VE), PLM Gravimetric (PLM-Grav), Phase contrast Microscopy (PCM), and Transmission Electron Microscopy (TEM).

To determine and document the quality of the asbestos analyses conducted in support of these phases, EPA requires Quality Control (QC) analysis to accompany field sample analysis at frequencies and criteria goals as specified in Libby OU3 Laboratory Modifications and Sampling and Analysis Plans (SAPs). Three types of QC analyses are applied to the Libby OU3 samples collected in 2015:

- Field QC Analyses
- Sample Preparation Facility (SPF) QC Analyses
- Laboratory QC Analyses

2.1 Field QC Analyses

Field QC samples were analyzed by the Polarized Light Microscopy-Visual Estimation (PLM-VE), PLM-Gravimetric (PLM-Grav), Transmission Electron Microscopy (TEM), and Phase Contrast Microscopy (PCM) analysis samples.

Four types of field QC analyses were applied to Libby OU3 samples analyzed in 2015: field duplicates, field blanks, lot blanks, and equipment rinsate blanks (EBs). These are defined as follows:

Field duplicate – A QC sample which is collected from the same approximate location as the original sample. As stated in the SB QAPP, “Because field duplicate samples are expected to have inherent variability that is random and may be either small or large, typically, there is no quantitative requirement for the agreement of field duplicates. Rather, results are used to determine the magnitude of this variability to evaluate data usability.”

Field blank – QC samples which are collected to evaluate potential contamination introduced during sample collection, shipping and handling, or analysis.

Lot blanks – QC samples which are selected at random from each group of cassettes to be used for collection of air samples. Before air filter cassettes can be used for asbestos sampling, though, the lot must be asbestos-free. The selected lot blanks are analyzed for asbestos fibers by the same method used for field sample analysis. If any asbestos fibers are detected on the lot blanks, the entire batch of cassettes is rejected. Only lots of filters with acceptable lot blank results are placed in the general supply area for use by project personnel.

EBs – QC samples which are collected to evaluate potential contamination that arises due to inadequate decontamination of sampling equipment.

Field QC are collected at the frequencies specified in Section B5 Quality Assurance/Quality Control of the project-specific QAPPs, and are specific to each media type. Due to the variability of field QC sampling frequency requirements for each OU3 phase in 2015, the following field QC sections are presented by sampling phase.

2.1.1 Slash Pile Burn (SB) Field QC

Table 3 presents the TEM field QC sample summary for field duplicates and field blanks related to the 2015 OU3 SB sampling event.

Table 3 – 2015 OU3 TEM Slash Pile Burn Field QC Summary

Media	Field Samples	Field Duplicates		Field Blanks	
		#	%	#	%
Air	62	NA	NA	2	3.2%
Ash[1]	3	NA	NA	NA	NA
Duff	5	1	20.0%	NA	NA
Tree Bark	3	1	33.3%	NA	NA
Totals	**73**	**2**	**25.0%**	**2**	**3.2%**

[1] Note that ash samples are prepared and analyzed in triplicate.

The frequency requirements for TEM field duplicates and field blanks specified by the QAPP were met for the SB sampling event (one field duplicate, each, for the duff and tree bark media; one field blank for each sampling day for air media). Both of the field blank samples analyzed by TEM for the SB event met the requirement criteria with non-detect results in both blanks.

The 2015 SB field duplicate results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). Of the two (2) field duplicate pairs analyzed for the 2015 SB project, one (1) was a tree bark and the other a duff sample. Neither (0%) of the field duplicate pair results were within the 90% CI when evaluating for Total LA, while both (100%) were within 90% CI when evaluating for PCMe LA structures only.

Table 4 presents the statistical comparison for the original (first evaluation) and field duplicate (second evaluation) Total LA analyses as identified by laboratory and sample number, as analyzed by the TEM-ISO method. Note that, the 90% CI requirement is not met where Rate 1 and Rate 2 differ.

Table 4 – 2015 OU3 TEM Slash Pile Burn Field QC Statistical Comparison Using Two Poisson Rates – Total LA

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	SB-00003	SB-00004	Tree Bark	55	9.75E+04	42	4.87E+04	[1.84-3.76] Rate 1 is greater than Rate 2
EMSL04	SB-00011	SB-00012	Duff	56	2.34E+06	28	9.65E+06	[0.32-0.73] Rate 1 is less than Rate 2

[a] Tree bark $(cm)^{-2}$, Duff $(g)^{-}$

As presented in **Table 4**, when considering Total LA results for both field duplicate samples, the first evaluation rate (Rate 1) was statistically different from the second evaluation rate (Rate 2).

Table 5 presents the statistical comparison for the original (first evaluation) and field duplicate (second evaluation) PCMe LA Structures analyses as identified by laboratory and sample number, as analyzed by the TEM-ISO method.

Table 5 – 2015 OU3 TEM Slash Pile Burn Field QC Statistical Comparison Using Two Poisson Rates – PCMe LA Structures

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	SB-00003	SB-00004	Tree Bark	7	9.75E+04	10	4.87E+04	[0.56-3.5] The rates are not different.
EMSL04	SB-00011	SB-00012	Duff	10	2.34E+06	6	9.65E+06	[0.16-1.12] The rates are not different.

[a] Tree bark $(cm)^{-2}$, Duff $(g)^{-}$

As presented in **Table 5**, when considering PCMe LA structure results only, for both SB field duplicate samples, the rates are not statistically different between the first and second evaluations.

Four (4) samples were collected and analyzed by Phase Contrast Microscopy (PCM) for the 2015 OU3 SB sampling event. **Table 6** presents the PCM field blank QC sample summary related to the 2015 OU3 SB sampling event.

Table 6 – 2015 OU3 PCM Slash Pile Burn Field Blank QC Summary

Media	Field Samples	Field Blanks	
		#	%
Air	4	1	25.0%

The single field blank analyzed by PCM for the SB event met the frequency and performance requirement criteria, with a non-detect result.

2.1.2 Understory Burn (UB) Field QC

Table 7 presents the TEM field QC sample summary related to the 2015 OU3 UB sampling event.

Table 7 – 2015 OU3 TEM Understory Burn Field QC Summary

Media	Field Samples	Field Duplicates		Lot Blanks		Field Blanks	
		#	%	#	%	#	%
Air	49	NA	NA	2	4.1%	4	8.2%
Ash[1]	3	NA	NA	NA	NA	NA	NA
Duff	5	1	20.0%	NA	NA	NA	NA
Tree Bark	4	1	25.0%	NA	NA	NA	NA
Totals	**61**	**2**	**22.2%**	**2**	**4.1%**	**4**	**8.2%**

[1] Note that ash samples are prepared and analyzed in triplicate.

The frequency requirements for TEM field duplicates, lot blanks, and field blanks specified by the QAPP were met for the UB sampling event (one field duplicate, each, for the duff and tree bark media; two lot blanks and one field blank each sampling day for air media). Lot blanks are collected to ensure air samples for asbestos analysis are collected on asbestos-free filters. All of the lot blank and field blank samples analyzed by TEM for the UB event met the requirement criteria with non-detect results in all six (6) blanks (2 lot blanks and 4 field blanks).

Of the two (2) field duplicate pairs analyzed for the 2015 UB project, one (1) was a tree bark and the other a duff sample. The 2015 UB field duplicate results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). Neither (0%) of the field duplicate pair results were within the 90% CI when evaluating for Total LA, while both (100%) were within 90% CI when evaluating for PCMe LA structures only.

Table 8 presents the statistical comparison for the original (first evaluation) and field duplicate (second evaluation) Total LA analyses as identified by laboratory and sample number, as analyzed by the TEM-ISO method.

Table 8 – 2015 OU3 TEM Understory Field QC Statistical Comparison Using Two Poisson Rates – Total LA

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	UB-00004	UB-00003	Duff	5	4.81E+06	23	9.60E+06	[0.04-0.26] Rate 1 is less than Rate 2
EMSL04	UB-00015	UB-00016	Tree Bark	7	9.60E+04	20	8.80E+04	[0.16-0.83] Rate 1 is less than Rate 2

[a] Tree bark $(cm)^{-2}$, Duff $(g)^{-}$

As presented in **Table 8**, when considering Total LA results for both field duplicate samples, the first evaluation rate (Rate1) was statistically different from the second evaluation rate (Rate 2).

Table 9 presents the statistical comparison for the original (first evaluation) and field duplicate (second evaluation) PCMe LA Structures analyses as identified by laboratory and sample number, as analyzed by the TEM-ISO method.

Table 9 – 2015 OU3 TEM Understory Field QC Statistical Comparison Using Two Poisson Rates – PCMe LA Structures

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	UB-00004	UB-00003	Duff	2	4.81E+06	0	9.60E+06	[0.0-6.93] The rates are not different
EMSL04	UB-00015	UB-00016	Tree Bark	0	9.60E+04	2	8.80E+04	[0.0-3.79] The rates are not different

[a] Tree bark $(cm)^{-2}$, Duff $(g)^{-}$

As presented in **Table 9**, when considering PCMe LA structure results only, for both UB field duplicate samples, the first and second evaluation rates are not statistically different.

2.1.3 Trespasser (TS) Field QC

Table 10 presents the PLM and TEM field QC sample summary for field duplicates and field blanks related to the 2015 OU3 TS sampling event.

Table 10 – 2015 OU3 PLM and TEM Trespasser Field QC Summary

Method/ Media	Field Samples	Field Duplicates (10%)		Field Blanks (1 per sampling day)		Lot Blanks (2 total)		Total Samples
		#	%	#	%	#	%	
PLM / Soil	37	3	8.1%	NA	NA	NA	NA	**40**
TEM / Air	60	NA	NA	3	5.0%	2	3.3%	**65**

Note: Frequency goal percentages for each QC sample type are presented within the parentheses (XX%) in the applicable column.

The frequency requirements for TEM field duplicates and field blanks specified by the QAPP were met for the TS sampling event (three (3) field duplicates for the soil media, with none required for air media; one (1) field blank for each sampling day for air media; and two (2) total lot blanks for air media). All of the field duplicate, field blank, and lot blank samples analyzed by TEM for the TS event met the requirement criteria, and exhibited ND results.

2.1.4 Surface Water and Groundwater (WT) Field QC

Table 11 presents the TEM field QC sample summary related to the 2015 OU3 WT sampling event.

Table 11 – 2015 OU3 TEM Surface Water and Groundwater Field QC Summary

Media	Field Samples	Field Duplicates (10%)		EBs (1 per day)		Field Blanks (10%)	
		#	%	#	%	#	%
Groundwater	20	2	10.0%	8	40.0%	1	5.0%
Surface Water	167	18	10.8%	0	0.0%	0	0.0%
Totals	**187**	**20**	**10.7%**	**8**	**4.3%**	**1**	**0.5%**

Note: Frequency goal percentages for each QC sample type are presented within the parentheses (XX%) in the applicable column.

The frequency requirements for TEM field duplicates and EBs specified by the QAPP were met for the WT sampling event. The frequency requirements for the field blanks, as specified in the WT QAPP Section B5.1.5, were not met with the areas of discordance highlighted in yellow in **Table 11** above. As specified in the WT QAPP, Section B5.1.5 "Field blanks will be collected at a frequency of 10% (1 per 10 field samples)," which accounts for 19 field blanks (10% of 185

field and field duplicate samples) in the surface water and two (2) field blanks (10% of 22 field and field duplicate samples) in the groundwater portions of the WT phase, though only a single field blank was reported with the groundwater data leading to a failure to meet the overall frequency goal percentage for the WT phase. The field blank and most of the EB samples analyzed by TEM for the WT event met the requirement criteria with non-detect results. Contamination was present in some of the EB analyses related to the groundwater portion of the WT phase, as is further described in **Section 2.1.4.1** and **Attachment 2** of this report.

Of the 20 field duplicate pairs analyzed for the 2015 WT project, two (2) were groundwater samples and 18 were surface water samples. The 2015 WT field duplicate results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). With the exceptions of those highlighted in yellow in **Tables 12 and 13** below, the field duplicate pair results were within the 90% CI when considering Total LA and PCMe LA structures only.

Table 12 presents the statistical comparison for the original (first evaluation) and field duplicate (second evaluation) Total LA analyses as identified by laboratory and sample number, as analyzed by the TEM-ISO method.

Table 12 – 2015 OU3 TEM Surface Water and Groundwater Field QC Statistical Comparison Using Two Poisson Rates – Total LA

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL03	WT-10007	WT-10008	Water	37	5.30E+05	36	5.20E+05	[0.69-1.58] The rates are not different
EMSL22	WT-10015	WT-10016	Water	1	4.90E+04	6	4.90E+04	[0.01-1.09] The rates are not different
EMSL22	WT-10032	WT-10033	Water	0	4.90E+04	1	4.90E+04	[0-19] The rates are not different
EMSL03	WT-10037	WT-10036	Water	42	5.20E+05	54	5.20E+05	[0.54-1.11] The rates are not different
EMSL22	WT-101119	WT-10120	Water	25	8.30E+05	25	9.40E+05	[0.53-1.46] The rates are not different
EMSL04	WT-10111	WT-10112	Water	31	1.00E+06	35	1.00E+06	[0.57-1.37] The rates are not different
EMSL04	WT-10089	WT-10090	Water	38	5.20E+05	27	5.20E+05	[0.9-2.21] The rates are not different
EMSL04	WT-10065	WT-10066	Water	33	3.00E+05	39	5.20E+05	[0.32-0.74] Rate 1 is less than Rate 2
EMSL22	WT-10145	WT-10146	Water	25	8.00E+04	26	1.40E+05	[0.33-0.91] Rate 1 is less than Rate 2
EMSL22	WT-10128	WT-10129	Water	1	4.90E+04	0	4.90E+04	[0-19] The rates are not different
EMSL03	WT-10057	WT-10058	Water	0	4.80E+04	1	5.00E+04	[0-18.24] The rates are not different
EMSL03	WT-10083	WT-10084	Water	23	5.80E+04	26	1.30E+05	[0.24-0.66] Rate 1 is less than Rate 2
EMSL04	WT-10098	WT-10099	Water	2	4.90E+04	2	4.90E+04	[0.11-9.24] The rates are not different
EMSL04	WT-10150	WT-10151	Water	27	5.20E+05	33	5.10E+05	[0.52-1.32] The rates are not different
EMSL04	WT-10163	WT-10164	Water	7	4.90E+04	1	1.30E+05	[0.42-58.6] The rates are not different
EMSL04	WT-10182	WT-10181	Water	28	1.20E+05	25	3.40E+05	[0.24-0.65] Rate 1 is less than Rate 2

Table 12 – 2015 OU3 TEM Surface Water and Groundwater Field QC Statistical Comparison Using Two Poisson Rates – Total LA

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	WT-10226	WT-10227	Water	28	8.40E+05	36	5.20E+05	[0.8-1.96] The rates are not different
EMSL04	WT-10178	WT-10179	Water	25	5.20E+05	26	5.20E+05	[0.58-1.58] The rates are not different
EMSL04	WT-10193	WT-10194	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different
EMSL04	WT-10199	WT-10200	Water	1	4.90E+04	0	4.90E+04	[0-19] The rates are not different

[a] Water $(L)^{-1}$

As presented in **Table 12**, for four (4) of the 20 field duplicate samples (highlighted in yellow), the first evaluation rate (Rate1) were statistically different from the second evaluation rate (Rate 2) when considering all total LA.

Table 13 presents the statistical comparison for the original (first evaluation) and field duplicate (second evaluation) PCMe LA Structures analyses as identified by laboratory and sample number, as analyzed by the TEM-ISO method.

Table 13 – 2015 OU3 TEM Surface Water and Groundwater Field QC Statistical Comparison Using Two Poisson Rates – PCMe LA Structures

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL03	WT-10007	WT-10008	Water	7	5.30E+05	3	5.20E+05	[0.66-10.66] The rates are not different
EMSL22	WT-10015	WT-10016	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different
EMSL22	WT-10032	WT-10033	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different
EMSL03	WT-10037	WT-10036	Water	7	5.20E+05	2	5.20E+05	[0.82-23.38] The rates are not different
EMSL22	WT-10119	WT-10120	Water	3	8.30E+05	1	9.40E+05	[0.29-68.42] The rates are not different
EMSL04	WT-10111	WT-10112	Water	3	1.00E+06	5	1.00E+06	[0.13-2.46] The rates are not different
EMSL04	WT-10089	WT-10090	Water	3	5.20E+05	3	5.20E+05	[0.18-5.53] The rates are not different
EMSL04	WT-10065	WT-10066	Water	6	3.00E+05	3	5.20E+05	[0.3-5.33] The rates are not different
EMSL22	WT-10145	WT-10146	Water	2	8.00E+04	2	1.40E+05	[0.06-5.28] The rates are not different
EMSL22	WT-10128	WT-10129	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different
EMSL03	WT-10057	WT-10058	Water	0	4.80E+04	0	5.00E+04	Both counts are 0; the rates are not different
EMSL03	WT-10083	WT-10084	Water	2	5.80E+04	4	1.30E+05	[0.03-1.2] The rates are not different
EMSL04	WT-10098	WT-10099	Water	0	4.90E+04	2	4.90E+04	[0-3.47] The rates are not different

Table 13 – 2015 OU3 TEM Surface Water and Groundwater Field QC Statistical Comparison Using Two Poisson Rates – PCMe LA Structures

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	WT-10150	WT-10151	Water	5	5.20E+05	7	5.10E+05	[0.23-2.21] The rates are not different
EMSL04	WT-10163	WT-10164	Water	1	4.90E+04	0	1.30E+05	[0-50.41] The rates are not different
EMSL04	WT-10182	WT-10181	Water	5	1.20E+05	7	3.40E+05	[0.08-0.77] Rate 1 is less than Rate 2
EMSL04	WT-10226	WT-10227	Water	6	8.40E+05	4	5.20E+05	[0.7-9.15] The rates are not different
EMSL04	WT-10178	WT-10179	Water	2	5.20E+05	4	5.20E+05	[0.07-2.69] The rates are not different
EMSL04	WT-10193	WT-10194	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different
EMSL04	WT-10199	WT-10200	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different

[a] Water $(L)^{-1}$

As presented in **Table 13**, when considering PCMe LA structure results only, a single field duplicate sample (highlighted in yellow), of the 20 total, resulted in first and second evaluation rates which were statistically different.

2.1.4.1 Equipment Rinsate Blank Contamination

Sampling equipment used to collect the 2015 OU3 soil characterization samples during the removal action were tested for the presence of asbestos through EB sample analyses.

As a result of contamination of the EB samples for the groundwater portion of the 2015 Libby OU3 WT sampling event, the concentrations for the associated samples required adjustment (See **Attachment 2**). The EB concentrations used to adjust the associated sample concentrations are presented in **Table 14**, below.

Table 14 – 2015 OU3 TEM Groundwater Field QC – Adjusted for Equipment Rinsate Blank Contamination

Total Structures						Total Structures > 10 um					
Sample #	N_b	GO	GOA	A_b	L_b	Sample #	N_b	GO	GOA	A_b	L_b
WT-10063	7	21	0.013	0.273	25.6	WT-10063	1	21	0.013	0.273	3.7
WT-10070	3	21	0.013	0.273	11.0	WT-10070	0	21	0.013	0.273	0.0
WT-10075	5	21	0.013	0.273	18.3	WT-10075	0	21	0.013	0.273	0.0
WT-10079	3	21	0.013	0.273	11.0	WT-10079	0	21	0.013	0.273	0.0
WT-10224	7	21	0.013	0.273	25.6	WT-10224	0	21	0.013	0.273	0.0
WT-10230	10	21	0.013	0.273	36.6	WT-10230	1	21	0.013	0.273	3.7
WT-10236	27	7	0.013	0.091	296.7	WT-10236	2	7	0.013	0.091	22.0
WT-10232	18	21	0.013	0.273	65.9	WT-10232	1	21	0.013	0.273	3.7
AVERAGE					61.3	AVERAGE					4.1

N_b Total number of countable structures
A_b Total area of filter blanks counted (Total GO*GOA)
L_b Background Loading s/mm2
GO Grid openings
GOA Grid opening Area

As described in Field Modification LFM-OU3-02, "The blank loading rates, denoted as L_b…are used to adjust all site samples (i.e., by subtracting the corresponding L_b from the reported site samples loading rate). If this adjustment resulted in a sample loading rate to become GO negative, this means it is not possible to rank the sample as a detect due to the equipment rinsate blank contamination." As shown in **Table 14**, as a result of the EB contamination, the average adjustment for the applicable samples as related to total structures was 61.3 s/mm^2, and the average adjustment to total structures > 10 um was 4.1 s/mm^2.

2.2 Sample Preparation Facility (SPF) QC Analysis

The SPF, approximately 19 miles from the Libby Superfund site in Troy, MT, is used by EPA to prepare samples from the Libby OU3 site for Polarized Light Microscopy (PLM) analysis. Soil samples delivered to the Troy SPF are processed in accordance with the latest revision of Standard Operating Procedure (SOP) ISSI-LIBBY-01, which includes procedures for drying, splitting, sieving, grinding, and archiving soil samples. Once processed, the resulting fine ground and/or coarse fractions are submitted to analytical laboratories for analysis by the Libby-specific PLM methods, PLM-Grav and PLM-VE. Grinding the samples to a uniform size prior to shipping for analysis removes the potential variability introduced by each laboratory grinding their own samples. In order to ensure proper sample handling and decontamination of soil sample preparation equipment at the Troy SPF, preparation QC samples are also collected. These samples are assigned unique field identifiers and are submitted blindly to the analytical laboratories along with the fine ground and/or coarse fractions processed from the field samples. The preparation QC samples that were utilized for PLM analyses at the SPF include preparation blanks, which include drying blanks and grinding blanks, and preparation duplicates. Note that grinding and drying blanks were not always performed specifically with OU3 samples; however, the required blanks were available in the site-wide database.

In 2015, the EPA Region 8 ESAT contractor, which operates the Troy SPF, prepared 66 OU3 field samples for analysis by PLM-VE, with 11 (17%) preparation duplicate samples and seven (7) grinding blanks and drying blanks each. The PLM-VE Troy SPF QC samples were prepared for four (4) of the five (5) 2015 phases, excluding the Surface Water and Groundwater (WT) phase. Forty six (46) field samples were prepared for the PLM-Grav method, with two (4.3%) preparation duplicates. All PLM-Grav Troy SPF QC samples were prepared in support of the Trespasser (TS) phase (see **Tables 15A and 15B**).

Table 15A – 2015 OU3 PLM-VE Troy SPF QC

Phase	Field Samples	Grinding Blanks[1]	Drying Blanks[2]	Prep Duplicates (Freq. Goal=5%)	
		No. of Samples	No. of Samples	No. of Samples	%
SB	6	2	2	3	50%
UB	6	2	2	4	67%
TS	45	1	1	2	4.4%
SM	9	2	2	2	22%
TOTALS	**66**	**7**	**7**	**11**	**17%**

[1] Processed at a frequency of 1 grinding blank per day.
[2] Processed at a frequency of 1 drying blank per drying oven used in the drying process.

Table 15B – 2015 OU3 PLM-Grav Troy SPF QC

Phase	Field Samples	Prep Duplicates (Freq. Goal=5%)	
		No. of Samples	%
TS	46	2	4.3%

2.2.1 Preparation Blank Frequency

The two (2) types of preparation blanks used at the Troy SPF, drying blanks and grinding blanks, are both made from asbestos-free quartz sand obtained from Premier Silica, in Colorado Springs, Colorado. The material was verified by ESAT Region 8 in 2013 to be suitable for use as a blank matrix, with all results reported in the Bin A, non-detect (ND) category.

2.2.1.1 Drying Blanks

Drying blanks are used to determine if cross-contamination is occurring during the sample drying process. Drying blanks consist of one (1) aliquot of asbestos-free quartz sand placed in each of the drying ovens used during the drying process. As shown in **Table 15A**, two (2) drying blanks were prepared with the SB, UB, and SM samples and one (1) was prepared with the TS samples. The drying blank samples were processed at a frequency of one (1) drying blank per drying oven used in the drying process, meeting the requirements for each project, and all were reported as non-detects (NDs; Bin A) by PLM-VE, suggesting that the procedures utilized to dry the samples did not introduce LA contamination.

2.2.1.2 Grinding Blanks

Like drying blanks, grinding blanks are used to determine if cross-contamination has occurred during or after the PLM grinding process. Grinding blanks consist of asbestos-free quartz sand and are processed at a frequency of one (1) per day. As shown in **Table 15A**, two (2) drying blanks were prepared with the SB, UB, and SM samples and one (1) was prepared with the TS samples. The grinding blank samples were processed at a frequency of one (1) grinding blank per day, meeting the requirements for each project, and all results were reported as ND (Bin A) by PLM-VE, suggesting that the procedures utilized to grind the samples did not introduce LA contamination.

2.2.2 Preparation Duplicate Comparison Results

Preparation duplicates are created by dividing a sample designated for PLM analysis into two (2) parts after drying, but prior to sieving and grinding. The frequency goal for preparation duplicates is 5.0%, which, as shown in **Table 15A and 15B** was narrowly missed for the TS phase due to the next field sample threshold not having been met to induce an additional preparation duplicate (60 for both PLM-VE and PLM-Grav, respectively). For the TS and SM phases, all of the preparation duplicate sample results were reported within one bin category of the parent sample by PLM-VE and PLM-Grav. For the SB and UB phases, all of the preparation duplicate sample results were reported as ND (Bin A) by PLM-VE for both the parent and duplicate samples resulting in 100% concordant results. The results of all 2015 OU3 preparation duplicate samples meet the requirement specified in the Soil Sample Preparation at the Troy SPF ESAT Region 8 SOP.

Note that although two (2) preparation duplicates were prepared by the Troy SPF for PLM-Grav analysis, no requirement to prepare such a sample is indicated in the SPF Soil Processing SOP

16-ASB-06.02. Comparison of the preparation duplicate results with the paired original field sample results is used to evaluate variability that may occur during preparation and analysis.

Table 16 – 2015 OU3 SPF PLM-VE Preparation Duplicates

		Comparison as Total Number of Analyses				
		Preparation Duplicate Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	8	1	0	0	**9**
	Bin B1 (Tr)	0	0	1	0	**1**
	Bin B2 (<1%)	0	1	0	0	**1**
	Bin C (≥1%)	0	0	0	0	**0**
	Totals:	**8**	**2**	**1**	**0**	**11**

	# of Samples	**% of Samples**
Total Pairs	**11**	**100%**
Concordant	8	73%
Weakly Discordant	3	27%
Strongly Discordant	0	0%

The results of the 2015 OU3 preparation duplicate processed soil samples are illustrated in **Table 16** above. Of the 11 preparation duplicate pairs analyzed by PLM-VE, 8 (73%) were concordant, three (27%) were weakly discordant, and none (0%) were strongly discordant. Of the two (2) preparation duplicates performed for PLM-Grav, both pairs were reported as trace (Tr), and 100% concordant. Though the SPF QC preparation duplicate analyses by PLM-VE for weakly discordant results of 25% exceeds the <20% requirement specified in the Soil Sample Preparation at the Troy SPF ESAT Region 8 SOP, the limited number of analytical results reduces the statistical significance of this evaluation. Given the small number of SPF PLM-VE preparation duplicates, the concordant results for these QC samples analyzed under each of the PLM methods is a good indication that the samples are being processed in a consistent manner.

2.3 Laboratory QC Analysis

A variety of laboratory-based QC analyses are performed for TEM and PLM sample analyses, which are used to assess the quality of the associated sample data. The contract laboratories used by EPA Region 8 to analyze Libby OU3 samples in 2015 are listed in **Table 1** of this report. The results of laboratory QC applied to samples collected from the Libby OU3 Superfund site and analyzed in 2015, are described for TEM and PLM in the sections below.

2.3.1 TEM Laboratory QC

The laboratory QC requirements for TEM analyses at the Libby OU3 site are patterned after the requirements set forth by NVLAP, which include:

- TEM Laboratory Blanks (LBs)
- TEM Recount Analyses (RS, RD, and VA)
- TEM Re-preparations (RPs)
- TEM Inter-laboratory (IL) Analyses

Each of these TEM laboratory QC types have Phase-specific, program-wide frequency goal requirements as a percentage of the field samples analyzed. **Table 17** provides summaries of the number and frequency of TEM laboratory QC analyses performed by laboratory and investigation phase in 2015.

Table 17 – 2015 OU3 TEM QC Sample Frequency

Phase	Lab	Media	Field Samples	Laboratory QC (% Frequency Goal)									
				LB (4%)		RS (1%)		RD (2.5%)		VA (1%)		RP (1%)	
				#	%	#	%	#	%	#	%	#	%
All	EMSL03	All	95	10	11%	1	1.1%	3	3.2%	2	2.1%	1	1.1%
All	EMSL04	All	207	17	8.2%	2	1.0%	6	2.9%	3	1.4%	3	1.4%
All	EMSL22	All	62	4	6.5%	1	1.6%	2	3.2%	1	1.6%	1	1.6%
All	EMSL45	All	50	8	16%	1	2.0%	4	8.0%	1	2.0%	2	4.0%
All	ESATR8	All	43	3	7.0%	1	2.3%	3	7.0%	1	2.3%	1	2.3%
Total			**457**	**42**	**9.2%**	**6**	**1.3%**	**18**	**3.9%**	**8**	**1.8%**	**8**	**1.8%**

As summarized in **Table 17,** a total of 42 LB, six (6) RS, 18 RD, and eight (8) each of RP and VA TEM analyses were performed in 2015 across the OU3 phases. A total of 20 IL samples were analyzed for the 2015 OU3 phases, representing a total frequency of 4.4%, which exceeds the overall program goal of 1% IL frequency.

As illustrated in **Table 17**, the TEM Laboratory QC sample frequency requirements for RS, RD, VA, and RP QC samples were exceeded (by total) for all individual laboratories and phases combined. The overall TEM QC frequency requirements for the 2015 OU3 sampling events, five (5) in total, met the OU3 QC requirements specified in Laboratory Modification LB-00029F Note that, at EPA direction, post-hoc analyses were completed by EMSL45 (one each of VA, RS, and RP) and EMSL22 (one RP) to meet the frequency requirements specified in Laboratory Modification LB-000029F, and were included in the table above.

2.3.1.1 TEM Laboratory Blanks

Laboratory Blanks (LBs) for TEM analysis are prepared from new, unused filters and analyzed using the same procedures as applied to field samples. The purpose of a LB is to determine the presence of asbestos contamination during sample preparation and analysis in the TEM laboratory. As specified in Libby Laboratory Modification LB-000029 and the applicable SAPs (see **Section 8.0 References** of this report), LBs are to be analyzed at a frequency of 4%. As illustrated in **Table 17**, all individual laboratories met the frequency goals for performing LBs, with 42 LBs analyzed for an overall frequency of 9.2%. No asbestos structures were found in any of the 2015 OU3 LB analyses.

2.3.1.2 TEM Recount Analyses

A recount analysis is an intra-laboratory re-examination of the original TEM grid openings (GOs) to verify the reported asbestos structure counts and characteristics. Three (3) types of recount analyses were performed by the TEM analytical laboratories:

- Recount Same (RS) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by the same microscopist who performed the initial examination.

- Recount Different (RD) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by a microscopist within the same laboratory who did not perform the initial examination.
- Verified Analysis (VA) – Similar to RD but with different documentation requirements, a VA must be recorded in accordance with the NIST (1994) protocol requirements.

Recount analyses were compared with the original analysis on a GO-by-GO, and structure-by-structure basis, with only those GOs that were able to be re-examined during the recount analysis included in the evaluation; in some instances grid openings may have been damaged with no alternates available. The degree of concordance between the original analysis and the recount analysis was evaluated based on the total number of countable LA structures observed for each grid opening that was re-examined. The concordance metrics, as defined in LB-000029, are summarized in **Table 18**.

Table 18 – TEM Recount Analysis Concordance Rules

Measurement Parameter	Concordance Rule
Number of LA structures within each grid opening	For grid openings with 10 or fewer structures, counts must match exactly. For grid openings with more than 10 structures, counts must be within 10 percent (%) as calculated as relative percent difference (RPD) (((maximum count – minimum count)/average count)*100%).
Asbestos class of structure (LA, OA, CH)	Must agree 100% on Chrysotile (CH) vs. amphibole. For assignment of amphiboles to LA or other amphibole (OA) bins, must agree on at least 90% of all amphibole structures.
LA Structure length	For fibers and bundles (all methods) and compact fiber (CF), compact bundle (CB), matrix fiber (MF), and matrix bundle (MB) structures (ISO), must agree within 1 micron (µm) or 10% (whichever is less stringent). For clusters and matrices (AHERA and ASTM) and compact fiber obscured (CFO), compact bundle obscured (CBO), compact cluster (CC), matrix fiber obscured (MFO), matrix bundle obscured (MBO), and matrix cluster (MC) structures (ISO), must agree within 2 µm or 20% (whichever is less stringent). The above percentages (%) are to be calculated as RPD (((1st analysis length – 2nd analysis length)/average length)*100%).
LA Structure width	For fibers and bundles (all methods) and CF, CB, CFO, CBO, MF, MB, MFO, and MBO structures (ISO), must agree within 0.5 µm or 20% (whichever is less stringent). For clusters and matrices (AHERA and ASTM) and CC and MC structures (ISO), there is no quantitative rule for concordance. The above percentage (%) is to be calculated as RPD (((1st analysis width – 2nd analysis width)/average width)*100%).
Presence of Sodium (Na) and Potassium (K)	There is no rule for concordance, but must be tabulated to identify potential trends that may indicate inconsistencies in recording practices or interpretation of spectra.

The TEM recount program-wide concordance criteria, as defined in LB-000029, are summarized in **Table 19**.

Table 19 – TEM Recount Program-Wide criteria

QC Sample Type	Metric	Program-Wide Criteria		
		Good	Acceptable	Poor
Lab Blanks	% with ≥1 asbestos structures	0% - 0.1%	0.2% - 0.5%	>0.5%
Recounts	Concordance on LA count*	>95%	85-95%	<85%
	Concordance on type (chrysotile vs. amphibole)	>99%	95%-99%	<95%
	Concordance on type (LA vs. other amphibole)	>99%	95%-99%	<95%
	Concordance on type (LA vs. NAM)	>99%	95%-99%	<95%
	Concordance on LA length	>90%	80%-90%	<80%
	Concordance on LA width	>90%	80%-90%	<80%
Re-preparations	Concordance on LA concentration/loading	>95%	90-95%	<90%

* Identified as Structures per GO throughout the applicable tables in this report.

Table 20 shows the TEM recount analysis results for the 18 RD, six (6) RS, and eight (8) VA OU3 analyses performed in 2015. The recount results for all media and phase were combined, and are shown by mineral class, structure length, structure width, and matched structures per grid opening.

Table 20 – 2015 OU3 TEM Intra-laboratory Recount Analysis Results – By Media

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Duff	LA vs. NAM	44	44	100%	Air	LA vs. NAM	126	126	100%
	LA vs. OA	44	43	98%		LA vs. OA	126	126	100%
	LA vs. CH	44	44	100%		LA vs. CH	126	126	100%
	Structures per GO[1]	21	14	67%		Structures per GO[1]	108	100	93%
	Structures per GO[2]	21	14	67%		Structures per GO[2]	183	175	96%
	Structure Length	44	44	100%		Structure Length	126	115	91%
	Structure Width	44	44	100%		Structure Width	126	122	97%
	Na/K Presence	44	35	80%		Na/K Presence	117	112	96%
Tree Bark	LA vs. NAM	29	29	100%	Water	LA vs. NAM	265	263	99%
	LA vs. OA	29	29	100%		LA vs. OA	265	262	99%
	LA vs. CH	29	29	100%		LA vs. CH	265	265	100%
	Structures per GO[1]	4	4	100%		Structures per GO[1]	30	16	53%
	Structures per GO[2]	4	4	100%		Structures per GO[2]	30	16	53%
	Structure Length	29	29	100%		Structure Length	265	250	94%
	Structure Width	29	29	100%		Structure Width	265	265	100%
	Na/K Presence	29	29	100%		Na/K Presence	265	197	74%
Ash	LA vs. NAM	51	51	100%	**Totals**	**LA vs. NAM**	**515**	**513**	100%
	LA vs. OA	51	51	100%		**LA vs. OA**	**515**	**511**	99%
	LA vs. CH	51	51	100%		**LA vs. CH**	**515**	**515**	100%
	Structures per GO[1]	4	3	75%		**Structures per GO[1]**	**167**	**137**	82%
	Structures per GO[2]	4	3	75%		**Structures per GO[2]**	**242**	**212**	88%
	Structure Length	51	51	100%		**Structure Length**	**515**	**489**	95%
	Structure Width	51	51	100%		**Structure Width**	**515**	**511**	99%
	Na/K Presence	51	51	100%		**Na/K Presence**	**506**	**424**	84%

LA – Libby Amphibole OA – Other Amphibole CH – Chrysotile NAM – Non-asbestos Material
Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.

As illustrated in **Table 20** above, the overall recount attributes for mineral class (LA vs. NAM, LA vs. OA, and LA vs. CH), structure length, and structure width were in the "Good" category, concordance on LA count (structures per GO, including non-detects) was in the "Acceptable" range at 88%, and concordance on LA count (structures per GO, excluding non-detects) was in the "Poor" category at 82%. It should also be noted that, for all recount pairs, there was 84% agreement on Chrysotile versus Amphiboles. Though there is no rule for concordance for the presence of Na/K, they are tabulated to identify potential trends which may indicate inconsistencies in recording practices or interpretation of spectra.

2.3.1.3 TEM Re-preparations

A TEM re-preparation (RP) is the re-analysis of a sample from which new grids have been prepared using a different portion of the same field sample filter used to prepare the original grids. The 2015 RP results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). RPs provide information on analysis precision, as well as within-filter variability.

Tables 21A and 21B present the statistical comparison for the original and RP analyses as identified by sample number for the 2015 OU3 phases, representing the total LA and LA greater than 10 evaluations, respectively. In 2015, eight (8) sample RPs were prepared out of 457 TEM samples analyzed across all OU3 phases and laboratories, for a frequency of 1.8% (see **Table 17**). Of these eight (8) RPs, none were found to be statistically different from the original analyses (see **Tables 21A and B**) with 100% of RP analyses results within the established criteria. When compared to the program-wide goals, the 100% acceptable RP analyses rates as "Good" (>95%). Note that, unless otherwise indicated, where the LA structure counts are different between the first and second evaluations, the 90% CI requirement is still met.

Table 21A – 2015 OU3 Re-preparation Statistical Comparison Using Two Poisson Rates – Total LA

Phase	Lab	Field Sample ID	Method	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
					Count	Sens [a]	Count	Sens [a]	
SB	EMSL04	SB-00139	TEM-ISO	Air	25	7.00E-03	27	4.49E-03	[0.88-2.37] The rates are not different
SB	ESATR8	SB-00237*	TEM-ISO	Air	0	3.51E-03	0	3.51E-03	Both counts are 0; the rates are not different
TS	EMSL03	TS-00052	TEM-ISO	Air	28	5.43E-03	25	9.46E-03	[0.39-1.05] The rates are not different
TS	EMSL04	TS-00037	TEM-ISO	Air	2	5.99E-03	5	5.99E-03	[0.06-1.93] The rates are not different
TS	EMSL45	TS-00084	TEM-ISO	Air	6	3.58E-02	8	4.78E-02	[0.19-1.56] The rates are not different
WT	EMSL04	WT-10182	TEM-ISO	Water	28	1.20E+05	27	2.00E+05	[0.39-1.01] The rates are not different
WT	EMSL22	WT-10034	TEM-ISO	Water	14	4.90E+04	22	4.90E+04	[0.34-1.17] The rates are not different
SM	EMSL45	SM-30169	TEM-ISO	Duff	1	9.81E+06	1	9.81E+06	[0.03-38.49] The rates are not different

Table 21B – 2015 OU3 Re-preparation Statistical Comparison Using Two Poisson Rates – LA >10

Phase	Lab	Field Sample ID	Method	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
					Count	Sens [a]	Count	Sens [a]	
WT	EMSL04	WT-10182	TEM-ISO	Water	5	1.20E+05	3	2.00E+05	[0.24-4.8] The rates are not different
WT	EMSL22	WT10034	TEM-ISO	Water	1	4.90E+04	2	4.90E+04	[0.02-6.39] The rates are not different

Sens [a]: Water $(L)^{-1}$, Tree bark $(cm)^{-2}$, Duff, $(g)^{-}$, Air $(CC)^{-1}$

2.3.1.4 TEM Inter-laboratory Analyses

Twenty (20) OU3 samples for the 2015 TEM re-preparation/inter-laboratory (RP/IL) analyses were selected in accordance with the most recent revision of Laboratory Modification LB-000029. These samples included 12 air samples, four (4) water samples, two (2) ash samples, and one each of tree bark and duff samples. The list was provided to each of the Libby contract laboratories, who then retrieved the samples from archive storage, prepared the TEM grids, analyzed the samples, prepared the paperwork, and shipped the grids to the laboratory selected to perform the IL analyses. The criteria for TEM IL analyses are the same as those for the other recount analyses, described in **Section 2.3.1.2** above. **Table 22** provides a summary of the overall 2015 OU3 TEM IL results, across all laboratories, by media.

Table 22 – 2015 OU3 TEM Inter-laboratory Analyses – All Matching Structures

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Water	LA vs. NAM	177	167	94%	Air	LA vs. NAM	103	102	99%
	LA vs. OA	177	177	100%		LA vs. OA	103	101	98%
	LA vs. CH	177	177	100%		LA vs. CH	103	103	100%
	Structures per GO[1]	18	8	44%		Structures per GO[1]	78	65	83%
	Structures per GO[2]	18	8	44%		Structures per GO[2]	119	106	89%
	Structure Length	177	158	89%		Structure Length	103	76	74%
	Structure Width	177	177	100%		Structure Width	103	102	99%
	Na/K Presence	177	93	53%		Na/K Presence	103	84	82%
Tree Bark	LA vs. NAM	8	7	88%	Ash	LA vs. NAM	46	45	98%
	LA vs. OA	7	7	100%		LA vs. OA	46	46	100%
	LA vs. CH	7	7	100%		LA vs. CH	46	46	100%
	Structures per GO[1]	9	2	22%		Structures per GO[1]	16	4	25%
	Structures per GO[2]	10	3	30%		Structures per GO[2]	16	4	25%
	Structure Length	8	8	100%		Structure Length	44	40	91%
	Structure Width	8	8	100%		Structure Width	44	44	100%
	Na/K Presence	8	6	75%		Na/K Presence	44	30	68%
Duff	LA vs. NAM	8	7	88%	**Totals**	**LA vs. NAM**	**342**	**328**	96%
	LA vs. OA	7	7	100%		**LA vs. OA**	**340**	**338**	99%
	LA vs. CH	7	7	100%		**LA vs. CH**	**340**	**340**	100%
	Structures per GO[1]	8	4	50%		**Structures per GO[1]**	**129**	**83**	64%
	Structures per GO[2]	10	6	60%		**Structures per GO[2]**	**173**	**127**	73%
	Structure Length	8	8	100%		**Structure Length**	**340**	**290**	85%
	Structure Width	8	8	100%		**Structure Width**	**340**	**339**	100%
	Na/K Presence	8	6	75%		**Na/K Presence**	**340**	**219**	64%

Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.

As presented in **Table 22**, with the exception of the following, IL analyses were all within the "Good" or "Acceptable" range of the program-wide criteria (**Table 19**) specified for Asbestos Class of Structure (LA vs. NAM, OA, or CH), Structure Length, Structure Width, and Structures per GO. The exceptions, as highlighted in **Table 22**, include:

- LA vs. NAM
    - Water – 94% of the results from LA vs. NAM structures exceeded the criteria of 95% concordance, which falls into the "Poor" category described in **Table 19**.
    - Tree Bark – 88% of the results from LA vs. NAM structures exceeded the criteria of 95% concordance, which falls into the "Poor" category described in **Table 19**.
    - Duff – 88% of the results from LA vs. NAM structures exceeded the criteria of 95% concordance, which falls into the "Poor" category described in **Table 19**.
- Structures per GO
    - Water – 44% of the GOs (excluding and including NDs, respectively) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 19**.
    - Tree Bark – 22% and 30% of the GOs (excluding and including NDs, respectively) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 19**.
    - Duff – 50% and 60% of the GOs (excluding and including NDs, respectively) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 19**.
    - Air – 83% of the GOs (excluding NDs) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 19**.
    - Ash – 25% of the GOs (excluding and including NDs, respectively) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 19**.
    - Totals – 64% and 73% of the GOs (excluding and including NDs, respectively) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 19**.
- Structure Length
    - Air – 74% of the results from matched LA structures were exceeded the structure length criteria, which falls into the "Poor" category (<80% concordance) described in **Table 19**.

In addition to the LB-000029 requirements, 70% (14 out of 20) RP/IL sample pair results were within the applicable NISTR (NVLAP) requirements.

The discordances presented above may be attributed to false negative results potentially caused by analyst error and/or misinterpretation, chemical variability among structures, tears in the film replicate causing the relocation of fibers, etc. Note that no program-wide criteria from **Table 18** apply to NaK.

Unmatched structures are those structures either identified by the RP laboratory, but not the IL laboratory, or those identified by the IL laboratory, but not the RP laboratory. **Table 23** below shows the unmatched structures by laboratory, unadjusted for ambiguous structures.

Table 23 – 2015 OU3 TEM IL Analyses Missed Structures – By Phase

Phase	Lab	Total Structures	Structures Missed	
			#	%
SB	EMSL03	10	0	0.0%
SB	EMSL04	38	3	7.9%
SB	ESATR8	28	4	14%
SB Phase Totals		**76**	**7**	**9.2%**
UB	EMSL03	29	2	6.9%
UB	EMSL04	94	27	29%
UB	EMSL45	73	1	1.4%
UB	ESATR8	31	1	3.2%
UB Phase Totals		**227**	**31**	**14%**
TS	ESATR8	24	2	8.3%
TS	EMSL03	22	0	0.0%
TS	EMSL04	19	1	5.3%
TS	EMSL45	14	2	14%
TS Phase Totals		**79**	**5**	**6.3%**
WT	EMSL22	111	27	24%
WT	EMSL03	85	14	16%
WT	EMSL04	187	29	16%
WT Phase Totals		**383**	**70**	**18%**
OVERALL TOTALS		**765**	**113**	**15%**

For the combined phases, matched structures were identified with 97% confirmation by EMSL45 (84/87 structures), 92% confirmation by ESATR8 (76/83 structures), 89% confirmation by EMSL03 (130/146 structures), 82% confirmation by EMSL04 (278/338 structures), and 76% confirmation by EMSL22 (84/111 structures) in the 2015 OU3 TEM IL study overall, combining for the confirmed identification of 652 of 765 total structures (85%). A total of 113 of 765 combined structures were missed (15%).

In the 2015 SB OU3 TEM IL study, matched structures were identified with 100% confirmation by EMSL03. For EMSL04 and ESATR8, three (3) and four (4) structures were missed resulting in 7.9% and 14% of structures missed, respectively. With seven (7) of 76 missed overall, 9.2% of structures were missed program-wide for the SB OU3 event.

In the 2015 UB OU3 TEM IL study, matched structures were identified for all participating laboratories ranging from 1.4% missed (EMSL45) to 29% missed (EMSL04). With 31 of 227 missed overall, 14% of structures were missed program-wide for the UB OU3 event.

In the 2015 TS OU3 TEM IL study, matched structures were identified with 100% confirmation by EMSL03. EMSL04 missed one (1) of 19 structures for a 5.3% missed LA structure rate. For

EMSL45 and ESATR8, two (2) structures each were missed resulting in 14.3% and 8.3% of structures missed, respectively. With five (5) of 79 LA structures missed overall, 6.3% of structures were missed program-wide for the TS OU3 event.

In the 2015 WT OU3 TEM IL study, matched structures were identified for all participating laboratories ranging from 15.5% missed (EMSL04) to 24.3% missed (EMSL22). With 70 of 383 missed overall, 18.3% of structures were missed program-wide for the WT OU3 event.

The limited number of structures found in the 2015 OU3 TEM IL samples do not warrant such evaluations, however additional considerations for laboratory performance can be made by excluding ambiguous structures, thereby basing the analyses upon only those results considered most appropriate. Reasons for structures to be identified as ambiguous include:

- Damaged (i.e., ripped or torn) grid openings preventing the IL laboratory from either locating or reconciling missed structures.
- Heavy particulate or melting of organic material causing replica to shift resulting in structures migrating into other GOs and onto grid bars.
- Structures burned during the original analyses resulting in inability to identify by EDS and SAED.
- Chemical variability along structures, causing significant differences in EDS spectra, and resulting in the same structure recorded as a NAM in one (1) analysis and LA in the other.

2.3.2 PLM Laboratory QC

Four types of PLM Laboratory QC analyses were performed on the 2015 OU3 samples, Laboratory Duplicate Samples (LDSs), Laboratory Duplicate Cross-check (LDC) samples, Laboratory Duplicate Cross-check Re-preparation (LDCR) samples, and PLM Recount Inter-laboratory (IL) analyses. These Laboratory QC analyses are defined as follows:

- LDS – A reanalysis of a sample by the same analyst.
- LDC – A reanalysis of a sample by a different analyst.
- LDCR – A re-preparation and reanalysis of a sample by a different analyst.
- IL – A separate Fine Ground (FG) aliquot of a previously-analyzed sample analyzed by a different laboratory, with the Bin results compared.

Table 24 below provides the OU3 program-wide concordance criteria for PLM-VE Recount Analyses. PLM-Grav recount results were compared based on a relative percent difference (RPD) calculation (RPD (%) = (Original - IL) / [(Original + IL)/2] * 100); however, to-date, no project-specific RPD acceptance criteria or OU3 program-wide goals have been established.

Table 24 – OU3 Program-Wide Criteria for PLM-VE Recount Analysis Concordance

Metric	Good	Acceptable	Poor
% of IL pairs ranked as strongly discordant	<5%	5-10%	>10%
% of IL pairs ranked as weakly discordant	<20%	20-40%	>40%

Table 25A and Table 25B provide a summary of the frequency at which these analyses were performed for OU3 2015 PLM-VE and PLM-Grav analyses, respectively. **Tables 26A and 26B** provide the concordance results between the original and recount analyses for the PLM-VE and

PLM-Grav analyses for LDS, LDC, and LDCR samples, respectively. **Tables 27A and 27B** present the PLM-VE and PLM-Grav analyses for the IL samples, respectively:

Table 25A – 2015 OU3 PLM-VE QC Sample Frequency by Laboratory

Phase	Lab	Field Samples	LDS (Freq. Goal=2%)		LDC (Freq. Goal=4%)		LDCR (Freq. Goal=4%)		IL (Freq. Goal=1%)	
			#	%	#	%	#	%	#	%
All	EMSL04	48	2	4.2%	3	6.3%	3	6.3%	4	8.3%
All	EMSL22	17	0	0.0%	1	5.9%	1	5.9%	4	24%
Total		**65**	**2**	**3.1%**	**4**	**6.2%**	**4**	**6.2%**	**8**	**12%**

Table 25B - 2015 OU3 PLM-Grav QC Sample Frequency by Project and Laboratory

Phase	Lab	Field Samples	LDS (Freq. Goal=2%)		LDC (Freq. Goal=8%)		IL (Freq. Goal=1%)	
			#	%	#	%	#	%
All	EMSL04	35	1	2.9%	4	11%	1	2.9%
All	EMSL22	17	1	5.9%	3	18%	2	12%
Total		**52**	**2**	**3.8%**	**7**	**13%**	**3**	**5.8%**

As shown in **Table 25A**, 18 total PLM-VE QC samples were analyzed by PLM-VE for the 2015 OU3 phases, including four (4) LDC and LDCR samples each, two (2) LDS samples, and eight (8) IL samples. **Table 25B** shows that of the 12 total QC samples analyzed by PLM-Grav for the OU3 2015 phases, seven (7) were LDC samples, two (2) were LDS samples, and three (3) were IL samples.

As highlighted in **Tables 25A** and **25B**, the number of PLM QC analyses performed in 2015, by laboratory was slightly below the required frequency in only one case, LDS by PLM-VE for EMSL22, in which the laboratory did not reach the 50 sample mark to prompt and LDS analysis by PLM-VE. The overall total frequencies for both PLM methods and all QC types met the specified 2015 OU3 frequency goals when the laboratory results are combined.

Table 26A shows the Recount Comparison results for the 10 PLM-VE LDC/LDCR/LDS analyses and **Table 26B** shows the Recount Comparison results for the nine (9) PLM-Grav LDC/LDS analyses performed for the OU3 PLM analyses conducted in 2015.

Table 26A – 2015 OU3 PLM-VE Recount Comparison of LDC/LDCR/LDS Results

		Comparison as Total Number of Analyses				
		LDC/LDCR/LDS Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	2	0	0	0	**2**
	Bin B1 (Tr)	0	5	0	0	**5**
	Bin B2 (<1%)	0	0	2	0	**2**
	Bin C (≥1%)	0	0	1	0	**1**
	Totals:	**2**	**5**	**3**	**0**	**10**

	# of Samples	% of Samples
Total Pairs	10	100%
Concordant	9	90%
Weakly Discordant	1	10%
Strongly Discordant	0	0%

Table 26B – 2015 OU3 PLM-Grav Recount Comparison of LDC/LDS Results

		Comparison as Total Number of Analyses				
		LDC/LDS Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	2	0	0	0	**2**
	Bin B1 (Tr)	0	4	0	0	**4**
	Bin B2 (<1%)	0	0	0	0	**0**
	Bin C (≥1%)	0	0	0	3	**3**
	Totals:	**2**	**4**	**0**	**3**	**9**

	# of Samples	% of Samples
Total Pairs	9	100%
Concordant	9	100%
Weakly Discordant	0	0%
Strongly Discordant	0	0%

As illustrated in **Table 26A**, 90% of the 10 LDS, LDC, and LDCR analyses performed in 2015 for OU3 were concordant, placing the PLM-VE analyses in the “Good” category (<20% and <5%) for weakly and strongly discordant results, respectively, as described in **Table 24**. The single weakly discordant result came from the EMSL04 laboratory analysis of an LDCR sample in the TS phase.

Table 26B shows that all nine (9) of the 2015 OU3 PLM QC results for the PLM-Grav method were found to be in concordance (100%), which places the analysis results in the “Good” category for weakly and strongly discordant results.

Table 27A – 2015 OU3 PLM-VE IL Comparison of Results

		Comparison as Total Number of Analyses				
		IL Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	0	1	0	0	**1**
	Bin B1 (Tr)	0	3	0	0	**3**
	Bin B2 (<1%)	0	0	0	2	**2**
	Bin C (≥1%)	0	0	0	2	**2**
	Totals:	**0**	**4**	**0**	**4**	**8**

	# of Samples	% of Samples
Total Pairs	8	100%
Concordant	5	63%
Weakly Discordant	3	38%
Strongly Discordant	0	0.0%

Table 27B – 2015 OU3 PLM-Grav IL Comparison of Results

		Comparison as Total Number of Analyses				
		IL Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	1	0	0	0	**1**
	Bin B1 (Tr)	0	1	0	0	**1**
	Bin B2 (<1%)	0	0	0	0	**0**
	Bin C (≥1%)	0	0	0	1	**1**
	Totals:	**1**	**1**	**0**	**1**	**3**

	# of Samples	% of Samples
Total Pairs	3	100%
Concordant	3	100%
Weakly Discordant	0	0.0%
Strongly Discordant	0	0.0%

As summarized in **Table 27A**, five (5) of eight (8), or 62.5%, of the 2015 OU3 PLM-VE IL samples are concordant and three (37.5%) are weakly discordant, and so are considered "Acceptable" and "Good" for weak and strong discordance, respectively. All three (3) of the 2015 OU3 PLM QC results for the PLM-Grav method (**Table 27B**) were found to be in concordance (100%), which places these IL analysis results in the "Good" category for weakly and strongly discordant results.

2.3.3 PCM Laboratory QC

In 2015, PCM Replicate Analysis QC samples were not analyzed in the only phase which included PCM samples for OU3 (4 samples in total), the SB phase for OU3. With no PCM QC RA samples prepared for the SB OU3 sampling event, the EMSL04 laboratory did not meet the 10% RA frequency requirement due to the low number of PCM field samples. The first replicate would have been initiated subsequent to the 10th sample analysis.

3.0 Asbestos Data Validation

In 2015, asbestos data from 596 Libby OU3 samples were validated by the QATS Program for media that included air, water, tree bark, duff, ash, and soil. An additional 154 OU3 inorganic water samples from 2015 were also validated for metals, chloride/sulfate, and alkalinity methods. Data validation of these samples was performed in accordance with the applicable method, SAP Analytical Requirements Summaries, Laboratory Modifications, and QATS Libby-specific data validation SOPs. The methods used for the 2015 OU3 asbestos analyses include ISO 10312 and EPA Method 100.2 for TEM, and PLM-VE and PLM-Grav for PLM analysis. The validation SOPs applied by the QATS Program include SOP QATS-70-094 (Validation of Polarized Light Microscopy (PLM) Data Deliverables), SOP QATS-70-095 (Validation of Libby Transmission Electron Microscopy (TEM) Data Deliverables), and SOP QATS-70-096 (Validation of Phase Contrast Microscopy (PCM) Data Deliverables).

The validation process involves evaluating asbestos data based on the analytical requirements in the applicable method or SOP used by EPA for analysis of samples collected at Libby Superfund Site OUs. Criteria that are evaluated and reported include sample receipt, sample

preparation, microscope alignment, instrument calibrations, stopping rules, structure recording and identification, blank analysis (if applicable), recount/re-preparation analysis (if applicable), and overall assessment of data.

Data are qualified if the daily or monthly calibrations associated with a sample set were not performed at the required frequency, or if the calibrations fail to meet method requirements. The equipment alignment and calibration documentation from each of the Libby support laboratories are provided separately on a quarterly basis. This calibration information is entered into laboratory-specific spreadsheets, where the data validators can access the information and verify that the calibrations were acceptable and performed at the correct frequency for the analyses being evaluated.

B-qualifiers for blank contamination are applied during the validation process for those blanks directly associated with field samples (i.e., provided with a particular deliverable selected for validation). In addition to those QC analyses reviewed during the validation of select deliverables, QC analyses are also reviewed and evaluated on a program-wide basis to ensure they are both performed at the required frequency and that they are within the applicable criteria. With the exception of QC analyses directly associated with a particular set of samples, laboratory QC analyses are performed to determine the quality of the collective data, and not the quality of any specific single set of samples.

The data validation process also includes a comparison of the information reported on the bench sheets to the entries in the associated laboratory method-specific EDDs to ensure that the reported results are complete, compliant with the specified methodology, and accurate. These comparison discrepancies are noted in a separate table of the data validation report. An EPA-approved QATS Data Review Checklist is used to document the data validation process.

All OU3 sample results were validated for the 2015 UB, SB, TS, and WT sampling phases. A total of 596 asbestos samples from 69 Laboratory Job Numbers, analyzed by five (5) different laboratories for the 2015 Libby OU3 analytical events and 154 inorganic samples from four (4) Laboratory Job Numbers from the 2015 OU3 WT phase, as analyzed by one (1) laboratory, were validated. The phases, laboratories, chain-of-custody (COC) numbers, Laboratory Job Numbers, method, matrix, and sample counts are presented, as follows, in **Table 28A** for the asbestos data and **Table 28B** for the inorganics data:

Table 28A – 2015 OU3 Asbestos Sample Data Validation Summary

Phase	Lab	COC Number	Laboratory Job Number	Method	Matrix	Total Sample Analyses	Field Samples (Not QC)	Total QC Samples
SB	EMSL04	25977	41514016	PCM	Air	3	3	0
SB	EMSL04	25999	41514332	PCM	Air	1	1	0
SB	EMSL04	15-1065_FG	41514140	PLM-VE	Soil	4	3	1
SB	EMSL04	15-1065_C	41514141	PLM-Grav	Soil	3	3	0
SB	EMSL04	15-1074_FG	41514566	PLM-VE	Soil	4	3	1
SB	EMSL04	15-1074_C	41514570	PLM-Grav	Soil	5	3	2
SB	EMSL04	25978	41514012	TEM	Tree Bark	5	4	1
SB	EMSL04	25979	41514018	TEM	Duff	7	6	1*
SB	EMSL04	25995	41514397	TEM	Air	6	5	1*

Table 28A – 2015 OU3 Asbestos Sample Data Validation Summary

Phase	Lab	COC Number	Laboratory Job Number	Method	Matrix	Total Sample Analyses	Field Samples (Not QC)	Total QC Samples
SB	EMSL04	25996	41514400	TEM	Air	6	5	1
SB	EMSL04	25993	41514414	TEM	Air	4	4	0
SB	EMSL04	25989	41514418	TEM	Air	6	6	0
SB	EMSL03	25990	41514422	TEM	Air	7	7	0
SB	EMSL03	25992	41514425	TEM	Air	7	6	1*
SB	EMSL03	25991	41514458	TEM	Air	7	6	1
SB	EMSL04	25997	41514462	TEM	Ash	10	9	1*
SB	EMSL03	26005	41514588	TEM	Air	7	7	0
SB	EMSL03	26004	41514595	TEM	Air	7	6	1
SB	ESATR8	25976	A150107	TEM	Air	2	2	0
SB	ESATR8	25994	A150108	TEM	Air	7	6	1
SB	ESATR8	26008	A150121	TEM	Air	5	4	1
SB Phase Totals						**113**	**99**	**14**
UB	EMSL04	15-1095	41515591	PLM	Soil	4	3	1
UB	EMSL04	15-1191	41519104	PLM	Soil	4	3	1
UB	EMSL04	270515JK01	41515450	TEM	Tree Bark	5	5	0
					Duff	6	5	1*
UB	EMSL04	260615JK02	41519119	TEM	Ash	9	9	0
UB	EMSL04	260615JK01C	41519128	TEM	Air	3	3	0
UB	EMSL04	260615JK01D	41519133	TEM	Air	4	3	1*
UB	EMSL04	260615JK01F	41519141	TEM	Air	3	3	0
UB	EMSL03	260615JK01J	41519144	TEM	Air	7	6	1
UB	EMSL04	260615JK01K	41519151	TEM	Air	4	4	0
UB	EMSL45	260615JK01B	38995150088	TEM	Air	7	6	1
UB	EMSL45	260615JK01E	38995150089	TEM	Air	3	3	0
UB	EMSL45	260615JK01H	38995150090	TEM	Air	4	4	0
UB	EMSL45	260615JK01I	38995150091	TEM	Air	8	7	1
UB	ESATR8	200515JK01	A150130	TEM	Air	2	2	0
UB	ESATR8	290515JK01	A150147	TEM	Air	5	5	0
UB	ESATR8	260615JK01A	A150228	TEM	Air	6	5	1
UB	ESATR8	260615JK01G	A150229	TEM	Air	6	4	2
UB Phase Totals						**90**	**80**	**10**
TS	EMSL04	15-1427_FG	41529321	PLM-VE	Soil	17	15	2
TS	EMSL04	15-1427_C	41529322	PLM-Grav	Soil	14	13	1
TS	EMSL04	15-1428_FG	41529333	PLM-VE	Soil	13	12	1
TS	EMSL04	15-1428_C	41529335	PLM-Grav	Soil	13	12	1
TS	EMSL22	15-1429_FG	221506241	PLM-VE	Soil	19	17	2
TS	EMSL22	15-1429_C	221506242	PLM-Grav	Soil	21	17	4

Table 28A – 2015 OU3 Asbestos Sample Data Validation Summary

Phase	Lab	COC Number	Laboratory Job Number	Method	Matrix	Total Sample Analyses	Field Samples (Not QC)	Total QC Samples
TS	EMSL03	230915JK01	31531899	TEM	Air	7	6	1
TS	EMSL03	230915JK02	31531900	TEM	Air	6	6	0
TS	EMSL04	220915JK03	41529347	TEM	Air	7	6	1
TS	EMSL04	220915JK04	41529357	TEM	Air	9	8	1
TS	EMSL22	240915JK02	221506264	TEM	Air	7	6	1
TS	EMSL22	230915JK03	221506265	TEM	Air	7	6	1
TS	EMSL45	230915JK03	451500387	TEM	Air	6	6	0
TS	EMSL45	240915JK01	451500389	TEM	Air	7	6	1
TS	ESATR8	220915JK01	A150500	TEM	Air	6	6	0
TS	ESATR8	220915JK02	A150501	TEM	Air	6	6	0
TS	ESATR8	240915JK04	A150502	TEM	Air	4	3	1*
					TS Phase Totals	**169**	**151**	**18**
WT	EMSL03	150415JK01	41511057	TEM	Water	13	12	1*
WT	EMSL04	160415DA01	41511063	TEM	Water	8	8	0
WT	EMSL22	200415JK01	41511388	TEM	Water	20	19	1*
WT	EMSL04	190415DA01	41511395	TEM	Water	8	7	1*
WT	EMSL03	230415JK01	41511862	TEM	Water	31	30	1*
WT	EMSL04	290415DA01	41512830	TEM	Water	31	31	0
WT	EMSL22	060515DA01	41513445	TEM	Water	32	31	1
WT	EMSL03/04	150515JK01	41514338	TEM	Water	32	31	1
WT	EMSL04	210515DA01	41514992	TEM	Water	17	16	1*
WT	EMSL04	210515JK01	41514996	TEM	Water	32	31	1*
					WT Phase Totals	**224**	**216**	**12**
					OVERALL TOTALS	**596**	**546**	**54**

Note: Ash samples are processed in replicates of 3 (i.e. 3 replicates for 3 samples = 9 analyses)

* A Reconciliation (RC) analysis was also performed on the QC sample due to discrepancies between the original and replicate analyses. RCs are not included in the table counts.

The 596 total asbestos samples validated for the UB, SB, TS, and WT phases consisted of 546 field samples and 54 QC samples. The QC samples consisted of RS, RD, LDS, VA, LDC, and LDCR samples, as presented in elsewhere in this report. Note that the RC and blanks associated with these projects were also validated.

No qualifiers were applied to any of the 372 2015 SB, UB, and TS phase asbestos samples validated. Qualifiers were applied to 23 of the 224 2015 WT event samples validated. All qualified samples were related to the three (3) laboratory jobs with equipment rinsate blank (EB) contamination. As a result of contamination of the EB samples for the 2015 Libby OU3 WT sampling event, three (3) WT Laboratory Job Numbers required re-validation (with “J” or “UJ” qualifiers applied to all samples) and resubmission of the revised reports. The laboratory jobs affected by EB contamination included 041511063, 041511395, and 041514992.

The bench sheet/EDD information comparisons found that of the 596 asbestos sample results validated, approximately 10% contained some type of bench sheet/EDD discrepancy. All of the identified discrepancies were considered by the validators as minor (i.e., typographical errors or omissions in fields) and as having no impact on the sample results. As verified by QATS personnel, the EDDs were corrected by the applicable laboratory personnel to reflect the correct information subsequent to this validation, and so no further action is required.

Table 28B – 2015 OU3 Inorganics Sample Data Validation Summary

Phase	Lab	COC Number	Laboratory Job Number	Method	Matrix	Total Sample Analyses	Field Samples (Not QC)	Total QC Samples
WT	EMSL04	150415JK01	11501931	Metals	Water	14	12	2
				Chloride/Sulfate		14	12	2
				Alkalinity		12	12	0
WT	EMSL04	160415DA01	11501932	Metals	Water	10	8	2
				Chloride/Sulfate		10	8	2
				Alkalinity		8	8	0
WT	EMSL04	190415DA01	11501987	Metals	Water	9	7	2
				Chloride/Sulfate		9	7	2
				Alkalinity		7	7	0
WT	EMSL04	200415JK01	11501931	Metals	Water	21	19	2
				Chloride/Sulfate		21	19	2
				Alkalinity		19	19	0
INORGANICS TOTALS						**154**	**138**	**16**

Note: Non-asbestos samples were analyzed in three (3) different ways (i.e. 20 samples in a non-asbestos job represent 60 analyses).

The 154 total inorganic metals, chloride/sulfate, and alkalinity samples validated for the WT phase consisted of 138 field samples and 16 QC samples. For the Metals and Chloride/Sulfate methods, MS/MSDs are included as QC.

Qualifiers were applied to 54 of the 154 2015 WT event samples validated. All qualified samples were related to the metals and chloride/sulfate methods, with a lack of serial dilutions performed being the main cause for qualification.

4.0 Laboratory On-site Audits

On-site audits of all laboratories and soil preparation facilities used by EPA for analytical support at the Libby Superfund Site were conducted in 2015. During this period, a total of six (6) on-site audits were performed as related to OU3, including five (5) asbestos laboratory audits and one (1) asbestos SPF audit. **Table 29** lists the audits performed by laboratory/facility, audit type, and date.

Table 29 – 2015 Asbestos Laboratory and Soil Preparation Facility On-site Audits

Laboratory	Location	Audit Type	Audit Date(s)
EMSL Analytical, Inc. (EMSL04)	Cinnaminson, NJ	Asbestos Laboratory	04/07-08/2015
EMSL Analytical, Inc. (EMSL03)	New York, NY	Asbestos Laboratory	04/14-15/2015
ESAT Region 8 (ESATR8)	Golden, CO	Asbestos Laboratory	05/11-12/2015
EMSL Analytical, Inc. (EMSL22)	Denver, CO	Asbestos Laboratory	05/14-15/2015
LA Testing, Inc. (EMSL45)*	Sierra Madre, CA	Asbestos Laboratory	09/17-18/2015
ESAT Region 8 SPF (ESATR8 SPF)	Troy, MT	Soil Preparation Facility	06/30/2015

* Formerly Hygeia Laboratories, Inc. (HYGEIA)

4.1 On-site Audit Process

On-site audits are used by EPA to verify that samples analyzed by their contract facilities are processed in accordance with EPA requirements. Each on-site audit involves the general elements of preparation, on-site support, and report generation, which are modified as needed to fit the type of audit being performed.

Preparation for asbestos laboratory audits typically involves ensuring the on-site audit checklist to be used is updated to reflect the latest methods and modifications required for Libby sample preparation and analysis; coordination with Region 8 to receive the most recent copies of the laboratory's SOPs, Quality Assurance Manual (QAM) and other needed documentation; and coordination with the EPA representative attending the audit with regard to travel logistics. If there are any anticipated problem areas based on prior evaluation of QC/QA data or validation reports, the auditor will discuss these with the EPA member of the Audit Team prior to the audit.

The on-site audit generally starts with an entrance debriefing to the laboratory regarding the areas to be evaluated and the anticipated duration of the audit. This is followed by evaluating areas throughout the laboratory to verify adherence to Libby project analysis requirements, the laboratory preparation and analysis SOPs, and adherence to the requirements in the laboratory QAM. The areas typically audited in an asbestos laboratory include: Sample Receipt, Log-in, Storage, and Chain-of-Custody (COC) procedures; Indirect and Direct Preparation of Samples; Transmission Electron Microscopy (TEM) Analysis; Polarized Light Microscopy (PLM) Analysis; Data Management; and Quality Control/Quality Assurance. As part of the QA/QC assessment, the laboratory's internal audit and air monitoring programs are evaluated. All laboratory staff involved with handling, preparing, analyzing, reporting, and performing QC on Libby samples are interviewed. Findings are identified and reported to the laboratory at the exit debriefing.

On-site audit reports detailing the findings are prepared and submitted to EPA typically within a month and, following EPA approval, are sent to the laboratories by EPA. Audited laboratories are required to provide corrective action responses to EPA regarding the on-site audit findings. Areas where findings were identified are evaluated during the subsequent on-site audit to determine the degree to which the laboratories have applied corrective action.

The results from the above-listed laboratory and SPF on-site audits performed in 2015 are summarized by the following sections:

- Deficiencies by Laboratory (5 laboratories)
- Laboratory Trends (5 laboratories)
- Deficiencies by Laboratory Process Area (5 laboratories)
- Laboratory Responses (5 laboratories)
- SPF Audits (ESATR8 SPF)
- Laboratory Internal Audits (5 laboratories)
- Air Monitoring (5 laboratories)

4.2 On-site Audit Deficiencies by Laboratory

A total of 15 deficiencies were identified from the five (5) laboratory on-site audits performed in 2015. Deficiencies from the SPF audit are not included in this total because it did not involve the preparation and analysis of asbestos samples. The results from the SPF on-site audit are discussed separately in Section 4.6. For the laboratory audits conducted in 2015, an average of three (3) deficiencies per audit was observed. The laboratory with the lowest number of on-site audit deficiencies was EMSL04 with one (1), and the laboratory with the highest number of deficiencies was EMSL45 (formerly HYGEIA) with seven (7). The 2015 Libby OU3 asbestos on-site audit deficiencies by laboratory are provided in **Table 30**.

Table 30 – 2015 Asbestos On-site Audit Deficiencies by Laboratory

Laboratory	Year	Total Deficiencies	Percentage
EMSL04	2015	1	7%
EMSL03	2015	2	13%
ESATR8	2015	2	13%
EMSL22	2015	3	20%
HYGEIA/EMSL45	2015	7	47%
Total		**15**	

4.3 Deficiency Trends by Laboratory

A deficiency comparison between the 2015 on-site audits and the same laboratories audited in 2014 was performed to determine corrective action trends. A total of 22 deficiencies were identified in the five asbestos on-site laboratory audits performed during 2014, as compared to the 15 defects observed in the on-site audits of the same five laboratories in 2015 (see **Table 31**). It should be noted that the both the 2014 and 2015 on-site audits were full 2-day audits.

Table 31 – Comparison of 2014 and 2015 On-site Audit Defects by Laboratory

	Deficiencies		Change In Defects per Audit	
Laboratory	2014	2015	Increase/(Decrease)	%Increase/(%Decrease)
EMSL04	6	1	(5)	(83%)
EMSL03	5	2	(3)	(60%)
ESATR8	2	2	0	0%
EMSL22	5	3	(2)	(40%)
HYGEIA/EMSL45	4	7	3	75%
Totals	**22**	**15**	**(7)**	**(32%)**
Average	**4.4**	**3.0**	**(1.4)**	**(32%)**

As **Table 31** shows, the average of 3.0 defects per on-site audit in 2015 represents a 32% decrease from the 4.4 average number of defects per on-site audit recorded in 2014. All five laboratories audited in 2014 and again in 2015 showed an equal number or decrease in the number of defects with the exception of EMSL45, which was audited as HYGEIA as part of the Libby Laboratory On-site Audit Program in 2014.

During the 2015 on-site audits, QATS personnel evaluated the defects identified in the previous audits to determine whether corrective action had been applied. **Table 32** provides a summary of the degree to which each laboratory addressed the deficiencies from the 2014 on-site audits. For all laboratories and the SPF, findings from the previous audit were at least partially addressed when reviewed during the on-site audit for the current contract year.

Table 32 – Summary of 2015 Follow-up On-site Audit Deficiencies

Laboratory	Location	2014 Findings Addressed			New Deficiencies in 2015
		Completely	Partially	Not Addressed	
EMSL04	Cinnaminson, NJ	6 of 6	NA	0	1
EMSL03	New York, NY	5 of 5	NA	0	2
ESATR8	Golden, CO	2 of 2	NA	0	2
EMSL22	Denver, CO	5 of 5	NA	0	3
EMSL45	Sierra Madre, CA	4 of 4	NA	0	7
ESATR8 SPF	Troy, Montana	1 of 2	1 of 2	0	2

Laboratory responses to the deficiencies identified in the 2015 on-site audits were reviewed and found to be acceptable. The reported corrective actions will be evaluated in the next on-site audit cycle.

4.4 Deficiencies by Laboratory Process Area

The 15 asbestos on-site audit deficiencies identified in the five (5) on-site laboratory audits performed in 2015 were evaluated across seven (7) laboratory process areas. The laboratory process in which the majority of the observed deficiencies occurred was the PLM analysis category. Categories with no deficiencies included TEM analysis, QA/QC, and sample receipt, storage, log-in, and chain-of-custody.

Table 33 shows the laboratory process categories evaluated, the number of deficiencies observed in each of the 2015 on-site audits, and the percentage of deficiencies observed by category.

Table 33 – 2015 On-site Laboratory Audit Deficiencies by Laboratory Process Area

Laboratory Area	# of Deficiencies	% of Deficiencies
Indirect and Direct Preparation of Air Filter & Dust Samples	1	7%
Transmission Electron Microscopy (TEM) Analysis	0	0%
Polarized Light Microscopy (PLM) Analysis	9	60%
Data Management	2	13%
Quality Assurance and Quality Control (QA/QC)	0	0%
Phase Contrast Microscopy (PCM) Analysis	3	20%
Sample Receipt, Storage, Log-in, and Chain-of-custody	0	0%
Total	**15**	**100%**

A summary of the deficiencies by laboratory process category that were observed in the five (5) on-site audits performed in 2015 are as follows:

Indirect and Direct Preparation of Air Filter and Dust Samples – The single indirect and direct preparation of air filters and dust samples issue observed during the on-site audits involved the hood used to perform the TEM indirect preparations, which was found to be dusty, and the filter assembly has not been replaced in years (EMSL45).

TEM Analysis – No deficiencies were found in the TEM Analysis category during the 2015 on-site audits related to OU3.

PLM Analysis – A total of nine (9) PLM-related deficiencies from five (5) laboratories were identified during the 2015 on-site audits, as follows:

- Balances used to weigh samples for the PLM-Gravimetric analyses of the coarse (C) fraction were not traceable (EMSL03, EMSL04, EMSL22, ESATR8).
- Only two weights were used for balance calibration (EMSL22).
- Balance calibration weight measurements were written on scrap paper, which was discarded after weight values transcribed to an Excel spreadsheet (EMSL03).
- The Laboratory Duplicate Same (LDS) analysis for method NIOSH 9002 were not performed as described in the Libby-specific 9002 SOP (ER8-Libby-02, rev 0) (EMSL45).
- A third party vendor certification was not available for the balance used to perform the PLM-Grav analyses since June 2014 (EMSL45).
- The applicable PLM scope calibration records for Libby analyses were not posted to the eRoom (EMSL45).

Data Management – Two (2) data management deficiencies from two (2) laboratories were identified, as follows:

- The balance identification (ID) used was inaccurately recorded in the EDD and/or Scribe database (EMSL22).
- PLM instrument IDs were not entered into the database as required for 2012-2014 (ESATR8).

Quality Control and Quality Assurance – No deficiencies were found in the TEM Analysis category during the 2015 on-site audits related to OU3.

PCM Analysis – Three (3) PCM deficiencies were identified from one (1) laboratory (EMSL45), as follows:

- PCM sample preparation activities were inappropriately being performed in the PLM Bulk preparation area (EMSL45).
- Non-calibrated counters were used to tally the number of fibers during PCM analysis (EMSL45).
- Results for the required daily reference slide analyses were being recorded in the same logbook in which the passing criteria are kept (EMSL45).

Sample Receipt, Storage, Log-in, and COC – No deficiencies were found in the sample receipt, storage, log-in, and COC category during the 2015 on-site audits related to OU3.

4.5 Laboratory Responses

EPA requires that laboratories provide responses to on-site audit reports identifying their proposed corrective action to each of the findings. These laboratory responses assist EPA in "closing the loop" on laboratory deficiencies, and help resolve method interpretation issues. Laboratory responses to all of the 2015 on-site audit reports have been received from all of the current Libby support laboratories. All laboratories provided proposed corrective actions for the identified findings, along with objective evidence as applicable. No findings were contested. The laboratory-proposed corrective actions will be verified during the next round of scheduled audits.

4.6 Soil Preparation Facility (SPF) Audits

In 2015, EPA also scheduled an on-site audit of the ESATR8 SPF in Troy, MT. Five (5) deficiencies were identified from the 2015 SPF on-site audit as compared to the two (2) deficiencies identified in 2014, which represents a 150% increase. Note that both the 2014 and 2015 SPF audits were 1-day on-site audits. **Table 34** shows the on-site audit deficiencies identified in the 2014 and 2015 SPF on-site audits by five (5) facility process areas.

Table 34 – 2014 & 2015 SPF On-site Audit Deficiencies by Process Area

Process Area	Deficiencies		%Increase/ (%Decrease)
	2014	2015	
Bulk Drying	1	1	0%
Grinding and Splitting	1	0	(100%)
QA/QC & Health and Safety	0	2	200%
Sample Receiving	0	0	0%
Sieving of Preparation Samples	0	2	200%
Totals	**2**	**5**	**150%**

A summary of the deficiencies, by process category, that were observed in the SPF on-site audit performed in 2015 are as follows:

Bulk Drying – The single bulk soil drying issue observed during the SPF on-site audit were related to a lack of calibration of the balances used to weigh samples during the splitting, sieving, and grinding processes.

Quality Assurance/Quality Control & Health and Safety – The two (2) QA/QC and health and safety issues observed during the on-site audits were related to no internal quality/process audit performed within the last year; and a failure to performed quarterly safety inspections by the Site Safety Officer.

Sieving of Preparation Samples – Two (2) sieving of preparation samples issues were observed during the 2015 SPF on-site audit. The riffle splitter, used to divide samples into equal portions, had been taped together at the seam creating the potential for cross-contamination; and soil samples having only been passed through the riffle splitter twice rather than the three times as required in the written procedures.

4.7 Laboratory Internal Audits

As part of the 2015 on-site laboratory audits, the EPA Audit Team evaluated the internal audit program for each of EPA's Libby asbestos support laboratories. All were found to continue to have active internal audit programs in place, which involve conducting internal audits of their specific operations on an annual basis using standardized checklists. During the 2015 EPA on-site laboratory audits, the Audit Team reviewed with the laboratory staff any significant findings noted in their internal audit reports. **Table 35** presents the internal audit history for the five (5) laboratories that provided support to Libby OU3 investigation activities in 2015.

Table 35 – 2015 Laboratory Internal Audit Dates by Laboratory

	Laboratory				
	EMSL03	**EMSL04**	**EMSL22**	**EMSL45**	**ESATR8**
Date:	12/14/2014	08/18/2014	09/17/2014	10/07/2014	07/2014

Note: The Troy SPF facility did not perform an internal audit within the last year.

4.8 Air Monitoring Samples

During the 2015 on-site laboratory audits, the Audit Team also evaluated whether contract-required environmental contamination monitoring programs were in place at each laboratory that analyzes samples from Libby. The requirements of the laboratory monitoring programs for each laboratory are described in the laboratory-specific Quality Management Plans (QMPs). These include immediate notification by the laboratory QAM to the LC and the QATS contractor of any laboratory contamination monitoring results that are outside of the appropriate acceptance criteria. Air monitoring samples were verified during the 2015 on-site audits to have been collected on a quarterly basis at the EMSL Laboratories in New York (EMSL03), New Jersey (EMSL04), Denver (EMSL22) and Sierra Madre (EMSL45). These samples are collected from various locations in each of the laboratories, including the sample receiving, PLM and TEM sample preparation, and the TEM analysis areas. Air monitoring samples at the Troy SPF are collected on a monthly basis. Air monitoring results were reviewed during the 2014 annual on-site audits. No LA structures were observed by the Audit Team.

In addition to internal laboratory air monitoring, in 2015 CDM Smith collected monthly blank samples at the Troy SPF. In all, 32 samples were collected at the Troy SPF and blindly analyzed by the participating laboratories. All analyses were non-detects.

5.0 Laboratory Mentoring Program

EPA Region 8's mentoring program for laboratories supporting Libby OU3 projects include training, site-specific reference materials, technical discussions, monthly EPA/laboratory calls, electronic data audits, and the use of laboratory modification forms.

To ensure that new laboratories have properly trained staff to perform analysis of Libby site samples, EPA established training programs that allow laboratories and/or analysts who are experienced with the analysis of LA provide training and mentoring to new laboratories prior to the receipt and analysis of Libby field samples. This training program for new laboratories includes a rigorous 2-3 day period of on-site training provided by senior personnel from those laboratories who are highly experienced with the Libby project. Training includes a review of morphological, optical, chemical, and electron diffraction characteristics of LA, as well as training on the project-specific analytical methodology, documentation, and administrative

procedures required for the Libby site. No new laboratories were mentored for Libby OU3 during 2015.

For those laboratories and analysts already analyzing samples from the Libby site, the following reference materials, EDD tools, SOPs, laboratory modification, and meeting participation are in place to ensure consistency and continued training:

Site-specific Reference Materials

- TEM - Because LA is not a common form of asbestos, USGS prepared site-specific reference materials using LA collected at the Libby mine site (EPA 2008a), which each laboratory must analyze in order to become familiar with the physical and chemical appearance of LA and establish a reference library of instrument-specific LA EDS spectra.

- PLM - USGS has also prepared site-specific reference materials of LA in soil for use during PLM-VE analyses, which are mounted on slides at concentrations of 0.2% and 1.0% by weight and used to assist in determining visual area estimation of LA levels in soil.

Monthly Technical Discussions

To ensure that all laboratories are aware of technical or procedural issues and requirements, monthly teleconference calls are held between EPA, their contractors, and each of the participating laboratories. These calls cover all aspects of the analytical process, including sample flow, information processing, technical issues, analytical method procedures and development, documentation issues, project-specific laboratory modifications, and pertinent asbestos publications.

Electronic Data Deliverable (EDD) Reporting

Standardized data entry spreadsheets (electronic data deliverables, or EDDs) have been developed specifically for the Libby project to ensure consistency between laboratories in the presentation and submittal of analytical data. In general, a unique Libby-specific EDD was developed for each type of analytical method. Each EDD contains a variety of built-in QC functions that improve the accuracy of data entry and help maintain data integrity.

Laboratory Modification Forms

When changes or revisions are needed to improve or document specifics about analytical methods or procedures used by the Libby laboratory team, these changes are documented using laboratory modification forms, which provide a standardized format for tracking procedural changes in sample analysis, allowing project managers to assess potential impacts on the quality of the data being collected. A list of current, active modifications is provided in Section 6.0.

6.0 Laboratory Modifications

Twenty (20) project-specific laboratory modifications were current and active in 2015, as presented in **Table 36**. Summary descriptions and the applicable effective and/or revision dates

of the seven (7) laboratory modifications which were revised in 2015 and one (1) laboratory modification that was developed in January 2016, follow the table.

Table 36 – 2015 Active Laboratory Modifications

Lab Mod	Effective/ Revision Date	Description
LB-000015B	11/02/2015	PCM air and overloaded/wet samples
LB-000016H	03/19/2012	TEM by Method ISO 10312
LB-000020D	05/04/2015	TEM Water
LB-000029F	01/27/2015	TEM QC
LB-000031G	04/30/2012	TEM recording rules
LB-000040A	01/25/2012	ASTM Method
LB-000055B	11/02/2012	Drying TEM air samples
LB-000066E	08/15/2013	Structure photos, spectra, and NaK codes
LB-000067C	04/01/2013	General TEM recording rules (sketch structures, ND stands for “Not Detected”, list of valid values for Structure ID, lab blanks always have LQ-00001 as sample number, Prep Date is when prep starts)
LB-000073D	06/22/2015	PLM Inter-Labs
LB-000085A	05/04/2012	TEM Calibrations
LB-000087	05/04/2012	PLM NIOSH 9002 Identification (in effect until 05/22/2015)
LB-000088	12/17/2012	PLM-VE and PLM-Grav SOPs
LB-000091	07/16/2013	Indirect Preparation
LB-000097A	10/22/2014	PLM-VE Procedures
LB-000098	03/05/2014	PLM-Grav QC Procedures
LB-000103	05/28/2015	PLM microscope documentation
LB-000104	11/03/2015	PLM microscope calibration ESATR8 (temp)
LB-000105	09/11/2015	EPA-Libby-2012-11 Ash-specific
LB-000106	01/15/2016	PLM-Grav balance calibration EMSL45 (temp)

a) LB-000015B (11/02/2015) – This modification documents the permanent modifications of procedures for all PCM air samples and provides clarification to laboratories for overloaded or wet samples, reporting, and fast-turn analyses.

b) LB-000020D (05/04/2015) – This modification provides guidance on the preparation and analysis of water samples for the Libby Project for TEM by method ISO 10312.

c) LB-000029F (01/27/2015) – This modification provides permanent clarifications to laboratory-based quality control (QC) analysis requirements for TEM. The purpose is to standardize the frequency of analysis and procedures for the selection and interpretation of the results for laboratory-based TEM QC analyses (regardless of sample medium).

d) LB-000073D (06/22/2015) – This modification clarified the IL analyses for the PLM-VE and PLM-Grav methods, in addition to standardizing the selection and analysis procedures for IL soil samples.

e) LB-000103 (05/28/2015) – This modification describes the procedure for EDD entry of two (2) PLM microscopes used on one (1) lab job.

f) LB-000104 (11/03/2015) – This temporary modification describes the ESATR8 microscope discrepancies discovered for the PLM-1 and PLM-2 alignment check logbooks, as identified in entries recorded on 06/11/2015, 08/07/2015, and 09/25/2015.

g) LB-000105 (09/11/2015) – This modification serves to standardize the ash-specific preparation and analysis procedures, as related to EPA-Libby-2012-11.

h) LB-000106 (01/15/2016) – This temporary modification was developed to address the qualification of the 2015 PLM-Grav samples which were analyzed on balances which were calibrated with weights that had not been calibrated by a third party vendor within the year, as found during the 2015 on-site audit of the laboratory.

7.0 Conclusions and Recommendations

QC Data Evaluated

Field QC

The field QC samples collected for the 2015 OU3 studies included field blanks and field duplicates for TEM and field blanks for PCM in the SB phase; field duplicates, field blanks, and lot blanks for TEM in the UB phase; field duplicates for PLM and field blanks and lot blanks for TEM in the TS phase; and field duplicates, equipment rinsate blanks (EBs), and field blanks for TEM in the WT phase. Field QC frequencies and requirements were met in all cases, with the exception of TEM field blanks and EBs in the WT phase. In the WT phase, only one (1) TEM field blank was collected for a frequency of 0.5%, where the WT QAPP requires a 10% frequency which would necessitate 21 field blanks to be collected. The QATS Program requests a field record of modification (ROM) from the sampling contractor which describes the deficiency. Additionally, EB contamination in the groundwater portion of the WT phase affected the applicable sample concentrations, which required concentration adjustments to some groundwater sample results, as described herein.

Because each OU3 phase requires different QC sample processing frequencies based upon the applicable SAP, the QATS Program recommends that field SAPs be read and acknowledged by all field personnel, and that COCs are reviewed to ensure that field QC are collected at the frequencies required by the investigation-specific SAPs.

SPF QC

In 2015, OU3 PLM preparation QC samples collected at the Troy SPF, include preparation duplicates, grinding blanks, and drying blanks. The 2015 OU3 PLM analysis for all phases were performed at the required frequencies, with seven (7) grinding and drying blanks each, and 17% of the 66 total field samples for PLM-VE. Preparation duplicates for PLM-VE and PLM-Grav in the TS phase were prepared at respective frequencies of 4.4% and 4.3% of the 46 total field samples, falling short of the 5% frequency goal, which would have been met upon reaching the 50 sample threshold. All of the blank sample-types were reported in the Bin A (non-detect) category. Eight (8) of the 11 preparation duplicates analyzed by PLM-VE were concordant (73%) while the remaining three (3) were found to be weakly discordant (27%). The two (2) PLM-Grav preparation duplicate QC samples were found to be concordant. Note that grinding

and drying blanks were not always performed specifically with OU3 samples; however the required blanks were available in the site wide database, and all grinding and drying blank samples were reported as ND. The QATS Program recommends that the SPF performs grinding blanks and drying blanks specific to OU3 samples, as was completed in the TS phase.

During the 2014 on-site audit of the Troy SPF, the EPA Audit Team observed that grinding blanks were processed at the beginning of each day, prior to samples, on equipment which was cleaned the previous day. This practice renders the evaluation of potential for cross-contamination with field samples ineffective. To effectively monitor for grinder contamination process, and in response to a QATS Program recommendation, the grinding blanks are now processed only after field samples have already been processed.

Laboratory Analysis QC - TEM

TEM QC Frequency

As described in **Section 2.3.1**, all five (5) laboratories met the OU3 program-wide TEM QC sample frequencies requirements for LB, RS, RD, VA, RP, and ILs described in Laboratory Modification LB-0000029. This is an improvement over the previous year when the requirement failures were likely attributed to laboratories not having received sufficient samples to trigger the requirement to perform QC analyses. To ensure an appropriate number of QC analyses were performed in 2015, specifically those with frequency requirements of 1.0%, Laboratory Modification LB-000029 was modified (following a QATS Program recommendation) to ensure that adequate QC analyses are performed when less than the number of samples necessary to trigger these analyses are reached. During 2015, post-hoc QC analyses were only required for EMSL45 (one each for VA, RS, and RP) and EMSL22 (one RP).

Forty-two (42) TEM LBs were analyzed by participating laboratories in 2015, with no asbestos structures observed. This suggests that asbestos contamination was not introduced during preparation or analyses of TEM samples. All individual laboratories met the OU3 program frequency requirements without exception, and the overall program frequency of LB analyses is 9.2%, exceeding the Laboratory Modification LB-000029 frequency requirement of 4%.

Laboratory TEM QC Concordance

The 2015 TEM intra-laboratory recount analyses (i.e., RS and RD) presented in **Table 20** fell into the “Good” and “Acceptable” ranges described in **Table 19** with the exception of the “Poor” categorization for structures per GO (excluding NDs; 82%), overall. Statistical analysis of the RP results detailed in **Table 21A** shows that 100% of the eight (8) RP analyses were within the 90% CI established for their evaluation, falling into the “Good” rating category, as established by the program-wide goals.

Overall, the 2015 TEM inter-laboratory (IL) analyses presented in **Table 22** fell into the “Good” and “Acceptable” ranges described in **Table 19** with the exception of the “Poor” categorization for structures per GO (including and excluding NDs; 73% and 64%).
Laboratory Analysis QC - PLM

PLM QC Frequency

Eighteen (18) PLM-VE QC samples, comprised of four (4) LDC and LDCR each, two (2) LDS, and eight (8) IL samples; and 12 PLM-Grav QC samples, including seven (7) LDC, two (2) LDS,

and three (3) IL samples, were analyzed in 2015. As illustrated in **Tables 25A and 25B**, the 2015 OU3 program-wide PLM QC frequency met all of the requirements described in the PLM SOP for IL samples (PLM-VE and PLM-Grav) and LDS samples (PLM-VE) by laboratory, with the exception of LDS analysis by EMSL22 for PLM-VE. When all laboratories are combined for the year, the PLM-VE and PLM-Grav frequency requirements are met in all cases. Due to the limited number of field samples analyzed for OU3-only, the 2015 PLM-VE QC samples analyzed are not representative of all QC evaluations, with many QC samples processed and reported with the site-wide (all other OUs) data. Regardless, the laboratories should be reminded of the importance of performing OU3-specifc QC to avoid the observed QC deficiencies.

Laboratory PLM QC Concordance

Both the OU3 PLM-VE and PLM-Grav method recount analyses performed in 2015 were considered "Good" (<20% and <5%) for weakly and strongly discordant results, respectively. For PLM-VE analyses, one (1) sample pair result (an LDCR by EMSL04) was considered weakly discordant (10%), while the remaining nine (9) were found to be concordant (90%). For PLM-Grav analyses, all nine (9) sample pair results were found to be concordant (100%).

Overall, the 2015 PLM-VE inter-laboratory IL analyses presented in **Table 27A** fell into the "Acceptable" and "Good" ranges for weakly (<20%) and strongly (<5%) discordant results described in **Table 24**. The PLM-Grav IL analyses were considered "Good" for weakly and strongly discordant results, with all sample results reported as concordant.

Phase Contrast Microscopy QC

No PCM QC replicate analysis samples were analyzed for OU3 in 2015. With only four (4) samples analyzed by PCM in the SB phase, the frequency goals were not met due to the 30th sample not being reached, thereby not initiating the next QC sample for analysis.

Asbestos Data Validation

In 2015, data validation was performed on 596 Libby OU3 samples. 100% of the 372 Libby OU3 asbestos results for samples analyzed in 2015 required no qualification for the SB, UB, and TS phases. Qualifiers were applied to 23 of the 224 WT phase samples for OU3 as related to EB contamination in three (3) laboratory jobs. Bench sheet/EDD comparisons were also conducted on all samples validated in 2015. Of the 569 sample results validated, approximately 10% contained bench sheet/EDD discrepancies, which were considered minor (i.e., typographical errors or omissions in fields) and as having no impact on the sample results.

Validation was also performed on 154 inorganic water samples in the WT phase for OU3 in 2015. The inorganic samples were validated for the requirements related to metals, chloride/sulfate, and alkalinity. Qualifiers were applied to 54 of the 154 samples, as applicable to the metals and chloride/sulfate methods.

Laboratory On-site Audits

A total of 15 audit defects were identified in the five (5) 2-day on-site laboratory audits performed in 2015. The deficiencies by laboratory from high to low include: EMSL45 (7), EMSL22 (3), EMSL03 and ESATR8 (2 each), and EMSL04 (1). The PLM analysis laboratory process category contained the majority of the observed deficiencies for the audits performed in 2015 with nine (9) deficiencies. For the 2015 on-site audits there was a 32% decrease in the

average number of defects per on-site audit as compared to 2014 for the same five (5) laboratories audited in both 2014 and 2015. Laboratory responses, in the form of proposed corrective actions to the identified deficiencies, were submitted by the laboratories for the 2015 audits. No findings were contested. The laboratory-proposed corrective actions in response to the 2015 audits will be verified during the next round of scheduled audits.

In 2015, the CB&I QATS Program also supported one (1) SPF on-site audit of the Troy SPF in Troy, MT. Five (5) deficiencies were identified in the Troy SPF on-site audit performed in 2015 as compared to the two (2) defects observed at the same facility in 2014, representing a 150% increase.

It is recommended that the on-site audit program continue, with at least biennial full, 2-day on-site audits scheduled at the Libby asbestos support laboratories and sample preparation facilities. The QATS Program will use information gathered from the validation process, PLM and TEM Inter-laboratories, and feedback from data users to further enhance the on-site audit process.

8.0 References

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EPA 2015 Low-Intensity Prescribed Understory Burn Activity-Based Sampling Quality Assurance Project Plan , Operable Unit 3, Libby Asbestos Superfund Site (Revision 2). U.S. Environmental Protection Agency, Region 8. June 2015.

EPA 2015 Trespasser Activity-Based Sampling Quality Assurance Project Plan , Operable Unit 3, Libby Asbestos Superfund Site (Revision 0). U.S. Environmental Protection Agency, Region 8. September 2015.

EPA 2015 Surface Water and Groundwater Sampling and Analysis Plan/Quality Assurance Project Plan, Operable Unit 3, Libby Asbestos Superfund Site (Revision 1). U.S. Environmental Protection Agency, Region 8. April 2015.

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Attachment 1

2015 Slash Pile Burn and Understory Burn Validation and Quality Control Review (December 2015)

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December 16, 2015

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Document ID #: 3021-12162015-1

EPA CONTRACT NUMBER EP-W-10-033
TASK ORDER NUMBER 3021
QA SUPPORT FOR RI/FS AT THE LIBBY ASBESTOS SITE OU3

Dear Ms. Progess:

Enclosed please find the technical memorandum entitled "2015 Slash Pile Burn and Understory Burn Validation and Quality Control Review." This memorandum is a deliverable under Task 6 of Task Order 3021.

If you have any questions, please feel free to contact me.

Sincerely,



Lyndsay K. Gensler
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Technical Memorandum

From:	Lyndsay Gensler, CB&I QATS Program
Date:	December 16, 2015
Subject:	2015 Slash Pile Burn and Understory Burn Validation and Quality Control Review

The following is a review of the Quality Control (QC) analyses and data validation performed on sample analyses associated with the 2015 Slash Pile Burn (SB) and Understory Burn (UB) sampling events. These are two (2) of the four (4) scheduled sampling events taking place for OU3 in 2015.

The elements in this memorandum include:

- Troy Sample Preparation Facility (SPF) QC
- QC Data Evaluated
- Asbestos Data Validation
- Conclusions and Recommendations

The QC data described in this section were collected from the OU3 site and analyzed by the EPA contract laboratories listed in **Table 1** below**.**

Table 1 – 2015 Libby OU3 Laboratories

Abbreviation	Name, Location
EMSL03	EMSL Analytical, Inc., New York, NY
EMSL04	EMSL Analytical, Inc., Cinnaminson, NJ
EMSL45*	EMSL Analytical, Inc., Sierra Madre, CA
ESATR8	ESAT Region 8, Golden, CO

* Note: Formerly Hygeia Laboratories, Inc.

The SAP Summaries used to determine QC frequency were the following:

- Slash Pile Burn Activity-Based Sampling Quality Assurance Project Plan, Revision 1, May 12, 2015 (SLASHOU3-0415).
- Low-Intensity Prescribed Understory Burn Activity-Based Sampling Quality Assurance Project Plan, Revision 2, June 5, 2015 (BURNOU3-0515).

Troy SPF QC

Soil samples delivered to the Troy Sample Preparation Facility (SPF) in 2015 were processed in accordance with ESAT SOP 16-ASB-06.02 (Soil Sample Preparation at the Troy SPF), which includes processes for drying, splitting, sieving, grinding, and archiving of soil sample collected from OU3. Once processed, the resulting fine ground and/or coarse fractions are submitted to the laboratories for analysis by the Libby-specific PLM methods (PLM-Grav and PLM-VE). Grinding the samples to a uniform size prior to shipping for analysis removes the potential

variability introduced by each laboratory grinding their own sample. In order to ensure proper sample handling and decontamination of soil/sediment sample preparation equipment at the Troy SPF, preparation QC samples are also processed. These samples are assigned unique field identifiers and are submitted blindly to the analytical laboratories along with the associated field samples. Two types of preparation QC samples were processed for PLM analyses at the preparation facilities: preparation blanks, which include drying and grinding blanks, and preparation duplicates. With six (6) total PLM-VE field samples for the 2015 Libby OU3 SB event, two (2) grinding blanks, two (2) drying blanks, and three (3) preparation duplicate samples were analyzed (see **Table 2**). With six (6) total PLM-VE field samples for the 2015 Libby OU3 UB event, two (2) grinding blanks, two (2) drying blanks, and four (4) preparation duplicate samples were analyzed (see **Table 3**).

Table 2 – 2015 OU3 PLM-VE Slash Pile Burn Troy SPF QC

	Grinding Blanks[1]	Drying Blanks[2]	Prep Duplicates (Freq. Goal=5%)	
Field Samples	No. of Samples	No. of Samples	No. of Samples	%
6	2	2	3	50%

Table 3 – 2015 OU3 PLM-VE Understory Burn Troy SPF QC

	Grinding Blanks[1]	Drying Blanks[2]	Prep Duplicates (Freq. Goal=5%)	
Field Samples	No. of Samples	No. of Samples	No. of Samples	%
6	2	2	4	67%

[1] Processed at a frequency of 1 grinding blank per day.
[2] Processed at a frequency of 1 drying blank per drying oven used in the drying process.
Note: Troy SPF QC were not OU3-specific. The results presented in this section were extracted (as applicable to these events) from the site-wide (non-OU3) database.

Drying Blanks

Drying blanks are used to determine if cross-contamination is occurring during sample processing, specifically the sample drying process. Drying blanks consist of one (1) aliquot of asbestos-free quartz sand placed in each of the drying ovens used during the drying process. As shown in **Tables 2** and **3**, two (2) drying blanks each, were prepared with the SB and UB samples, respectively. All of the drying blank sample results were reported as non-detects (NDs; Bin A) by PLM-VE, suggesting that the procedures utilized to dry the samples did not introduce LA contamination.

Grinding Blanks

Like drying blanks, grinding blanks are used to determine if cross-contamination has occurred during or after the PLM grinding process. Grinding blanks consist of asbestos-free quartz sand and are processed at a frequency of one (1) per day. As shown in **Tables 2** and **3**, two (2) drying blanks each, were prepared with the SB and UB samples, respectively. All of the grinding blank sample results were reported as ND (Bin A) by PLM-VE, suggesting that the procedures utilized to grind the samples did not introduce LA contamination.

Preparation Duplicates

Preparation duplicates are created by dividing a sample designated for PLM analysis into two (2) parts after drying, but prior to sieving and grinding. Preparation duplicates are prepared at a frequency of 5.0% of processed field samples. Comparison of the preparation duplicate results with the paired original field sample results is used to evaluate variability that may occur during

preparation and analysis. As shown in **Tables 2** and **3**, three (3) and four (4) preparation duplicates were prepared with the SB and UB samples, respectively. All of the preparation duplicate sample results were reported as ND (Bin A) by PLM-VE for both the parent and duplicate samples resulting in 100% concordant results and passing the requirement specified in the Soil Sample Preparation at the Troy SPF ESAT Region 8 SOP. Given the small number of SPF PLM-VE preparation duplicates, the concordant results for these QC samples analyzed under each of the PLM methods is a good indication that the samples are being processed in a consistent manner.

QC Data Evaluated

TEM and PCM QC Frequency

To illustrate the frequency and performance of QC applied under the SB and UB sampling events in 2015, various tables (listed below) are presented throughout this report.

- Table 4A – 2015 OU3 TEM Slash Pile Burn QC Sample Frequency
- Table 4B – 2015 OU3 TEM Slash Pile Burn Field QC Summary
- Table 4C – 2015 OU3 TEM Slash Pile Burn Field QC Statistical Comparison Using Two Poisson Rates
- Table 4D – 2015 OU3 PCM Slash Pile Burn QC Sample Frequency
- Table 4E – 2015 OU3 PCM Slash Pile Burn Field QC Summary
- Table 5A – 2015 OU3 TEM Understory Burn QC Sample Frequency
- Table 5B – 2015 OU3 TEM Understory Burn Field QC Summary
- Table 5C – 2015 OU3 TEM Understory Burn Field QC Statistical Comparison Using Two Poisson Rates

Slash Pile Burn QC Sample Analysis Frequency

Eighty-three (83) field samples and 31 QC samples were collected and/or analyzed by Transmission Electron Microscopy (TEM) for the 2015 OU3 SB sampling event as presented in **Table 4A** below.

Table 4A – 2015 OU3 TEM Slash Pile Burn QC Sample Frequency

Lab	Media	Field Samples (Not QC)	Blanks								RS (1%)		RD (2.5%)		VA (1%)		RP (1%)	
			Total (4%)		LB (3%)		DB*		FB* (2%)									
			#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
ESATR8	Air	12	1	8.3%	1	8.3%	NA	NA	NA	NA	0	0.0%	1	8.3%	0	0.0%	1	8.3%
EMSL03	Air	32	5	15.6%	5	15.6%	NA	NA	NA	NA	0	0.0%	1	3.1%	0	0.0%	0	0.0%
EMSL04	Air	20	4	20.0%	4	20.0%	NA	NA	NA	NA	0	0.0%	1	5.0%	2	10.0%	1	5.0%
EMSL04	Ash	9	3	33.3%	1	11.1%	1	11.1%	1	11.1%	1	11.1%	0	0.0%	0	0.0%	0	0.0%
EMSL04	Duff	6	5	83.3%	1	16.7%	3	50.0%	1	16.7%	0	0.0%	0	0.0%	1	16.7%	0	0.0%
EMSL04	Tree Bark	4	3	75.0%	1	25.0%	1	25.0%	1	25.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
Totals		**83**	**21**	**25.3%**	**13**	**15.7%**	**5**	**26.3%**	**3**	**15.8%**	**2**	**2.4%**	**3**	**3.6%**	**3**	**3.6%**	**2**	**2.4%**

Note: Frequency goal percentages for each QC sample type are presented within the parentheses (XX%) in the applicable column.
*: Not required for air samples (if NA, percentage calculation does not include the applicable field samples).
LB – Laboratory Blank DB – Drying Blank (Freq. Goal = 1/ drying oven used in the drying process)
FB – Filtration Blank RS – Recount Same RD – Recount Different
VA – Verified Analysis RP – Re-preparations

Of the 31 QC samples analyzed by TEM for the SB sampling event, 21 were laboratory blanks (25.3%), two (2) each were RS and RP samples (2.4% each), and three (3) each were RD and VAs (3.6%).

Areas of discordance between the required frequencies and the percentage actually performed are highlighted in yellow. The overall frequencies were performed at the required frequencies on an OU3 program-wide basis, as illustrated in **Table 4A** above.

To clarify the TEM QC frequency requirements for OU3 sampling events, an update of the 2014 OU3 QC requirements was performed in Laboratory Modification LB-00029F. This modification requires that "Labs performing fewer than 40 TEM analyses for the Libby Project in a calendar year must perform LBs at minimum rate of 4% (rounding up) and a RD. Once a laboratory has performed 40 TEM analyses in a calendar year, they must perform a minimum of one (1) of each QC type (LB, RS, RD, IL, VA, and RP)." Additionally, in order to meet the OU3 QC frequency requirements of 1% for RPs, VAs and RSs, laboratories are advised to select an appropriate sample before the 100th sample analysis for OU3, rather than waiting for the 100th sample threshold to initiate a QC analysis, as was the common practice in years' past.

A TEM field duplicate is a QC sample which is collected from the same approximate location as the original sample. As stated in the SB QAPP, "Because field duplicate samples are expected to have inherent variability that is random and may be either small or large, typically, there is no quantitative requirement for the agreement of field duplicates. Rather, results are used to determine the magnitude of this variability to evaluate data usability."

Field blanks are QC samples which are collected to evaluate potential contamination introduced during sample collection, shipping and handling, or analysis. Field duplicates and field blanks are collected at the frequencies specified in Section B5 Quality Assurance/Quality Control of the SB and UB QAPPs, and are specific to each media type.

Table 4B presents the TEM field QC sample summary for field duplicates and field blanks related to the 2015 OU3 SB sampling event.

Table 4B – 2015 OU3 TEM Slash Pile Burn Field QC Summary

Media	Field Samples	Field Duplicates		Field Blanks	
		#	%	#	%
Air	62	NA	NA	2	3.2%
Ash[1]	3	NA	NA	NA	NA
Duff	5	1	20.0%	NA	NA
Tree Bark	3	1	33.3%	NA	NA
Totals	**73**	**2**	**25.0%**	**2**	**3.2%**

[1] Note that ash samples are prepared and analyzed in triplicate.

The frequency requirements for TEM field duplicates and field blanks specified by the QAPP were met for the SB sampling event (one field duplicate, each, for the duff and tree bark media; one field blank for each sampling day for air media). Both of the field blank samples analyzed by TEM for the SB event met the requirement criteria with non-detect results in both blanks.

The 2015 SB field duplicate results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). Of the two (2) field duplicate pairs analyzed for the 2015 SB project, one (1) was a tree bark and the other a duff sample. Neither (0%) of the field duplicate pair results were within

the 90% CI when evaluating for Total LA, while both (100%) were within 90% CI when evaluating for PCMe LA structures only.

Table 4C, below, presents the statistical comparison for the original (first evaluation) and field duplicate (second evaluation) analyses as identified by laboratory and sample number, as analyzed by the TEM-ISO method. Note that, the 90% CI requirement is not met where Rate 1 and Rate 2 differ (refer to Attachment 3 in LB-000029F for the applied statistical method).

Table 4C – 2015 OU3 TEM Slash Pile Burn Field QC Statistical Comparison Using Two Poisson Rates – Total LA

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	SB-00003	SB-00004	Tree Bark	55	9.75E+04	42	4.87E+04	[1.84-3.76] Rate 1 is greater than Rate 2
EMSL04	SB-00011	SB-00012	Duff	56	2.34E+06	28	9.65E+06	[0.32-0.73] Rate 1 is less than Rate 2

[a] Tree bark $(cm)^{-2}$, Duff $(g)^{-}$

As presented in **Table 4C**, when considering Total LA results for both field duplicate samples, the first evaluation rate (Rate 1) was statistically different from the second evaluation rate (Rate 2).

Table 4D – 2015 OU3 TEM Slash Pile Burn Field QC Statistical Comparison Using Two Poisson Rates – PCMe LA Structures

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	SB-00003	SB-00004	Tree Bark	7	9.75E+04	10	4.87E+04	[0.56-3.5] The rates are not different.
EMSL04	SB-00011	SB-00012	Duff	10	2.34E+06	6	9.65E+06	[0.16-1.12] The rates are not different.

[a] Tree bark $(cm)^{-2}$, Duff $(g)^{-}$

As presented in **Table 4D**, when considering PCMe LA structure results only, for both SB field duplicate samples, the rates are not statistically different between the first and second evaluations.

Four (4) samples were collected and analyzed by Phase Contrast Microscopy (PCM) for the 2015 OU3 SB sampling event as presented in **Table 4E** below.

Table 4E – 2015 OU3 PCM Slash Pile Burn QC Sample Frequency

Lab	Field Samples	Replicate Analysis (Freq. Goal=10%)	
		#	%
EMSL04	4	0	0.0%

No PCM QC RA samples were prepared for the SB OU3 sampling event, and so, as highlighted in **Table 4E**, the EMSL04 laboratory did not meet the 10% RA frequency requirement due to the low number of PCM field samples. The first replicate would have been initiated subsequent to the 10^{th} sample analysis.

Table 4F presents the PCM field blank QC sample summary related to the 2015 OU3 SB sampling event.

Table 4F – 2015 OU3 PCM Slash Pile Burn Field Blank QC Summary

Media	Field Samples	Field Blanks	
		#	%
Air	4	1	25.0%

The single field blank analyzed by PCM for the SB event met the frequency and performance requirement criteria, with a non-detect result.

Understory Burn QC Sample Analysis Frequency

Seventy-five (75) field samples and 28 QC samples were collected and/or analyzed by TEM for the 2015 OU3 UB sampling event as presented in **Table 5A** below. Note that no PCM samples were collected for the UB project.

Table 5A – 2015 OU3 TEM Understory Burn QC Sample Frequency

Lab	Media	Field Samples (Not QC)	Blanks								RS (1%)		RD (2.5%)		VA (1%)		RP (1%)	
			Total (4%)		LB (3%)		DB*		FB* (2%)									
			#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
EMSL45	Air	20	1	5.0%	1	5.0%	NA	NA	NA	NA	0	0.0%	2	10.0%	0	0.0%	0	0.0%
ESATR8	Air	16	1	6.3%	0	0.0%	1	6.3%	NA	NA	1	6.3%	1	6.3%	1	6.3%	0	0.0%
EMSL03	Air	6	1	16.7%	1	16.7%	NA	NA	NA	NA	0	0.0%	1	16.7%	0	0.0%	0	0.0%
EMSL04	Air	13	6	46.2%	4	30.8%	1	7.7%	1	7.7%	0	0.0%	1	7.7%	0	0.0%	0	0.0%
EMSL04	Ash	9	3	33.3%	1	11.1%	1	11.1%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
EMSL04	Duff	6	5	83.3%	1	16.7%	3	50.0%	1	16.7%	0	0.0%	1	16.7%	0	0.0%	0	0.0%
EMSL04	Tree Bark	5	3	60.0%	1	20.0%	1	20.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Totals		**75**	**20**	**26.7%**	**9**	**12.0%**	**7**	**14.3%**	**4**	**12.1%**	**1**	**1.3%**	**6**	**8.0%**	**1**	**1.3%**	**0**	**0.0%**

Note: Frequency goal percentages for each QC sample type are presented within the parentheses (XX%) in the applicable column.
*: Not required for air samples (if NA, percentage calculation does not include the applicable field samples).
LB – Laboratory Blank DB – Drying Blank (Freq. Goal = 1/ drying oven used in the drying process)
FB – Filtration Blank RS – Recount Same RD – Recount Different
VA – Verified Analysis RP – Re-preparations

Of the 28 QC samples analyzed by TEM for the 2015 OU3 UB sampling event, 20 were laboratory blanks (26.7%), one each were RS and VA (1.3% each), and six (6) were RDs (8.0%).

Areas of discordance between the required frequencies and the percentage actually performed are highlighted in yellow. The overall QC sample frequencies, with the exception of the RPs, were performed for the UB project at the required frequencies on an OU3 program-wide basis, as illustrated in **Table 5A** above. As was the case with the SB QC samples, the initiation of the preparation of UB QC samples at the frequencies required are defined in Laboratory Modification LB-000029F, as a minimum frequency per calendar year within each laboratory (across all media).

Table 5B presents the TEM field QC sample summary related to the 2015 OU3 UB sampling event.

Table 5B – 2015 OU3 TEM Understory Burn Field QC Summary

Media	Field Samples	Field Duplicates		Lot Blanks		Field Blanks	
		#	%	#	%	#	%
Air	49	NA	NA	2	4.1%	4	8.2%
Ash[1]	3	NA	NA	NA	NA	NA	NA
Duff	5	1	20.0%	NA	NA	NA	NA
Tree Bark	4	1	25.0%	NA	NA	NA	NA
Totals	**61**	**2**	**22.2%**	**2**	**4.1%**	**4**	**8.2%**

[1] Note that ash samples are prepared and analyzed in triplicate.

The frequency requirements for TEM field duplicates, lot blanks, and field blanks specified by the QAPP were met for the UB sampling event (one field duplicate, each, for the duff and tree bark media; two lot blanks and one field blank each sampling day for air media). Lot blanks are collected to ensure air samples for asbestos analysis are collected on asbestos-free filters. All of the lot blank and field blank samples analyzed by TEM for the UB event met the requirement criteria with non-detect results in all six (6) blanks (2 lot blanks and 4 field blanks).

Of the two (2) field duplicate pairs analyzed for the 2015 SB project, one (1) was a tree bark and the other a duff sample. As with the SB event, the 2015 UB field duplicate results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). Both (100%) of the field duplicate pair results were within the 90% CI when considering Total LA and PCMe LA structures only.

Table 5C, below, presents the statistical comparison for the original (first evaluation) and field duplicate (second evaluation) analyses as identified by laboratory and sample number, as analyzed by the TEM-ISO method.

Table 5C – 2015 OU3 TEM Understory Field QC Statistical Comparison Using Two Poisson Rates – Total LA

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	UB-00004	UB-00003	Duff	5	4.81E+06	23	9.60E+06	[0.04-0.26] Rate 1 is less than Rate 2
EMSL04	UB-00015	UB-00016	Tree Bark	7	9.60E+04	20	8.80E+04	[0.16-0.83] Rate 1 is less than Rate 2

[a] Tree bark $(cm)^{-2}$, Duff $(g)^{-}$

As presented in **Table 5C**, for both field duplicate samples, the first evaluation rate (Rate1) was statistically different from the second evaluation rate (Rate 2).

Table 5D – 2015 OU3 TEM Understory Field QC Statistical Comparison Using Two Poisson Rates – PCMe LA Structures

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	UB-00004	UB-00003	Duff	2	4.81E+06	0	9.60E+06	[0.0-6.93] The rates are not different
EMSL04	UB-00015	UB-00016	Tree Bark	0	9.60E+04	2	8.80E+04	[0.0-3.79] The rates are not different

[a] Tree bark $(cm)^{-2}$, Duff $(g)^{-}$

As presented in **Table 5D**, when considering PCMe LA structure results only, for both UB field duplicate samples, the first and second evaluation rates are not statistically different.

As illustrated in the **Tables 4A** and **5A**, the QC sample frequency requirements were not met by the individual laboratories in many cases for RS, RD, VA, and RP QC samples for the 2015 OU3 SB and UB sampling events; however these frequencies will be assessed across all media types for samples from all 2015 OU3 events, once they are completed.

TEM Laboratory Blanks

Laboratory blanks (LBs) for TEM analysis are prepared from new, unused filters and analyzed using the same procedures as applied to field samples. A laboratory blank helps determine the presence of any significant sources of asbestos contamination during sample preparation and analysis in the TEM laboratory. As **Tables 4A** and **5A** show, a total of 41 TEM laboratory blanks (including filtration and drying blanks) were analyzed by the participating laboratories in 2015 for the SB and UB events. No asbestos structures were observed in any of the laboratory blanks, suggesting that the sample preparation and analysis procedures performed by the laboratories were effective in not introducing asbestos contamination.

TEM Recounts & Re-preparations

A recount analysis is a re-examination of select original TEM grid openings (GOs) to verify the reported asbestos structure counts and characteristics. Three (3) types of recount analyses were performed by the TEM analytical laboratories for the 2015 SB and UB projects:

- Recount Same (RS) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by the same microscopist who performed the initial examination.
- Recount Different (RD) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by a microscopist within the same laboratory who did not perform the initial examination.
- Verified Analysis (VA) – Similar to RD but with different documentation requirements, a VA must be recorded in accordance with the NIST (1994) protocol requirements.

Recount analyses were compared with the original analysis on a GO-by-GO, and structure-by-structure basis. The degree of concordance between the original analysis and the recount analysis was evaluated based on the total number of countable LA structures observed for each grid opening that was re-examined. The concordance metrics, as defined in LB-000029F, are summarized in **Table 6**:

Table 6 – TEM Recount Analysis Concordance Rules

Measurement Parameter	Concordance Rule
Number[1] of LA structures within each grid opening	For grid openings with 10 or fewer structures, counts must match exactly. For grid openings with more than 10 structures, counts must be within 10 percent (%) as calculated as RPD (((maximum count – minimum count)/average count)*100%).
Asbestos class of structure (LA, OA, CH)	Must agree 100% on CH vs. amphibole. For assignment of amphiboles to LA or OA bins, must agree on at least 90% of all amphibole structures.

Table 6 – TEM Recount Analysis Concordance Rules

Measurement Parameter	Concordance Rule
LA Structure length	For fibers and bundles (all methods) and CF, CB, MF, and MB structures (ISO), must agree within 1 um or 10% (whichever is less stringent). For clusters and matrices (AHERA and ASTM) and CFO, CBO, CC, MFO, MBO, and MC structures (ISO), must agree within 2 um or 20% (whichever is less stringent). The above percentages (%) are to be calculated as RPD (((1st analysis length – 2nd analysis length)/average length)*100%).
LA Structure width	For fibers and bundles (all methods) and CF, CB, CFO, CBO, MF, MB, MFO, and MBO structures (ISO), must agree within 0.5 um or 20% (whichever is less stringent). For clusters and matrices (AHERA and ASTM) and CC and MC structures (ISO), there is no quantitative rule for concordance. The above percentage (%) is to be calculated as RPD (((1st analysis width – 2nd analysis width)/average width)*100%).
Presence of Sodium (Na) and Potassium (K)	There is no rule for concordance, but must be tabulated to identify potential trends that may indicate inconsistencies in recording practices or interpretation of spectra.

[1] For air samples, concordance will be evaluated based on total and PCME structure counts.

The TEM recount OU3 program-wide concordance criteria, as defined in LB-000029F, are summarized in **Table 7**.

Table 7 – TEM Recount OU3 Program-wide Criteria

QC Sample Type	Metric	OU3 Program-Wide Criteria		
		Good	Acceptable	Poor
Lab Blanks	% with ≥1 asbestos structures	0% - 0.1%	0.2% - 0.5%	>0.5%
Recounts	Concordance on LA count*	>95%	85%-95%	<85%
	Concordance on type (chrysotile vs. amphibole)	>99%	95%-99%	<95%
	Concordance on type (LA vs. other amphibole)	>99%	95%-99%	<95%
	Concordance on type (LA vs. NAM)	>99%	95%-99%	<95%
	Concordance on LA length	>90%	80%-90%	<80%
	Concordance on LA width	>90%	80%-90%	<80%
Re-preparations	Concordance on LA concentration/loading	>95%	90%-95%	<90%

* Identified as Structures per GO throughout the applicable tables in this memorandum.

TEM Recounts – Slash Pile Burn

A total of eight (8) recount analyses comprised of two (2) RS, three (3) RD, and three (3) VA samples, as summarized in **Table 8**, were performed for the 2015 SB project. As a total, all required attributes reviewed were considered “Good” or “Acceptable” (**Table 7**). Due to the small number of samples analyzed/structures found for the ash and duff media types, structures per GO (including and excluding all GOs) were considered “Poor,” as highlighted in yellow in **Table 8**. It should also be noted that, for all recount pairs, there was 100% agreement on Chrysotile versus Amphiboles. Though there is no rule for concordance for the presence of Na/K, they are tabulated to identify potential trends which may indicate inconsistencies in recording practices or interpretation of spectra.

Table 8 – 2015 OU3 TEM Slash Pile Burn Recount Analysis Results – By Media

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Air	LA vs. NAM	37	37	100%	Duff	LA vs. NAM	22	22	100%
	LA vs. OA	37	37	100%		LA vs. OA	22	22	100%
	LA vs. CH	37	37	100%		LA vs. CH	22	22	100%
	Structures per GO[1]	27	24	89%		Structures per GO[1]	5	3	60%
	Structures per GO[2]	53	50	94%		Structures per GO[2]	5	3	60%
	Structure Length	37	32	86%		Structure Length	22	22	100%
	Structure Width	37	36	97%		Structure Width	22	22	100%
	Na/K Presence	37	35	95%		Na/K Presence	22	16	73%
Tree Bark	LA vs. NAM	29	29	100%	**Totals**	**LA vs. NAM**	**139**	**139**	**100%**
	LA vs. OA	29	29	100%		**LA vs. OA**	**139**	**139**	**100%**
	LA vs. CH	29	29	100%		**LA vs. CH**	**139**	**139**	**100%**
	Structures per GO[1]	4	4	100%		**Structures per GO[1]**	**40**	**34**	**85%**
	Structures per GO[2]	4	4	100%		**Structures per GO[2]**	**66**	**60**	**91%**
	Structure Length	29	29	100%		**Structure Length**	**139**	**134**	**96%**
	Structure Width	29	29	100%		**Structure Width**	**139**	**138**	**99%**
	Na/K Presence	29	29	100%		**Na/K Presence**	**139**	**131**	**94%**
Ash	LA vs. NAM	51	51	100%					
	LA vs. OA	51	51	100%					
	LA vs. CH	51	51	100%					
	Structures per GO[1]	4	3	75%					
	Structures per GO[2]	4	3	75%					
	Structure Length	51	51	100%					
	Structure Width	51	51	100%					
	Na/K Presence	51	51	100%					

Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.

TEM Recounts – Understory Burn

A total of eight (8) recount analyses comprised of one (1) RS, six (6) RD, and one (1) VA samples, as summarized in **Table 9**, were performed for the 2015 UB project. As a total, all required attributes reviewed were considered "Good" or "Acceptable" (**Table 7**). Due to the small number of samples analyzed/structures found for the duff media type, structures per GO (including and excluding NDs) and the combined media (total; excluding NDs) were considered "Poor," as highlighted in yellow in **Table 9**. It should also be noted that, for all recount pairs, there was 100% agreement on Chrysotile versus Amphiboles. Though there is no rule for concordance for the presence of Na/K, they are tabulated to identify potential trends which may indicate inconsistencies in recording practices or interpretation of spectra.

Table 9 – 2015 OU3 TEM Understory Burn Recount Analysis Results – By Media

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Air	LA vs. NAM	34	34	100%	**Totals**	**LA vs. NAM**	**55**	**55**	**100%**
	LA vs. OA	34	34	100%		**LA vs. OA**	**55**	**54**	**98%**
	LA vs. CH	34	34	100%		**LA vs. CH**	**55**	**55**	**100%**
	Structures per GO[1]	34	30	88%		**Structures per GO[1]**	**40**	**31**	**78%**
	Structures per GO[2]	60	56	93%		**Structures per GO[2]**	**66**	**57**	**86%**
	Structure Length	34	33	97%		**Structure Length**	**55**	**54**	**98%**
	Structure Width	34	34	100%		**Structure Width**	**55**	**55**	**100%**
	Na/K Presence	25	25	100%		**Na/K Presence**	**55**	**51**	**93%**
Duff	LA vs. NAM	21	21	100%					
	LA vs. OA	21	20	95%					
	LA vs. CH	21	21	100%					
	Structures per GO[1]	6	1	17%					
	Structures per GO[2]	6	1	17%					
	Structure Length	21	21	100%					
	Structure Width	21	21	100%					
	Na/K Presence	21	18	88%					

Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.

TEM Re-preparations

A TEM re-preparation (RP) is the re-analysis of a sample from which new grids have been prepared using a different portion of the same filter that was used to prepare the original grids. The 2015 RP results (second evaluation) were compared to the original analyses (first evaluation) using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). RPs provide information on analysis precision, as well as within-filter variability. A total of two (2) RP pairs were analyzed for the 2015 SB project for the air media. Both (100%) of the RP pair results were within the 90% CI. **Table 10** presents the statistical comparison for the original and RP analyses as identified by sample number. Note that no RP pairs were analyzed for the 2015 UB event.

Table 10 – 2015 OU3 Slash Pile Burn Re-preparation Statistical Comparison Using Two Poisson Rates

Lab	Field Sample ID	Method	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	SB-00139	ISO	Air	25	7.00E-03	27	4.49E-03	[0.88-2.37] The rates are not different
ESATR8	SB-00237*	ISO	Air	0	3.51E-03	0	3.51E-03	Both counts are 0; the rates are not different

[a] ABS $(CC)^{-1}$
* All of the samples in the Job #A150121 were ND; however, the other two (2) jobs (A150107 and A150108) each had samples with numerous structures.

Laboratory QC

PLM Laboratory QC

Two (2) types of PLM Laboratory QC analyses were performed on the 2015 OU3 SB and UB samples, Laboratory Duplicate Samples (LDSs) and Laboratory Duplicate Cross-check Re-preparation (LDCR) samples. These Laboratory QC analyses are defined as follows:

- LDS – A reanalysis of a sample by the same analyst.
- LDCR – A reanalysis of a sample by a different analyst.

Table 11A and **Table 11B** provide a summary of the frequency at which the PLM LDS and LDCR analyses were performed for the SB project:

Table 11A – 2015 OU3 Slash Pile Burn PLM-VE QC Sample Frequency by Laboratory

Lab	Field Samples (Not QC)	LDCR (Freq. Goal=8%)		LDS (Freq. Goal=2%)	
		#	%	#	%
EMSL04	6	1	16.7%	1	16.7%

Table 11B – 2015 OU3 Slash Pile Burn PLM-Grav QC Sample Frequency by Laboratory

Lab	Field Samples (Not QC)	LDCR (Freq. Goal=8%)		LDS (Freq. Goal=2%)	
		#	%	#	%
EMSL04	6	1	16.7%	1	16.7%

Table 12 provides a summary of the frequency at which the PLM LDS and LDCR analyses were performed for the UB project:

Table 12 – 2015 OU3 Understory Burn PLM-VE QC Sample Frequency by Laboratory

Lab	Field Samples (Not QC)	LDCR (Freq. Goal=8%)		LDS (Freq. Goal=2%)	
		#	%	#	%
EMSL04	6	1	16.7%	1	16.7%

Of the six (6) SB PLM-VE, six (6) SB PLM-Grav, and six (6) UB PLM-VE QC samples analyzed for the 2015 SB and UB projects, in each case, one (16.7%) was an LDCR sample and one (16.7%) was an LDS sample.

As presented in **Tables 11A, 11B,** and **12**, the numbers of PLM QC analyses performed in 2015 were above the required frequencies for all sample analyses and QC types.

PLM Recount OU3 Program-wide Criteria

Table 13 below provides the OU3 program-wide concordance criteria for PLM-VE Recount Analyses. PLM-Grav recount results were compared based on a relative percent difference (RPD) calculation (RPD (%) = (Original - IL) / [(Original + IL)/2] * 100); however, to-date, no project-specific RPD acceptance criteria or OU3 program-wide goals have been established.

Table 13 – OU3 Program-Wide Criteria for PLM-VE Recount Analysis Concordance

Metric	Good	Acceptable	Poor
% of IL pairs ranked as strongly discordant	<5%	5-10%	>10%
% of IL pairs ranked as weakly discordant	<20%	20-40%	>40%

Table 14 summarizes the recount results of the LDCR and LDS samples for the 2015 OU3 SB and UB events, combined.

Table 14 – 2015 OU3 PLM-VE Recount Comparison of LDCR/LDS Results for the Combined Slash Pile Burn and Understory Burn Events

		Comparison as Total Number of Analyses				
		LDCR/LDS Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	0	0	0	0	**0**
	Bin B1 (Tr)	0	3	0	0	**3**
	Bin B2 (<1%)	0	0	1	0	**1**
	Bin C (≥1%)	0	0	0	0	**0**
	Totals:	**0**	**3**	**1**	**0**	**4**

	# of Samples	% of Samples
Total Pairs	4	100.0%
Concordant	4	100.0%
Weakly Discordant	0	0.0%
Strongly Discordant	0	0.0%

When combining the SB and UB events, for the four (4) total pairs of LDCR and LDS QC samples summarized in **Table 14**, 100.0% are concordant, and so considered "Good" for both weak and strong discordance. A calculation of the average concordance shows the original results to be biased low relative to the duplicate results.

TEM Inter-laboratory QC

An inter-laboratory (IL) sample is a separate preparation of a previously-analyzed sample re-examined by a microscopist in a different laboratory than who performed the initial examination, with the results compared. Four (4) OU3 samples for the 2015 SB TEM re-preparation/inter-laboratory (RP/IL) analyses were selected in accordance with the most recent revision of Laboratory Modification LB-000029. These samples included three (3) air samples and one ash sample. The list was provided to each of the Libby contract laboratories, who then retrieved the samples from archive storage, prepared the TEM grids, analyzed the samples, prepared the paperwork, and shipped the grids to the laboratory selected to perform the IL analyses.

IL analyses provide information on variability and potential bias between laboratories. The criteria for TEM IL analyses are the same as those for the other recount analyses. **Table 15A** provides a summary of the overall 2015 SB OU3 TEM IL results, across all laboratories, by media. Note that **Table 15A** includes those structures determined to be ambiguous.

Table 15A – 2015 OU3 TEM Slash Pile Burn Inter-laboratory Analyses – All Matching Structures

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Air	LA vs. NAM	10	10	100%	**Totals**	**LA vs. NAM**	**38**	**37**	**97%**
	LA vs. OA	10	10	100%		**LA vs. OA**	**38**	**38**	**100%**
	LA vs. CH	10	10	100%		**LA vs. CH**	**38**	**38**	**100%**
	Structures per GO[1]	10	10	100%		**Structures per GO[1]**	**16**	**12**	**75%**
	Structures per GO[2]	30	30	100%		**Structures per GO[2]**	**36**	**32**	**89%**
	Structure Length	10	6	60%		**Structure Length**	**36**	**29**	**81%**
	Structure Width	10	10	100%		**Structure Width**	**36**	**36**	**100%**
	Na/K Presence	10	10	100%		**Na/K Presence**	**36**	**26**	**72%**
Ash	LA vs. NAM	28	27	96%					
	LA vs. OA	28	28	100%					
	LA vs. CH	28	28	100%					
	Structures per GO[1]	6	2	33%					
	Structures per GO[2]	6	2	33%					
	Structure Length	26	23	88%					
	Structure Width	26	26	100%					
	Na/K Presence	26	16	62%					

Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.

As presented in **Table 15A**, with three exceptions, IL analyses were all within the "Good" or "Acceptable" range of the program-wide criteria (**Table 7**) specified for Asbestos Class of Structure (LA vs. NAM, OA, or CH), Structure Length, Structure Width, and Structures per GO. The exceptions, as highlighted in **Table 15A**, include:

- Air – 60% of the results from matched LA structures were exceeded the structure length criteria, which falls into the "Poor" category (<80% concordance) described in **Table 7**.
- Ash – 33% of the GOs (excluding and including NDs) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 7**.
- Totals – 75% of the GOs (excluding NDs) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 7**.

The UB OU3 TEM IL study followed the same processes for selection and analysis as the SB event. In total, seven (7) OU3 samples for the 2015 UB TEM re-preparation/inter-laboratory (RP/IL) analyses, comprised of four (4) air samples, and one each of duff, tree bark, and ash samples, were selected. **Table 15B** provides a summary of the overall 2015 UB OU3 TEM IL results, across all laboratories, by media. Note that **Table 15B** includes those structures determined to be ambiguous.

Table 15B – 2015 OU3 TEM Understory Burn Inter-laboratory Analyses – All Matching Structures

Results for Matched LA Structures									
Media	**Attribute**	**Total**	**Pass**	**%**	**Media**	**Attribute**	**Total**	**Pass**	**%**
Air	LA vs. NAM	51	51	100%	Duff	LA vs. NAM	8	7	88%
	LA vs. OA	51	49	96%		LA vs. OA	7	7	100%
	LA vs. CH	51	51	100%		LA vs. CH	7	7	100%
	Structures per GO[1]	30	27	90%		Structures per GO[1]	8	4	50%
	Structures per GO[2]	40	37	93%		Structures per GO[2]	10	6	60%
	Structure Length	51	45	88%		Structure Length	8	8	100%
	Structure Width	51	51	100%		Structure Width	8	8	100%
	Na/K Presence	51	44	86%		Na/K Presence	8	6	75%
Tree Bark	LA vs. NAM	8	7	88%	**Totals**	**LA vs. NAM**	**85**	**83**	**98%**
	LA vs. OA	7	7	100%		**LA vs. OA**	**83**	**81**	**98%**
	LA vs. CH	7	7	100%		**LA vs. CH**	**83**	**83**	**100%**
	Structures per GO[1]	9	2	22%		**Structures per GO[1]**	**57**	**35**	**61%**
	Structures per GO[2]	10	3	30%		**Structures per GO[2]**	**70**	**48**	**69%**
	Structure Length	8	8	100%		**Structure Length**	**85**	**78**	**92%**
	Structure Width	8	8	100%		**Structure Width**	**85**	**85**	**100%**
	Na/K Presence	8	6	75%		**Na/K Presence**	**85**	**70**	**82%**
Ash	LA vs. NAM	18	18	100%					
	LA vs. OA	18	18	100%					
	LA vs. CH	18	18	100%					
	Structures per GO[1]	10	2	20%					
	Structures per GO[2]	10	2	20%					
	Structure Length	18	17	84%					
	Structure Width	18	18	100%					
	Na/K Presence	18	14	78%					

Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.

As presented in **Table 15B**, with the exception of the following, IL analyses were all within the "Good" or "Acceptable" range of the program-wide criteria (**Table 7**) specified for Asbestos Class of Structure (LA vs. NAM, OA, or CH), Structure Length, Structure Width, and Structures per GO. Upon further evaluation, issues with an ash sample (UB-00126) appear to have impacted these results. The exceptions, as highlighted in **Table 15B**, include:

- LA vs. NAM
  - Tree Bark – 88% of the results from LA vs. NAM structures exceeded the criteria of 95% concordance, which falls into the "Poor" category described in **Table 7**.
  - Duff – 88% of the results from LA vs. NAM structures exceeded the criteria of 95% concordance, which falls into the "Poor" category described in **Table 7**.
- Structures per GO
  - Duff – 50% and 60% of the GOs (excluding and including NDs, respectively) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 7**.

- Ash – 20% of the GOs (excluding and including NDs) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 7**.
- Tree Bark – 22% and 30% of the GOs (excluding and including NDs, respectively) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 7**.
- Totals – 61% and 69% of the GOs (excluding and including NDs, respectively) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 7**.

Missed (or unmatched) structures are those structures either identified by the RP laboratory, but not the IL laboratory, or those identified by the IL laboratory, but not the RP laboratory. **Tables 16A and 16B** show the unmatched structures by laboratory, unadjusted for ambiguous structures for the SB and UB TEM IL events, respectively.

Table 16A – 2015 OU3 TEM Slash Pile Burn IL Analyses Missed Structures

Lab	Total Structures	Structures Missed	
		#	%
EMSL03	10	0	0%
EMSL04	38	3	7.9%
ESATR8	28	4	14%
All Labs	**76**	**7**	**9.2%**

In the 2015 SB OU3 TEM IL study, matched structures were identified with 100% confirmation by EMSL03. For EMSL04 and ESATR8, three (3) and four (4) structures were missed resulting in 7.9% and 14% of structures missed, respectively. With seven (7) of 76 missed overall, 9.2% of structures were missed program-wide for the SB OU3 event.

Table 16B – 2015 OU3 TEM Understory Burn IL Analyses Missed Structures

Lab	Total Structures	Structures Missed	
		#	%
EMSL03	29	2	6.9%
EMSL04	94	27	29%
EMSL45	73	1	1.4%
ESATR8	31	1	3.2%
All Labs	**227**	**31**	**14%**

In the 2015 UB OU3 TEM IL stud, missed structures were identified for all participating laboratories ranging from 1.4% missed (EMSL45) to 29% missed (EMSL04). With 31 of 227 missed overall, 14% of structures were missed program-wide for the UB OU3 event.
The discordances presented in **Tables 15AB** and **16AB** for both TEM IL studies may be attributed to false negative results potentially caused by analyst error and/or misinterpretation, chemical variability among structures, tears in the film replicate causing the relocation of fibers, etc. Note that no program-wide criteria from **Table 7** apply to NaK.

Additional considerations for laboratory performance can be made by excluding ambiguous structures, thereby basing the analyses upon only those results considered most appropriate. Reasons for structures to be identified as ambiguous include:

- Damaged (i.e., ripped or torn) grid openings preventing the IL laboratory from either locating or reconciling missed structures.
- Heavy particulate or melting of organic material causing replica to shift resulting in structures migrating into other GOs and onto grid bars.
- Structures burned during the original analyses resulting in inability to identify by EDS and SAED.
- Chemical variability along structures, causing significant differences in EDS spectra, and resulting in the same structure recorded as a NAM in one (1) analysis and LA in the other.

Note that the limited number of structures found in the 2015 SB and UB OU3 TEM IL samples do not warrant such evaluations.

Asbestos Data Validation

All of the 2015 OU3 sample results for the SB and UB studies were validated. A total of 203 samples from 38 Laboratory Job Numbers, analyzed by four (4) different laboratories for the 2015 Libby OU3 SB and UB analytical events, were validated by the QATS Program. The projects, laboratories, chain-of-custody (COC) numbers, Laboratory Job Numbers, method, matrix, and sample counts are presented, as follows, in **Table 17**:

Table 17 – 2015 OU3 SB and UB Sample Data Validation Summary

Project	Lab	COC Number	Laboratory Job Number	Method	Matrix	Total Sample Analyses	Field Samples (not QC)	Total QC Samples
SB	EMSL04	25977	041514016	PCM	Air	3	3	0
SB	EMSL04	25999	041514332	PCM	Air	1	1	0
SB	EMSL04	15-1065_FG	041514140	PLM-VE	Soil	4	3	1
SB	EMSL04	15-1065_C	041514141	PLM-Grav	Soil	3	3	0
SB	EMSL04	15-1074_FG	041514566	PLM-VE	Soil	4	3	1
SB	EMSL04	15-1074_C	041514570	PLM-Grav	Soil	5	3	2
SB	EMSL04	25978	041514012	TEM	Tree Bark	5	4	1
SB	EMSL04	25979	041514018	TEM	Duff	7	6	1*
SB	EMSL04	25995	041514397	TEM	Air	6	5	1*
SB	EMSL04	25996	041514400	TEM	Air	6	5	1
SB	EMSL04	25993	041514414	TEM	Air	4	4	0
SB	EMSL04	25989	041514418	TEM	Air	6	6	0
SB	EMSL03	25990	041514422	TEM	Air	7	7	0
SB	EMSL03	25992	041514425	TEM	Air	7	6	1*
SB	EMSL03	25991	041514458	TEM	Air	7	6	1
SB	EMSL04	25997	041514462	TEM	Ash	10	9	1*
SB	EMSL03	26005	041514588	TEM	Air	7	7	0
SB	EMSL03	26004	041514595	TEM	Air	7	6	1
SB	ESATR8	25976	A150107	TEM	Air	2	2	0

Table 17 – 2015 OU3 SB and UB Sample Data Validation Summary

Project	Lab	COC Number	Laboratory Job Number	Method	Matrix	Total Sample Analyses	Field Samples (not QC)	Total QC Samples
SB	ESATR8	25994	A150108	TEM	Air	7	6	1
SB	ESATR8	26008	A150121	TEM	Air	5	4	1
SB Sub-Totals						**113**	**99**	**14**
UB	EMSL04	15-1095	041515591	PLM	Soil	4	3	1
UB	EMSL04	15-1191	041519104	PLM	Soil	4	3	1
UB	EMSL04	270515JK01	041515450	TEM	Tree Bark	5	5	0
					Duff	6	5	1*
UB	EMSL04	260615JK02	041519119	TEM	Ash	9	9	0
UB	EMSL04	260615JK01C	041519128	TEM	Air	3	3	0
UB	EMSL04	260615JK01D	041519133	TEM	Air	4	3	1*
UB	EMSL04	260615JK01F	041519141	TEM	Air	3	3	0
UB	EMSL03	260615JK01J	041519144	TEM	Air	7	6	1
UB	EMSL04	260615JK01K	041519151	TEM	Air	4	4	0
UB	EMSL45	260615JK01B	38995150088	TEM	Air	7	6	1
UB	EMSL45	260615JK01E	38995150089	TEM	Air	3	3	0
UB	EMSL45	260615JK01H	38995150090	TEM	Air	4	4	0
UB	EMSL45	260615JK01I	38995150091	TEM	Air	8	7	1
UB	ESATR8	200515JK01	A150130	TEM	Air	2	2	0
UB	ESATR8	290515JK01	A150147	TEM	Air	5	5	0
UB	ESATR8	260615JK01A	A150228	TEM	Air	6	5	1
UB	ESATR8	260615JK01G	A150229	TEM	Air	6	4	2
UB Sub-Totals						**90**	**80**	**10**
SB and UB Totals						**203**	**179**	**24**

Note: Ash samples are processed in replicates of 3 (i.e. 3 replicates for 3 samples = 9 analyses)

* A Reconciliation (RC) analysis was also performed on the QC sample due to discrepancies between the original and replicate analyses. RCs are not included in the table counts.

The 203 total samples validated for the SB and UB projects consisted of 179 field samples, nine (9) laboratory blanks, and seven (7) QC samples. The QC samples consisted of RS, RD, LDS, VA, and LDCR samples, as presented in elsewhere in this report. Note that the RC and blanks associated with these projects were also validated.

No qualifiers were applied to any of the 2015 SB and UB event asbestos samples validated. The bench sheet/EDD information comparisons found that of the 203 sample results validated, 26 (12.8%) contained some type of bench sheet/EDD discrepancy. Note that, not included in these counts are the four (4) EDD discrepancies in the SB projects related to two (2) blanks samples and two (2) RC samples. All of the identified discrepancies were considered by the validators as minor (i.e., typographical errors or omissions in fields) and as having no impact on the sample results. As verified by QATS personnel, the EDDs were corrected by the applicable laboratory personnel to reflect the correct information subsequent to this validation, and so no further action is required.

Conclusions and Recommendations

The 2015 OU3 SB and UB event analytical results provided by the participating laboratories and the soil samples processed at the Troy SPF were found to be accurate and of acceptable quality, meeting the requirements specified in the applicable methods and project-specific SOPs and Laboratory Modifications. Due to the small number of OU3 samples prepared and analyzed for analysis by TEM in the 2015 SB and UB events, as respectively presented in **Tables 4A** and **5A**, certain QC analyses were not performed for the media specified. Because this memo represents only two (2) of the four (4) 2015 OU3 analytical events, action will not be taken to ensure QC frequencies are met until all data are evaluated as applicable to 2015.

With regard to the Troy SPF QC selection process, the QATS Program recommends that QC samples specific to OU3 (**Tables 2** and **3**) are processed in order to make the applicable data for OU3 projects readily available and identifiable in the OU3 database. The current process used, which provides QC samples that are not specific to the project OU (i.e. site-wide vs. OU3), requires queries of the non-OU3 database to locate the applicable OU3 grinding blanks, drying blanks and preparation duplicate sample data.

The overall EPA-defined “Good” and “Acceptable” results for the PLM LDS/LDCR (**Table 14**) and TEM IL (**Tables 15A** and **15B**) analyses along with the lack of qualification for the sample results evaluated in the data validation effort (0 of 203; **Table 17**), indicates that the sample processing, preparation, analysis, and reporting for the 2015 OU3 SB and UB events were done so appropriately and accurately.

Attachment 2

2015 Trespasser and Surface Water and Groundwater Validation and Quality Control Review (April 2016)

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April 15, 2016

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Document ID #: 3021-04152016-1

EPA CONTRACT NUMBER EP-W-10-033
TASK ORDER NUMBER 3021
QA SUPPORT FOR RI/FS AT THE LIBBY ASBESTOS SITE OU3

Dear Ms. Progess:

Enclosed please find the technical memorandum entitled "2015 Trespasser and Surface Water and Groundwater Validation and Quality Control Review." This memorandum is a deliverable under Task 6 of Task Order 3021.

If you have any questions, please feel free to contact me.

Sincerely,



Lyndsay K. Gensler
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Technical Memorandum

From:	Lyndsay Gensler, CB&I QATS Program
Date:	April 15, 2016
Subject:	2015 Trespasser and Surface Water and Groundwater Validation and Quality Control Review

The following is a review of the Quality Control (QC) analyses and data validation performed on sample analyses associated with the 2015 Trespasser (TS) and Surface Water and Groundwater (WT) sampling events. These are remaining two (2) of four (4) sampling events taking place for OU3 in 2015.

The elements in this memorandum include:

- Troy Sample Preparation Facility (SPF) QC
- QC Data Evaluated
- Asbestos Data Validation
- Conclusions and Recommendations

The QC data described in this section were collected from the OU3 site and analyzed by the EPA contract laboratories listed in **Table 1** below**.**

Table 1 – 2015 Libby OU3 Laboratories

Abbreviation	Name, Location
EMSL03	EMSL Analytical, Inc., New York, NY
EMSL04	EMSL Analytical, Inc., Cinnaminson, NJ
EMSL22	EMSL Analytical, Inc., Denver, CO
EMSL45	EMSL Analytical, Inc., Sierra Madre, CA
ESATR8	ESAT Region 8, Golden, CO

The SAP Summaries used to determine QC frequency were the following:

- Trespasser Activity-Based Sampling Quality Assurance Project Plan, Revision 0, September 4, 2015.
- Surface Water and Groundwater Sampling and Analysis Plan/Quality Assurance Project Plan, Revision 1, April 10, 2015.

Troy SPF QC

Soil samples delivered to the Troy Sample Preparation Facility (SPF) in 2015 were processed in accordance with ESAT SOP 16-ASB-06.02 (Soil Sample Preparation at the Troy SPF), which includes processes for drying, splitting, sieving, grinding, and archiving of soil samples collected from OU3. Once processed, the resulting fine ground and/or coarse fractions are submitted to the laboratories for analysis by the Libby-specific PLM methods (PLM-Grav and PLM-VE).

Grinding the samples to a uniform size prior to shipping for analysis removes the potential variability introduced by each laboratory grinding their own sample. In order to ensure proper sample handling and decontamination of soil/sediment sample preparation equipment at the Troy SPF, preparation QC samples are also processed. These samples are assigned unique field identifiers and are submitted blindly to the analytical laboratories along with the associated field samples.

Two types of preparation QC samples were processed for PLM analyses at the preparation facilities: preparation blanks, which include drying and grinding blanks, and preparation duplicates. With 45 total PLM-VE field samples for the 2015 Libby OU3 TS event, one (1) grinding blank, one (1) drying blank, and two (2) preparation duplicate samples were analyzed (see **Table 2A**). With 46 total PLM-Grav field samples for the 2015 Libby OU3 TS event, two (2) preparation duplicate samples were analyzed (see **Table 2B**).

Table 2A – 2015 OU3 PLM-VE Trespasser Troy SPF QC

Field Samples	Grinding Blanks[1]	Drying Blanks[2]	Prep Duplicates (Freq. Goal=5%)	
	No. of Samples	No. of Samples	No. of Samples	%
45	1	1	2	4.4%

[1] Processed at a frequency of 1 grinding blank per day.
[2] Processed at a frequency of 1 drying blank per drying oven used in the drying process.

Table 2B – 2015 OU3 PLM-Grav Trespasser Troy SPF QC

Field Samples	Prep Duplicates (Freq. Goal=5%)	
	No. of Samples	%
46	2	4.3%

Drying Blanks

Drying blanks are used to determine if cross-contamination is occurring during sample processing, specifically the sample drying process. Drying blanks consist of one (1) aliquot of asbestos-free quartz sand placed in each of the drying ovens used during the drying process. As shown in **Tables 2A**, the frequency requirement was met with one (1) drying blank for PLM-VE prepared with the TS samples. The drying blank sample result was reported as non-detect (Bin A) by PLM, suggesting that the procedures utilized to dry the samples did not introduce LA contamination.

Grinding Blanks

Like drying blanks, grinding blanks are used to determine if cross-contamination has occurred during or after the PLM grinding process. Grinding blanks consist of asbestos-free quartz sand and are processed at a frequency of one (1) per day. As shown in **Tables 2A**, the frequency requirement was met with one (1) grinding blank prepared with the TS samples. The grinding blank sample result was reported as ND (Bin A) by PLM-VE, suggesting that the procedures utilized to grind the samples did not introduce LA contamination.

Preparation Duplicates

Preparation duplicates are created by dividing a sample designated for PLM analysis into two (2) parts after drying, but prior to sieving and grinding. Preparation duplicates are prepared at a frequency of 5.0% of processed field samples; however, since the 60th field sample was not reached, the next preparation duplicate sample was not initiated resulting in a frequency

requirement which fell short of the 5.0% goal. Comparison of the preparation duplicate results with the paired original field sample results is used to evaluate variability that may occur during preparation and analysis. As shown in **Tables 2A** and **2B**, two (2) preparation duplicates were prepared with the TS samples, for both the PLM-VE and Grav methods, respectively. All of the preparation duplicate sample results were reported within one bin category of the parent sample by PLM-VE and PLM-Grav, and pass the requirement specified in the Soil Sample Preparation at the Troy SPF ESAT Region 8 SOP. Given the small number of SPF PLM preparation duplicates, the concordant results for these QC samples analyzed under each of the PLM methods is a good indication that the samples are being processed in a consistent manner.

QC Data Evaluated

TEM QC Frequency

The frequency and performance of QC applied under the TS and WT sampling events in 2015, are illustrated in the following tables presented throughout this report.

- Table 3A – 2015 OU3 TEM Trespasser QC Sample Frequency
- Table 3B – 2015 OU3 TEM Trespasser Field QC Summary
- Table 4A – 2015 OU3 TEM Surface Water and Groundwater QC Sample Frequency
- Table 4B – 2015 OU3 TEM Surface Water and Groundwater Field QC Summary
- Table 4C – 2015 OU3 TEM Surface Water and Groundwater Field QC Statistical Comparison Using Two Poisson Rates – Total LA
- Table 4D – 2015 OU3 TEM Surface Water and Groundwater Field QC Statistical Comparison Using Two Poisson Rates – PCMe LA Structures
- Table 5 – 2015 OU3 TEM Surface Water and Groundwater Field QC – Adjusted for Equipment Blank Contamination

Trespasser QC Sample Analysis Frequency

Sixty-five (65) field samples and 17 QC samples were collected and/or analyzed by Transmission Electron Microscopy (TEM) for the 2015 OU3 TS sampling event as presented in **Table 3A** below.

Table 3A – 2015 OU3 TEM Trespasser QC Sample Frequency

Lab	Media	Field Samples (Not QC)	LB (4%)		RS (1%)		RD (2.5%)		VA (1%)		RP (1%)	
			#	%	#	%	#	%	#	%	#	%
ESATR8	Air	15	2	13.3%	0	0.0%	1	6.7%	0	0.0%	0	0.0%
EMSL03	Air	12	2	16.7%	0	0.0%	0	0.0%	0	0.0%	1	8.3%
EMSL04	Air	14	2	14.3%	0	0.0%	1	7.1%	0	0.0%	1	7.1%
EMSL22	Air	12	2	16.7%	0	0.0%	1	8.3%	1	8.3%	0	0.0%
EMSL45	Air	12	2	16.7%	0	0.0%	1	8.3%	0	0.0%	0	0.0%
Totals		**65**	**10**	**15.4%**	**0**	**0.0%**	**4**	**6.2%**	**1**	**1.5%**	**2**	**3.1%**

Note: Frequency goal percentages for each QC sample type are presented within the parentheses (XX%) in the applicable column.
LB – Laboratory Blank RS – Recount Same RD – Recount Different
VA – Verified Analysis RP – Re-preparations

Of the 17 QC samples analyzed by TEM for the TS sampling event, 10 were laboratory blanks (LBs) (15.4%), four (4) were recount different (RD) samples (6.2%), two (2) were re-preparation (RP) samples (3.1%), and one (1) was a verified analysis (VA) sample (1.5%). No recount same (RS) samples were analyzed for the TS project. All blank samples, including the LBs, and

drying and filtration blanks, were prepared and analyzed at the required frequencies, with all analyses resulting in NDs.

Areas of discordance between the required frequencies and the percentage actually performed are highlighted in yellow. The overall frequencies were performed at the required frequencies on an OU3 program-wide basis, as illustrated in **Table 3A** above, except where highlighted. The overall TEM QC frequency requirements for the 2015 OU3 sampling events, four (4) in total, met the OU3 QC requirements specified in Laboratory Modification LB-00029F (See **Attachment 2**).

A TEM field duplicate is a QC sample which is collected from the same approximate location as the original sample. As stated in the TS QAPP, "Because field duplicate samples are expected to have inherent variability that is random and may be either small or large, typically, there is no quantitative requirement for the agreement of field duplicates. Rather, results are used to determine the magnitude of this variability to evaluate data usability."

Field blanks are QC samples which are collected to evaluate potential contamination introduced during sample collection, shipping and handling, or analysis. Field duplicates and field blanks are collected at the frequencies specified in Section B5 Quality Assurance/Quality Control of the project QAPPs, and are specific to each media type.

Table 3B presents the TEM field QC sample summary for field duplicates and field blanks related to the 2015 OU3 TS sampling event.

Table 3B – 2015 OU3 TEM Trespasser Field QC Summary

Method/ Media	Field Samples	Field Duplicates (10%)		Field Blanks (1 per sampling day)		Lot Blanks (2 total)		Total Samples
		#	%	#	%	#	%	
PLM / Soil	37	3	8.1%	NA	NA	NA	NA	**40**
TEM / Air	60	NA	NA	3	5.0%	2	3.3%	**65**

Note: Frequency goal percentages for each QC sample type are presented within the parentheses (XX%) in the applicable column.

The frequency requirements for TEM field duplicates and field blanks specified by the QAPP were met for the TS sampling event (three (3) field duplicates for the soil media, with none required for air media; one (1) field blank for each sampling day for air media; and two (2) total lot blanks for air media). All of the field duplicate, field blank, and lot blank samples analyzed by TEM for the TS event met the requirement criteria, and exhibited ND results.

Surface Water and Groundwater QC Sample Analysis Frequency

Two-hundred and sixteen (216) field samples and 15 QC samples were collected and/or analyzed by TEM for the 2015 OU3 WT sampling event as presented in **Table 4A** below.

Table 4A – 2015 OU3 TEM Surface Water and Groundwater QC Sample Frequency

Lab	Media	Field Samples (Not QC)	LB (4%)		RS (1%)		RD (2.5%)		VA (1%)		RP (1%)	
			#	%	#	%	#	%	#	%	#	%
EMSL03	Surface Water	45	2	4.4%	1	2.2%	1	2.2%	0	0.0%	0	0.0%
EMSL04	Surface Water	121	1	0.8%	0	0.0%	2	1.7%	2	1.7%	1	0.8%
EMSL22	Surface Water	50	2	4.0%	1	2.0%	1	2.0%	0	0.0%	1	2.0%
Totals		**216**	**5**	**2.3%**	**2**	**0.9%**	**4**	**1.9%**	**2**	**0.9%**	**2**	**0.9%**

Note: Frequency goal percentages for each QC sample type are presented within the parentheses (XX%) in the applicable column.
LB – Laboratory Blank RS – Recount Same RD – Recount Different
VA – Verified Analysis RP – Re-preparations

Of the 216 field samples analyzed by TEM for the 2015 OU3 WT sampling event, 15 QC samples were analyzed, including five (5) were LBs (2.3%), four (4) were RDs (1.9%), and two each were RS, VA, and RPs (0.9% each).

Areas of discordance between the required frequencies and the percentage actually performed are highlighted in yellow. The overall frequencies were performed at the required frequencies on an OU3 program-wide basis, as illustrated in **Table 4A** above, except where highlighted. The overall TEM QC frequency requirements for the 2015 OU3 sampling events, four (4) in total, met the OU3 QC requirements specified in Laboratory Modification LB-00029F (See **Attachment 2**).

Table 4B presents the TEM field QC sample summary related to the 2015 OU3 WT sampling event.

Table 4B – 2015 OU3 TEM Surface Water and Groundwater Field QC Summary

Media	Field Samples	Field Duplicates (10%)		Equipment Blanks (1 per day)		Field Blanks (10%)	
		#	%	#	%	#	%
Groundwater	20	2	10.0%	8	40.0%	1	5.0%
Surface Water	167	18	10.8%	0	0.0%	0	0.0%
Totals	**187**	**20**	**10.7%**	**8**	**4.3%**	**1**	**0.5%**

Note: Frequency goal percentages for each QC sample type are presented within the parentheses (XX%) in the applicable column.

The frequency requirements for TEM field duplicates and equipment blanks (EBs) specified by the QAPP were met for the WT sampling event. The frequency requirements for the field blanks, as specified in the WT QAPP Section B5.1.5, were not met with the areas of discordance highlighted in yellow in **Table 4B** above. The field blank and most of the EB samples analyzed by TEM for the WT event met the requirement criteria with non-detect results. Contamination was present in some of the EB analyses, as is further described in the **Equipment Rinsate Blank Contamination** section and **Attachment 1** of this memorandum.

Of the 20 field duplicate pairs analyzed for the 2015 WT project, two (2) were groundwater samples and 18 were surface water samples. The 2015 WT field duplicate results were compared to the original analyses using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). With the exceptions of those highlighted in yellow in **Tables 4C and 4D** below, the field duplicate pair results were within the 90% CI when considering Total LA and PCMe LA structures only.

Table 4C, below, presents the statistical comparison for the original (first evaluation) and field duplicate (second evaluation) analyses as identified by laboratory and sample number, as analyzed by the TEM-ISO method.

Table 4C – 2015 OU3 TEM Surface Water and Groundwater Field QC
Statistical Comparison Using Two Poisson Rates – Total LA

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL03	WT-10007	WT-10008	Water	37	5.30E+05	36	5.20E+05	[0.69-1.58] The rates are not different
EMSL22	WT-10015	WT-10016	Water	1	4.90E+04	6	4.90E+04	[0.01-1.09] The rates are not different
EMSL22	WT-10032	WT-10033	Water	0	4.90E+04	1	4.90E+04	[0-19] The rates are not different
EMSL03	WT-10037	WT-10036	Water	42	5.20E+05	54	5.20E+05	[0.54-1.11] The rates are not different
EMSL22	WT-101119	WT-10120	Water	25	8.30E+05	25	9.40E+05	[0.53-1.46] The rates are not different
EMSL04	WT-10111	WT-10112	Water	31	1.00E+06	35	1.00E+06	[0.57-1.37] The rates are not different
EMSL04	WT-10089	WT-10090	Water	38	5.20E+05	27	5.20E+05	[0.9-2.21] The rates are not different
EMSL04	WT-10065	WT-10066	Water	33	3.00E+05	39	5.20E+05	[0.32-0.74] Rate 1 is less than Rate 2
EMSL22	WT-10145	WT-10146	Water	25	8.00E+04	26	1.40E+05	[0.33-0.91] Rate 1 is less than Rate 2
EMSL22	WT-10128	WT-10129	Water	1	4.90E+04	0	4.90E+04	[0-19] The rates are not different
EMSL03	WT-10057	WT-10058	Water	0	4.80E+04	1	5.00E+04	[0-18.24] The rates are not different
EMSL03	WT-10083	WT-10084	Water	23	5.80E+04	26	1.30E+05	[0.24-0.66] Rate 1 is less than Rate 2
EMSL04	WT-10098	WT-10099	Water	2	4.90E+04	2	4.90E+04	[0.11-9.24] The rates are not different
EMSL04	WT-10150	WT-10151	Water	27	5.20E+05	33	5.10E+05	[0.52-1.32] The rates are not different
EMSL04	WT-10163	WT-10164	Water	7	4.90E+04	1	1.30E+05	[0.42-58.6] The rates are not different
EMSL04	WT-10182	WT-10181	Water	28	1.20E+05	25	3.40E+05	[0.24-0.65] Rate 1 is less than Rate 2
EMSL04	WT-10226	WT-10227	Water	28	8.40E+05	36	5.20E+05	[0.8-1.96] The rates are not different
EMSL04	WT-10178	WT-10179	Water	25	5.20E+05	26	5.20E+05	[0.58-1.58] The rates are not different
EMSL04	WT-10193	WT-10194	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different
EMSL04	WT-10199	WT-10200	Water	1	4.90E+04	0	4.90E+04	[0-19] The rates are not different

[a] Water $(L)^{-1}$

As presented in **Table 4C**, for four (4) of the 20 field duplicate samples (highlighted in yellow), the first evaluation rate (Rate1) were statistically different from the second evaluation rate (Rate 2) when considering all total LA.

Table 4D – 2015 OU3 TEM Surface Water and Groundwater Field QC
Statistical Comparison Using Two Poisson Rates – PCMe LA Structures

Lab	Field Sample ID	Field Duplicate ID	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL03	WT-10007	WT-10008	Water	7	5.30E+05	3	5.20E+05	[0.66-10.66] The rates are not different
EMSL22	WT-10015	WT-10016	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different
EMSL22	WT-10032	WT-10033	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different
EMSL03	WT-10037	WT-10036	Water	7	5.20E+05	2	5.20E+05	[0.82-23.38] The rates are not different
EMSL22	WT-10119	WT-10120	Water	3	8.30E+05	1	9.40E+05	[0.29-68.42] The rates are not different
EMSL04	WT-10111	WT-10112	Water	3	1.00E+06	5	1.00E+06	[0.13-2.46] The rates are not different
EMSL04	WT-10089	WT-10090	Water	3	5.20E+05	3	5.20E+05	[0.18-5.53] The rates are not different
EMSL04	WT-10065	WT-10066	Water	6	3.00E+05	3	5.20E+05	[0.3-5.33] The rates are not different
EMSL22	WT-10145	WT-10146	Water	2	8.00E+04	2	1.40E+05	[0.06-5.28] The rates are not different
EMSL22	WT-10128	WT-10129	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different
EMSL03	WT-10057	WT-10058	Water	0	4.80E+04	0	5.00E+04	Both counts are 0; the rates are not different
EMSL03	WT-10083	WT-10084	Water	2	5.80E+04	4	1.30E+05	[0.03-1.2] The rates are not different
EMSL04	WT-10098	WT-10099	Water	0	4.90E+04	2	4.90E+04	[0-3.47] The rates are not different
EMSL04	WT-10150	WT-10151	Water	5	5.20E+05	7	5.10E+05	[0.23-2.21] The rates are not different
EMSL04	WT-10163	WT-10164	Water	1	4.90E+04	0	1.30E+05	[0-50.41] The rates are not different
EMSL04	WT-10182	WT-10181	Water	5	1.20E+05	7	3.40E+05	[0.08-0.77] Rate 1 is less than Rate 2
EMSL04	WT-10226	WT-10227	Water	6	8.40E+05	4	5.20E+05	[0.7-9.15] The rates are not different
EMSL04	WT-10178	WT-10179	Water	2	5.20E+05	4	5.20E+05	[0.07-2.69] The rates are not different
EMSL04	WT-10193	WT-10194	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different
EMSL04	WT-10199	WT-10200	Water	0	4.90E+04	0	4.90E+04	Both counts are 0; the rates are not different

[a] Water $(L)^{-1}$

As presented in **Table 4D**, when considering PCMe LA structure results only, a single field duplicate sample (highlighted in yellow), of the 20 total, resulted in first and second evaluation rates which were statistically different.

Equipment Rinsate Blank Contamination

As a result of contamination of the equipment rinsate blank samples for the 2015 Libby OU3 WT sampling event, the concentrations for the associated samples required adjustment (See **Attachment 1**). The EB concentrations used to adjust the associated sample concentrations are presented in **Table 5**, below.

Table 5 – 2015 OU3 TEM Surface Water and Groundwater Field QC – Adjusted for Equipment Blank Contamination

Total Structures						Total Structures > 10 um					
Sample #	N_b	GO	GOA	A_b	L_b	Sample #	N_b	GO	GOA	A_b	L_b
WT-10063	7	21	0.013	0.273	25.6	WT-10063	1	21	0.013	0.273	3.7
WT-10070	3	21	0.013	0.273	11.0	WT-10070	0	21	0.013	0.273	0.0
WT-10075	5	21	0.013	0.273	18.3	WT-10075	0	21	0.013	0.273	0.0
WT-10079	3	21	0.013	0.273	11.0	WT-10079	0	21	0.013	0.273	0.0
WT-10224	7	21	0.013	0.273	25.6	WT-10224	0	21	0.013	0.273	0.0
WT-10230	10	21	0.013	0.273	36.6	WT-10230	1	21	0.013	0.273	3.7
WT-10236	27	7	0.013	0.091	296.7	WT-10236	2	7	0.013	0.091	22.0
WT-10232	18	21	0.013	0.273	65.9	WT-10232	1	21	0.013	0.273	3.7
AVERAGE					**61.3**	**AVERAGE**					**4.1**

N_b Total number of countable structures
A_b Total area of filter blanks counted (Total GO*GOA)
L_b Background Loading s/mm2
GO Grid openings
GOA Grid opening Area

TEM Laboratory Blanks

Laboratory blanks (LBs) for TEM analysis are prepared from new, unused filters and analyzed using the same procedures as applied to field samples. LBs help determine the presence of any significant sources of asbestos contamination during sample preparation and analysis in the TEM laboratory. As **Tables 3A** and **4A** show, a total of 15 TEM LBs were analyzed by the participating laboratories in 2015 for the TS and WT events. No asbestos structures were observed in any of the LBs, suggesting that the sample preparation and analysis procedures performed by the laboratories were effective in not introducing asbestos contamination.

TEM Recounts & Re-preparations

A recount analysis is a re-examination of select original TEM grid openings (GOs) to verify the reported asbestos structure counts and characteristics. Three (3) types of recount analyses were performed by the TEM analytical laboratories for the 2015 TS and WT projects:

- Recount Same (RS) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by the same microscopist who performed the initial examination.
- Recount Different (RD) – Select original GOs, usually the ten (10) with the highest number of LA structures, are re-examined by a microscopist within the same laboratory who did not perform the initial examination.
- Verified Analysis (VA) – Similar to RD but with different documentation requirements, a VA must be recorded in accordance with the NIST (1994) protocol requirements.

Recount analyses were compared with the original analysis on a GO-by-GO, and structure-by-structure basis. The degree of concordance between the original analysis and the recount analysis was evaluated based on the total number of countable LA structures observed for each grid opening that was re-examined. The concordance metrics, as defined in LB-000029F, are summarized in **Table 6**:

Table 6 – TEM Recount Analysis Concordance Rules

Measurement Parameter	Concordance Rule
Number[1] of LA structures within each grid opening	For grid openings with 10 or fewer structures, counts must match exactly. For grid openings with more than 10 structures, counts must be within 10 percent (%) as calculated as RPD (((maximum count – minimum count)/average count)*100%).
Asbestos class of structure (LA, OA, CH)	Must agree 100% on CH vs. amphibole. For assignment of amphiboles to LA or OA bins, must agree on at least 90% of all amphibole structures.
LA Structure length	For fibers and bundles (all methods) and CF, CB, MF, and MB structures (ISO), must agree within 1 um or 10% (whichever is less stringent). For clusters and matrices (AHERA and ASTM) and CFO, CBO, CC, MFO, MBO, and MC structures (ISO), must agree within 2 um or 20% (whichever is less stringent). The above percentages (%) are to be calculated as RPD (((1st analysis length – 2nd analysis length)/average length)*100%).
LA Structure width	For fibers and bundles (all methods) and CF, CB, CFO, CBO, MF, MB, MFO, and MBO structures (ISO), must agree within 0.5 um or 20% (whichever is less stringent). For clusters and matrices (AHERA and ASTM) and CC and MC structures (ISO), there is no quantitative rule for concordance. The above percentage (%) is to be calculated as RPD (((1st analysis width – 2nd analysis width)/average width)*100%).
Presence of Sodium (Na) and Potassium (K)	There is no rule for concordance, but must be tabulated to identify potential trends that may indicate inconsistencies in recording practices or interpretation of spectra.

[1] For air samples, concordance will be evaluated based on total and PCMe structure counts.

The TEM recount OU3 program-wide concordance criteria, as defined in LB-000029F, are summarized in **Table 7**.

Table 7 – TEM Recount OU3 Program-wide Criteria

QC Sample Type	Metric	OU3 Program-Wide Criteria		
		Good	Acceptable	Poor
Lab Blanks	% with ≥1 asbestos structures	0% - 0.1%	0.2% - 0.5%	>0.5%
Recounts	Concordance on LA count*	>95%	85%-95%	<85%
	Concordance on type (chrysotile vs. amphibole)	>99%	95%-99%	<95%
	Concordance on type (LA vs. other amphibole)	>99%	95%-99%	<95%
	Concordance on type (LA vs. NAM)	>99%	95%-99%	<95%
	Concordance on LA length	>90%	80%-90%	<80%
	Concordance on LA width	>90%	80%-90%	<80%
Re-preparations	Concordance on LA concentration/loading	>95%	90%-95%	<90%

* Identified as Structures per GO throughout the applicable tables in this memorandum.

TEM Recounts – Trespasser

A total of five (5) recount analyses comprised of four (4) RD and one (1) VA samples, as summarized in **Table 8**, were performed for the 2015 TS project. As a total, all required attributes reviewed were considered “Good” or “Acceptable” (**Table 7**). It should be noted that,

for all recount pairs, there was 100% agreement on Chrysotile versus Amphiboles. Though there is no rule for concordance for the presence of Na/K, they are tabulated to identify potential trends which may indicate inconsistencies in recording practices or interpretation of spectra.

Table 8 – 2015 OU3 TEM Trespasser Recount Analysis Results – By Media

Results for Matched LA Structures				
Media	**Attribute**	**Total**	**Pass**	**%**
Air	LA vs. NAM	40	40	100.0%
	LA vs. OA	40	40	100.0%
	LA vs. CH	40	40	100.0%
	Structures per GO[1]	32	31	96.9%
	Structures per GO[2]	50	49	98.0%
	Structure Length	40	35	87.5%
	Structure Width	40	37	92.5%
	Na/K Presence	40	37	92.5%

LA – Libby Amphibole OA – Other Amphibole CH – Chrysotile NAM – Non-asbestos Material
Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.

TEM Recounts – Surface Water and Groundwater

A total of eight (8) recount analyses comprised of two (2) RS, two (2) VA, and four (4) RD samples, as summarized in **Table 9**, were performed for the 2015 WT project. As a total, all required attributes reviewed were considered "Good" or "Acceptable" (**Table 7**), with the exceptions of the structures per GO attributes which were below the 85% criteria threshold. It should also be noted that, for all recount pairs, there was 100% agreement on Chrysotile versus Amphiboles. Though there is no rule for concordance for the presence of Na/K, they are tabulated to identify potential trends which may indicate inconsistencies in recording practices or interpretation of spectra.

Table 9 – 2015 OU3 TEM Surface Water and Groundwater Recount Analysis Results – By Media

Results for Matched LA Structures				
Media	**Attribute**	**Total**	**Pass**	**%**
Water	LA vs. NAM	265	263	99.2%
	LA vs. OA	265	262	98.9%
	LA vs. CH	265	265	100.0%
	Structures per GO[1]	30	16	53.3%
	Structures per GO[2]	30	16	53.3%
	Structure Length	265	250	94.3%
	Structure Width	265	265	100.0%
	Na/K Presence	265	197	74.3%

LA – Libby Amphibole OA – Other Amphibole CH – Chrysotile NAM – Non-asbestos Material
Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.

TEM Re-preparations

A TEM re-preparation (RP) is the re-analysis of a sample from which new grids have been prepared using a different portion of the same filter that was used to prepare the original grids.

The 2015 RP results (second evaluation) were compared to the original analyses (first evaluation) using the method for comparison of two Poisson rates described by Nelson (1982), based on a 90% confidence interval (CI). RPs provide information on analysis precision, as well as within-filter variability. A total of three (3) RP pairs were analyzed for the 2015 TS project for the air media and two (2) RP pairs were analyzed for the 2015 WT project for the water media. All of the RP pair results (100%) were within the 90% CI. **Table 10** presents the statistical comparison for the original and RP analyses as identified by sample number for the TS project.

Table 10 – 2015 OU3 Trespasser Re-preparation Statistical Comparison Using Two Poisson Rates

Lab	Field Sample ID	Method	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL03	TS-00052	TEM-ISO	Air	28	5.43E-03	25	9.46E-03	[0.39-1.05] The rates are not different
EMSL04	TS-00037	TEM-ISO	Air	2	5.99E-03	5	5.99E-03	[0.06-1.93] The rates are not different
EMSL45	TS-00084	TEM-ISO	Air	6	3.58E-02	8	4.78E-02	[0.19-1.56] The rates are not different

[a] Air $(CC)^{-1}$

Tables 11A and 11B present the statistical comparison for the original and RP analyses as identified by sample number for the WT project, representing the total LA and LA greater than 10 evaluations, respectively.

Table 11A – 2015 OU3 Surface Water and Groundwater Re-preparation Statistical Comparison Using Two Poisson Rates – Total LA

Lab	Field Sample ID	Method	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	WT-10182	TEM-ISO	WATER	28	1.20E+05	27	2.00E+05	[0.39-1.01] The rates are not different
EMSL22	WT10034	TEM-ISO	WATER	14	4.90E+04	22	4.90E+04	[0.34-1.17] The rates are not different

Table 11B – 2015 OU3 Surface Water and Groundwater Re-preparation Statistical Comparison Using Two Poisson Rates – LA >10

Lab	Field Sample ID	Method	Media	First Evaluation		Second Evaluation		Poisson Ratio Rate Comparison (CI=90%)
				Count	Sensitivity [a]	Count	Sensitivity [a]	
EMSL04	WT-10182	TEM-ISO	WATER	5	1.20E+05	3	2.00E+05	[0.24-4.8] The rates are not different
EMSL22	WT10034	TEM-ISO	WATER	1	4.90E+04	2	4.90E+04	[0.02-6.39] The rates are not different

[a] Water $(L)^{-1}$

All of the RP pair results for the TS and WT sampling events were within the 90% CI poisson ratio rate comparison.

Laboratory QC

PLM Laboratory QC

Three (3) types of PLM Laboratory QC analyses were performed on the 2015 OU3 samples, Laboratory Duplicate Samples (LDSs), Laboratory Duplicate Cross-check (LDC) and Laboratory Duplicate Cross-check Re-preparation (LDCR) samples. These Laboratory QC analyses are defined as follows:

- LDS – A reanalysis of a sample by the same analyst.
- LDC – A reanalysis of a sample by a different analyst
- LDCR – A re-preparation and reanalysis of a sample by a different analyst.

Tables 12A and 12B provide a summary of the frequency at which the PLM LDS, LDC, and LDCR analyses were performed for the TS project for the PLM-VE and PLM-Grav methods, respectively. Note that no PLM samples were analyzed for the WT project.

Table 12A – 2015 OU3 Trespasser PLM-VE QC Sample Frequency by Laboratory

Method	Lab	Field Samples (Not QC)	LDS (Freq. Goal=2%)		LDC (Freq. Goal=4%)		LDCR (Freq. Goal=4%)	
			#	%	#	%	#	%
PLM-VE	EMSL04	27	1	3.7%	1	3.7%	1	3.7%
	EMSL22	17	0	0.0%	1	5.9%	1	5.9%
	Totals	**44**	**1**	**2.3%**	**2**	**4.5%**	**2**	**4.5%**

Table 12B – 2015 OU3 Trespasser PLM-Grav QC Sample Frequency by Laboratory

Method	Lab	Field Samples (Not QC)	LDS (Freq. Goal=2%)		LDC (Freq. Goal=8%)	
			#	%	#	%
PLM-Grav	EMSL04	25	0	0.0%	2	8.0%
	EMSL22	17	1	5.9%	3	17.6%
	Totals	**42**	**1**	**2.4%**	**5**	**11.9%**

Note: Frequency goals are applicable to each PLM QC sample-type on an OU3 program-wide bases over the entire calendar year. These goals are included as informational only.

Of the five (5) TS PLM-VE QC samples analyzed for the 2015 TS project, one (2.3% overall) was an LDS sample, and two each (4.5%) were LDC and LDCR samples. Of the six (6) TS PLM-Grav QC samples analyzed for the 2015 TS project, one (2.4% overall) was an LDS sample, and five (11.9%) were LDC samples.

As presented in **Tables 12A and 12B**, the total numbers of PLM QC analyses performed in 2015 were above the required frequencies for all sample analyses and QC types. As illustrated in the **Tables 12A and 12B**, while all of the QC sample frequency requirements were not met by the individual laboratories, as highlighted in yellow, these frequencies are assessed from all 2015 OU3 event, for which all frequency requirements we met (see **Attachment 2**).

PLM Recount OU3 Program-wide Criteria

Table 13 below provides the OU3 program-wide concordance criteria for PLM-VE Recount Analyses, as defined in Laboratory Modification LB-000073.

Table 13 – OU3 Program-Wide Criteria for PLM-VE Recount Analysis Concordance

Metric	Good	Acceptable	Poor
% of IL pairs ranked as strongly discordant	<5%	5-10%	>10%
% of IL pairs ranked as weakly discordant	<20%	20-40%	>40%

PLM-Grav recount results were compared based on a relative percent difference (RPD) calculation (RPD (%) = (Original - IL) / [(Original + IL)/2] * 100). To-date, no project-specific RPD acceptance criteria or OU3 program-wide goals have been established, rather acceptance

criteria for PLM-Grav recount results are determined by the individual laboratory, which in the case of the EMSL Laboratories, is 100% concordance.

Tables 14A and 14B summarize the recount results of the LDC, LDCR, and/or LDS samples by PLM-VE and PLM-Grav analysis, respectively, for the 2015 OU3 TS event.

Table 14A – 2015 OU3 PLM-VE Recount Comparison of LDC/LDCR/LDS Results for the Trespasser Event

		Comparison as Total Number of Analyses				
		LDC/LDCR/LDS Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	1	0	0	0	**1**
	Bin B1 (Tr)	0	2	0	0	**2**
	Bin B2 (<1%)	0	0	1	0	**1**
	Bin C (≥1%)	0	0	1	0	**1**
	Totals:	**1**	**2**	**2**	**0**	**5**

	# of Samples	% of Samples
Total Pairs	5	100.0%
Concordant	4	80.0%
Weakly Discordant	1	20.0%
Strongly Discordant	0	0.0%

Table 14B – 2015 OU3 PLM-Grav Recount Comparison of LDC/LDS Results for the Trespasser Event

		Comparison as Total Number of Analyses				
		LDC/LDS Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	1	0	0	0	**1**
	Bin B1 (Tr)	0	2	0	0	**2**
	Bin B2 (<1%)	0	0	0	0	**0**
	Bin C (≥1%)	0	0	0	3	**3**
	Totals:	**1**	**2**	**0**	**3**	**6**

	# of Samples	% of Samples
Total Pairs	6	100.0%
Concordant	6	100.0%
Weakly Discordant	0	0.0%
Strongly Discordant	0	0.0%

As summarized in **Table 14A**, 80.0% of the PLM-VE QC samples for the TS project are concordant and 20.0% are weakly discordant, and so are considered “Acceptable” and “Good” for weak and strong discordance, respectively. All of the PLM QC results for the PLM-Grav method (**Table 14B**) were found to be in concordance (100%), which passes the acceptance criteria of 100% RPD, as determined by the EMSL Laboratories.

Inter-laboratory QC

An inter-laboratory (IL) sample is a separate preparation of a previously-analyzed sample re-examined by a microscopist in a different laboratory than who performed the initial examination, with the results compared.

PLM ILs

Table 15A – 2015 OU3 PLM-VE IL Comparison of Results for the Trespasser Event

		Comparison as Total Number of Analyses				
		IL Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	0	1	0	0	**1**
	Bin B1 (Tr)	0	3	0	0	**3**
	Bin B2 (<1%)	0	0	0	2	**2**
	Bin C (≥1%)	0	0	0	2	**2**
	Totals:	**0**	**4**	**0**	**4**	**8**

	# of Samples	% of Samples
Total Pairs	8	100.0%
Concordant	5	62.5%
Weakly Discordant	3	37.5%
Strongly Discordant	0	0.0%

Table 15B – 2015 OU3 PLM-Grav IL Comparison of Results for the Trespasser Event

		Comparison as Total Number of Analyses				
		IL Analysis Bin:				
		Bin A (ND)	Bin B1 (Tr)	Bin B2 (<1%)	Bin C (≥1%)	**Totals:**
Original Analysis Bin:	Bin A (ND)	1	0	0	0	**1**
	Bin B1 (Tr)	0	1	0	0	**1**
	Bin B2 (<1%)	0	0	0	0	**0**
	Bin C (≥1%)	0	0	0	1	**1**
	Totals:	**1**	**1**	**0**	**1**	**3**

	# of Samples	% of Samples
Total Pairs	3	100.0%
Concordant	3	100.0%
Weakly Discordant	0	0.0%
Strongly Discordant	0	0.0%

As summarized in **Table 15A**, 62.5% of the TS PLM-VE IL samples are concordant and 37.5% are weakly discordant, and so are considered “Acceptable” and “Good” for weak and strong discordance, respectively. All of the 2015 OU3 TS PLM QC results for the PLM-Grav method (**Table 15B**) were found to be in concordance (100%), which places these IL analysis results in the “Good” category for weakly and strongly discordant results.

TEM ILs

Five (5) OU3 air samples for the 2015 TS TEM re-preparation/inter-laboratory (RP/IL) analyses were selected in accordance with the most recent revision of Laboratory Modification LB-000029. The list was provided to each of the Libby contract laboratories, who then retrieved the samples from archive storage, prepared the TEM grids, analyzed the samples, prepared the paperwork, and shipped the grids to the laboratory selected to perform the IL analyses.

IL analyses provide information on variability and potential bias between laboratories. The criteria for TEM IL analyses are the same as those for the other recount analyses. **Table 16** provides a summary of the overall 2015 TS OU3 TEM IL results, across all laboratories, by media. Note that **Table 16** includes those structures determined to be ambiguous.

Table 16 – 2015 OU3 TEM Trespasser Inter-laboratory Analyses – All Matching Structures

Results for Matched LA Structures				
Media	**Attribute**	**Total**	**Pass**	**%**
Air	LA vs. NAM	42	41	98%
	LA vs. OA	42	42	100%
	LA vs. CH	42	42	100%
	Structures per GO[1]	38	28	74%
	Structures per GO[2]	49	39	80%
	Structure Length	42	25	60%
	Structure Width	42	41	98%
	Na/K Presence	42	30	71%

LA – Libby Amphibole OA – Other Amphibole CH – Chrysotile NAM – Non-asbestos Material
Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.

As presented in **Table 16**, with three exceptions, IL analyses were all within the "Good" or "Acceptable" range of the program-wide criteria (**Table 7**) specified for Asbestos Class of Structure (LA vs. NAM, OA, or CH), Structure Length, Structure Width, and Structures per GO. The exceptions, as highlighted in **Table 16**, include:

- 60% of the results from matched LA structures were exceeded the structure length criteria, which falls into the "Poor" category (<80% concordance) described in **Table 7**.
- 80% of the GOs (excluding and including NDs) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 7**.
- 75% of the GOs (excluding NDs) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 7**.

The WT OU3 TEM IL study followed the same processes for selection and analysis as the TS event. In total, four (4) OU3 water samples for the 2015 WT TEM re-preparation/inter-laboratory (RP/IL) analyses were selected. **Table 17** provides a summary of the overall 2015 WT OU3 TEM IL results, across all laboratories, by media. Note that **Table 17** includes those structures determined to be ambiguous.

Table 17 – 2015 OU3 TEM Surface Water and Groundwater Inter-laboratory Analyses – All Matching Structures

Results for Matched LA Structures				
Media	**Attribute**	**Total**	**Pass**	**%**
Water	LA vs. NAM*	177	167	94%
	LA vs. OA	177	177	100%
	LA vs. CH	177	177	100%
	Structures per GO[1]	18	8	44%
	Structures per GO[2]	18	8	44%
	Structure Length	177	158	89%
	Structure Width	177	177	100%
	Na/K Presence	177	93	53%

Structures per GO[1] – Grid openings that contained reportable structures.
Structures per GO[2] – All grid openings, including those that did not contain reportable structures.
Note: The structures determined to be ambiguous are included in the results presented in the table above.
* For sample WT-10227, 8 of the 10 NAMs reported in the RP-IL should have been reported as LA in accordance with LB-000066E, as identified by the EMSL data reviewer. Removing those 8 NAMs improves the passing percentage of LA vs. NAM to 99%, which is acceptable.

As presented in **Table 17**, with the exception of the following, IL analyses were all within the "Good" or "Acceptable" range of the program-wide criteria (**Table 7**) specified for Asbestos Class of Structure (LA vs. NAM, OA, or CH), Structure Length, Structure Width, and Structures per GO. The exceptions, as highlighted in **Table 17**, include:

- 94% of the results from LA vs. NAM structures exceeded the criteria of 95% concordance, which falls into the "Poor" category described in **Table 7**.
- 44% of the GOs (excluding and including NDs) were in concordance with the structures per GO criteria, which falls into the "Poor" category (<85% concordance) described in **Table 7**.

Missed (or unmatched) structures are those structures either identified by the RP laboratory, but not the IL laboratory, or those identified by the IL laboratory, but not the RP laboratory. **Tables 18 and 19** show the unmatched structures by laboratory, unadjusted for ambiguous structures for the TS and WT TEM IL events, respectively.

Table 18 – 2015 OU3 TEM Trespasser Inter-laboratory Analyses Missed LA Structures (by Laboratory)

Missed LA Structures			
Laboratory	**Total Structures**	**LA Structures Missed**	
		#	%
ESATR8	24	2	8.3%
EMSL03	22	0	0.0%
EMSL04	19	1	5.3%
EMSL45	14	2	14.3%
All Labs	**79**	5	**6.3%**

In the 2015 TS OU3 TEM IL study, matched structures were identified with 100% confirmation by EMSL03. EMSL04 missed one (1) of 19 structures for a 5.3% missed LA structure rate. For EMSL45 and ESATR8, two (2) structures each were missed resulting in 14.3% and 8.3% of

structures missed, respectively. With five (5) of 79 LA structures missed overall, 6.3% of structures were missed program-wide for the TS OU3 event.

Table 19 – 2015 OU3 TEM Surface Water and Groundwater IL Analyses Missed LA Structures

Laboratory	Total Structures	LA Structures Missed	
		#	%
EMSL22	111	27	24.3%
EMSL03	85	14	16.5%
EMSL04	187	29	15.5%
All Labs	**383**	**70**	**18.3%**

In the 2015 WT OU3 TEM IL study, missed structures were identified for all participating laboratories ranging from 15.5% missed (EMSL04) to 24.3% missed (EMSL22). With 70 of 383 missed overall, 18.3% of structures were missed program-wide for the WT OU3 event.

The discordances presented in **Tables 18 and 19** for both TEM IL studies may be attributed to false negative results potentially caused by analyst error and/or misinterpretation, chemical variability among structures, tears in the film replicate causing the relocation of fibers, etc. Note that no program-wide criteria from **Table 7** apply to NaK.

Additional considerations for laboratory performance can be made by excluding ambiguous structures, thereby basing the analyses upon only those results considered most appropriate. Reasons for structures to be identified as ambiguous include:

- Damaged (i.e., ripped or torn) grid openings preventing the IL laboratory from either locating or reconciling missed structures.
- Heavy particulate or melting of organic material causing replica to shift resulting in structures migrating into other GOs and onto grid bars.
- Structures burned during the original analyses resulting in inability to identify by EDS and SAED.
- Chemical variability along structures, causing significant differences in EDS spectra, and resulting in the same structure recorded as a NAM in one (1) analysis and LA in the other.

Note that the limited number of structures found in the 2015 TS and WT OU3 TEM IL samples do not warrant such evaluations.

Asbestos Data Validation

All of the 2015 OU3 sample results for the TS and WT studies were validated. A total of 547 samples from 31 Laboratory Job Numbers, analyzed by five (5) different laboratories for the 2015 Libby OU3 TS and UWT analytical events, were validated by the QATS Program. The projects, laboratories, chain-of-custody (COC) numbers, Laboratory Job Numbers, method, matrix, and sample counts are presented, as follows, in **Table 20**:

Table 20 – 2015 OU3 Trespasser and Surface Water and Groundwater Sample Data Validation Summary

Project	Laboratory	COC Number	Laboratory Job Number	Method	Matrix	Total Sample Analyses	Field Samples (not QC)	Total QC Samples
TS	EMSL04	15-1427_FG	041529321	PLM-VE	Soil	17	15	2
TS	EMSL04	15-1427_C	041529322	PLM-Grav	Soil	14	13	1
TS	EMSL04	15-1428_FG	041529333	PLM-VE	Soil	13	12	1
TS	EMSL04	15-1428_C	041529335	PLM-Grav	Soil	13	12	1
TS	EMSL22	15-1429_FG	221506241	PLM-VE	Soil	19	17	2
TS	EMSL22	15-1429_C	221506242	PLM-Grav	Soil	21	17	4
TS	EMSL03	230915JK01	031531899	TEM	Air	7	6	1
TS	EMSL03	230915JK02	031531900	TEM	Air	6	6	0
TS	EMSL04	220915JK03	041529347	TEM	Air	7	6	1
TS	EMSL04	220915JK04	041529357	TEM	Air	9	8	1
TS	EMSL22	240915JK02	221506264	TEM	Air	7	6	1
TS	EMSL22	230915JK03	221506265	TEM	Air	7	6	1
TS	EMSL45	230915JK03	451500387	TEM	Air	6	6	0
TS	EMSL45	240915JK01	451500389	TEM	Air	7	6	1
TS	ESATR8	220915JK01	A150500	TEM	Air	6	6	0
TS	ESATR8	220915JK02	A150501	TEM	Air	6	6	0
TS	ESATR8	240915JK04	A150502	TEM	Air	4	3	1*
				Trespasser Sub-Totals		**169**	**151**	**18**
WT	EMSL04	150415JK01	011501931	Metals	Water	14	12	2
				Chloride/Sulfate		14	12	2
				Alkalinity		12	12	0
WT	EMSL04	160415DA01	011501932	Metals	Water	10	8	2
				Chloride/Sulfate		10	8	2
				Alkalinity		8	8	0
WT	EMSL04	190415DA01	011501987	Metals	Water	9	7	2
				Chloride/Sulfate		9	7	2
				Alkalinity		7	7	0
WT	EMSL04	200415JK01	011501931	Metals	Water	21	19	2
				Chloride/Sulfate		21	19	2
				Alkalinity		19	19	0
WT	EMSL03	150415JK01	041511057	TEM	Water	13	12	1*
WT	EMSL04	160415DA01	041511063	TEM	Water	8	8	0
WT	EMSL22	200415JK01	041511388	TEM	Water	20	19	1*
WT	EMSL04	190415DA01	041511395	TEM	Water	8	7	1*
WT	EMSL03	230415JK01	041511862	TEM	Water	31	30	1*
WT	EMSL04	290415DA01	041512830	TEM	Water	31	31	0

Table 20 – 2015 OU3 Trespasser and Surface Water and Groundwater Sample Data Validation Summary

Project	Laboratory	COC Number	Laboratory Job Number	Method	Matrix	Total Sample Analyses	Field Samples (not QC)	Total QC Samples
WT	EMSL22	060515DA01	041513445	TEM	Water	32	31	1
WT	EMSL03/04	150515JK01	041514338	TEM	Water	32	31	1
WT	EMSL04	210515DA01	041514992	TEM	Water	17	16	1*
WT	EMSL04	210515JK01	041514996	TEM	Water	32	31	1*
Surface Water and Groundwater Sub-Totals						**378**	**354**	**24**
TS and WT Totals						**547**	**505**	**42**

Note: Non-asbestos samples were analyzed in three (3) different ways (i.e. 20 samples in a non-asbestos job represent 60 analyses).

* A Reconciliation (RC) analysis was also performed on the QC sample due to discrepancies between the original and replicate analyses. RCs are not included in the table counts.

The 547 total samples validated for the TS and WT projects consisted of 505 field samples and 42 QC samples. The QC samples consisted of RS, RD, LDS, VA, LDC, and LDCR samples, as presented in elsewhere in this report. For the Metals and Chloride/Sulfate methods, MS/MSDs are included as QC. Note that the RC and blanks associated with these projects were also validated.

No qualifiers were applied to any of the 169 2015 TS event asbestos samples validated. Qualifiers were applied to 77 of the 378 2015 WT event samples validated. All qualified samples were related to the metals and chloride/sulfate methods, or the three (3) laboratory jobs with equipment blank contamination (EB). As a result of contamination of the equipment rinsate blank (EB) samples for the 2015 Libby OU3 WT sampling event, three (3) WT Laboratory Job Numbers required re-validation (with “J” or “UJ” qualifiers applied to all samples) and resubmission of the revised reports. The laboratory jobs affected by EB contamination included 041511063, 041511395, and 041514992.

The bench sheet/EDD information comparisons found that of the 169 TS and 378 WT sample results validated, approximately 10% contained some type of bench sheet/EDD discrepancy. All of the identified discrepancies were considered by the validators as minor (i.e., typographical errors or omissions in fields) and as having no impact on the sample results. As verified by QATS personnel, the EDDs were corrected by the applicable laboratory personnel to reflect the correct information subsequent to this validation, and so no further action is required.

Conclusions and Recommendations

The 2015 OU3 TS and WT event analytical results provided by the participating laboratories and the samples processed at the Troy SPF were found to be accurate and of acceptable quality, meeting the requirements specified in the applicable methods and project-specific SOPs and Laboratory Modifications. Due to the small number of OU3 samples prepared and analyzed for analysis by TEM in the 2015 TS and WT events, as respectively presented in **Tables 3A** and **4A**, certain QC analyses were not performed for the media specified. As a result of the first two (2) events presented in the QATS Program memo entitled “2015 Slash Pile Burn and Understory Burn Validation and Quality Control Review”, post-hoc analyses were conducted to ensure frequency requirements were met as specified in Laboratory Modification LB-000029F. **Attachment 2** of this memo presents the overall 2015 OU3 TEM QC frequencies, which pass the applicable yearly requirements. **Attachment 2** also provides the overall 2015 OU3 PLM QC

frequencies for LDS, LDC, and LDCR analyses by the PLM-VE and PLM-Grav methods, which met the frequency requirements in each case.

With regard to the Troy SPF QC selection process, the QATS Program recommendation that QC samples specific to OU3 are processed in order to make the applicable data for OU3 projects readily available and identifiable in the OU3 database, was applied to the data related to these two (2) events. The process used in the Slash Pile Burn and Understory Burn events, which provided QC samples that were not specific to the project OU (i.e. site-wide vs. OU3), required queries of the non-OU3 database to locate the applicable OU3 grinding blanks, drying blanks, and preparation duplicate sample data. This adjustment has improved the process of tracking, evaluating, and validating the data and its requirements related to the specific projects.

The overall EPA-defined “Good” and “Acceptable” results for the PLM LDS/LDC/LDCR (**Table 14A, 14B, 15A, and 15B**) and TEM IL (**Tables 16** and **17**) analyses, with few exceptions as described herein, along with the limited qualification for the sample results evaluated in the data validation effort (**Table 20**), indicates that the sample processing, preparation, analysis, and reporting for the 2015 OU3 TS and WT events were done so appropriately and accurately.

ATTACHMENT 1

FIELD MODIFICATION APPROVAL FORM LFM-OU3-02
Libby OU3, Surface Water and Groundwater Sampling Event (Revision 0) and
Adjusted Sample Results for EB Contamination

Attachment 1

FIELD MODIFICATION APPROVAL FORM
LFM-OU3-02
Libby OU3, Surface Water and Groundwater Sampling Event (Revision 0)

Requested by: Michael Lenkauskas (CB&I Federal Services LLC) Date: 01/04/2016

Description of Deviation:

Due to contamination detected in the equipment rinsate blanks for the Libby OU3 Ground Water Sampling Event conducted in the spring of 2015, the concentrations for the associated samples will need to be adjusted to account for the possibility of cross-contamination between samples collected in the field using the contaminated equipment. To do this, the overall blank fiber loading was calculated [N/(GO·AGO) where N=number of fibers reported in the blank, GO=number of grid openings examined, AGO=area of a grid opening] in the equipment blanks for both total LA and LA>10. These blank loading rates, denoted as Lb, are included in the attached Excel file and are used to adjust all site samples (i.e., by subtracting the corresponding Lb from the reported site samples loading rate). If this adjustment resulted in a sample loading rate to become go negative, this means it is not possible to rank the sample as a detect due to the equipment rinsate blank contamination. All site samples will be qualified with either a "J" or "UJ", depending on adjusted concentration, with the reason code "EB (LFM-OU3-02)" in the database and the blank-adjusted concentration will be recorded along with the qualifier (e.g., "EB [13.2]").
Note: On February 8, 2016, MWH provided a Technical Memorandum to W.R. Grace & Co, Subject: *Libby OU3 Study Area Groundwater Equipment Rinsate Blank Discussion*, which describes possible causes and ramifications of this QC issue. While this memorandum states the groundwater sample results could be biased high as a consequence of the blank contamination issue, it concluded "…it is not likely that groundwater samples were significantly impacted" and states "results are considered to be usable and representative". We disagree with this conclusion and recommend that any decisions for groundwater be based on the blank-adjusted concentrations.

X EPA Region 8 has reviewed this field modification approves as proposed.

☐ EPA Region 8 has reviewed this field modification and approves with the following exceptions:

_____
_____
_____
_____

☐ EPA Region 8 has reviewed this field modification and does not agree with the proposed approach for the following reasons:

_____
_____
_____
_____

_____ 3/21/16
Christina Progess, EPA RPM Date

Attachment 1

Adjusted Results for EB Contamination

Phase	Media	StationID	IndexID	SampDate	FieldQCType	intID_Analysis	AnalysisLab	LabQCType	AnalysisDate	AnalysisType	AnalysisMethod	DilutVol1	EFA	GOSize	GOCount	Sensitivity_LA	LA Count		LA Concentration		Loading		EB Adjusted Loading		EB Adjusted Conc.	
																	All	>10	All	>10	All	>10	All	>10	All	>10
SWGW-2015	Groundwater	Well C	WT-10061	4/14/2015	Field Sample	25824	EMSL04	NOT QC	5/8/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	49400.2181	1	0	49400	0	3.6	0	-58	0	-783563	0
SWGW-2015	Groundwater	BH-09-1	WT-10062	4/14/2015	Field Sample	25825	EMSL04	NOT QC	5/4/2015	TEM-ISO	ISO 10312	100	1359	0.0131	4	259351.145	40	3	10374046	778053	763	57	702	53	9541082	722098
SWGW-2015	Groundwater	BH-07A-1	WT-10064	4/15/2015	Field Sample	25827	EMSL04	NOT QC	5/8/2015	TEM-ISO	ISO 10312	10	1359	0.0131	77	134727.8676	1	0	134728	0	0.99	0	-60	0	-8194909	0
SWGW-2015	Groundwater	BH-07A-2	WT-10065	4/15/2015	Field Sample	25828	EMSL04	NOT QC	5/14/2015	TEM-ISO	ISO 10312	50	1359	0.0131	7	296401.3086	33	6	9781243	1778408	360	65	299	61	8115316	1666497
SWGW-2015	Groundwater	BH-07A-2	WT-10066	4/15/2015	Field Duplicate	25829	EMSL04	NOT QC	5/15/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	518702.2901	39	3	20229389	1556107	744	57	683	53	18563462	1444196
SWGW-2015	Groundwater	BH-07B-1	WT-10067	4/15/2015	Field Sample	25830	EMSL04	NOT QC	5/11/2015	TEM-ISO	ISO 10312	100	1359	0.0131	21	49400.2181	21	1	1037405	49400	76	4	15	-0.48	204441	-6555
SWGW-2015	Groundwater	BH-05A-1	WT-10073	4/17/2015	Field Sample	25860	EMSL04	NOT QC	4/29/2015	TEM-ISO	ISO 10312	25	1359	0.0131	77	53891.14702	1	0	53891	0	0.99	0	-60	0	-3277964	0
SWGW-2015	Groundwater	BH-01A-1	WT-10074	4/17/2015	Field Sample	26672	EMSL04	NOT QC	4/28/2015	TEM-ISO	ISO 10312	25	1359	0.0131	15	276641.2214	25	3	6916031	829924	127	15	66	11	3584176	606103
SWGW-2015	Groundwater	BH-03A-1	WT-10076	4/19/2015	Field Sample	25863	EMSL04	NOT QC	4/29/2015	TEM-ISO	ISO 10312	10	1359	0.0131	4	2593511.45	57	5	147830153	12967557	1088	95	1026	91	139500516	12408005
SWGW-2015	Groundwater	BH-05A-2	WT-10077	4/19/2015	Field Sample	25864	EMSL04	NOT QC	4/30/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	518702.2901	32	2	16598473	1037405	611	38	549	34	14932546	925494
SWGW-2015	Groundwater	BH-01A-2	WT-10078	4/19/2015	Field Sample	25865	EMSL04	NOT QC	5/1/2015	TEM-ISO	ISO 10312	50	1359	0.0131	4	518702.2901	56	3	29047328	1556107	1069	57	1007	53	27381401	1444196
SWGW-2015	Groundwater	Well C	WT-10221	5/18/2015	Field Sample	26209	EMSL04	NOT QC	8/4/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	49780.21978	1	0	49780	0	3.7	0	-58	0	-783183	0
SWGW-2015	Groundwater	BH-09-1	WT-10222	5/18/2015	Field Sample	26210	EMSL04	NOT QC	8/5/2015	TEM-ISO	ISO 10312	100	1359	0.013	6	174230.7692	27	2	4704231	348462	346	26	285	22	3871267	292506
SWGW-2015	Groundwater	BH-07A-1	WT-10223	5/18/2015	Field Sample	26211	EMSL04	NOT QC	8/4/2015	TEM-ISO	ISO 10312	10	1359	0.013	77	135764.2358	0	0	0	0	0	0	0	0	0	0
SWGW-2015	Groundwater	BH-07A-2	WT-10226	5/19/2015	Field Sample	26214	EMSL04	NOT QC	8/5/2015	TEM-ISO	ISO 10312	25	1359	0.013	5	836307.6923	28	6	23416615	5017846	431	92	369	88	20084761	4794025
SWGW-2015	Groundwater	BH-07A-2	WT-10227	5/19/2015	Field Duplicate	26215	EMSL04	NOT QC	8/6/2015	TEM-ISO	ISO 10312	50	1359	0.013	4	522692.3077	36	4	18816923	2090769	692	77	631	73	17150996	1978859
SWGW-2015	Groundwater	BH-07B-1	WT-10228	5/19/2015	Field Sample	26246	EMSL04	NOT QC	8/6/2015	TEM-ISO	ISO 10312	100	1359	0.013	21	49780.21978	0	0	0	0	0	0	0	0	0	0
SWGW-2015	Groundwater	BH-03A-1	WT-10229	5/19/2015	Field Sample	26247	EMSL04	NOT QC	8/6/2015	TEM-ISO	ISO 10312	50	1359	0.013	4	522692.3077	40	3	20907692	1568077	769	58	708	54	19241765	1456166
SWGW-2015	Groundwater	BH-05A-1	WT-10231	5/20/2015	Field Sample	26249	EMSL04	NOT QC	8/12/2015	TEM-ISO	ISO 10312	10	1359	0.013	77	135764.2358	13	0	1764935	0	13	0	-48	0	-6564702	0
SWGW-2015	Groundwater	BH-05A-2	WT-10233	5/21/2015	Field Sample	26251	EMSL04	NOT QC	8/14/2015	TEM-ISO	ISO 10312	50	1359	0.013	7	298681.3187	25	1	7467033	298681	275	11	213	6.9	5801106	186771
SWGW-2015	Groundwater	BH-01A-2	WT-10234	5/21/2015	Field Sample	26252	EMSL04	NOT QC	8/19/2015	TEM-ISO	ISO 10312	10	1359	0.0131	5	2074809.16	29	4	60169466	8299237	443	61	381	57	51839829	7739684
SWGW-2015	Groundwater	BH-01A-1	WT-10235	5/21/2015	Field Sample	26253	EMSL04	NOT QC	8/20/2015	TEM-ISO	ISO 10312	50	1359	0.0131	12	172900.7634	25	4	4322519	691603	159	25	98	21	2656592	579693

ATTACHMENT 2

Combined 2015 OU3 Surface Water and Groundwater (WT), Understory Burn (UB), Slash Pile and Burn (SB), and Trespasser (TS) QC

ATTACHMENT 2

Combined 2015 OU3 Surface Water and Groundwater (WT), Understory Burn (UB), Slashpile and Burn (SB), and Trespasser (TS) TEM QC

Laboratory	Not QC	Blanks (4%)		Recount Same (1%)		Recount Different (2.5%)		Verfied Analysis (1%)		Repreparation (1%)		Inter-labs	
		#	%	#	%	#	%	#	%	#	%	#	%
EMSL03	95	10	10.5%	1	1.1%	3	3.2%	2	2.1%	1	1.1%	6	6.3%
EMSL04	207	18	8.7%	2	1.0%	5	2.4%	2	1.0%	3	1.4%	6	2.9%
EMSL22	62	4	6.5%	1	1.6%	2	3.2%	1	1.6%	1	1.6%	1	1.6%
EMSL45	50	7	14.0%	1	2.0%	4	8.0%	1	2.0%	1	2.0%	3	6.0%
ESATR8	43	3	7.0%	1	2.3%	2	4.7%	1	2.3%	1	2.3%	5	11.6%
Totals	**457**	**42**	9.2%	**6**	1.3%	**16**	3.5%	**7**	1.5%	**7**	1.5%	**21**	4.6%

Note: Post-hoc analyses were completed by EMSL45 (one each of VA, RS, and RP) and EMSL22 (one RP) to meet the frequency requirements specified in Laboratory Modification LB-000029F, and are included in the table above.

Combined 2015 OU3 Understory Burn (UB), Slashpile and Burn (SB), and Trespasser (TS) PLM QC

Laboratory	Method	Not QC	LDS (2%)		LDC (4%)		LDCR (4%)		IL (1%)	
			#	%	#	%	#	%	#	%
EMSL04	PLM-VE	39	2	5.1%	3	7.7%	2	5.1%	1	2.6%
EMSL22	PLM-VE	17	1	5.9%	1	5.9%	1	5.9%	4	23.5%
Totals		**56**	**3**	**5.4%**	**4**	**7.1%**	**3**	**5.4%**	**5**	**8.9%**

Laboratory	Method	Not QC	LDS (2%)		LDC (8%)		IL (1%)	
			#	%	#	%	#	%
EMSL04	PLM-Grav	31	1	3.2%	3	9.7%	4	12.9%
EMSL22	PLM-Grav	17	1	5.9%	3	17.6%	2	11.8%
Totals		**48**	**2**	**4.2%**	**6**	**12.5%**	**6**	**12.5%**

LDS - Laboratory Duplicate Sample
LDC - Laboratory Duplicate Cross-check
LDCR - Laboratory Duplicate Cross-check Re-preparation
IL - Inter-laboratory
Applicable frequency requirements indicated in parentheses.

LIBBY ASBESTOS SUPERFUND SITE
OPERABLE UNIT 3

DATA VERIFICATION REPORT: 2007 TO 2015
August 2016

Contract No. W9128F-11-D-0023
Task Order No. 0005

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 8

Prepared by:

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Section 1
Introduction

Data verification includes checking that results have been transferred correctly from the original hand-written, hard copy field and analytical laboratory documentation to the project database. The goal of data verification is to identify and correct data reporting errors. The investigation-specific sampling and analysis plan (SAP) and/or quality assurance project plan (QAPP) specifies the data verification requirements. This data verification process utilizes Site-specific standard operating procedures (SOPs)[1] developed to ensure analytical results and field sample information in the project database are accurate and reliable:

- **EPA-LIBBY-09 – *SOP for Transmission Electron Microscopy (TEM) Data Review and Data Entry Verification*** – This Site-specific SOP describes the steps for the verification of TEM analyses, based on a review of the laboratory benchsheets, and verification of the transfer of results from the benchsheets into the project database.
- **EPA-LIBBY-10 - *SOP for Polarized Light Microscopy (PLM) Data Review and Data Entry Verification*** – This Site-specific SOP describes the steps for the verification of PLM analyses, based on a review of the laboratory benchsheets, and verification of the transfer of results from the benchsheets into the project database.
- **EPA-LIBBY-11 - *SOP for Field Information Data Review and Data Entry Verification*** – This Site-specific SOP describes the steps for the verification of field sample information, based on a review of the field sample data sheet (FSDS), and verification of the transfer of results from the FSDS into the project database. An FSDS review is performed on all samples selected for analytical data verification.

These regular data verification reviews ensure that any data reporting issues are quickly identified and rectified to limit any impact on overall data quality. If issues are identified during the data verification, the frequency of these checks may be increased as appropriate.

Discrepancies identified in the verification process are categorized as being either a critical error, potential critical error or non-critical discrepancy. Each category is described briefly below.

Critical error: An error is identified in a critical data field which resulted in an error in the calculation of the achieved analytical sensitivity, reported asbestos concentration or structure count. Critical data fields include, but are not limited to, effective area of the filter, number of grid openings examined, area of a grid opening, sample quantity (e.g., mass, volume area), number of structures observed, and indirect preparation inputs. Critical errors may also impact data interpretation (e.g., sample location information).

Potential critical error: an error is identified in a critical data field which does not results in an error in the calculation of the achieved analytical sensitivity, concentration or structure count.

Non-critical discrepancy: a discrepancy is identified in a non-critical data field that does not impact the calculation of the achieved analytical sensitivity, concentration or structure

[1] Formal data verification SOPs were not developed at the time of verification efforts performed for the earlier investigations; however, all verification efforts were performed in basic accordance with the formal SOPs that were developed in 2012.

count and do not have negative data quality implications. Non-critical data fields include, but are not limited to, preparation details (e.g., number of grids prepared, prepared by) and analytical details (e.g., analysis date, instrument name).

A verification of the FSDS information was performed for samples of all media types in basic accordance with SOP EPA-LIBBY-11 (Revision 0). FSDS verification was performed for 100% of all samples on a weekly basis when field documentation forms were submitted during each investigation. Documentation errors and omissions were noted during these reviews. The frequency of errors tended to be higher during the beginning of each sampling investigation. All issues identified have been resolved by field personnel and the necessary corrections have been made to the project database.

A verification of the surface water, groundwater, pore water, ambient air, activity based sampling (ABS) air, ash, tree bark, and duff sample results analyzed by TEM in basic accordance with the International Organization for Standardization (ISO) method 10312:1995 (E) (ISO 1995) was performed in accordance with SOP EPA-LIBBY-09 (Revision 2). A verification of the sediment, soil, and mine waste sample results analyzed by the Libby-specific polarized light microscopy visual area estimation (PLM-VE) and gravimetric (PLM-Grav) methods was performed in accordance with SOP EPA-LIBBY-10 (Revision 0). This verification effort was based on the Libby OU3 project database and the final laboratory reports as provided by the analytical laboratories. **Table 1** details the verification frequency for TEM (Panel A) and PLM (Panel B) analyses.

In 2014, some analytical laboratories began utilizing a direct data entry process for the TEM electronic data deliverables (EDDs), meaning, instead of recording information by hand on a laboratory benchsheet, information was directly entered into a software application. The software application automatically transferred the data into the Libby-specific EDD spreadsheet. This process eliminates potential issues that may arise during the transfer of data from the hand-written laboratory benchsheet to the EDD. As a result, hand-written benchsheets were not included in the laboratory data package and verification of the data transfer was not necessary.

Consistency checks were performed on the data directly entered into the EDD for all analyses selected for verification to ensure that the reported raw structure data were consistent with the analytical method and that applicable SOPs and Libby-specific laboratory method modifications had been followed. Additionally, all calculated values in the EDD were verified based on raw data inputs to confirm the transfer of data from the EDD to the database was performed properly.

Consistency checks were performed for all analyses to ensure that the reported raw structure data were consistent with the analytical method and that applicable analytical SOPs and Libby-specific laboratory method modifications had been followed.

All data verification efforts were completed by the U.S. Environmental Protection Agency (EPA) data management contractor for OU3. SRC, Inc. was the data management contractor (Data Verifier) for the OU3 project from 2007 to 2011; Data Verifier responsibilities were subsequently transferred to CDM Smith in 2011. Critical errors required revision to the benchsheet and/or EDD by the analytical laboratory. As appropriate, the Data Verifier made necessary modifications to the project database to address non-critical discrepancies. Except where noted, all issues identified have been resolved by the analytical laboratory, the necessary corrections have been made to the benchsheet and/or EDD, and revised EDDs have been loaded to the project database.

Attachments 1 and 2 contain the analytical and structure information for the TEM verification findings. **Attachments 3, 4, and 5** contain the analytical, result, and optical information for the PLM verification findings, respectively. Laboratory benchsheets are not included with this report;

however, these files are available upon request. Attachments for FSDS verification findings are not included with this report; corrections were made to the database in real-time and no formal tracking spreadsheets were created.

The sections below provide an overview of the verification findings.

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Section 2
Surface Water and Pore Water

2.1 Phase I (2007)

A verification of three Phase I surface water analyses was performed (EPA 2007). One discrepancy was identified in which the sample identification (ID) number was incorrectly entered in the EDD; the Data Verifier made the appropriate change in the EDD in order to upload to the project database. Three non-critical discrepancies were identified in which the grid storage location was recorded on the benchsheet but was not entered in the EDD. The grid storage location was added to the EDD by the Data Verifier and loaded to the project database.

2.2 Phase II (2008)

A verification of 25 Phase II surface water analyses was performed (EPA 2008a, 2008c). Multiple critical errors were identified during the verification process; therefore, an additional 25 analyses were selected for verification. The critical errors identified are summarized below:

- The structure comments were incorrect or missing from the benchsheet, EDD or both. The structure comments include the energy dispersive x-ray analysis (EDXA) observation (e.g., NaK) and were inconsistently recorded on the benchsheet and entered in the EDD. The EDDs were revised and loaded to the project database to reflect the correct structure comment.
- The structure dimensions (e.g., length, width) were incorrectly transferred from the benchsheet to the EDD. The laboratory revised the EDD to correct the structure dimensions; however, the revisions were made to the incorrect structure. The structure dimensions were changed in the EDD by the Data Verifier based on the dimensions recorded on the benchsheet and loaded to the project database. The grid opening name (e.g., A2) was incorrectly transferred from the benchsheet to the EDD. This impacted the total number of grid openings examined, which in turn impacted the achieved analytical sensitivity and reported asbestos concentration.
- The mineral class (e.g., Libby amphibole asbestos [LA]) was entered in the EDD but was not recorded on the benchsheet.
- The structure type (e.g., fiber [F], bundle [B]) was incorrectly recorded on the benchsheet and entered in the EDD.
- Structure comments (e.g., structure crosses non-countable grid bar) were entered in the EDD but were not recorded on the benchsheet.
- Structure comment was incorrectly entered in the EDD for a complex structure (e.g., MD10).
- The mineral type (e.g., unknown [UN]) was incorrectly recorded on the benchsheet and entered in the EDD.

2.3 Phase IV Part B (2011)

The verification of 24 Phase IV Part B surface water analyses (EPA 2011, CDM Smith 2011). In brief, the majority of the errors identified were non-critical (i.e., would not impact the calculation of sensitivity or concentration). One type of critical error that was identified was an error in the recorded volume applied to the filter, which impacted the calculation of the achieved analytical sensitivity and reported asbestos concentration. In some cases, the volume applied to the filter was not always clear based on the preparation log. As a result, EPA requested that a subsequent

100% verification of the volume applied to the filter be performed by the Data Verifier. This additional verification revealed three critical errors in the volume entered in the EDD.

2.4 Phase V Part A (2012)

A verification of 21 Phase V Part A surface water analyses was performed (EPA 2012a). Results are summarized below.

- One critical error was identified in which a grid opening name was incorrectly transferred from the benchsheet to the EDD. This impacted the total number of grid openings examined, which in turn impacted the achieved analytical sensitivity and reported asbestos concentration.
- A potential critical error was identified in two laboratory data packages in which the volume of water selected for analysis was not clearly recorded on the water preparation record. The laboratory confirmed that the correct volume of water was entered in the EDD; thus, this issue was not deemed to be critical.
- Several non-critical discrepancies were identified:
    - The instrument ID was incorrectly recorded on the benchsheet.
    - The analysis prepared by was incorrectly transferred from the benchsheet to the EDD.
    - A structure dimension (e.g., width) was incorrectly transferred from the benchsheet to the EDD.
    - The quality control (QC) type changed from "Repreparation" to "Not QC" in the EDD but was not changed on the benchsheet.
    - The minimum aspect ratio recording rule was not circled on the benchsheet.
    - The structure type (e.g., ND) was recorded in an incorrect column on the benchsheet.
    - Structure comments were not recorded on the benchsheet for a non-countable structure.

2.5 Phase V Part B (2012)

A verification of 21 Phase V Part B surface water and pore water analyses was performed (EPA 2012b). Results are summarized below.

- Four critical errors were identified:
    - The volume applied to the filter was incorrectly transferred from the water preparation record to the benchsheet and EDD, which impacted the achieved analytical sensitivity and reported asbestos concentration.
    - A structure dimension (e.g., length) was incorrectly transferred from the benchsheet to the EDD. As a result, the total number of structures greater than (>) 10 micrometers (µm) and corresponding asbestos concentration were incorrectly reported.
    - The structure comments were incorrect or missing from the benchsheet, EDD or both. The structure comments include the EDXA observation (e.g., NaK)[2] and were inconsistently recorded on the benchsheet and entered in the EDD.
- Several non-critical discrepancies were identified:
    - The structure type was incorrectly entered in the EDD as "MF0" rather than "MFO." In addition to the formal verification effort, the structure type for all

[2] In the early verification efforts (pre-2012) NaK was identified as a critical error. However, it has been determined that NaK is no longer a reliable metric of mine-related waste; thus the discrepancy in NaK is no longer a critical error.

analyses in this dataset was reviewed based on data available in the project database. No additional discrepancies were noted.
  - Structure comments were not recorded on the benchsheet for non-countable structures.
  - The volume applied to the filter was not recorded on the benchsheet.
  - The laboratory name was incorrectly transferred from the benchsheet to the EDD.
  - A grid name was incorrectly transferred from the benchsheet to the EDD.
  - Grid openings were recorded on the benchsheet but appeared to have been crossed out. It was unclear if the grid openings were examined.

2.6 Nature and Extent (2012)

A verification of two Nature and Extent surface water samples was performed[3] (EPA 2012c, 2013a). No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

2.7 Phase V Part B (2013)

A verification of nine Phase V Part B surface water and pore water analyses was performed (EPA 2013b). Results are summarized below.

- No critical errors were identified in the verification process.
- One potential critical error was identified in which a grid opening name was incorrectly transferred from the benchsheet to the EDD. This discrepancy has the potential to impact the total number of grid openings examined, which in turn would impact the achieved analytical sensitivity and reported asbestos concentration. However, in this analysis, the total number of grid openings examined was not impacted by this discrepancy; thus, this discrepancy was not deemed to be critical.
- One non-critical discrepancy was identified in which the QC type was changed from "Repreparation" to "Not QC" in the EDD but was not changed on the benchsheet.

2.8 Surface Water (2015)

A verification of 185 surface water analyses was performed. Although the governing SAP/QAPP (MWH 2015) required 10% verification of analyses, all analyses were entered in the EDD using the direct data entry process. Therefore, 100% of all analyses were verified[4], including field QC (i.e., field duplicates and field blanks). Results are summarized below.

- One critical error was identified in which a duplicate grid opening name was entered in the EDD. This impacted the total number of grid openings examined, which in turn impacted the achieved analytical sensitivity and reported asbestos concentration.
- One potential critical error was identified in which the volume of water selected for analysis recorded on the water preparation record did not match the volume entered in the EDD. This has the potential to impact the achieved analytical sensitivity and reported asbestos concentration. The laboratory confirmed that the volume of water entered in the EDD was correct and corrected the water preparation record accordingly; thus, this issue was not deemed to be critical.

[3] Because the Kootenai River is included in the OU3 Study Area, only the Kootenai River surface water samples collected during this investigation that were verified are summarized in this report.
[4] The level of effort to verify analyses entered in the EDD using the direct data entry process is less than the level of effort to verify the analytical information recorded on a hand-written benchsheet. Because analyses entered in the EDD using the direct data entry system are verified electronically, there is no difference in level effort to verify 10% of analyses or 100% of analyses; thus, 100% of analyses were verified.

- Seven non-critical discrepancies were identified in which unexpected structure types were entered in the EDD, based on TEM ISO 10312 (ISO 1995). For example, the structure type was entered in the EDD as MD10, rather than MD11.

Section 3
Groundwater

3.1 Phase II (2008)

A verification of four Phase II groundwater analyses was performed (EPA 2008b). One critical error was identified in which the structure comments (e.g., NaK) were entered in the EDD but were not recorded on the benchsheet.

3.2 Groundwater (2015)

A verification of 31 groundwater analyses was performed. As noted above (see Section 2.8), the governing SAP/QAPP (MWH 2015) required 10% verification of analyses, however, all analytical information was entered by the laboratory in the EDD using the direct data entry process. Therefore, 100% of all analyses were verified[5], including field QC (i.e., field duplicates, field blanks, and equipment rinsate blanks). Results are summarized below.

- No critical errors were identified in the verification process.
- One potential critical error was identified in which the volume of water selected for analysis was not clearly recorded on the water preparation record. The laboratory confirmed that the volume entered in the EDD was correct and corrected the water preparation record accordingly; thus, this issue was not deemed to be critical.
- One non-critical discrepancy was identified in which an unexpected structure type was entered in the EDD, based on procedures in TEM ISO 10312 (ISO 1995). For example, the structure type was entered in the EDD as MD10, rather than MD11.

Additionally, it was noted that asbestos structures were observed in all equipment rinsate blanks that were collected. This issue is discussed in further detail in the main text of the Data Summary Report (see Section 13.4.1).

[5] The level of effort to verify analyses entered in the EDD using the direct data entry process is less than the level of effort to verify the analytical information recorded on a hand-written benchsheet. Because analyses entered in the EDD using the direct data entry system are verified electronically, there is no difference in level effort to verify 10% of analyses or 100% of analyses; thus, 100% of analyses were verified.

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Section 4
Duff

4.1 Phase I (2007)

A verification of 19 Phase I duff analyses was performed (EPA 2007). Results are summarized below.

- A critical error was identified in which the dilution volume was populated in the EDD for four laboratory blank analyses selected for verification. A subsequent investigation was performed on all analyses within this dataset to ensure the accuracy of this data field. It appears that this field is incorrectly populated for all laboratory blank analyses. The dilution volume is used in the calculation of the f-factor, however in the case of laboratory blank analysis the EDD automatically assigns a 1 as the f-factor and does not utilize this field in the calculation. The erroneous dilution volume entries were removed from the database by the Data Verifier.
- Several non-critical discrepancies were identified and are summarized below:
    - The prepared by field was incorrectly transferred from the benchsheet to the EDD.
    - The residue mass field was incorrectly populated in the EDD for two laboratory blank samples.
    - The photo number recorded on the benchsheet in the structure comments was not transferred from the benchsheet to the EDD for one structure. The photo number was manually added to the EDD and loaded to the project database by the Data Verifier.

4.2 Nature and Extent Forest (2012)

A verification of 11 Nature and Extent Forest duff analyses was performed (EPA 2012d, 2013c). Results are summarized below.

- No critical errors or potential critical errors were identified during the verification process.
- Several non-critical discrepancies were identified:
    - The minimum aspect ratio recording rule was modified during the upload process from the EDD to the project database. The data upload process has been modified to load the values presented in the EDD without modifications and the minimum aspect ratio field was corrected by running an update query in the project database.
    - The laboratory sample number was incorrectly recorded on the benchsheet.
    - The laboratory name was incorrectly transferred from the benchsheet to the EDD.
    - The target sensitivity was incorrectly recorded on the benchsheet.

4.3 Commercial Logging (2012)

A verification of two Commercial Logging duff analyses was performed (EPA 2012e). Results are summarized below.

- No critical errors or potential critical errors were identified during the verification process.
- Several non-critical discrepancies were identified:

- The target sensitivity was incorrectly transferred from the benchsheet to the EDD.
- The instrument ID was incorrectly recorded on the benchsheet.
- The sketch was entered in the EDD but was not recorded on the benchsheet.
- The structure type was incorrectly entered in the EDD as "MF0" rather than "MFO."

4.4 Replicate Analysis (2013)

A verification of six replicate analyses from Phase I and Commercial Logging was performed. No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

4.5 Commercial Logging (2014)

A verification of two Commercial Logging (2014) duff analyses was performed (EPA 2014a, 2015a). Results are summarized below.

- No critical errors were identified in the verification process.
- One potential critical error was identified on the duff preparation sample data sheet (PSDS) in which the aliquot volume selected for analysis was not clearly indicated on the PSDS. This discrepancy has the potential to impact the achieved analytical sensitivity and reported asbestos concentration. The laboratory confirmed that the aliquot volume entered in the EDD was correct and revised the PSDS accordingly; thus, this discrepancy was not deemed to be critical.
- No non-critical discrepancies were identified in the verification process.

4.6 Slash Pile Burn (2015)

A verification of six Slash Pile Burn ABS duff analyses was performed (EPA 2015c). All analyses were entered in the EDD using the direct data entry process. Results are summarized below.

- One critical error was identified in which grid names were incorrectly entered in the EDD. This error was identified because the number of grid openings required to achieve the target analytical sensitivity was four grid openings, not the 10 grid openings as entered in the EDD. This impacted the total number of grid openings examined, which in turn impacted the achieved analytical sensitivity and reported asbestos concentration.
- No potential critical errors or non-critical discrepancies were identified in the verification process.

4.7 Understory Burn (2015)

A verification of six Understory Burn ABS duff samples was performed (EPA 2015d). All analyses were entered in the EDD using the direct data entry process. No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

4.8 Authentic Wildfire (2015)

A verification of six wildfire duff samples was performed (EPA 2015e). No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

Section 5
Tree Bark

5.1 Phase I (2007)

A verification of 17 Phase I tree bark analyses was performed (EPA 2007). Results are summarized below.

- One critical error was identified in which the grid opening area was corrected by the laboratory on the benchsheet but was not corrected in the EDD. This impacted the total number of grid openings examined, which in turn impacted the achieved analytical sensitivity and reported asbestos concentration.
- Several non-critical discrepancies were identified:
    - The structure type "MB10" is not a valid structure type under ISO recording rules and was incorrectly recorded on the benchsheet and entered in the EDD for one analysis. The laboratory modified the documentation to reflect the correct structure type of "MB."
    - The structure identification (e.g., ADX) was recorded on the benchsheet but was not entered in the EDD.
    - The structure comments recorded on the benchsheet were missing or incorrectly entered in the EDD.
    - The voltage units were recorded on the benchsheet but were not entered in the EDD for four analyses. The Data Verifier manually updated the voltage in the project database.
    - The prepared by, receipt date and preparation date fields were incorrectly transferred from the benchsheet to the EDD.

5.2 Nature and Extent in the Forest (2012)

A verification of eight Nature and Extent in the Forest tree bark analyses was performed (EPA 2012d, 2013c). Results are summarized below.

- No critical errors or potential critical errors were identified during the verification process.
- Several non-critical discrepancies were identified:
    - The structure type was incorrectly transferred from the benchsheet to the EDD.
    - The lab sample number was incorrectly recorded on the benchsheet.
    - The instrument was incorrectly recorded on the benchsheet.

5.3 Commercial Logging (2012)

A verification of two Commercial Logging tree bark analyses was performed (EPA 2012e). Results are summarized below.

- No critical errors or potential critical errors were identified during the verification process.
- One non-critical discrepancy was identified in which a structure type was incorrectly entered in the EDD as "MF0" rather than "MFO". In addition to the formal verification effort, the structure type for all analyses in this dataset was reviewed based on data

available in the project database. Discrepancies were identified in five structures in which the structure type was entered as "MF0" in the EDD, rather than "MFO."

5.4 Replicate Analysis (2013)

A verification of five replicate analyses from Phase I and Commercial Logging was performed. Results are summarized below.

- One critical error was identified in which the mineral class was incorrectly entered in the EDD. As a result, the total number of countable LA structures was incorrect, which in turn impacted the reported asbestos concentration. Additionally, it was discovered that the laboratory did not enter the pilot hole diameter in the EDD for Phase I tree bark replicate analyses, which impacted the achieved analytical sensitivity and reported asbestos concentration. All EDDs that were impacted in this way, including analyses not selected for verification, have since been corrected by the laboratory and reloaded to the database.
- No potential critical errors were identified in the verification process.
- Several non-critical discrepancies were identified:
    - The EDS tick mark was entered in the EDD but was not recorded on the benchsheet.
    - The sketch tick mark was entered in the EDD but was not recorded on the benchsheet.
    - A structure dimension (e.g., length) was incorrectly transferred from the benchsheet to the EDD. This discrepancy did not impact the total number of LA structures counted.
    - The number of grids prepared was incorrectly transferred from the benchsheet to the EDD.
    - The structure type was incorrectly transferred from the benchsheet to the EDD.
    - Chrysotile not counted was recorded on the benchsheet but was not entered in the EDD.

5.5 Wood-burning Stove Ash Removal (2012)

A verification of four wood-burning stove ash removal tree bark analyses[6] was performed (EPA 2012f, 2013d). Results are summarized below.

- No critical errors or potential critical errors were identified in the verification process.
- Several non-critical discrepancies were identified:
    - A grid name was incorrectly transferred from the benchsheet to the EDD.
    - Structure comments were recorded on the benchsheet but were not entered in the EDD.
    - The EDXA was incorrectly transferred from the benchsheet to the EDD.

5.6 Commercial Logging (2014)

A verification of five Commercial Logging (2014) tree bark samples was performed (EPA 2014a, 2015a). No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

[6] Only samples collected in the study location near the mine are summarized in this report.

5.7 Slash Pile Burn (2015)

A verification of four Slash Pile Burn ABS tree bark analyses was performed (EPA 2015c). All analyses were entered in the EDD using the direct data entry process. Results are summarized below.

- One critical error was identified in which the tree core diameter was incorrectly entered on the COC by the field team. This error impacted the achieved analytical sensitivity and reported asbestos concentration.
- No potential critical errors or non-critical discrepancies were identified in the verification process.

5.8 Understory Burn (2015)

A verification of five Understory Burn ABS tree bark analyses was performed (EPA 2015d). All analyses were entered in the EDD using the direct data entry process. No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

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Section 6
Ash

6.1 Wood-burning Stove Ash Removal (2012)

A verification of three wood-burning stove ash analyses[7] was performed (EPA 2012f, 2013d). No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

6.2 Authentic Wildfire – Souse Gulch (2013)

A verification of three Souse Gulch wildfire ash analyses was performed (EPA 2015e). No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

6.3 Slash Pile Burn (2015)

A verification of nine Slash Pile Burn ABS ash analyses was performed (EPA 2015c). All analyses were entered in the EDD using the direct data entry process. No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

6.4 Understory Burn (2015)

A verification of nine Understory Burn ABS ash analyses was performed (EPA 2015d). All analyses were entered in the EDD using the direct data entry process. Results are summarized below.

- One critical error was identified in which the area of a grid opening was incorrectly entered in the EDD. The value for the area of the grid opening entered in the EDD was unexpected based on the value entered for the other ash analyses in this dataset. This impacted the achieved analytical sensitivity and reported asbestos concentration.
- No potential critical or non-critical discrepancies were identified in the verification process.

[7] Only samples collected in the study location near the mine are summarized in this report.

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Section 7
Ambient Air

7.1 Phase I (2007)

A verification of five Phase I ambient air analyses was performed (EPA 2007). Results are summarized below.

- No critical errors or potential critical errors were identified during the verification process.
- One non-critical discrepancy was identified for two analyses in which the grid name was incorrectly transferred from the benchsheet to the EDD. The grid opening name was manually revised in the EDD and loaded to the project database by the Data Verifier.

7.2 Phase II (2008)

A verification of 10 Phase II ambient air analyses was performed (EPA 2008b). No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

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Section 8
Activity-Based Sampling (ABS) Air

8.1 Phase III (2009)

A verification of 25 Phase III ABS air samples from Phase III was performed (EPA 2009). No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

8.2 Phase IV Part A (2010)

A verification of 26 Phase IV Part A ABS air samples was performed (EPA 2010). Results are summarized below.

- One critical error was identified in which the target analytical sensitivity (TAS) reported by the laboratory was incorrect based on the TAS specified in the governing SAP/QAPP. This discrepancy has the potential to cause negative data quality implications if the achieved sensitivity for the analysis did not reach the TAS specified in the SAP/QAPP and no other stopping rules were met (i.e., structure count, maximum area of the filter examined). This analysis met the maximum area examined stopping rule; therefore, no further action was warranted.
- No potential critical errors or non-critical discrepancies were identified during the verification process.

8.3 Phase V Part A (2012)

A verification of two Phase V Part A ABS air samples was performed (EPA 2012a). Results are summarized below.

- No critical errors were identified during the verification process.
- A potential critical error was identified in both analyses in which grid opening names were incorrectly transferred from the benchsheet to the EDD. This has the potential to impact the total number of grid openings examined, which in turn impacts the achieved analytical sensitivity. However, in both analyses, the total number of grid openings examined was not impacted by this discrepancy; thus, this discrepancy was not deemed to be critical.
- No non-critical discrepancies were identified during the verification process.

8.4 Commercial Logging (2012)

A verification of 13 Commercial Logging ABS air analyses was performed (EPA 2012e). Results are summarized below.

- Two critical errors were identified:
    - The magnification was incorrectly entered in the EDD as high magnification rather than low magnification. As a result, the analytical results were reported in terms of both total LA and phase contrast microscopy-equivalent (PCME) LA, rather than PCME LA only.
    - The volume was incorrectly recorded on the COC by field personnel. As a result, the volume entered in the EDD by the laboratory was incorrect, which impacted the achieved analytical sensitivity and reported asbestos concentration.

- One potential critical error was identified in which a grid opening name was incorrectly transferred from the benchsheet to the EDD. This discrepancy has the potential to impact the total number of grid openings examined, which would in turn impact the achieved analytical sensitivity. However, in this analysis, the total number of grid openings examined was not impacted by this discrepancy; thus, this discrepancy was not deemed to be critical.
- Two non-critical discrepancies were identified:
    - The analysis date was incorrectly transferred from the benchsheet to the EDD.
    - The estimated particulate loading was entered in the EDD but was not recorded on the benchsheet.

During this verification effort, discrepancies were also identified in data fields in the project database due to errors in the EDD upload process (e.g., structure dimensions were rounded in the database to one decimal point compared to the EDD). This has the potential to impact the number of PCME LA structures observed, if the raw structure details were utilized. For this dataset, the number of PCME LA structures observed and PCME LA concentration were loaded directly from the EDD into the project database and were not calculated *post-hoc* using the raw structure dimensions in the database. It was discovered that the structure dimension data fields in the project database were providing a rounded value (to one decimal point), rather than the actual value. The data field in the EDD template was modified to address this issue. All impacted EDDs[8] in the project database have since been reloaded using the modified EDD template.

8.5 Wood-burning Stove Ash Removal (2012)

A verification of three wood-burning stove ABS air analyses[9] was performed (EPA 2012f, 2013d). Results are summarized below.

- No critical errors or potential critical errors were identified in the verification process.
- Two non-critical discrepancies were identified:
    - Structure dimensions (e.g., length) were incorrectly transferred from the benchsheet to the EDD.
    - The EDXA was recorded on the benchsheet but was not entered in the EDD.

8.5 Authentic Wildfire – Souse Gulch (2013)

A verification of six Souse Gulch wildfire ABS air analyses was performed (EPA 2015e). Results are summarized below

- Two critical errors were identified:
    - The air volume was incorrectly transferred from the benchsheet to the EDD, which impacted the achieved analytical sensitivity. Asbestos was not detected in this analysis; thus, the reported asbestos concentration was not impacted.
    - A grid opening was recorded on the benchsheet but was not entered in the EDD. This impacted the total number of grid openings examined, which in turn impacted the achieved analytical sensitivity. Asbestos was not detected in this analysis; thus, the reported asbestos concentration was not impacted.
- No potential critical errors were identified in the verification process.
- Three non-critical discrepancies were identified:

[8] This rounding issue does not affect air EDDs generated prior to 2012 and all EDDs after this have been corrected; thus, the rounding of structure dimensions is no longer an issue.
[9] Only samples collected in the study location near the mine are summarized in this report.

- A structure dimension (e.g., length) was incorrectly transferred from the benchsheet to the EDD. This discrepancy did not impact the number of PCME LA structures counted.
- The minimum length recording rule was incorrectly transferred from the benchsheet to the EDD. Asbestos was not detected in this analysis; thus the number of PCME LA structures counted was not impacted.
- The instrument ID was incorrectly transferred from the benchsheet to the EDD.

8.6 Supplemental Analysis (2013)

A verification of 11 supplemental analyses from Phase III and Phase IV Part A was performed. Results are summarized below.

- No critical errors or potential critical errors were identified in the verification process.
- Two non-critical discrepancies were identified:
  - The estimated particulate loading was incorrectly transferred from the benchsheet to the EDD.
  - The minimum length recording rule was incorrectly transferred from the benchsheet to the EDD. Asbestos was detected in his analysis; however, this discrepancy did not impact the number of PCME LA structures counted.

8.7 Commercial Logging (2014)

A verification of seven Commercial Logging (2014) ABS air samples was performed (EPA 2014a, 2015a). No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

During this verification effort, discrepancies were identified in data fields in the project database due to errors in the EDD upload process. Results were modified during the upload process (e.g., structure dimensions were truncated/rounded). If raw structure details are utilized, data interpretation has the potential to be inaccurate. It was discovered that the data fields for structure dimensions in the project database and the data fields in the EDD differed in such a way that only the value that was being displayed in the EDD was loaded to the project database, rather than the actual value. The data field in the EDD template was modified to a "general" format as opposed to a "number" format with one decimal place displayed, so the value displayed was the actual value. All EDDs that were impacted in this way in the project database, including analyses not selected for verification, have since been reloaded using the modified EDD template.

8.8 Nature and Extent Forest (2014)

A verification of 12 Nature and Extent Forest ABS air analyses was performed (EPA 2014b, 2015b). No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

As discussed above in Section 8.7, errors were identified in the data upload process. All EDDs that were impacted in this way in the project database, including analyses not selected for verification, have since been reloaded using the modified EDD template.

8.9 Slash Pile Burn (2015)

A verification of 62 Slash Pile Burn ABS air analyses was performed (EPA 2015c). Of the 62 total analyses, 50 were entered in the EDD using the direct data entry process[10]. No critical errors, potential critical errors or non-critical discrepancies were identified during the verification process.

8.10 Understory Burn (2015)

A verification of 49 Understory Burn ABS air analyses was performed (EPA 2015d). Of the 49 total analyses, 18 were entered in the EDD using the direct data entry process.[11] Results are summarized below.

- No critical errors were identified in the verification process.
- Three potential critical errors were identified:
    - For two analyses, a grid opening name was incorrectly transferred from the benchsheet to the EDD. This has the potential to impact the total number of grid openings examined, which would in turn impact the achieved analytical sensitivity and reported asbestos concentration. However, in both analyses, the total number of grid openings examined was not impacted by this discrepancy; thus, this discrepancy was not deemed to be critical.
    - For one analysis, the analyst indicated that loose material was present on the cowl of the filter, the filter was prepared indirectly, and only half of the filter was ashed. This is not consistent with the indirect preparation SOP. The analyst confirmed that there was not loose material on the cowl and corrected the EDD accordingly.
- Several non-critical discrepancies were identified:
    - For two analyses, the structure type was incorrectly entered in the EDD.
    - For one analysis, the structure comment (e.g., crosses the grid bar length doubled [XGBLD]) was not entered in the EDD.
    - For one analysis, the EDXA was incorrectly transferred from the benchsheet to the EDD.

8.11 Trespasser ABS (2015)

A verification of 60 Trespasser ABS air analyses was performed (EPA 2015f). Results are summarized below.

- No critical errors were identified in the verification process.
- One potential critical error was identified in which two grid opening names was incorrectly transferred from the benchsheet to the EDD. This discrepancy has the potential to impact the total number of grid openings examined, which in turn would impact the achieved analytical sensitivity and reported asbestos concentration. However, in this analysis, the total number of grid openings examined was not impacted by this error; thus, this error was not deemed to be critical.
- Several non-critical discrepancies were identified:
    - For three analyses, the structure type was incorrectly transferred from the benchsheet to the EDD.

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[10] The EMSL laboratories utilized the direct data entry system; ESATR8 recorded analytical information on hand-written benchsheets.

[11] The EMSL laboratories utilized the direct data entry system; ESATR8 and Hygeia recorded analytical information on hand-written benchsheets.

- For four analyses, the loose material in the cowl was incorrectly recorded on the benchsheet.
- For three analyses, the analysis comments for non-countable structures (e..g, XNCGBLD) were not recorded on the benchsheet or entered in the EDD.
- For one analysis, the EDXA observation was incorrectly transferred from the benchsheet to the EDD.
- For two analyses, the mineral ID and EDXA observation were not recorded on the benchsheet but were entered in the EDD.
- For five analyses, the minimum length recording rule was incorrectly transferred from the benchsheet to the EDD.
- For one analysis, the width for one structure was incorrectly transferred from the benchsheet to the EDD.
- For one analysis, the analysis date was incorrectly transferred from the benchsheet to the EDD.
- For one analysis, the magnification was incorrectly transferred from the benchsheet to the EDD.

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Section 9
Tissue

A verification of three tissue analyses was performed (EPA 2012b, 2012g, 2012h, 2013e). Results are summarized below.

- One potential critical error was identified in which a grid opening name was incorrectly transferred from the benchsheet to the EDD. This discrepancy has the potential to impact the total number of grid openings examined, which in turn would impact the achieved analytical sensitivity and reported asbestos concentration. However, in this analysis, the total number of grid openings examined was not impacted by this discrepancy; thus, this discrepancy was not deemed to be critical.
- One issue was identified in which the minimum aspect ratio recording rule from the EDD was modified during the upload process to the project database resulting in erroneous data being presented in the database. The data upload process has since been modified to correctly load the values presented in the EDDs.

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Section 10

Sediment, Soil and Mine Waste

10.1 Phase I (2007)

A verification of 36 Phase I PLM-VE analyses and 15 PLM-Grav analyses was performed (EPA 2007). Results are summarized below.

PLM-GRAV

- The laboratory name, SOP version, analysis status and QC type (e.g., Not QC) were entered in the EDD but were not recorded on the benchsheet for 14 analyses.
- The SOP revision number and laboratory job number fields were incorrect on the benchsheet for one analysis.

PLM-VE

- The optical comments were entered in the EDD but were not recorded on the benchsheet for one analysis.
- The receipt date on benchsheet did not match receipt date on the chain-of-custody for eight analyses. The receipt date from the chain-of-custody was correctly entered in the EDD.
- Two samples had several discrepancies in the analysis comment, SOP revision number, and suffix number fields. The data in these fields were manually entered in the project database by the Data Verifier. The sample ID number and lab sample ID fields on the benchsheet were switched; however, the data was correctly entered in the EDD.
- The result qualifier (e.g., <) was recorded on the benchsheet but the value "1" was not recorded in the mass fraction (%) field. This data was correctly entered in the EDD.

10.2 Phase II (2008)

Initially, a verification of 19 Phase II PLM-VE and seven Phase II PLM-Grav analyses was performed (EPA 2008a, 2008c). Based on the high frequency of critical errors identified in the PLM-Grav analyses (see below), a verification of 100% of the Phase II PLM analyses was performed. Results are summarized below.

PLM-GRAV

Critical errors were identified for six analyses in which the tare weight and mass of LA fields were recorded on the benchsheet and entered in the EDD in units of grams instead of milligrams. As a result, the reported asbestos concentration in the original EDDs was incorrect.

Several non-critical discrepancies were identified in which the analytical specific information recorded on the benchsheet was missing or incorrectly transferred to the EDD. These discrepancies are summarized below:

- The SOP revision number was missing from the benchsheet but was entered in the EDD.
- The SOP version number entered in the EDD did not match the revision number recorded on the benchsheet.
- The analyst initials were recorded on the benchsheet but were not entered into the EDD. The Data Verifier manually entered the appropriate analyst initials in the project database.

PLM-VE

Several non-critical discrepancies were identified in which the analytical specific information recorded on the benchsheet was missing or incorrectly transferred to the EDD. These discrepancies are summarized below:

- The fraction suffix was not recorded on the benchsheet.
- The analysis date was not transferred correctly from the benchsheet to the EDD
- The sample number ID was incorrect on the benchsheet.
- The birefringence information was revised on the benchsheet but was not revised in the EDD. The Data Verifier manually entered the appropriate birefringence information in the project database.

10.3 Nature and Extent (2012)

A verification of three Nature and Extent sediment samples was performed[12] (EPA 2012c, 2013a). No discrepancies were identified in the consistency review process or the transfer of data from the benchsheet to the EDD.

10.3 Phase V Part A (2012)

A verification of four Phase V Part A sediment PLM-VE analyses was performed (EPA 2012a). No discrepancies were identified in the consistency review process or the transfer of data from the benchsheet to the EDD.

10.4 Phase V Part B (2012)

A verification of 10 Phase V Part B sediment PLM-VE analyses and two PLM-Grav analyses was performed (EPA 2012b). No discrepancies were identified in the consistency review process or the transfer of data from the benchsheet to the EDD.

10.5 Amphitheater Removal (2012)

A verification of 15 Amphitheater Removal soil PLM-VE analyses and three PLM-Grav analyses was performed (MWH 2012). No discrepancies were identified in the consistency review process or the transfer of data from the benchsheet to the EDD.

10.6 Geotechnical (2014)

A verification of 130 Geotechnical soil PLM-VE analyses and 44 PLM-Grav analyses was performed (MWH 2014). One non-critical discrepancy was identified in which the refractive index was incorrectly entered in the EDD. No discrepancies were identified in the consistency review process.

10.7 Slash Pile Burn (2015)

A verification of six Slash Pile Burn soil PLM-VE analyses and six PLM-Grav analyses was performed (EPA 2015c). Results are summarized below.

[12] Because the Kootenai River is included in the OU3 Study Area, only the Kootenai River sediment samples collected during this investigation that were verified are summarized in this report.

PLM-GRAV

- Non-critical discrepancies were identified in all six PLM-Grav analyses in which the analysis method SOP was incorrectly recorded on the benchsheet.
- One non-critical discrepancy was identified in which the analysis comment recorded on the benchsheet was not entered in the EDD.

PLM-VE

- No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

10.8 Understory Burn (2015)

A verification of six Understory Burn soil PLM-VE analyses was performed (EPA 2015d). Results are summarized below.

- No critical errors or potential critical errors were identified in the verification process.
- Two non-critical discrepancies were identified in which the analysis comment recorded on the benchsheet was not entered in the EDD.

10.9 Trespasser (2015)

A verification of 37 Trespasser soil PLM-VE analyses and 37 PLM-Grav analyses was performed (EPA 2015e). Results are summarized below.

PLM-GRAV

- No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

PLM-VE

- No critical errors or potential critical errors were identified in the verification process.
- Four non-critical discrepancies were identified in which the analysis comment recorded on the benchsheet was not entered in the EDD.

10.9 Authentic Wildfire (2015)

A verification of three 2015 wildfire soil PLM-VE analyses and two PLM-Grav analyses was performed (EPA 2015e). No critical errors, potential critical errors or non-critical discrepancies were identified in the verification process.

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Section 11

Recommendations for Future Review and Verification

Most of the issues identified during the data verification efforts were non-critical in nature and the frequency of critical errors was generally low. All issues identified during the various OU3 data verification efforts were submitted to the field teams and/or analytical laboratories for resolution and rectification and the necessary changes have been incorporated into the project database. No additional verification efforts for these datasets are recommended at this time.

Data Verifier: _____ ***Date:*** ***8/17/2016***

Data Verification Manager: _____ ***Date:*** ***8/17/2016***

****The Verification Data Manager acknowledges that all issues discovered during the verification process have been resolved.***

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Section 12
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TABLE 1
SUMMARY OF OU3 DATA VERIFICATION FREQUENCY
Libby Asbestos Superfund Site

Panel A: TEM Verification

Investigation	Year	Media Type	Required Verification Frequency	Number of Analyses Verified	Total Number of Analyses	Achieved Verification Frequency
Phase I[a]	2007	Ambient Air	10%	5	55	9.1%
		Duff	10%	19	114	17%
		Surface Water	10%	3	30	10%
		Tree Bark	10%	17	85	20%
Phase II	2008	Ambient Air	10%	10	82	12%
		Groundwater	10%	4	19	21%
		Surface Water	10%	50	237	21%
Phase III	2009	ABS Air	10%	25	229	11%
Phase IV Part A	2010	ABS Air	10%	26	252	10%
Phase IV Part B	2010	Surface Water	10%	24	104	23%
Nature and Extent	2012	Surface Water	10%	2	6	33%
		Tree Bark	10%	8	51	16%
		Duff	10%	11	51	22%
Tissue Assessment	2012	Tissue	10%	3	19	16%
Phase V Part A	2012	ABS Air	10%	2	2	100%
		Surface Water	10%	21	72	29%
Phase V Part B	2012	Surface Water/Pore Water	10%	21	156	13%
Phase V Part B	2013	Surface Water/Pore Water	10%	9	78	12%
Commercial Logging	2012	ABS Air	100%	13	13	100%
		Tree Bark	10%	2	5	40%
		Duff	10%	2	5	40%
Wildfire-Souse Gulch	2012	ABS Air	30%	6	18	33%
		Ash	30%	3	9	33%
Supplemental Analysis	2013	ABS Air	NS	11	48	23%
Replicate Analysis	2013	Tree Bark	NS	5	22	23%
		Duff	NS	6	22	27%
Commercial Logging	2014	ABS Air	25%	7	29	24%
		Tree Bark	25%	5	5	100%
		Duff	25%	2	5	40%
Nature and Extent	2014	ABS Air	10%	12	60	20%
Slash Pile Burn ABS	2015	ABS Air	100%	62	62	100%
		Ash	100%	9	9	100%
		Tree Bark	100%	4	4	100%
		Duff	100%	6	6	100%
Understory Burn ABS	2015	ABS Air	100%	49	49	100%
		Ash	100%	9	9	100%
		Tree Bark	100%	5	5	100%
		Duff	100%	6	6	100%
Trespasser ABS	2015	ABS Air	100%	60	60	100%
Surface Water/Groundwater[b]	2015	Surface Water	10%	185	185	100%
		Groundwater	10%	31	31	100%
Wildfire	2015	Duff	30%	6	18	33%

TABLE 1
SUMMARY OF OU3 DATA VERIFICATION FREQUENCY
Libby Asbestos Superfund Site

Panel B: PLM Verification

Investigation	Year	Media Type	Required Verification Frequency	PLM-VE			PLM-Grav		
				Number of Analyses Verified	Total Number of Analyses	Achieved Verification Frequency	Number of Analyses Verified	Total Number of Analyses	Achieved Verification Frequency
Phase I[a]	2007	Sediment, Soil, Mine Waste	10%	21	191	11%	15	142	11%
Phase II	2008	Sediment	10%	192	192	100%	37	37	100%
Nature and Extent	2012	Sediment	10%	3	12	25%	--	--	--
Amphitheater Removal	2012	Soil	100%	15	15	100%	3	3	100%
Phase V Part A	2012	Sediment	10%	4	4	100%	--	--	--
Phase V Part B	2013	Sediment	10%	10	54	19%	2	10	20%
Geotechnical[c]	2014	Soil	10%	130	130	100%	44	44	100%
Slash Pile Burn ABS	2015	Soil	100%	6	6	100%	6	6	100%
Understory Burn ABS	2015	Soil	100%	6	6	100%	--	--	--
Trespasser ABS	2015	Soil	100%	37	37	100%	37	37	100%
Wildfire	2015	Soil	30%	3	9	33%	2	4	50%

Notes:

[a] Analyses verified in Phase I include field QC and laboratory QC.

[b] Although the governing QAPP (MWH 2015) required only 10% verification of samples/analyses, all analytical results were entered in the EDD using the direct data entry system; thus, 100% of all analyses were verified, including field QC (i.e., field duplicates).

[c] Due to the discrepancies identified in the soil results for this investigation (see Section 13.7 in the main text of this data summary report), 100% of analyses were verified.

-- PLM-Grav analysis was not performed

% = percent

ABS = activity-based sampling

EDD = electronic data deliverable

NS = not specified

PLM = polarized light microscopy

PLM-Grav = polarized light microscopy gravimetric

PLM-VE = polarized light microscopy visual area estimation

QAPP = quality assurance project plan

QC = quality control

TEM = transmission electron microscopy

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE I SURFACE WATER

Analysis Lab	Instrument	Voltage	Magnific	Grid Opening Size	EFA	**Index ID**	Media	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	COC ID	Lab QC Type	Analyst	Analysis Date	Analysis Method	Analysis Dev	Grid Storage Location	Dilution Volume1	Grid Opening Count	F Factor	Count Total	Count >10	Sensitivity	Verifier's Company	Verifier	Comments
EMSL27	JEOL 100 CX (30)	100 kV	19,000 X	0.013	1295	P1-00257	Surface Water	10/19/2007	270701124	270701124-0001	4	R. Pescador	10/19/2007	1910075B01	Not QA	R. Mahoney	12/14/2007	EPA 100.2	Mod20	ML0730, C	100	20	1	1	0	49807.692	SRC	AB	Grid storage location was not entered in the EDD. The grid storage location was entered in the EDD by the Data Manager (SRC) on 8-6-2008 and loaded to the project database.
EMSL27	JEOL 100 CX (30)	100 kV	19,000 X	0.013	1295	P1-00300	Surface Water	10/16/2007	270701102	270701102-0005	4	K. Smeltzer	10/16/2007	1610075B01	Not QA	R. Mahoney	12/11/2007	EPA 100.2	Mod20	ML0728, D	100	20	1	0	0	49807.692	SRC	AB	Grid storage location was not entered in the EDD. The grid storage location was entered in the EDD by the Data Manager (SRC) on 8-6-2008 and loaded to the project database.
EMSL27	JEOL 100 CX (30)	100 kV	19,000 X	0.013	1295	P1-00381	Surface Water	10/12/2007	270701089	270701089-0002	4	R. Pescador	10/12/2007	111007TL03	Not QA	R. Mahoney	11/8/2007	EPA 100.2	Mod20	ML0726, B	100	21	1	20	7	47435.897	SR C	AB	The Data Manager (SRC) changed the index ID in the original EDD from P100381 to P1-00381. Grid storage location was not entered in the EDD. The grid storage location was entered in the EDD by the Data Manager (SRC) on 8-6-2008 and loaded to the project database.

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE II SURFACE WATER

Index ID	Analysis Method	Analysis Date	Analysis Lab	Lab Job Number	Lab SampleID	EFA	Grid Opening Count	Grid Opening Size	Dilute Volume1	F Factor	Mineral Class	N LA Struc	Verifier's Company	Verifier	Comments
P2-00001	ISO 10312	5/23/08	EMSL19	270800136	270800136-0001	1295	7	0.013	50	1	LA	50	SRC	E. Kelly	
P2-00004	ISO 10312	6/3/08	EMSL19	270800136	270800136-0004	1295	50	0.013	10	1	LA	7	SRC	E. Kelly	
P2-00027	ISO 10312	9/15/08	EMSL19	270800152	270800152-0007	1295	1	0.013	2	1	LA	25	SRC	E. Kelly	
P2-00029	ISO 10312	9/22/08	EMSL19	270800152	270800152-0009	1295	50	0.013	10	1	LA	0	SRC	E. Kelly	
P2-00043	ISO 10312	10/6/08	EMSL19	270800187	270800187-0003	1295	15	0.013	50	1	LA	25	SRC	E. Kelly	
P2-00051	ISO 10312	12/4/08	EMSL19	270800192	270800192-0002	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00053	ISO 10312	12/5/08	EMSL19	270800192	270800192-0004	1295	2	0.013	20	1	LA	28	SRC	E. Kelly	
P2-00063	ISO 10312	12/18/08	EMSL19	270800220	270800220-0003	1295	12	0.013	50	1	LA	25	SRC	E. Kelly	
P2-00082	ISO 10312	1/21/09	EMSL19	270800249	270800249-0002	1295	10	0.013	50	1	LA	29	SRC	E. Kelly	
P2-00093	ISO 10312	1/21/09	EMSL27	270800254	270800254-0009	1295	2	0.013	25	1	LA	34	SRC	E. Kelly	
P2-00095	ISO 10312	1/22/09	EMSL27	270800254	270800254-0011	1295	50	0.013	25	1	LA	0	SRC	E. Kelly	
P2-00098	ISO 10312	1/26/09	EMSL19	270800257	270800257-0001	1295	14	0.013	50	1	LA	25	SRC	E. Kelly	
P2-00111	ISO 10312	9/16/08	EMSL27	270800275	270800275-0003	1295	36	0.013	100	1	LA	25	SRC	E. Kelly	
P2-00304	ISO 10312	9/3/08	EMSL27	270800300	270800300-0004	1295	7	0.013	50	1	LA	26	SRC	E. Kelly	
P2-00308	ISO 10312	9/12/08	EMSL27	270800306	270800306-0001	1295	31	0.013	10	1	LA	25	SRC	E. Kelly	
P2-00310	ISO 10312	9/13/08	EMSL27	270800306	270800306-0003	1295	17	0.013	10	1	LA	27	SRC	E. Kelly	
P2-00326	ISO 10312	10/3/08	EMSL27	270800313	270800313-0006	1295	5	0.013	25	1	LA	31	SRC	E. Kelly	
P2-00337	ISO 10312	11/7/08	EMSL27	270800341	270800341-0003	1295	11	0.013	100	1	LA	27	SRC	E. Kelly	
P2-00345	ISO 10312	12/11/08	EMSL27	270800350	270800350-0004	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00348	ISO 10312	12/12/08	EMSL27	270800350	270800350-0007	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00351	ISO 10312	11/23/08	EMSL27	270800381	270800381-0003	1295	19	0.013	50	1	LA	27	SRC	E. Kelly	
P2-00355	ISO 10312	12/4/08	EMSL27	270800381	270800381-0007	1295	40	0.013	50	1	LA	0	SRC	E. Kelly	
P2-00361	ISO 10312	12/11/08	EMSL27	270800390	270800390-0003	1295	40	0.013	50	1	LA	0	SRC	E. Kelly	
P2-00365	ISO 10312	12/15/08	EMSL27	270800423	270800423-0003	1295	40	0.013	50	1	LA	0	SRC	E. Kelly	
P2-00371	ISO 10312	12/15/08	EMSL27	270800423	270800423-0009	1295	20	0.013	100	1	LA	1	SRC	E. Kelly	
P2-00374	ISO 10312	9/25/08	EMSL27	270800429	270800429-0002	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00375	ISO 10312	9/24/08	EMSL27	270800429	270800429-0003	1295	50	0.013	50	1	LA	0	SRC	E. Kelly	
P2-00402	ISO 10312	12/10/08	EMSL27	270800472	270800472-0002	1295	6	0.013	50	1	LA	25	SRC	E. Kelly	
P2-00410	ISO 10312	12/11/08	EMSL27	270800487	270800487-0004	1295	40	0.013	50	1	LA	0	SRC	E. Kelly	
P2-00411	ISO 10312	12/11/08	EMSL27	270800487	270800487-0005	1295	40	0.013	50	1	LA	0	SRC	E. Kelly	
P2-00427	ISO 10312	12/17/08	EMSL27	270800508	270800508-0001	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00444	ISO 10312	12/17/08	EMSL27	270800509	270800509-0006	1295	16	0.013	100	1	LA	27	SRC	E. Kelly	
P2-00447	ISO 10312	12/19/08	EMSL27	270800509	270800509-0009	1295	10	0.013	25	1	LA	25	SRC	E. Kelly	
P2-00452	ISO 10312	12/10/08	EMSL27	270800487	270800487-0002	1295	40	0.013	50	1	LA	0	SRC	E. Kelly	
P2-00804	ISO 10312	12/24/08	EMSL27	270800661	270800661-0001	1295	20	0.013	100	1	LA	17	SRC	E. Kelly	
P2-00806	ISO 10312	12/26/08	EMSL27	270800748	270800748-0001	1295	11	0.013	100	1	LA	25	SRC	E. Kelly	
P2-00842	ISO 10312	12/31/08	EMSL27	270800762	270800762-0003	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00844	ISO 10312	12/31/08	EMSL27	270800762	270800762-0005	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00846	ISO 10312	12/31/08	EMSL27	270800762	270800762-0007	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00885	ISO 10312	12/29/08	EMSL27	270800847	270800847-0003	1295	19	0.013	100	1	LA	26	SRC	E. Kelly	
P2-00890	ISO 10312	12/30/08	EMSL27	270800852	270800852-0004	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00892	ISO 10312	12/30/08	EMSL27	270800852	270800852-0001	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00896	ISO 10312	12/29/08	EMSL27	270800862	270800862-0001	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00906	ISO 10312	1/2/09	EMSL27	270800875	270800875-0003	1295	1	0.013	50	1	LA	26	SRC	E. Kelly	
P2-00907	ISO 10312	1/6/09	EMSL27	270800881	270800881-0003	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00909	ISO 10312	1/15/09	EMSL27	270800881	270800881-0005	1295	3	0.013	25	1	LA	28	SRC	E. Kelly	
P2-00912	ISO 10312	1/7/09	EMSL27	270800881	270800881-0002	1295	3	0.013	100	1	LA	33	SRC	E. Kelly	Grid openings counted should be 3 not 2
P2-00914	ISO 10312	1/9/09	EMSL27	270800881	270800881-0009	1295	21	0.013	100	1	LA	0	SRC	E. Kelly	
P2-00933	ISO 10312	12/30/08	EMSL27	270800852	270800852-0005	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	
P2-01060	ISO 10312	1/5/09	EMSL27	270801030	270801030-0001	1295	20	0.013	100	1	LA	0	SRC	E. Kelly	

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE V PART A SURFACE WATER

OVC - 5%	IndexID	Correct Number	Media	Analysis Lab	Instrument	Magnific	GOSize	EFA	Receipt Date	Lab Job Number	Lab Sample ID	# Grids Prepped	Prepared By	Prepared Date	Lab QC Type	Analysis By	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter	Estimated Particulate Loading	F-Factor	Analysis Comments	Recoding Rules: Minimum Aspect Ratio	Recoding Rules: Minimum Length (um)	Recoding Rules: Minimum Width (um)	Stopping Rules: Target Sensitivity	Stopping Rules: Maximum Gos	Stopping Rules: Max. Area Examined (mm2)	Stopping Rules: Target # of Structures	GOCount	LA: Sensitivity (1/L)	LA: Count: All	LA: Count: >10	OA: Sensitivity (1/L)	OA: Count: All	OA: Count: >10	Stopping Rule Achieved	Maximum area examined	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10002	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	4/25/2012	271200151	271200151-0002	3	D. Barney	4/25/2012	NOT QC	E. Wyatt-Pescador	5/16/2012	TEM-ISO	ISO 10312	20		0.1	Particulate Loading: 20% EDD Upgrade Comments: Counting rules were originally reported by the lab to be ISO 10312 [Total]. They have been revised to be TEM-ISO/ISO 10312 for the Analysis Method and Analysis Method SOP based on group concensus to meet the DRR. AL1 for the tag was assumed. If the minimum width was reported as "none" it was changed to "0" to meet DRR.	3:1	0.5	0	50000			25	77	179820.1798	0	0	179820.1798	0	0	Max Area Examined	1.001	CDM Smith	N. Ross		
	PS-10005	1	Surface Water	EMSL27	JEOL 100 CX (27-1)	19000	0.013	360	4/25/2012	271200151	271200151-0005	3	D. Barney	4/25/2012	Not QC	R. Mahoney	10/2/2012	TEM-ISO	ISO 10312	10	10	0.1	C1 on 10/04/12: archive filter location changed to Cennaminson	3:1	0.5	0	50000		1	25	85	325791.8552	2	0	325791.8552	0	0	Max Area Examined	1.105	CDM Smith	N. Ross		
	PS-10006	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	4/25/2012	271200151	271200151-0006	3	D. Barney	4/25/2012	NOT QC	E. Wyatt-Pescador	5/21/2012	TEM-ISO	ISO 10312	20		0.1	particulate loading 10% EDD Upgrade Comments: Counting rules were originally reported by the lab to be ISO 10312 [Total]. They have been revised to be TEM-ISO/ISO 10312 for the Analysis Method and Analysis Method SOP based on group concensus to meet the DRR. AL1 for the tag was assumed. If the minimum width was reported as "none" it was changed to "0" to meet DRR.	3:1	0.5	0	50000			25	4	3461538.462	121	19	3461538.462	0	0	Structure Count	0.052	CDM Smith	N. Ross		
x-EF	PS-10012	0	Surface Water	EMSL27	JEOL 100 CX (27-1)	19000	0.013	360	5/2/2012	271200196	271200196-0006	3	D. Barney	5/2/2012	Not QC	R. Mahoney	10/4/2012	TEM-ISO	ISO 10312	20	2	0.1		3:1	0.5	0	50000		1	25	9	1538461.538	27	6	1538461.538	0	0	Structure Count	0.117	CDM Smith	N. Ross	1-22-14 - In the water prep record for lab job 271200196, there are two volumes marked as "F", prepared for analysis. Next to the first sample (PS-10007), there is a handwritten note "quick count & full ISO" next to one of the volumes, but the next three samples only show "quick count." Requsst that the laboratory confirm that the volume for the quick count is the same for the full ISO analysis? Samples PS-10008, PS-10009 and PS-10011. 12-31-13 - The hand-written benchsheet was not provided in the PDF laboratory job. The water preparation record was not provided in the PDF laboratory job.	1/3/2014
	PS-10015	1	Surface Water	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	360	6/24/2013	041316380	041316380-0001	3	D. Stanhope	7/15/2013	NOT QC	F. Craig	7/29/2013	TEM-ISO	ISO 10312	20	1	0.1	Repreparation was performed from original filter. The original results for this sample as reported by EMSL-Libby were found to be in error; thus, the EMSL-Cinnaminson repreparation analysis will be used in preference (Lab QC type was changed from "RP" to	3:1	0.5	0	50000		1	25	76	179425.8373	0	0	179425.8373	0	0	Max Area Examined	1.0032	CDM Smith	N. Ross	QC Type changed in EDD from reprep to Not QC; this change should also be reflected on the benchsheet.	1/21/2014
	PS-10018	1	Surface Water	EMSL04	JEOL 100 CX II (04-05)	19000	0.0132	1282	5/31/2013	041314049	041314049-0002	4	D. Stanhope	7/24/2013	NOT QC	L. McCluskey-Eissing	8/8/2013	TEM-ISO	ISO 10312	20	1	0.1	Repreparation performed from original raw water sample. The original results for this sample as reported by EMSL-Libby were found to be in error; thus, the EMSL-Cinnaminson repreparation analysis will be used in preference (Lab QC Type was changed from "R	3:1	0.5	0	50000		1	25	76	638955.3429	0	0	638955.3429	0	0	Max Area Examined	1.0032	CDM Smith	N. Ross	QC Type changed in EDD from reprep to Not QC; this change should also be reflected on the benchsheet.	1/21/2014
	PS-10021	1	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	5/9/2012	271200241	271200241-0009	3	D. Barney	5/9/2012	NOT QC	R. Pescador	6/8/2012	TEM-ISO	ISO 10312	20		0.1	Particulate loading 5% C1 on 6/15/12 to correct dilutions EDD Upgrade Comments: Counting rules were originally reported by the lab to be ISO 10312 [Total]. They have been revised to be TEM-ISO/ISO 10312 for the Analysis Method and Analysis Method SOP based on group concensus to meet the DRR. AL1 for the tag was assumed. If the minimum width was reported as "none" it was changed to "0" to meet DRR.	3:1	0.5	0	50000			25	19	728744.9393	25	1	728744.9393	0	0	Structure Count	0.247	CDM Smith	N. Ross		
	PS-10025	2	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	5/9/2012	271200241	271200241-0013	3	D. Barney	5/9/2012	NOT QC	E. Wyatt-Pescador	6/7/2012	TEM-ISO	ISO 10312	20		0.1	Particulate loading 5% Correction 1 on 6/12/12 to revised archive filter location C2 on 6/15/12 to correct dilutions EDD Upgrade Comments: Counting rules were originally reported by the lab to be ISO 10312 [Total]. They have been revised to be TEM-ISO/ISO 10312 for the Analysis Method and Analysis Method SOP based on group concensus to meet the DRR. AL1 for the tag was assumed. If the minimum width was reported as "none" it was changed to "0" to meet DRR.	3:1	0.5	0	50000			25	5	2769230.769	27	4	2769230.769	0	0	Structure Count	0.065	CDM Smith	N. Ross	Structure comments not recorded on benchsheet for non-countable structure on page 1.	1/3/2014
	PS-10030	1	Surface Water	EMSL22	JEOL 1200 EX (22-2)	20000	0.013	1295	5/16/2012	271200275	271200275-0003	3	D. Barney	5/21/2012	NOT QC	E. Orthun	6/4/2012	TEM-ISO	ISO 10312	75		1	C1 on 6/14/2012 corrects grid storage and archive filter storage locations EDD Upgrade Comments: Counting rules were originally reported by the lab to be ISO 10312 [Total]. They have been revised to be TEM-ISO/ISO 10312 for the Analysis Method and Analysis Method SOP based on group concensus to meet the DRR. AL1 for the tag was assumed. If the minimum width was reported as "none" it was changed to "0" to meet DRR.	3:1	0.5	0	50000			25	27	49192.78253	2	1	49192.78253	0	0	Sensitivity	0.351	CDM Smith	N. Ross		
	PS-10033	1	Surface Water	EMSL22	JEOL 1200 EX (22-1)	20000	0.013	1295	5/16/2012	271200275	271200275-0006	3	D. Barney	5/21/2012	NOT QC	M. DeCavallas	6/7/2012	TEM-ISO	ISO 10312	45		1	C1 on 6/14/2012 corrects grid storage and archive filter storage locations EDD Upgrade Comments: Counting rules were originally reported by the lab to be ISO 10312 [Total]. They have been revised to be TEM-ISO/ISO 10312 for the Analysis Method and Analysis Method SOP based on group concensus to meet the DRR. AL1 for the tag was assumed. If the minimum width was reported as "none" it was changed to "0" to meet DRR.	3:1	0.5	0	50000			25	45	49192.78253	1	1	49192.78253	0	0	Sensitivity	0.585	CDM Smith	N. Ross		
	PS-10039	0	Surface Water	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1295	5/23/2012	271200324	271200324-0005	3	D. Barney	6/4/2012	Not QC	F. Craig	6/18/2012	TEM-ISO	ISO 10312	60	5	1		3:1	0.5	0	50000		1	25	33	49548.51546	0	0	49548.51546	0	0	Sensitivity	0.4356	CDM Smith	N. Ross		
	PS-10041	0	Surface Water	EMSL04	JEOL 1200 EX (04-03)	20000	0.0132	1295	5/23/2012	271200324	271200324-0007	3	D. Barney	6/4/2012	Not QC	P. Harrison	6/18/2012	TEM-ISO	ISO 10312	50	20	1	Additional analysis on 6/19/12	3:1	0.5	0	50000		1	25	40	49053.0303	0	0	49053.0303	0	0	Sensitivity	0.528	CDM Smith	N. Ross	Minimum aspect ratio recording rule not circled on benchsheet. Structure Type recorded in the Primary field on the benchsheet.	1/21/2014
x-EF	PS-10047	0	Surface Water	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1295	5/23/2012	271200324	271200324-0009	3	D. Barney	6/4/2012	Not QC	F. Craig	6/29/2012	TEM-ISO	ISO 10312	50	20	1		3:1	0.5	0	50000		1	25	40	49053.0303	2	0	49053.0303	0	0	Sensitivity	0.528	CDM Smith	N. Ross	Instrument ID on benchsheet is 01, not 04-01. There are two water preparation records in the PDF laboratory job: one dated 6-4-12 and one dated 6-19-12. Sample numbers PS-10047, PS-10042, PS-10044, PS-10050 and PS-10051 are listed on both preparation records with different volumes. Please confirm the correct volume for these samples and cross off the incorrect volume on the water preparation record.	1/21/2014
	PS-10054	0	Surface Water	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1295	5/23/2012	271200324	271200324-0020	3	D. Barney	6/4/2012	Not QC	F. Craig	6/28/2012	TEM-ISO	ISO 10312	100	10	1		3:1	0.5	0	50000		1	25	20	49053.0303	0	0	49053.0303	0	0	Sensitivity	0.264	CDM Smith	N. Ross	Instrument ID on benchsheet is 01, not 04-01.	1/21/2014
	PS-10056	1	Surface Water	EMSL04	JEOL 1200 EX (04-03)	20000	0.0132	1295	5/23/2012	271200324	271200324-0022	9	D. Barney	6/4/2012	Not QC	P. Harrison	6/15/2012	TEM-ISO	ISO 10312	100	15	1	Grid U3 analyzed 6/15/12 Grid E1 anlayzed 7/26/12. Correction 1 on 12/31/2013 to revise width of total structure 51.	3:1	0.5	0	50000		1	25	4	245265.1515	66	14	245265.1515	0	0	Structure Count	0.0528	CDM Smith	N. Ross	Width for total structure #51 is 0.6, not 0.3 according to benchsheet (page 5).	1/21/2014
	PS-10065	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	6/6/2012	271200393	271200393-0002	5	R. Pescador	6/20/2012	Not QC	E. Wyatt-Pescador	6/26/2012	TEM-ISO	ISO 10312	25	10	1	Additional analysis by R. Pescador on 7/2/2012	3:1	0.5	0	50000		1	25	28	39560.43956	0	0	39560.43956	0	0	Sensitivity	0.364	CDM Smith	N. Ross	The water preparation record was not provided in the PDF laboratory job.	1/21/2014
	PS-10067	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	6/6/2012	271200393	271200393-0004	5	R. Pescador	6/20/2012	Not QC	E. Wyatt-Pescador	6/26/2012	TEM-ISO	ISO 10312	20	10	1	Additional analysis by R. Pescador on 7/3/2012	3:1	0.5	0	50000		1	25	26	53254.43787	25	0	53254.43787	0	0	Structure Count	0.338	CDM Smith	N. Ross		
	PS-10073	1	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	6/13/2012	271200427	271200427-0003	3	R. Pescador	6/20/2012	NOT QC	E. Wyatt-Pescador	6/27/2012	TEM-ISO	ISO 10312	25	8	1	Additional grid openings read on 7/5/12 by Roy Pescador. Correction 1 on 12/31/2013 to revise prep person.	3:1	0.5	0	50000		1	25	31	35732.00993	0	0	35732.00993	0	0	Sensitivity	0.403	CDM Smith	N. Ross	Prepared by is R. Pescador, not D. Barney according to benchsheet. *[Note: EDD appears to have been corrected, based on the corrected lab job, but the C1 EDD was not loaded to the eRoom. 1-21-14]*	1/22/2014
	PS-10083	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	9/20/2012	271200960	271200960-0006	3	D. Barney	11/27/2012	NOT QC	E. Wyatt-Pescador	12/19/2012	TEM-ISO	ISO 10312	25	6	1		3:1	0.5	0	50000		1	25	80	13846.15385	0	0	13846.15385	0	0	Sensitivity	1.04	CDM Smith	N. Ross		
	PS-10092	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	9/20/2012	271200960	271200960-0014	3	D. Barney	12/17/2012	NOT QC	E. Wyatt-Pescador	12/23/2012	TEM-ISO	ISO 10312	25	5	1		3:1	0.5	0	50000		1	25	80	13846.15385	0	0	13846.15385	0	0	Sensitivity	1.04	CDM Smith	N. Ross		
	PS-10108	1	Surface Water	EMSL27	JEOL 100 CX 11 (27-2)	19000	0.013	360	9/20/2012	271200960	271200960-0021	3	D. Barney	12/21/2012	NOT QC	E.Wyatt Pescador	12/27/2012	TEM-ISO	ISO 10312	25	6	1	Correction 1 on 12/31/2013 to revise grid opening K2_D5.	3:1	0.5	0	50000		1	25	4	276923.0769	47	15	276923.0769	0	0	Structure Count	0.052	CDM Smith	N. Ross	Grid_grid opening is K2_D5, not K2_D4 according to benchsheet. Applies to all structures on page 4. Total number of grid openings examined decreases from 5 to 4.	1/3/2014

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE V PART B SURFACE WATER AND PORE WATER

Libby Asbestos Superfund Site

																				Recording Rules			Stopping Rules				LA			OA						
DVC - 5%	IndexID	Correct Number	Media	Analysis Lab	Instrument	Magnific	GOSize	EFA	Receipt Date	Lab Job Number	Lab Sample ID	# Grids Prepped	Prepared By	Prepared Date	Lab QC Type	Analysis By	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter	Estimated Particulate Loading	F-Factor	Analysis Comments	Minimum Aspect Ratio	Minimum Length (um)	Minimum Width (um)	Target Sensitivity	Max. Area Examined (mm2)	Target # of Structures	GOCount	Sensitivity (1/L)	Count All	Count >10	Sensitivity (1/L)	Count All	Count >10	Stopping Rule Achieved	Maximum area examined	Verifier's Company	Verifier's Name	Comment
	PS-20009	1	Pore Water (In)	EMSL27	JEOL 100 CXII (27-2)	19000	0.013	360	5/10/2012	271200252	271200252-0009	5	R. Pescador	5/14/2012	Not QC	R. Pescador	6/14/2012	TEM-ISO	ISO 10312	60	10	0.01	Correction 1 on 6/29/12 to fill in counted for chrysotile column	3:1	0.5	0	50000	1	25	4	11,538,462	40	5	11,538,462	0	0	Structure Count	0.052	CDM Smith	N. Ross	
x-EF	PS-20011	1	Surface Water	EMSL27	JEOL 100 CXII (27-2)	19000	0.013	360	5/10/2012	271200252	271200252-0011	5	R. Pescador	5/14/2012	Not QC	E. Wyatt-Pescador	6/12/2012	TEM-ISO	ISO 10312	10	5	1	Correction 1 on 6/29/12 to fill in counted for chrysotile column	3:1	0.5	0	50000	1	25	35	79,121	25	6	79,121	0	0	Structure Count	0.455	CDM Smith	N. Ross	Page four of the benchsheet was not provided in the PDF lab job.
	PS-20014	0	Surface Water	EMSL04	JEOL 1200 EX (04-03)	20000	0.0132	1295	5/14/2012	271200263	271200263-0001	3	D. Barney	5/17/2012	Not QC	P. Harrison	5/22/2012	TEM-ISO	ISO 10312	15		1	Particulate loading 10% EDD Upgrade Comments: Counting rules were originally reported by the lab to be ISO 10312 [Total]. They have been revised to be TEM-ISO/ISO 10312 for the Analysis Method and Analysis Method SOP based on group concensus to meet the DRR. AL1 for the tag was assumed. If the minimum width was reported as "none" it was changed to "0" to meet DRR.	3:1	0.5	0	50000		25	4	1,635,101	36	4	1,635,101	0	0	Structure Count	0.0528	CDM Smith	N. Ross	
	PS-20018	0	Surface Water	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1295	5/14/2012	271200263	271200263-0005	3	D. Barney	5/17/2012	Not QC	F. Craig	6/1/2012	TEM-ISO	ISO 10312	15		1	Particulate loading <1% EDD Upgrade Comments: Counting rules were originally reported by the lab to be ISO 10312 [Total]. They have been revised to be TEM-ISO/ISO 10312 for the Analysis Method and Analysis Method SOP based on group concensus to meet the DRR. AL1 for the tag was assumed. If the minimum width was reported as "none" it was changed to "0" to meet DRR.	3:1	0.5	0	50000		25	77	84,940	0	0	84,940	0	0	Area Examined	1.0164	CDM Smith	N. Ross	Page four of the benchsheet was not provided in the PDF lab job.
	PS-20036	1	Pore Water (In)	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1295	5/17/2012	271200285	271200285-0013	3	D. Barney	5/23/2012	Not QC	F. Craig	6/15/2012	TEM-ISO	ISO 10312	60		1	Particulate Loading 20%. Correction 1 on 12/31/2013 to revise structure type for total structure 14. EDD Upgrade Comments: Counting rules were originally reported by the lab to be ISO 10312 [Total]. They have been revised to be TEM-ISO/ISO 10312 for the Analysis Method and Analysis Method SOP based on group concensus to meet the DRR. AL1 for the tag was assumed. If the minimum width was reported as "none" it was changed to "0" to meet DRR.	3:1	0.5	0	50000		25	12	136,258	27	7	136,258	0	0	Structure Count	0.1584	CDM Smith	N. Ross	--Structure comments for non-countable structure on page 1 not recorded on benchsheet. --Structure type is MFO, not MFO (the letter O not the number zero) for total structure #14.
	PS-20039	1	Pore Water (In)	EMSL22	JEOL 1200 EX (22-1)	20000	0.013	385	5/21/2012	271200306	271200306-0002	3	D. Barney	5/31/2012	NOT QC	M. DeCavallas	6/25/2012	TEM-ISO	ISO 10312	10	20	1	Additional analysis on 6/28/2012. Correction 1 on 1/16/2014 to add comments for last non-countable structure and to add EDXA observation and mineral description for total structures 11, 15, 28, 37, 38, 39, 40, 48, 49, 54-59, 73, 80-84, 87, 88, and 90-94.	3:1	0.5	0	50000	1	25	4	740,385	96	18	740,385	0	0	Structure Count	0.052	CDM Smith	N. Ross	benchsheet; see total structures 54-59, 80-84, 87-88 and 90-94. Benchsheet needs revision. --Structure comments for first five non-countable structures were not recorded on the benchsheet but were entered in the EDD (e.g., "structure crosses non-countable grid bar"). --No comment for last non-countable structure was recorded on the benchsheet or entered in the EDD.
	PS-20041	1	Pore Water (In)	EMSL22	JEOL 1200 EX (22-1)	20000	0.013	1295	5/21/2012	271200306	271200306-0004	3	D. Barney	5/31/2012	Not QC	E. Orthun	7/5/2012	TEM-ISO	ISO 10312	10	15	0.1	Additional analysis on 7/8/2012 Beginning with grid R7:G8, analysis was done on 7/8/12, and on scope 22-2. Correction 1 on 1/2/2014 to revise length for total structure 78 and to revise EDXA observation for total structure 117.	3:1	0.5	0	50000	1	25	4	24,903,846	122	16	24,903,846	0	0	Structure Count	0.052	CDM Smith	N. Ross	--Structure comment (structure crosses non-countable grid bar) not recorded on benchsheet for the three non-countable structures (grid_grid opening R7_G8, page 6; R7_G8, page 9; R7_G6, page 12). --Length for total structure #78 is 10.75, not 0.75 according to benchsheet (page 8). --EDXA observation for total structure #117 is NaX, not NaK according to benchsheet (page 12).
	PS-20045	1	Surface Water	EMSL22	JEOL 1200 EX II (22-2)	20000	0.013	1295	5/21/2012	271200306	271200306-0008	3	D. Barney	5/31/2012	Not QC	E. Orthun	8/8/2012	TEM-ISO	ISO 10312	25	5	1	Also analyzed 8/14/2012. Correction 1 on 1/2/2014 to revise Laboratory ID.	3:1	0.5	0	50000	1	25	77	51,748	2	1	51,748	0	0	Area Examined	1.001	CDM Smith	N. Ross	Laboratory name on benchsheet is EMSL22 but EMSL27 was entered in the EDD. Which lab is correct? --The last four grid openings on page 6 appear to be crossed out; please revise the benchsheet so it is clear that these grid openings were examined.
	PS-20067	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	1295	5/24/2012	271200335	271200335-0014	5	D. Barney	6/15/2012	Not QC	E. Wyatt-Pescador	7/5/2012	TEM-ISO	ISO 10312	75	5	1		3:1	0.5	0	50000	1	25	30	44,274	0	0	44,274	0	0	Sensitivity	0.39	CDM Smith	N. Ross	
	PS-20076	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	5/29/2012	271200347	271200347-0008	5	R. Pescador	6/11/2012	Not QC	R. Pescador	6/21/2012	TEM-ISO	ISO 10312	25	10	1		3:1	0.5	0	50000	1	25	77	14,386	0	0	14,386	0	0	Sensitivity	1.001	CDM Smith	N. Ross	
	PS-20082	0	Pore Water (In)	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	5/31/2012	271200368	271200368-0007	3	D. Barney	7/4/2012	Not QC	R. Pescador	7/9/2012	TEM-ISO	ISO 10312	5	5	1		3:1	0.5	0	50000	1	25	4	1,384,615	57	23	1,384,615	0	0	Structure Count	0.052	CDM Smith	N. Ross	
	PS-20108	0	Pore Water (In)	EMSL27	JEOL 100 CX (27-1)	19000	0.013	1295	6/7/2012	271200395	271200395-0001	5	D. Barney	7/4/2012	Not QC	R. Mahoney	7/9/2012	TEM-ISO	ISO 10312	60	25	1		3:1	0.5	0	50000	1	25	40	41,506	0	0	41,506	0	0	Sensitivity	0.52	CDM Smith	N. Ross	
	PS-20112	0	Pore Water (In)	EMSL27	JEOL 100 CX (27-1)	19000	0.013	1295	6/7/2012	271200395	271200395-0005	3	D. Barney	7/4/2012	Not QC	R. Mahoney	7/18/2012	TEM-ISO	ISO 10312	15	10	1		3:1	0.5	0	50000	1	25	4	1,660,256	36	9	1,660,256	0	0	Structure Count	0.052	CDM Smith	N. Ross	
	PS-20209	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	6/11/2012	271200409	271200409-0006	3	D. Barney	7/12/2012	Not QC	E. Wyatt-Pescador	7/17/2012	TEM-ISO	ISO 10312	50	10	1		3:1	0.5	0	50000	1	25	12	46,154	0	0	46,154	0	0	Sensitivity	0.156	CDM Smith	N. Ross	
	PS-20217	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	6/21/2012	271200484	271200484-0003	3	D. Barney	7/12/2012	Not QC	R. Pescador	7/23/2012	TEM-ISO	ISO 10312	10	1	1		3:1	0.5	0	50000	1	25	60	46,154	1	1	46,154	0	0	Sensitivity	0.78	CDM Smith	N. Ross	
	PS-20225	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	1295	7/5/2012	271200533	271200533-0002	5	D. Barney	9/20/2012	Not QC	E. Wyatt-Pescador	11/8/2012	TEM-ISO	ISO 10312	25	4	1		3:1	0.5	0	50000	1	25	4	996,154	25	1	996,154	0	0	Structure Count	0.052	CDM Smith	N. Ross	
	PS-20241	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	7/26/2012	271200640	271200640-0004	5	D. Barney	9/20/2012	Not QC	E. Wyatt-Pescador	11/12/2012	TEM-ISO	ISO 10312	15	8	1		3:1	0.5	0	50000	1	25	18	102,564	25	4	102,564	0	0	Structure Count	0.234	CDM Smith	N. Ross	
	PS-20242	1	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	8/2/2012	271200684	271200684-0001	3	D. Barney	9/21/2012	Not QC	R. Pescador	11/13/2012	TEM-ISO	ISO 10312	15	4	1	Correction 1 on 1/22/2014 to revise grid naming for grid L2.	3:1	0.5	0	50000	1	25	4	461,538	36	5	461,538	0	0	Structure Count	0.052	CDM Smith	N. Ross	Grid is L2, not L1 according to benchsheet. Applies to grid openings H7 and H9 on page 2 and page 3.
	PS-20251	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	8/9/2012	271200736	271200736-0004	3	D. Barney	11/14/2012	Not QC	R. Pescador	11/16/2012	TEM-ISO	ISO 10312	10	4	1		3:1	0.5	0	50000	1	25	80	34,615	0	0	34,615	0	0	Sensitivity	1.04	CDM Smith	N. Ross	
x-EF	PS-20271	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	8/31/2012	271200877	271200877-0001	3	D. Barney	11/20/2012	NOT QC	R. Pescador	11/26/2012	TEM-ISO	ISO 10312	10	4	0.1		3:1	0.5	0	50000	1	25	80	346,154	0	0	346,154	0	0	Area Examined	1.04	CDM Smith	N. Ross	
	PS-20273	0	Surface Water	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	360	8/31/2012	271200877	271200877-0003	3	D. Barney	11/20/2012	NOT QC	E. Wyatt-Pescador	12/6/2012	TEM-ISO	ISO 10312	10	2	1		3:1	0.5	0	50000	1	25	80	34,615	0	0	34,615	0	0	Sensitivity	1.04	CDM Smith	N. Ross	

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE V PART B (2013) SURFACE WATER AND PORE WATER

DVC (100%)	IndexID	Correct Number	Media	Analysis Lab	Instrument	Magnific	GOSize	EFA	Receipt Date	Lab Job Number	Lab Sample ID	# Grids Prepped	Prepared By	Prepared Date	Lab QC Type	Analysis By	Analysis Date	Analysis Type	Analysis Method	Volume Applied to Filter	Estimated Particulate Loading	Analysis Comments	Recording Rules			Stopping Rules			GOCount	LA			OA			Stopping Rule Achieved	Verifier's Company	Verifier's Name	Comment	Correction Date
																							Minimum Aspect Ratio	Minimum Length (um)	Minimum Width (um)	Target Sensitivity	Max. Area Examined (mm2)	Target # of Structures		Sensitivity (1/L)	Count		Sensitivity (1/L)	Count						
																															All	>10		All	>10					
x-NR	P5-20292	0	Pore Water (In)	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	1295	5/6/2013	271300160	271300160-0003	5	D. Barney	5/6/2013	NOT QC	R. Pescador	5/21/2013	TEM-ISO	ISO 10312	10	2		3:1	0.5	0	50000	1	25	6	1,660,256	26	5	1,660,256	0	0	Structure Count	CDM Smith	A. Coler		
x-NR	P5-20302	0	Surface Water	EMSL27	JEOL 100 CX II (27-4)	19000	0.013	1295	5/6/2013	271300160	271300160-0013	3	D. Barney	5/6/2013	NOT QC	R. Pescador	5/31/2013	TEM-ISO	ISO 10312	10	2		3:1	0.5	0	50000	1	25	85	117,195	0	0	117,195	0	0	Area Examined	CDM Smith	A. Coler		
x-NR	P5-20308	0	Pore Water (In)	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	1295	5/10/2013	271300187	271300187-0004	5	D. Barney	5/10/2013	NOT QC	E. Wyatt-Pescador	5/30/2013	TEM-ISO	ISO 10312	15	4		3:1	0.5	0	50000	1	25	5	1,328,205	29	7	1,328,205	0	0	Structure Count	CDM Smith	A. Coler		
x-NR	P5-20323	0	Surface Water	EMSL27	JEOL 100 CX II (27-4)	19,000 X	0.013	1295	5/16/2013	271300215	271300215-0003	5	D. Barney	5/17/2013	NOT QC	R. Pescador	6/10/2013	TEM-ISO	ISO 10312	15	5		3:1	0.5	0	50000	1	25	4	1,660,256	25	5	1,660,256	0	0	Structure Count	CDM Smith	A. Coler		
x-NR	P5-20325	1	Surface Water	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1295	7/2/2013	041317328	041317328-0001	4	D. Stanhope	7/2/2013	NOT QC	F. Craig	7/19/2013	TEM-ISO	ISO 10312	15	1	Repreparation performed from original filter. The original results for this sample as reported by EMSL-Libby were found to be in error; thus, the EMSL-Cinnaminson repreparation analysis will be used in preference (Lab QC Type was changed from "RP" to "Not QC").	3:1	0.5	0	50000	1	25	62	105,490	25	5	105,490	0	0	Structure Count	CDM Smith	A. Coler	QC Type changed in EDD from Reprep to Not QC; this change should also be reflected on the benchsheet. Also applies to P5-20326.	1/29/2014
x-NR	P5-20361	0	Pore Water (In)	EMSL27	JEOL 100 CX II (27-4)	19000	0.013	1295	5/30/2013	271300285	271300285-0009	5	D. Barney	6/2/2013	NOT QC	R. Pescador	6/26/2013	TEM-ISO	ISO 10312	10	2		3:1	0.5	0	50000	1	25	16	622,596	25	3	622,596	0	0	Structure Count	CDM Smith	A. Coler		
x-NR	P5-20363	1	Pore Water (In)	EMSL27	JEOL 100 CX II (27-4)	19000	0.013	1295	6/3/2013	271300302	271300302-0002	5	D. Barney	6/4/2013	NOT QC	R. Pescador	6/27/2013	TEM-ISO	ISO 10312	10	4	Correction 1 on 1/29/2014 to revised grid opening L3_H1.	3:1	0.5	0	50000	1	25	79	126,095	0	0	126,095	0	0	Area Examined	CDM Smith	A. Coler	Grid_grid opening is L3_H1, not L3_H10 according to benchsheet (page 5).	1/29/2014
x-NR	P5-20368	0	Pore Water (In)	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	1295	6/10/2013	271300336	271300336-0002	5	D. Barney	6/11/2013	NOT QC	E. Wyatt-Pescador	7/5/2013	TEM-ISO	ISO 10312	10	3		3:1	0.5	0	50000	1	25	80	124,519	0	0	124,519	0	0	Area Examined	CDM Smith	A. Coler		
x-NR	P5-20374	0	Surface Water	EMSL27	JEOL 100 CX II (27-4)	19000	0.013	1295	6/17/2013	271300369	271300369-0004	5	D. Barney	6/18/2013	NOT QC	R. Pescador	7/14/2013	TEM-ISO	ISO 10312	10	2		3:1	0.5	0	50000	1	25	85	117,195	0	0	117,195	0	0	Area Examined	CDM Smith	A. Coler		

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

DVC (5%)	Field QC Type	IndexID	Correction Number	Media	Analysis Lab	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Receipt Date	Lab Job Number	Lab Sample ID	# Grids Prepped	Prepared By	Prepared Date	Analysis By	Analysis Date	Preparation Method	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	Estimated Particulate Loading	F-Factor	Analysis Comments	Recording Rules			Stopping Rules			GOCount	LA					OA				Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
																									Minimum Aspect Ratio	Minimum Length (um)	Minimum Width (um)	Target Sensitivity	Max. Area Examined (mm2)	Target # of Structures		Sensitivity (1/L)	Count		Concentration (f/L)		Sensitivity (1/L)	Count		Concentration (f/L)							
																																All	>10	All	>10		All	>10	All	>10					
	Field Sample	WT-10001	1	Surface Water	EMSL03	JEOL 100 CXII (03-04)	19,000	0.0128	1359	4/17/2015	041511057	041511057-0001	3	N. Smith	4/17/2015	D. YOUNG	4/23/2015	Direct	TEM-ISO	ISO 10312	25	10	1	Are prepped grids acceptable for analysis? YES Additional analysis dates: 5/6/15 C1 on 12/1/2015 to revise structure type for total structure 19.	3:1	0.5	0	50,000	1	25	4	1,061,719	41	5	4.4E+07	5.3E+06	1,061,719	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015	The Structure Type for total structure #19 should likely be MF, not MD. Please confirm.	12/2/2015
	Field Sample	WT-10002	0	Surface Water	EMSL03	JEOL 100 CX II (03-02)	19,000	0.0128	1359	4/17/2015	041511057	041511057-0002	3	N. Smith	4/17/2015	A. FOLGAR	4/23/2015	Direct	TEM-ISO	ISO 10312	100	15	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: 4/24/15	3:1	0.5	0	50,000	1	25	4	265,430	29	0	7.7E+06	0	265,430	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10003	0	Surface Water	EMSL03	JEOL 100 CXII (03-04)	19,000	0.0128	1359	4/17/2015	041511057	041511057-0003	3	N. Smith	4/17/2015	D. YOUNG	4/27/2015	Direct	TEM-ISO	ISO 10312	25	5	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	20	212,344	25	2	5.3E+06	4.2E+05	212,344	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
EF	Field Sample	WT-10004	1	Surface Water	EMSL03	JEOL 100 CXII (03-04)	19,000	0.0128	1359	4/17/2015	041511057	041511057-0004	3	N. Smith	4/17/2015	D. YOUNG	4/28/2015	Direct	TEM-ISO	ISO 10312	50	15	1	Are prepped grids acceptable for analysis? YES Additional analysis dates: 5/6/15 C1 on 12/1/2015 to revise structure type for primary structure 12.	3:1	0.5	0	50,000	1	25	4	530,859	38	2	2.0E+07	1.1E+06	530,859	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015	Structure type for primary structure #12 should likely be MD10, not MD11, since the secondary structure equals 5 µm (but is not longer than 5 µm).	12/2/2015
	Field Sample	WT-10005	0	Surface Water	EMSL03	JEOL 100CX II (03-04)	19,000	0.0131	1359	4/17/2015	041511057	041511057-0005	3	N. Smith	4/17/2015	J. ARRIAGA	4/28/2015	Direct	TEM-ISO	ISO 10312	50	20	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: 4/29/15, 5/1/15, 5/6/15, 5/7/15 Additional Instrument Used: JEOL 100CX II (03-02) for Diffraction of Primary LA # 36.	3:1	0.5	0	50,000	1	25	4	518,702	59	10	3.1E+07	5.2E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10006	0	Surface Water	EMSL03	JEOL 100 CX II (03-02)	19,000	0.0128	1359	4/17/2015	041511057	041511057-0006	3	N. Smith	4/17/2015	E. SIOUKRI	4/29/2015	Direct	TEM-ISO	ISO 10312	100	20	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: 4/30/15 & 5/10/15	3:1	0.5	0	50,000	1	25	4	265,430	80	4	2.1E+07	1.1E+06	265,430	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10007	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.0128	1359	4/17/2015	041511057	041511057-0007	3	N. Smith	4/17/2015	A. FOLGAR	5/1/2015	Direct	TEM-ISO	ISO 10312	50	15	1	Are prepped grids acceptable for analysis?YESAdditional analysis dates: 5/6/15	3:1	0.5	0	50,000	1	25	4	530,859	37	7	2.0E+07	3.7E+06	530,859	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10008	1	Surface Water	EMSL03	JEOL 100 CXII (03-04)	19,000	0.0131	1359	4/17/2015	041511057	041511057-0008	3	N. Smith	4/17/2015	D. YOUNG	5/5/2015	Direct	TEM-ISO	ISO 10312	50	15	1	Are prepped grids acceptable for analysis? YES Additional analysis dates: 5/7/15 C1 on 12/1/2015 to correct the structure types for primary structures #6 and #27.	3:1	0.5	0	50,000	1	25	4	518,702	36	3	1.9E+07	1.6E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015	Structure type for primary structure #27 should likely be MD11, not MD10, since the secondary structure is longer than 5 µm (5.4 µm).	12/2/2015
	Field Sample	WT-10009	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/17/2015	041511057	041511057-0009	3	N. Smith	4/17/2015	A. FOLGAR	5/7/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	522,692	36	3	1.9E+07	1.6E+06	522,692	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10010	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.0131	1359	4/17/2015	041511057	041511057-0010	3	N. Smith	4/17/2015	E. SIOUKRI	5/3/2015	Direct	TEM-ISO	ISO 10312	100	15	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: 5/8/2015	3:1	0.5	0	50,000	1	25	4	259,351	48	0	1.2E+07	0	259,351	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10011	1	Surface Water	EMSL03	JEOL 100 CXII (03-04)	19,000	0.0131	1359	4/17/2015	041511057	041511057-0011	3	N. Smith	4/17/2015	D. YOUNG	5/4/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A C1 on 12/1/2015 to revise structure type for primary structure 20.	3:1	0.5	0	50,000	1	25	4	259,351	30	4	7.8E+06	1.0E+06	259,351	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015	The Structure Type for primary structure #20 should likely be MD10, not MD11, since the secondary structure is 1 µm.	12/2/2015
	Field Sample	WT-10012	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.0131	1359	4/17/2015	041511057	041511057-0012	3	N. Smith	4/17/2015	A. FOLGAR	5/5/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	18	5	8.9E+05	2.5E+05	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10015	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0001	3	N. Smith	4/21/2015	W. Nguyen	5/7/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10016	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0002	3	N. Smith	4/21/2015	W. Nguyen	5/7/2015	Direct	TEM-ISO	ISO 10312	100	8	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: Yes; 5/8/15	3:1	0.5	0	50,000	1	25	21	49,400	6	0	3.0E+05	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10017	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0003	3	N. Smith	4/21/2015	W. Nguyen	5/8/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	5	0	2.5E+05	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10018	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0004	3	N. Smith	4/21/2015	W. Nguyen	5/8/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes; Grid B5 not acceptable; did not use in analysis.Additional analysis dates: N/A.	3:1	0.5	0	50,000	1	25	21	49,400	2	0	9.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10019	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0005	3	N. Smith	4/21/2015	W. Nguyen	5/9/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10020	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0006	3	N. Smith	4/21/2015	W. Nguyen	5/9/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10021	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0007	5	N. Smith	4/21/2015	W. Nguyen	5/30/2015	Direct	TEM-ISO	ISO 10312	5	4	1	Are prepped grids acceptable for analysis? Yes; P7, P8, P9 used for analysis; P5 and P6 voided.Additional analysis dates: N/A.	3:1	0.5	0	50,000	1	25	77	269,456	0	0	0	0	269,456	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10022	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0008	6	N. Smith	4/21/2015	W. Nguyen	5/15/2015	Direct	TEM-ISO	ISO 10312	100	6	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 5/16/2015	3:1	0.5	0	50,000	1	25	21	49,400	2	0	9.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10023	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0009	3	N. Smith	4/21/2015	W. Nguyen	5/16/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? Yes, Grids C8 and C9 used for analysis; C10 not used.Additional analysis dates: N/A.	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10024	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0010	3	N. Smith	4/21/2015	W. Nguyen	5/16/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	22	47,155	0	0	0	0	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10025	1	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0011	3	N. Smith	4/21/2015	W. Nguyen	5/19/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes: Grids L3, L4, L5 Additional analysis dates: N/A C1 on 12/1/2015 to revise data entry date.	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10026	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0012	3	N. Smith	4/21/2015	W. Nguyen	5/20/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes (Grids L7, L8 used for analysis; Grid L6 not used)Additional analysis dates: N/A.	3:1	0.5	0	50,000	1	25	21	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10027	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0013	3	N. Smith	4/22/2015	W. Nguyen	5/20/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes; Grids L9, L10, M1Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
EF	Field Sample	WT-10028	2	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0014	6	N. Smith	4/22/2015	W. Nguyen	5/20/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? Yes (Grids F1 and M3 used for analysis; Grids E9, E10, M2 and M4 not used)Additional analysis dates: 5/21/15C1 on 6/23/2015 to revise grid opening names. C2 on 7/29/2015 to revise laboratory ID.	3:1	0.5	0	50,000	1	25	4	259,351	28	3	7.3E+06	7.8E+05	259,351	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10031	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0015	3	N. Smith	4/22/2015	W. Nguyen	5/22/2015	Direct	TEM-ISO	ISO 10312	100	8	1	Are prepped grids acceptable for analysis? Yes; F2, F3, F4Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	8	129,676	26	4	3.4E+06	5.2E+05	129,676	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10032	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0016	3	N. Smith	4/22/2015	W. Nguyen	5/23/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes; F5, F6, F7Additional analysis dates: 5/28/15	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10033	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0017	3	N. Smith	4/22/2015	W. Nguyen	5/23/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes; F8, F9, F10Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10034	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0018	3	N. Smith	4/22/2015	W. Nguyen	5/27/2015	Direct	TEM-ISO	ISO 10312	100	4	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	14	1	6.9E+05	4.9E+04	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10035	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	4/21/2015	041511388	041511388-0019	2	N. Smith	4/22/2015	W. Nguyen	5/29/2015	Direct	TEM-ISO	ISO 10312	10	10	1	Are prepped grids acceptable for analysis? Yes; P3, P4Additional analysis dates: 5/30/15	3:1	0.5	0	50,000	1	25	22	471,548	25	4	1.2E+07	1.9E+06	471,548	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10036	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0001	3	N. Smith	4/27/2015	A. FOLGAR	5/10/2015	Direct	TEM-ISO	ISO 10312	50	15	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	522,692	54	2	2.8E+07	1.0E+06	522,692	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10037	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0002	3	N. Smith	4/27/2015	E. SIOUKRI	5/10/2015	Direct	TEM-ISO	ISO 10312	50	15	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: 5/14/15	3:1	0.5	0	50,000	1	25	4	522,692	42	7	2.2E+07	3.7E+06	522,692	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10038	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0003	3	N. Smith	4/27/2015	A. FOLGAR	5/11/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	261,346	27	0	7.1E+06	0	261,346	1	0	2.6E+05	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10039	0	Surface Water	EMSL03	JEOL 100 CX II (03-04)	19,000	0.013	1359	4/24/2015	041511862	041511862-0004	3	N. Smith	4/27/2015	D. YOUNG	5/11/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: 5/12/15	3:1	0.5	0	50,000	1	25	10	104,538	25	2	2.6E+06	2.1E+05	104,538	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10040	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0005	3	N. Smith	4/27/2015	A. FOLGAR	5/12/2015	Direct	TEM-ISO	ISO 10312	25	7	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	5	836,308	27	5	2.3E+07	4.2E+06	836,308	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10041	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0006	3	N. Smith	4/27/2015	A. FOLGAR	5/13/2015	Direct	TEM-ISO	ISO 10312	25	10	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	5	836,308	26	9	2.2E+07	7.5E+06	836,308	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10042	0	Surface Water	EMSL03	JEOL 100 CX II (03-04)	19,000	0.013	1359	4/24/2015	041511862	041511862-0007	3	N. Smith	4/27/2015	D. YOUNG	5/13/2015	Direct	TEM-ISO	ISO 10312	100	20	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	261,346	49	8	1.3E+07	2.1E+06	261,346	1	0	2.6E+05	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10043	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0008	3	N. Smith	4/27/2015	A. FOLGAR	5/13/2015	Direct	TEM-ISO	ISO 10312	25	10	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	1,045,385	32	4	3.3E+07	4.2E+06	1,045,385	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10044	0	Surface Water	EMSL03	JEOL 100 CX II (03-04)	19,000	0.013	1359	4/24/2015	041511862	041511862-0009	3	N. Smith	4/27/2015	D. YOUNG	5/14/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	261,346	39	3	1.0E+07	7.8E+05	261,346	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10045	0	Surface Water	EMSL03	JEOL 100 CX II (03-04)	19,000	0.013	1359	4/24/2015	041511862	041511862-0010	3	N. Smith	4/27/2015	D. YOUNG	5/15/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	5	209,077	30	3	6.3E+06	6.3E+05	209,077	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10046	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0011	3	N. Smith	4/27/2015	A. FOLGAR	5/15/2015	Direct	TEM-ISO	ISO 10312	100	15	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	261,346	35	6	9.1E+06	1.6E+06	261,346	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10047	0	Surface Water	EMSL03	JEOL 100 CX II (03-04)	19,000	0.013	1359	4/24/2015	041511862	041511862-0012	3	N. Smith	4/27/2015	D. YOUNG	5/17/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	5	0	2.5E+05	0	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10048	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0013	3	N. Smith	4/27/2015	A. FOLGAR	5/17/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	11	2	5.5E+05	1.0E+05	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10049	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0014	3	N. Smith	4/27/2015	A. FOLGAR	5/18/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	2	0	1.0E+05	0	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10050	0	Surface Water	EMSL03	JEOL 100 CX II (03-04)	19,000	0.013	1359	4/24/2015	041511862	041511862-0015	3	N. Smith	4/27/2015	D. YOUNG	5/18/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	1	0	5.0E+04	0	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10051	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0016	3	N. Smith	4/28/2015	A. FOLGAR	5/18/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	0	0	0	0	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10052	0	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.013	1359	4/24/2015	041511862	041511862-0017	3	N. Smith	4/28/2015	A. FOLGAR	5/19/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	0	0	0	0	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10053

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SURFACE WATER (2015)
Libby Asbestos Superfund Site

DVC (S%)	Field QC Type	IndexID	Correction Number	Media	Analysis Lab	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Receipt Date	Lab Job Number	Lab Sample ID	# Grids Prepped	Prepared By	Prepared Date	Analysis By	Analysis Date	Preparation Method	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	Estimated Particulate Loading	F-Factor	Analysis Comments	Recording Rules: Minimum Aspect Ratio	Recording Rules: Minimum Length (um)	Recording Rules: Minimum Width (um)	Stopping Rules: Target Sensitivity	Stopping Rules: Max. Area Examined (mm2)	Stopping Rules: Target # of Structures	GOCount	LA: Sensitivity (1/L)	LA: Count: All	LA: Count: >10	LA: Concentration (f/L): All	LA: Concentration (f/L): >10	OA: Sensitivity (1/L)	OA: Count: All	OA: Count: >10	OA: Concentration (f/L): All	OA: Concentration (f/L): >10	Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
	Field Sample	WT-10085	0	Surface Water	EMSL03	JEOL 100 CXII (03-04)	19,000	0.013	1359	4/24/2015	041511862	041511862-0030	3	N. Smith	4/29/2015	D. YOUNG	7/7/2015	Direct	TEM-ISO	ISO 10312	50	15	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 7/8/15	3:1	0.5	0	50,000	1	25	22	95,035	25	0	2.4E+06	0	95,035	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10086	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0002	3	N. Smith	5/4/2015	F. Craig	6/29/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 6/30/15	3:1	0.5	0	50,000	1	25	4	259,351	26	3	6.7E+06	7.8E+05	259,351	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10087	1	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0003	3	N. Smith	5/4/2015	F. Craig	5/17/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 12/1/2015 to revise the mineral class and mineral description for total structure #9.	3:1	0.5	0	50,000	1	25	21	49,400	14	3	6.9E+05	1.5E+05	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10088	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0004	3	N. Smith	5/4/2015	F. Craig	7/2/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	518,702	36	9	1.9E+07	4.7E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10089	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0005	3	N. Smith	5/4/2015	P. Harrison	6/5/2015	Direct	TEM-ISO	ISO 10312	50	15	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	518,702	38	3	2.0E+07	1.6E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10090	1	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0006	3	N. Smith	5/4/2015	F. Craig	5/18/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 12/1/2015 to correct the mineral class and mineral description for total structure #2.	3:1	0.5	0	50,000	1	25	4	518,702	26	3	1.3E+07	1.6E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10091	1	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0007	3	N. Smith	5/4/2015	F. Craig	5/19/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 6/5/15 C1 on 12/1/2015 to correct the EDXA observation for total structure #4.	3:1	0.5	0	50,000	1	25	4	518,702	41	5	2.1E+07	2.6E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10092	0	Surface Water	EMSL04	JEOL100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0008	3	J. Grillo	5/4/2015	F. Craig	7/3/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	6	345,802	27	2	9.3E+06	6.9E+05	345,802	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10093	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0009	3	N. Smith	5/4/2015	F. Craig	7/23/2015	Direct	TEM-ISO	ISO 10312	50	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 7/25/15 \ 7/26/15	3:1	0.5	0	50,000	1	25	8	259,351	25	1	6.5E+06	2.6E+05	259,351	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10094	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0010	3	N. Smith	5/5/2015	F. Craig	7/26/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 7/27/15	3:1	0.5	0	50,000	1	25	6	345,802	26	3	9.0E+06	1.0E+06	345,802	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10095	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0011	3	N. Smith	5/5/2015	F. Craig	7/28/2015	Direct	TEM-ISO	ISO 10312	25	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 7/29/15	3:1	0.5	0	50,000	1	25	67	61,935	22	2	1.4E+06	1.2E+05	61,935	3	0	1.9E+05	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10096	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0012	3	N. Smith	5/5/2015	P. Harrison	7/28/2015	Direct	TEM-ISO	ISO 10312	50	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	11	188,619	26	2	4.9E+06	3.8E+05	188,619	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10097	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0013	3	N. Smith	5/5/2015	P. Harrison	7/29/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	3	1	1.5E+05	4.9E+04	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10098	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0014	3	N. Smith	5/5/2015	P. Harrison	8/3/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	2	0	9.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
EF	Field Duplicate	WT-10099	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0015	3	N. Smith	5/5/2015	F. Craig	7/30/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	2	2	9.9E+04	9.9E+04	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10100	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/2/2015	041512830	041512830-0016	3	N. Smith	5/5/2015	F. Craig	7/30/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	1	4.9E+04	4.9E+04	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
EF	Field Sample	WT-10101	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0017	3	N. Smith	5/5/2015	P. Harrison	8/3/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10102	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0018	3	N. Smith	5/5/2015	P. Harrison	8/3/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10103	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0019	3	N. Smith	5/5/2015	P. Harrison	8/3/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10104	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0020	3	N. Smith	5/5/2015	P. Harrison	7/8/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10105	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0021	3	N. Smith	5/5/2015	P. Harrison	5/18/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	10	0	4.9E+05	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10106	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0022	3	N. Smith	5/5/2015	P. Harrison	5/19/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	24	4	1.2E+06	2.0E+05	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10107	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0023	3	N. Smith	5/5/2015	P. Harrison	7/17/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	3	0	1.5E+05	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10108	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0024	3	N. Smith	5/6/2015	P. Harrison	6/19/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 12/1/2015 to revise preparation date.	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10109	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0025	3	N. Smith	5/6/2015	P. Harrison	6/19/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10110	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0026	3	N. Smith	5/6/2015	P. Harrison	6/26/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10111	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0027	3	N. Smith	5/6/2015	P. Harrison	6/26/2015	Direct	TEM-ISO	ISO 10312	25	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 7/2/15	3:1	0.5	0	50,000	1	25	4	1,037,405	31	3	3.2E+07	3.1E+06	1,037,405	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10112	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0028	3	N. Smith	5/6/2015	P. Harrison	7/2/2015	Direct	TEM-ISO	ISO 10312	25	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 7/6/2015 C1 on 12/1/2015 to revise structure type for primary structure #11.	3:1	0.5	0	50,000	1	25	4	1,037,405	35	5	3.6E+07	5.2E+06	1,037,405	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015	Structure type for primary structure #11 should likely be MD10, not MD11, since the secondary structure is less than 5 µm (4.6 µm).	12/2/2015
	Field Sample	WT-10113	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0029	3	N. Smith	5/6/2015	P. Harrison	7/6/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	8	259,351	26	7	6.7E+06	1.8E+06	259,351	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10114	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0030	3	N. Smith	5/6/2015	P. Harrison	7/7/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10115	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/2/2015	041512830	041512830-0031	3	N. Smith	5/6/2015	P. Harrison	7/7/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	11	94,310	26	0	2.5E+06	0	94,310	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10116	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0001	3	N. Smith	5/11/2015	W. Nguyen	6/5/2015	Direct	TEM-ISO	ISO 10312	10	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	12	864,504	25	3	2.2E+07	2.6E+06	864,504	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10117	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0002	3	N. Smith	5/11/2015	W. Nguyen	6/6/2015	Direct	TEM-ISO	ISO 10312	50	5	1	Are prepped grids acceptable for analysis? Yes; A10, B1, B2Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	13	159,601	25	0	4.0E+06	0	159,601	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10118	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0003	3	N. Smith	5/11/2015	W. Nguyen	6/6/2015	Direct	TEM-ISO	ISO 10312	100	8	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	7	148,201	25	3	3.7E+06	4.4E+05	148,201	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10119	1	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0004	3	N. Smith	5/11/2015	W. Nguyen	6/9/2015	Direct	TEM-ISO	ISO 10312	25	6	1	Are prepped grids acceptable for analysis? Yes; B9, B10, C1 Additional analysis dates: N/A C1 on 12/1/2015 to correct the EDXA observation for total structure #3.	3:1	0.5	0	50,000	1	25	5	829,924	25	3	2.1E+07	2.5E+06	829,924	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10120	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0005	3	N. Smith	5/11/2015	W. Nguyen	6/11/2015	Direct	TEM-ISO	ISO 10312	5	5	1	Are prepped grids acceptable for analysis? Yes, C8, C9, C10Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	22	943,095	25	1	2.4E+07	9.4E+05	943,095	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10121	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0006	3	N. Smith	5/11/2015	W. Nguyen	6/12/2015	Direct	TEM-ISO	ISO 10312	25	5	1	Are prepped grids acceptable for analysis? Yes; D1, D2, D3Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	8	518,702	25	2	1.3E+07	1.0E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
EF	Field Sample	WT-10122	0	Surface Water	EMSL22	JEOL1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0007	3	N. Smith	5/11/2015	W. Nguyen	6/12/2015	Direct	TEM-ISO	ISO 10312	25	5	1	Are prepped grids acceptable for analysis? Yes; D10, E1; (Didn't get a chance to use E2)Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	7	592,803	25	1	1.5E+07	5.9E+05	592,803	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10123	1	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0008	3	N. Smith	5/11/2015	W. Nguyen	6/13/2015	Direct	TEM-ISO	ISO 10312	25	4	1	Are prepped grids acceptable for analysis? Yes; E6, E7, E8 Additional analysis dates: N/A C1 on 12/1/2015 to revise the structure type for primary structure #11.	3:1	0.5	0	50,000	1	25	7	592,803	25	6	1.5E+07	3.6E+06	592,803	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015	Structure type for primary structure #11 should likely be MD11, not MD10, since the secondary structure is greater than 5 µm (6.6 µm).	12/2/2015
	Field Sample	WT-10124	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0009	3	N. Smith	5/11/2015	W. Nguyen	6/16/2015	Direct	TEM-ISO	ISO 10312	100	6	1	Are prepped grids acceptable for analysis? E9, E10, F1Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	8	129,676	25	4	3.2E+06	5.2E+05	129,676	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10125	1	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0010	3	N. Smith	5/11/2015	W. Nguyen	7/11/2015	Direct	TEM-ISO	ISO 10312	25	1	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 12/1/2015 to correct analysis date.	3:1	0.5	0	50,000	1	25	77	53,891	8	1	4.3E+05	5.4E+04	53,891	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10126	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0011	3	N. Smith	5/11/2015	W. Nguyen	7/11/2015	Direct	TEM-ISO	ISO 10312	50	2	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	42	49,400	20	3	9.9E+05	1.5E+05	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10127	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0012	3	N. Smith	5/11/2015	W. Nguyen	7/12/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes; G5, G6 used only; G4 not usedAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	7	1	3.5E+05	4.9E+04	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10128	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0013	3	N. Smith	5/12/2015	W. Nguyen	7/12/2015	Direct	TEM-ISO	ISO 10312	50	1	1	Are prepped grids acceptable for analysis? Yes, H6, H7, H8Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	42	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10129	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0014	3	N. Smith	5/12/2015	W. Nguyen	7/14/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes, H9, H10, I1Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10130	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0015	3	N. Smith	5/12/2015	W. Nguyen	7/14/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes, I8, 9, 10Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10131	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0016	3	N. Smith	5/12/2015	W. Nguyen	7/15/2015	Direct	TEM-ISO	ISO 10312	50	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	42	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10132	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0017	3	N. Smith	5/12/2015	W. Nguyen	7/15/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes; J7, J8, J9Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	1	4.9E+04	4.9E+04	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10133	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0018	3	N. Smith	5/12/2015	W. Nguyen	7/21/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes; K3, K4, K5Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	2	1	9.9E

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

DVC (S%)	Field QC Type	IndexID	Correction Number	Media	Analysis Lab	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Receipt Date	Lab Job Number	Lab Sample ID	# Grids Prepped	Prepared By	Prepared Date	Analysis By	Analysis Date	Preparation Method	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	Estimated Particulate Loading	F-Factor	Analysis Comments	Recording Rules: Minimum Aspect Ratio	Recording Rules: Minimum Length (um)	Recording Rules: Minimum Width (um)	Stopping Rules: Target Sensitivity	Stopping Rules: Max. Area Examined (mm2)	Stopping Rules: Target # of Structures	GOCount	LA: Sensitivity (1/L)	LA: Count: All	LA: Count: >10	LA: Concentration (f/L): All	LA: Concentration (f/L): >10	OA: Sensitivity (1/L)	OA: Count: All	OA: Count: >10	OA: Concentration (f/L): All	OA: Concentration (f/L): >10	Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
	Field Sample	WT-10145	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0030	3	N. Smith	5/26/2015	W. Nguyen	7/30/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? Yes; R5, R6, R7Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	26	79,800	25	2	2.0E+06	1.6E+05	79,800	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10146	0	Surface Water	EMSL22	JEOL 1200 EX (22-01)	20,000	0.0131	1359	5/8/2015	041513445	041513445-0031	3	N. Smith	5/26/2015	W. Nguyen	7/30/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? Yes; S1, S2, S3Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	15	138,321	26	2	3.6E+06	2.8E+05	138,321	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10147	2	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.0128	1359	5/16/2015	041514338	041514338-0001	3	N. Smith	5/18/2015	A. FOLGAR	8/5/2015	Direct	TEM-ISO	ISO 10312	50	20	1	Are prepped grids acceptable for analysis?YES Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA. C2 on 12/31/2015 to remove extra spaces from the first 2 grid openings and to add the missing substructure for primary structure #18	3:1	0.5	0	50,000	1	25	4	530,859	45	7	2.4E+07	3.7E+06	530,859	0	0	0	0	CDM Smith	N. Ross/DDE	1/5/2016	1) In the Data entry 2 tab in the EDD, there is a space after Grid D4 in rows 13 and 14. Because of the space, the total number of grid openings examined is reported as 5, but should be 4. Please remove the space from these two Grids. 2) Structure type for primary structure #18 is MD10, however, no total structure follows.	1/5/2016
	Field Sample	WT-10148	1	Surface Water	EMSL03	JEOL 100 CX II (03-04)	19,000	0.0131	1359	5/16/2015	041514338	041514338-0002	3	N. Smith	5/18/2015	D. YOUNG	8/7/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	13	79,800	25	0	2.0E+06	0	79,800	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10149	1	Surface Water	EMSL03	JEOL 100 CXII (03-02)	19,000	0.0128	1359	5/16/2015	041514338	041514338-0003	3	N. Smith	5/18/2015	A. FOLGAR	8/11/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A C1 on 11/9/2015 to revise EFA.	3:1	0.5	0	50,000	1	25	9	235,938	26	0	6.1E+06	0	235,938	0	0	0	0	CDM Smith	N. Ross/DDE	1/5/2016	The volume applied to the filter is circled on the Water Preparation Record as 100, but was entered in the EDD as 50. Please confirm the correct volume.	1/5/2016
	Field Sample	WT-10150	1	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/16/2015	041514338	041514338-0004	3	N. Smith	5/18/2015	F. Craig	10/21/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to revise EFA.	3:1	0.5	0	50,000	1	25	4	518,702	27	5	1.4E+07	2.6E+06	518,702	4	0	2.1E+06	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10151	1	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0134	1359	5/16/2015	041514338	041514338-0005	3	N. Smith	5/18/2015	F. Craig	10/23/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 10/25/15 | 10/26/15 C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	4	507,090	33	7	1.7E+07	3.5E+06	507,090	1	0	5.1E+05	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10152	1	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/16/2015	041514338	041514338-0006	3	N. Smith	5/18/2015	F. Craig	10/22/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	4	518,702	30	6	1.6E+07	3.1E+06	518,702	4	0	2.1E+06	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10153	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0126	1359	5/16/2015	041514338	041514338-0007	3	N. Smith	5/18/2015	P. Harrison	10/26/2015	Direct	TEM-ISO	ISO 10312	25	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	6	719,048	27	1	1.9E+07	7.2E+05	719,048	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10154	2	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/16/2015	041514338	041514338-0008	3	N. Smith	5/18/2015	F. Craig	10/27/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 10/28/15 C1 on 11/9/2015 to correct EFA. C2 on 12/31/2015 to revise the structure type for primary structure #4	3:1	0.5	0	50,000	1	25	4	259,351	30	4	7.8E+06	1.0E+06	259,351	3	0	7.8E+05	0	CDM Smith	N. Ross/DDE	1/5/2016	Structure type for primary structure #4 should likely be CD22, not CD11, since two secondary structures longer than 5 µm follow.	1/5/2016
	Field Sample	WT-10155	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0009	3	N. Smith	5/18/2015	P. Harrison	10/27/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	7	148,201	26	4	3.9E+06	5.9E+05	148,201	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10156	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0010	3	N. Smith	5/18/2015	P. Harrison	10/30/2015	Direct	TEM-ISO	ISO 10312	50	5	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	9	230,534	26	3	6.0E+06	6.9E+05	230,534	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10157	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0011	3	N. Smith	5/19/2015	P. Harrison	10/29/2015	Direct	TEM-ISO	ISO 10312	50	15	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	5	414,962	28	2	1.2E+07	8.3E+05	414,962	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10158	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0134	1359	5/16/2015	041514338	041514338-0012	3	N. Smith	5/19/2015	P. Harrison	10/29/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	21	48,294	2	1	9.7E+04	4.8E+04	48,294	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10159	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0013	3	N. Smith	5/19/2015	P. Harrison	10/29/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 10/30/2015 C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	22	47,155	0	0	0	0	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10160	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0134	1359	5/16/2015	041514338	041514338-0014	3	N. Smith	5/19/2015	P. Harrison	10/29/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	21	48,294	3	0	1.4E+05	0	48,294	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10161	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0015	3	N. Smith	5/19/2015	P. Harrison	10/30/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	22	47,155	0	0	0	0	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10162	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0016	3	N. Smith	5/19/2015	P. Harrison	11/2/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	22	47,155	1	0	4.7E+04	0	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10163	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0017	3	N. Smith	5/19/2015	P. Harrison	11/2/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	22	47,155	0	0	0	0	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10164	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0018	3	N. Smith	5/19/2015	P. Harrison	11/2/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	22	47,155	0	0	0	0	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10165	1	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0019	3	N. Smith	5/19/2015	P. Harrison	11/2/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	22	47,155	0	0	0	0	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10166	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0020	3	N. Smith	5/19/2015	P. Harrison	11/3/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	22	47,155	2	0	9.4E+04	0	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10167	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0021	3	N. Smith	5/20/2015	P. Harrison	11/4/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	22	47,155	6	1	2.8E+05	47154.754	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10168	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0022	3	N. Smith	5/20/2015	P. Harrison	11/4/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	22	47,155	1	0	4.7E+04	0	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
EF	Field Sample	WT-10169	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0023	3	N. Smith	5/20/2015	P. Harrison	11/4/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	22	47,155	0	0	0.0E+00	0	47,155	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10170	1	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0134	1359	5/16/2015	041514338	041514338-0024	3	N. Smith	5/20/2015	F. Craig	10/30/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 11/9/2015 to correct EFA.	3:1	0.5	0	50,000	1	25	21	48,294	0	0	0	0	48,294	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10171	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0134	1359	5/16/2015	041514338	041514338-0025	3	N. Smith	5/20/2015	P. Harrison	11/10/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	48,294	0	0	0.0E+00	0.0E+00	48,294	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10172	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0134	1359	5/16/2015	041514338	041514338-0026	3	N. Smith	5/26/2015	P. Harrison	11/10/2015	Direct	TEM-ISO	ISO 10312	25	5	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	6	676,119	25	1	1.7E+07	6.8E+05	676,119	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10173	0	Surface Water	EMSL04	JEOL 1200 EX II (04-06)	20,000	0.0134	1359	5/23/2015	041514996	041514996-0001	3	N. Smith	5/28/2015	P. Harrison	10/16/2015	Direct	TEM-ISO	ISO 10312	25	8	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 10/19/2015	3:1	0.5	0	50,000	1	25	5	811,343	26	4	2.1E+07	3245373.1	811,343	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10176	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0002	3	N. Smith	5/28/2015	F. Craig	10/8/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates:10/9/15	3:1	0.5	0	50,000	1	25	4	518,702	34	3	1.8E+07	1.6E+06	518,702	3	0	1.6E+06	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10177	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.013	1359	5/23/2015	041514996	041514996-0003	3	N. Smith	5/28/2015	F. Craig	8/17/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 8/18/15	3:1	0.5	0	50,000	1	25	4	522,692	34	6	1.8E+07	3.1E+06	522,692	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10178	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0004	3	N. Smith	5/28/2015	P. Harrison	10/8/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	518,702	25	2	1.3E+07	1.0E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10179	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.013	1359	5/23/2015	041514996	041514996-0005	3	N. Smith	5/29/2015	F. Craig	8/25/2015	Direct	TEM-ISO	ISO 10312	50	15	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 8/26/15	3:1	0.5	0	50,000	1	25	4	522,692	26	4	1.4E+07	2.1E+06	522,692	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10180	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.013	1359	5/23/2015	041514996	041514996-0006	3	N. Smith	5/29/2015	F. Craig	8/27/2015	Direct	TEM-ISO	ISO 10312	50	20	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	522,692	33	8	1.7E+07	4.2E+06	522,692	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10181	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0134	1359	5/16/2015	041514338	041514338-0027	3	N. Smith	5/26/2015	F. Craig	11/6/2015	Direct	TEM-ISO	ISO 10312	50	5	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 11/8/2015, 11/9/2015	3:1	0.5	0	50,000	1	25	6	338,060	25	7	8.5E+06	2.4E+06	338,060	1	0	338059.7	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10182	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0028	3	N. Smith	5/26/2015	P. Harrison	11/5/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	9	115,267	28	5	3.2E+06	5.8E+05	115,267	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10183	1	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0134	1359	5/16/2015	041514338	041514338-0029	3	N. Smith	5/26/2015	F. Craig	11/9/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 11/16/15 C1 on 11/16/2015 to add additional GO analyzed. Original file did not meet the required analytical sensitivity.	3:1	0.5	0	50,000	1	25	21	48,294	0	0	0.0E+00	0.0E+00	48,294	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10184	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0134	1359	5/16/2015	041514338	041514338-0030	3	N. Smith	5/26/2015	P. Harrison	11/9/2015	Direct	TEM-ISO	ISO 10312	10	5	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 11/10/2015	3:1	0.5	0	50,000	1	25	75	135,224	9	1	1.2E+06	1.4E+05	135,224	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10185	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/16/2015	041514338	041514338-0031	3	N. Smith	5/26/2015	P. Harrison	11/5/2015	Direct	TEM-ISO	ISO 10312	50	20	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 11/6/2015	3:1	0.5	0	50,000	1	25	35	59,280	25	6	1.5E+06	3.6E+05	59,280	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10186	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0007	3	N. Smith	5/29/2015	F. Craig	10/12/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	518,702	27	2	1.4E+07	1.0E+06	518,702	3	0	1.6E+06	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10187	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0008	3	N. Smith	5/29/2015	F. Craig	9/4/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	8	129,676	26	4	3.4E+06	5.2E+05	129,676	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10188	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0009	3	N. Smith	5/29/2015	F. Craig	8/28/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 8/29/15	3:1	0.5	0	50,000	1	25	23	90,209	25	2	2.3E+06	1.8E+05	90,209	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10189	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.013	1359	5/23/2015	041514996	041514996-0010	3	N. Smith	5/29/2015	F. Craig	9/18/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	2	1	1.0E+05	5.0E+04	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10190	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0011	3	N. Smith	5/29/2015	F. Craig	9/19/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10191	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0012	3	N. Smith	5/29/2015	F. Craig	9/20/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
EF	Field Sample	WT-10192	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0013	3	N. Smith	5/29/2015	F. Craig	9/20/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10193	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0014	3	N. Smith	5/29/2015	F. Craig	9/20/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10194	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0015	3	N. Smith

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

DVC (5%)	Field QC Type	IndexID	Correction Number	Media	Analysis Lab	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Receipt Date	Lab Job Number	Lab Sample ID	# Grids Prepped	Prepared By	Prepared Date	Analysis By	Analysis Date	Preparation Method	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	Estimated Particulate Loading	F-Factor	Analysis Comments	Recording Rules			Stopping Rules			GOCount	LA					OA				Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
																									Minimum Aspect Ratio	Minimum Length (um)	Minimum Width (um)	Target Sensitivity	Max. Area Examined (mm2)	Target # of Structures		Sensitivity (1/L)	Count		Concentration (f/L)		Sensitivity (1/L)	Count		Concentration (f/L)						
																																All	>10	All	>10		All	>10	All	>10					
	Field Sample	WT-10195	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0016	3	N. Smith	6/1/2015	P. Harrison	10/7/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10196	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0017	3	N. Smith	6/1/2015	F. Craig	10/7/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10197	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0018	3	N. Smith	6/1/2015	F. Craig	10/7/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10198	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0019	3	N. Smith	6/1/2015	P. Harrison	10/7/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10199	0	Surface Water	EMSL04	JEOL JEM-100 CX II (04-05)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0020	3	N. Smith	6/1/2015	J. Spry	10/8/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10200	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0021	3	N. Smith	6/1/2015	P. Harrison	10/8/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10201	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0022	3	N. Smith	6/1/2015	P. Harrison	10/12/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10202	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0023	3	N. Smith	6/1/2015	P. Harrison	10/16/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10203	0	Surface Water	EMSL04	JEOL JEM 100CX II (04-05)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0024	4	N. Smith	6/1/2015	J. Spry	10/14/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 10/15/15, 10/19/15, 10/20/15 (Scope 04-03 used)	3:1	0.5	0	50,000	1	25	15	69,160	25	6	1.7E+06	4.1E+05	69,160	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10204	0	Surface Water	EMSL04	JEOL JEM 100 CX II (04-05)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0025	3	N. Smith	6/1/2015	J. Spry	10/12/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 10/13/15	3:1	0.5	0	50,000	1	25	6	172,901	27	3	4.7E+06	5.2E+05	172,901	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10205	0	Surface Water	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0026	3	N. Smith	6/2/2015	P. Harrison	10/12/2015	Direct	TEM-ISO	ISO 10312	50	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	36	57,634	26	6	1.5E+06	3.5E+05	57,634	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10206	0	Surface Water	EMSL04	JEOL-1200- EX II (04-06)	20,000	0.0131	1359	5/23/2015	041514996	041514996-0027	3	N. Smith	6/2/2015	P. Harrison	10/12/2015	Direct	TEM-ISO	ISO 10312	100	15	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	11	94,310	25	1	2.4E+06	9.4E+04	94,310	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10207	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0028	3	N. Smith	6/2/2015	F. Craig	10/13/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	9	115,267	23	7	2.7E+06	8.1E+05	115,267	3	1	3.5E+05	1.2E+05	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10208	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0029	3	N. Smith	6/2/2015	F. Craig	10/14/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	0	0	0	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10209	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0030	3	N. Smith	6/2/2015	F. Craig	10/14/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	22	0	1.1E+06	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
EF	Field Sample	WT-10210	0	Surface Water	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514996	041514996-0031	3	N. Smith	6/2/2015	F. Craig	10/16/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	3	0	1.5E+05	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE II PART B GROUND WATER

IndexID	Analysis Lab	Lab Job Number	Lab SampleID	Analysis Date	Analysis Method	Dilute Volume1	Grid Opening Size	EFA	Grid Opening Number	F Factor	Count all LA	Verifier's Company	Verifier	Comments
P2-00787	EMSL27	270800630	270800630-0002	12/23/08	ISO 10312	25	0.013	1295	50	0.1	0	SRC	E. Kelly	
P2-00789	EMSL27	270800630	270800630-0003	12/30/08	ISO 10312	100	0.013	1295	1	1	34	SRC	E. Kelly	
P2-01041	EMSL27	270800972	270800972-0001	1/2/09	ISO 10312	100	0.013	1295	20	1	0	SRC	E. Kelly	
P2-01045	EMSL27	270800972	270800972-0005	1/4/09	ISO 10312	100	0.013	1295	1	1	62	SRC	E. Kelly	

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - GROUNDWATER (2015)

Libby Asbestos Superfund Site

DVC (5%)	Field QC Type	IndexID	Correction Number	Media	Analysis Lab	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Receipt Date	Lab Job Number	Lab Sample ID	# Grids Prepped	Prepared By	Prepared Date	Analysis By	Analysis Date	Preparation Method	Analysis Type	Analysis Method	Volume Applied to Filter (mL)	Estimated Particulate Loading	F-Factor	Analysis Comments	Recording Rules			Stopping Rules			GOCount	LA					OA				Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
																									Minimum Aspect Ratio	Minimum Length (um)	Minimum Width (um)	Target Sensitivity	Max. Area Examined (mm2)	Target # of Structures		Sensitivity (1/L)	Count		Concentration (f/L)		Sensitivity (1/L)	Count		Concentration (f/L)						
																																All	>10	All	>10		All	>10	All	>10					
	Field Sample	WT-10061	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/17/2015	041511063	041511063-0001	3	N. Smith	4/20/2015	P. Harrison	5/8/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	1	0	4.9E+04	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10062	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/17/2015	041511063	041511063-0002	4	N. Smith	4/20/2015	P. Harrison	5/4/2015	Direct	TEM-ISO	ISO 10312	100	20	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	259,351	40	3	1.0E+07	7.8E+05	259,351	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Equipment Rinsate Blank	WT-10063	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/17/2015	041511063	041511063-0003	3	N. Smith	4/20/2015	P. Harrison	5/5/2015	Direct	TEM-ISO	ISO 10312	100	15	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	7	1	3.5E+05	4.9E+04	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
EF	Field Sample	WT-10064	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/17/2015	041511063	041511063-0004	3	N. Smith	4/20/2015	P. Harrison	5/8/2015	Direct	TEM-ISO	ISO 10312	10	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 5/11/2015	3:1	0.5	0	50,000	1	25	77	134,728	1	0	1.3E+05	0	134,728	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10065	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/17/2015	041511063	041511063-0005	3	N. Smith	4/20/2015	P. Harrison	5/14/2015	Direct	TEM-ISO	ISO 10312	50	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	7	296,401	33	6	9.8E+06	1.8E+06	296,401	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10066	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/17/2015	041511063	041511063-0006	3	N. Smith	4/20/2015	P. Harrison	5/15/2015	Direct	TEM-ISO	ISO 10312	50	15	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	518,702	39	3	2.0E+07	1.6E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10067	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/17/2015	041511063	041511063-0007	3	N. Smith	4/20/2015	P. Harrison	5/11/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	21	1	1.0E+06	4.9E+04	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Equipment Rinsate Blank	WT-10070	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/17/2015	041511063	041511063-0008	3	N. Smith	4/20/2015	P. Harrison	5/13/2015	Direct	TEM-ISO	ISO 10312	100	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 5/14/2015	3:1	0.5	0	50,000	1	25	21	49,400	3	0	1.5E+05	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10073	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/21/2015	041511395	041511395-0001	4	N. Smith	4/22/2015	P. Harrison	4/29/2015	Direct	TEM-ISO	ISO 10312	25	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	77	53,891	1	0	5.4E+04	0	53,891	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10074	1	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/21/2015	041511395	041511395-0002	4	N. Smith	4/22/2015	P. Harrison	4/28/2015	Direct	TEM-ISO	ISO 10312	25	15	1	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 12/1/2015 to revise structure type for primary structure #11.	3:1	0.5	0	50,000	1	25	15	276,641	25	3	6.9E+06	8.3E+05	276,641	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015	Structure type for primary structure #11 should likely be MD10, not MD11, since the secondary structure is less than 5 µm (2.6 µm).	12/2/2015
	Equipment Rinsate Blank	WT-10075	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/21/2015	041511395	041511395-0003	4	N. Smith	4/22/2015	P. Harrison	5/5/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,400	5	0	2.5E+05	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10076	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/21/2015	041511395	041511395-0004	4	N. Smith	4/22/2015	P. Harrison	4/29/2015	Direct	TEM-ISO	ISO 10312	10	20	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 4/30/2015	3:1	0.5	0	50,000	1	25	4	2,593,511	57	5	1.5E+08	1.3E+07	2,593,511	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10077	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/21/2015	041511395	041511395-0005	4	N. Smith	4/22/2015	P. Harrison	4/30/2015	Direct	TEM-ISO	ISO 10312	50	25	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 5/1/2015	3:1	0.5	0	50,000	1	25	4	518,702	32	2	1.7E+07	1.0E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10078	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/21/2015	041511395	041511395-0006	4	N. Smith	4/22/2015	P. Harrison	5/1/2015	Direct	TEM-ISO	ISO 10312	50	25	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 5/4/15	3:1	0.5	0	50,000	1	25	4	518,702	56	3	2.9E+07	1.6E+06	518,702	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015	Filtered volume selected for analysis was not circled on Water Preparation Record.	12/7/2015
	Equipment Rinsate Blank	WT-10079	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.0131	1359	4/21/2015	041511395	041511395-0007	4	N. Smith	4/22/2015	P. Harrison	5/6/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YAdditional analysis dates: 5/7/2015	3:1	0.5	0	50,000	1	25	21	49,400	3	0	1.5E+05	0	49,400	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10221	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.013	1359	5/23/2015	041514992	041514992-0001	3	N. Smith	5/27/2015	P. Harrison	8/4/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	1	0	5.0E+04	0	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10222	0	Groundwater	EMSL04	JEOL 100 CXII (04-01)	19,000	0.013	1359	5/23/2015	041514992	041514992-0002	3	N. Smith	5/27/2015	F. Craig	8/5/2015	Direct	TEM-ISO	ISO 10312	100	20	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	6	174,231	27	2	4.7E+06	3.5E+05	174,231	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10223	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.013	1359	5/23/2015	041514992	041514992-0003	3	N. Smith	5/27/2015	P. Harrison	8/4/2015	Direct	TEM-ISO	ISO 10312	10	5	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	77	135,764	0	0	0	0	135,764	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Equipment Rinsate Blank	WT-10224	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.013	1359	5/23/2015	041514992	041514992-0004	3	N. Smith	5/27/2015	P. Harrison	8/4/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	7	0	3.5E+05	0	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Blank	WT-10225	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.013	1359	5/23/2015	041514992	041514992-0005	3	N. Smith	5/27/2015	P. Harrison	8/4/2015	Direct	TEM-ISO	ISO 10312	100	2	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	0	0	0	0	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10226	0	Groundwater	EMSL04	JEOL 100 CXII (04-01)	19,000	0.013	1359	5/23/2015	041514992	041514992-0006	3	N. Smith	5/27/2015	F. Craig	8/5/2015	Direct	TEM-ISO	ISO 10312	25	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 8/6/15	3:1	0.5	0	50,000	1	25	5	836,308	28	6	2.3E+07	5.0E+06	836,308	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Duplicate	WT-10227	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.013	1359	5/23/2015	041514992	041514992-0007	3	N. Smith	5/27/2015	P. Harrison	8/6/2015	Direct	TEM-ISO	ISO 10312	50	8	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	4	522,692	36	4	1.9E+07	2.1E+06	522,692	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10228	0	Groundwater	EMSL04	JEOL 100 CXII (04-01)	19,000	0.013	1359	5/23/2015	041514992	041514992-0008	3	N. Smith	5/27/2015	F. Craig	8/6/2015	Direct	TEM-ISO	ISO 10312	100	1	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	21	49,780	0	0	0	0	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10229	0	Groundwater	EMSL04	JEOL 100 CXII (04-01)	19,000	0.013	1359	5/23/2015	041514992	041514992-0009	3	N. Smith	5/27/2015	F. Craig	8/6/2015	Direct	TEM-ISO	ISO 10312	50	20	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 8/7/15 | 8/10/15	3:1	0.5	0	50,000	1	25	4	522,692	40	3	2.1E+07	1.6E+06	522,692	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Equipment Rinsate Blank	WT-10230	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.013	1359	5/23/2015	041514992	041514992-0010	3	N. Smith	5/27/2015	P. Harrison	8/6/2015	Direct	TEM-ISO	ISO 10312	100	3	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 8/7/2015	3:1	0.5	0	50,000	1	25	21	49,780	10	1	5.0E+05	5.0E+04	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10231	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.013	1359	5/23/2015	041514992	041514992-0011	3	N. Smith	5/28/2015	P. Harrison	8/12/2015	Direct	TEM-ISO	ISO 10312	10	15	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	77	135,764	13	0	1.8E+06	0	135,764	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Equipment Rinsate Blank	WT-10232	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.013	1359	5/23/2015	041514992	041514992-0012	3	N. Smith	5/28/2015	P. Harrison	8/10/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 8/11/2015	3:1	0.5	0	50,000	1	25	21	49,780	18	1	9.0E+05	5.0E+04	49,780	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10233	0	Groundwater	EMSL04	JEOL-1200-EX II (04-06)	20,000	0.013	1359	5/23/2015	041514992	041514992-0013	3	N. Smith	5/28/2015	P. Harrison	8/14/2015	Direct	TEM-ISO	ISO 10312	50	20	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 8/21/2015	3:1	0.5	0	50,000	1	25	7	298,681	25	1	7.5E+06	3.0E+05	298,681	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10234	0	Groundwater	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514992	041514992-0014	3	N. Smith	5/28/2015	F. Craig	8/19/2015	Direct	TEM-ISO	ISO 10312	10	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	0.5	0	50,000	1	25	5	2,074,809	29	4	6.0E+07	8.3E+06	2,074,809	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Field Sample	WT-10235	0	Groundwater	EMSL04	JEOL 100 CXII (04-01)	19,000	0.0131	1359	5/23/2015	041514992	041514992-0015	3	N. Smith	5/28/2015	F. Craig	8/20/2015	Direct	TEM-ISO	ISO 10312	50	20	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 8/21/15	3:1	0.5	0	50,000	1	25	12	172,901	25	4	4.3E+06	6.9E+05	172,901	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		
	Equipment Rinsate Blank	WT-10236	0	Groundwater	EMSL04	JEOL 100 CXII (04-01)	19,000	0.013	1359	5/23/2015	041514992	041514992-0016	3	N. Smith	5/28/2015	F. Craig	8/21/2015	Direct	TEM-ISO	ISO 10312	100	10	1	Are prepped grids acceptable for analysis? YesAdditional analysis dates: 8/24/15	3:1	0.5	0	50,000	1	25	7	149,341	27	2	4.0E+06	3.0E+05	149,341	0	0	0	0	CDM Smith	N. Ross/DDE	12/18/2015		

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE I DUFF

Field QC Type	Analysis Lab	Instrument	Voltage	Magnific	Grid Opening Size	NGO	EFA	Duff Mass	Ashed Residue Total	Ashed Residue Aliquot	Index ID	Media	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	COC ID	Lab QC Type	Analyst	Analysis Date	Analysis Method	Grid Store	Dilute Aliquot1	Dilute Volume1	F Factor	Result Char	Mineral Class	Result	Verifier's Company	Verifier's Name	Comment
FS	EMSL04	JEOL 1200 EX (58)/ 100 CX (2)	100 kV	20,000/19,000 X	0.013	8	1295	417.55	245.77	0.25	P1-00152	Duff	10/10/2007	040725351	040725351-0001	3	D. Stanhope/I. Gomes	4/17/2008	081007DB01	Not QA	G. Agnello	5/7/2008	10312	Remedium 08-004, C	0.3	100	3.1E-06	Sensitivity	LA	9.8E+06	SRC	A. Bacom	
FS	EMSL27	JEOL 100 CX II (49)	100 kV	19,000 X	0.013	2	1295	322.59	142.57	0.25	P1-00222	Duff	10/17/2007	040725946	040725946-0018	3	D. Stanhope/T. ONeal	2/27/2008	121007DB01	Not QA	R. Pescador	4/1/2008	10312	Remedium 081, E	0.3	100	5.3E-06	Sensitivity	LA	2.9E+07	SRC	A. Bacom	Prepared by "D.Stanhope". Manually changed in project database by Data Manager (SRC)
FS	EMSL27	JEOL 100 CX II (49)	100 kV	19,000 X	0.013	3	1295	430.34	185.35	0.25	P1-00230	Duff	10/17/2007	040725946	040725946-0026	3	D. Stanhope	2/27/2008	121007DB01	Not QA	R. Pescador	4/9/2008	10312	Remedium 081, H	0.1	100	1.3E-06	Sensitivity	LA	5.7E+07	SRC	A. Bacom	Prepared by "D.Stanhope/T.O'Neal
FS	EMSL04	JEOL 1200 EX (58)	100 kV	20,000 X	0.013	5	1295	184.7	32.81	0.25	P1-00100	Duff	10/10/2007	040725351	040725351-0009	3	D. Stanhope	4/17/2008	081007DB01	Not QA	G. Agnello	5/27/2008	10312	Remedium 08-004, E	0.3	100	2.3E-05	Sensitivity	LA	4.7E+06	SRC	A. Bacom	
FS	EMSL04	JEOL 1200 EX (58)	100 kV	20,000 X	0.013	5	1295	252.48	86.8	0.25	P1-00040	Duff	10/10/2007	040725330	040725330-0011	3	D. Stanhope/L. Smith	4/1/2008	051007DB01	RD	R. Denton	5/23/2008	10312	Remedium 08-0002, H	0.3	100	8.6E-06	Sensitivity	LA	9.1E+06	SRC	A. Bacom	
FS	EMSL04	JEOL 1200 EX (58)	100 kV	20,000 X	0.013	6	1295	476.7	182.71	0.25	P1-00164	Duff	10/10/2007	040725351	040725351-0014	3	D. Stanhope	4/24/2008	081007DB01	Not QA	R. Denton	6/12/2008	10312	Remedium 08-004, F	0.3	100	4.1E-06	Sensitivity	LA	8.5E+06	SRC	A. Bacom	
FS	EMSL04	JEOL 1200 EX (58)	100 kV	20,000 X	0.013	4	1295	172.16	30.45	0.25	P1-00110	Duff	10/10/2007	040725351	040725351-0013	3	D. Stanhope	4/17/2008	081007DB01	Not QA	G. Agnello	6/17/2008	10312	CDM 08-004, F	0.3	100	2.5E-05	Sensitivity	LA	5.9E+06	SRC	A. Bacom	
FS	EMSL04	JEOL 100 CX II (02)	100 kV	19,000 X	0.013	14	1276	251.37	84.38	0.25	P1-00083	Duff	10/10/2007	040725341	040725341-0005	3	D. Stanhope/L. Smith	9/23/2008	051007DB02	Not QA	D. Young	9/24/2008	10312	Remedium 08-005, Q	0.1	100	3.0E-06	Sensitivity	LA	9.4E+06	SRC	A. Bacom	
FS	EMSL04	JEOL 100 CX II (02)	100 kV	19,000 X	0.013	5	1276	199.28	64.3	0.25	P1-00068	Duff	10/10/2007	040725341	040725341-0008	3	D. Stanhope/L. Smith	9/25/2008	051007DB02	Not QA	D. Young	10/6/2008	10312	0408-Remedium-6, E	0.3	100	1.2E-05	Sensitivity	LA	8.4E+06	SRC	A. Bacom	
FS	EMSL04	JEOL 100 CX II (13)	100 kV	19,000 X	0.013	5	1276	399.79	136.68	0.25	P1-00032	Duff	10/10/2007	040725330	040725330-0001	3	D. Stanhope/L. Smith	8/22/2008	051007DB01	Not QA	F. Craig	8/27/2008	10312	Remedium 08-004, K	0.3	100	5.5E-06	Sensitivity	LA	8.9E+06	SRC	A. Bacom	
Not Field	EMSL04	JEOL 100 CX II (02)	100 kV	19,000 X	0.013	10	1276	0	0	0	LB-38	Duff		040725341	040725341	3	D. Stanhope/H. Lind	9/25/2008	051007DB02	DB	D. Young	9/29/2008	10312	04-08-Remedium-6, B	100	100	1	Sensitivity	LA		SRC	A. Bacom	Residue mass should be zero. Dilution volume should be blank (EDD has error trap to set F-factor=1 in case of blank samples)
Not Field	EMSL27	JEOL 100 CX II (49)	100 kV	19,000 X	0.013	10	1295	0	0	0	LB-35	Duff		040725946	040725946	3	D. Stanhope/T. ONeal	3/7/2008	121007DB01	LB	R. Pescador	4/3/2008	10312	Remedium 081, I	100	100	1	Sensitivity	LA		SRC	A. Bacom	Dilution volume should be blank (EDD has error trap to set F-factor=1 in case of blank samples)
Not Field	EMSL04	JEOL 1200 EX (58)	100 kV	20,000 X	0.013	10	1295	0	0	0	LB-28	Duff		040725351	040725351	3	D. Stanhope/I. Gomes	4/8/2008	081007DB01	DB	G. Agnello	5/2/2008	10312	Remedium 08-0004, I	100	100	1	Sensitivity	LA		SRC	A. Bacom	Dilution volume should be blank (EDD has error trap to set F-factor=1 in case of blank samples)
Not Field	EMSL04	JEOL 100 CX II (13)	100 kV	19,000 X	0.013	10	1276	0	0	0	LB-25	Duff		040725341	040725341	3	D. Stanhope/L. Smith	9/19/2008	051007DB02	DB	F. Craig	9/22/2008	10312	Remedium 08-005, P	100	100	1	Sensitivity	LA		SRC	A. Bacom	Residue mass should be zero. Dilution volume should be blank (EDD has error trap to set F-factor=1 in case of blank samples)
FS	EMSL04	JEOL 100 CX II (13)	100 kV	19,000 X	0.013	7	1276	147.91	26.11	0.25	P1-00096	Duff	10/10/2007	040725341	040725341-0018	3	D. Stanhope/L. Smith	10/3/2008	051007DB02	Not QA	F. Craig	10/23/2008	10312	0408-Remedium-7, C	0.1	100	9.6E-06	Sensitivity	LA	9.9E+06	SRC	A. Bacom	
FS	EMSL04	JEOL 100 CX II (13)	100 kV	19,000 X	0.013	5	1276	152.72	49.65	0.25	P1-00106	Duff	10/10/2007	040725351	040725351-0011	3	D. Stanhope/L. Smith	10/10/2008	081007DB01	Not QA	F. Craig	10/17/2008	10312	0408-Remedium-8, C	0.3	100	1.5E-05	Sensitivity	LA	8.5E+06	SRC	A. Bacom	
FS	EMSL04	JEOL 1200 EX (04-03)	100 kV	20,000 X	0.013	4	1276	247.69	67.97	0.25	P1-00115	Duff	10/17/2007	040725946	040725946-0006	3	D. Stanhope/L. Smith	10/27/2008	121007DB01	Not QA	J. Bouchard	1/13/2009	10312	0408-Remedium-9, B	0.3	100	1.1E-05	Sensitivity	LA	9.0E+06	SRC	A. Bacom	
FS	EMSL04	JEOL 100 CX II (02)	100 kV	19,000 X	0.013	5	1276	279.28	91.01	0.25	P1-00124	Duff	10/10/2007	040725341	040725341-0009	3	D. Stanhope/L. Smith	9/26/2008	051007DB02	Not QA	D. Young	10/7/2008	10312	0408-Remedium-5, S	0.3	100	8.2E-06	Sensitivity	LA	8.5E+06	SRC	A. Bacom	
FS	EMSL04	JEOL 100 CX II (13)	100 kV	19,000 X	0.013	6	1276	423.96	184.97	0.25	P1-00147	Duff	10/10/2007	040725351	040725351-0024	3	D. Stanhope/H. Lind	10/16/2008	081007DB01	Not QA	F. Craig	10/27/2008	10312	0408-Remedium-8, N	0.3	100	8.2E-06	Sensitivity	LA	9.5E+06	SRC	A. Bacom	

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - COMMERCIAL LOGGING DUFF (2012)

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA (mm^2)	Sample Mass (g dry weight)	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Analysis Method	Est Filter Loading	Ashed residue mass (g), total	Ashed residue mass (g), aliquot in dilution	Aliquot 1 (mL)	Volume 1 (mL)	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	Sensitivity	Total LA		PCME LA		Stopping Rule Achieved	Verifier's Company	Verifier's Name	Comment	Correction Date
																											Min AR	Min Length (um)	Min Width (um)	Target Sens	Max Area Examined	Target N Strucs			Structure Count	Conc.	Structure Count	Conc.					
x-NR	CL-3-0001	Duff	1	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1282	528.72	8/13/2012	041221375	041221375-0001	5	D. Stanhope	8/15/2012	F. Craig	8/29/2012	Indirect - Ashed	TEM-ISO	20	128.96	0.25	0.3	100	5.82E-06	Correction 1 on 2/17/2014 to revise target sensitivity, to revise all MFO structure types, and to remove sketch markings for primary structure 22, 25, & 28.	3:1	0.5	0	1.0E+07	1	50	4	7.9E+06	78	6.2E+08	22	1.7E+08	Sensitivity	CDM Smith	A. Coler	--Target sensitivity in the EDD should be revised from 1.00+07 to 1.00E+07 so that it can be properly loaded to the database as a number field. --The instrument ID on the benchsheet should likely be "JEOL 100 CX II (04-01)" based on what was entered in the EDD. Please confirm. --Structure type is MFO, not MFO (the letter O not the number 0). Applies to all 24 MFO structures in this EDD. --For total structure #17, the "Sketch" field was not marked on the benchsheet but was entered in the EDD. --For primary structures #22, #25 and #28, the "Sketch" field should not be marked in the EDD, according to the benchsheet.	2/21/2014
x-NR	CL-3-0007	Duff	1	EMSL04	JEOL 1200 EX (04-03)	20000	0.0132	1282	405.54	8/13/2012	041221375	041221375-0007	5	D. Stanhope	8/15/2012	P. Harrison	8/23/2012	Indirect - Ashed	TEM-ISO	10	160.67	0.25	0.3	100	4.67E-06	Correction 1 on 2/17/2014 to revise the structure type for total structure #13.	3:1	0.5	0	1.0E+07	1	50	6	8.6E+06	26	2.2E+08	11	9.4E+07	Sensitivity	CDM Smith	A. Coler	For total structure #13 (page 2), the structure type was recorded on the benchsheet as MF but entered in the EDD as MFO. Please confirm the correct structure type and revise the EDD or benchsheet accordingly.	2/21/2014

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - REPLICATE ANALYSIS OF PHASE I AND COMMERCIAL LOGGING DUFF (2013)

DVC (100%)	Phase	Sample No.	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA (mm^2)	Duff Mass (g dry weight)	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Preparation Date	Analyst Name	Analysis Date	Prep Method	Analysis Method	Est Filter Loading	Ashed residue mass (g), total	Ashed residue mass (g), aliquot in dilution	Aliquot 1 (mL)	Volume 1 (mL)	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	Sensitivity	Total LA		PCME LA		Verifier's Company	Verifier's Name
																												Min AR	Min Length (um)	Min Width (um)	Target Sens	Max Area Examined	Target N Strucs			Structure Count	Conc.	Structure Count	Conc.		
x-NR	Commercial Logging	CL-3-0003	Duff	0	EMSL04	JEOL 1200 EX (04-03)	20000	0.0132	1282	293.2	8/13/2012	041316497	041316497-0003A	4	D. Stanhope	6/25/2013	P. Harrison	7/2/2013	Indirect - Ashed	TEM-ISO	15	83.87	0.25	0.3	100	8.942E-06		3:1	0.5	0	1.0E+07	1	50	4	9.3E+06	49	4.5E+08	15	1.4E+08	CDM Smith	A. Coler
x-NR	Commercial Logging	CL-3-0009	Duff	0	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1282	242.26	8/13/2012	041316497	041316497-0007A	4	D. Stanhope	6/25/2013	F. Craig	7/10/2013	Indirect - Ashed	TEM-ISO	15	34.25	0.25	0.3	100	2.19E-05		3:1	0.5	0	1.0E+07	1	50	4	4.6E+06	32	1.5E+08	11	5.0E+07	CDM Smith	A. Coler
x-NR	Commercial Logging	CL-3-0011	Duff	0	EMSL04	JEOL 100 CX II (04-05)	19000	0.0132	1282	281.37	8/13/2012	041316497	041316497-0009B	9	D. Stanhope	6/25/2013	L. McCluskey-Eissing	7/10/2013	Indirect - Ashed	TEM-ISO	10	49.2	0.25	0.3	100	1.524E-05		3:1	0.5	0	1.0E+07	1	50	4	5.7E+06	58	3.3E+08	15	8.5E+07	CDM Smith	A. Coler
x-NR	Phase I	P1-00040	Duff	1	EMSL04	JEOL 100 CX II (04-05)	19000	0.0132	1282	252.48	10/10/2007	041316496	041316496-0003A	3	D. Stanhope	7/31/2013	L. McCluskey-Eissing	8/6/2013	Indirect - Ashed	TEM-ISO	15	86.8	0.25	0.3	100	8.641E-06	1 on 8/14/2013.	3:1	0.5	0	1.0E+07	1.31	50	5	8.9E+06	30	2.7E+08	7	6.2E+07	CDM Smith	A. Coler
x-NR	Phase I	P1-00054	Duff	1	EMSL04	JEOL 100 CX II (04-05)	19000	0.0132	1282	211.67	10/10/2007	041316496	041316496-0002A	3	D. Stanhope	7/31/2013	L. McCluskey-Eissing	8/6/2013	Indirect - Ashed	TEM-ISO	15	70.03	0.25	0.3	100	1.071E-05	1 on 8/14/2013.	3:1	0.5	0	1.0E+07	1.31	50	5	8.6E+06	2	1.7E+07	0	0	CDM Smith	A. Coler
x-NR	Phase I	P1-00220	Duff	1	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1282	349.73	10/17/2007	041316624	041316624-0001A	3	D. Stanhope	7/31/2013	F. Craig	8/1/2013	Indirect - Ashed	TEM-ISO	20	119.2	0.25	0.3	100	6.292E-06	Correction 1 on 8/14/2013.	3:1	0.5	0	1.0E+07	1.31	50	4	1.1E+07	92	1.0E+09	25	2.8E+08	CDM Smith	A. Coler

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SLASH PILE BURN DUFF (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA (mm^2)	Sample Mass (g dry weight)	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Analysis Method	Est Filter Loading	Ashed residue mass (g), total	Ashed residue mass (g), aliquot in dilution	Aliquot 1 (mL)	Volume 1 (mL)	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	Sensitivity (1/g)	Total LA		PCME LA	Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date	Verification Comment	Correction Date
																											Min AR	Min Length (µm)	Min Width (µm)	Target Sens.	Max Area Examined (mm^2)	Target N Strucs			Structure Count	Conc. (s/g)	Structure Count						
	SB-00007	Duff	0	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	65.05	5/14/2015	041514018	041514018-0001	4	J. Grillo	5/18/2015	F. Craig	6/8/2015	Indirect - Ashed	TEM-ISO	20	5.83	0.26	0.3	100	1.34E-04	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	1.0E+07	1	25	4	3.0E+06	4	1.2E+07	0	Sensitivity	CDM Smith	N. Ross (DDE)	8/26/2015		
	SB-00008	Duff	0	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	64.63	5/14/2015	041514018	041514018-0002	4	J. Grillo	5/18/2015	F. Craig	6/8/2015	Indirect - Ashed	TEM-ISO	15	10.82	0.25	0.1	100	2.31E-05	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 6/9/15	3:1	0.5	0	1.0E+07	1	25	8	8.8E+06	17	1.5E+08	7	Sensitivity	CDM Smith	N. Ross (DDE)	8/26/2015		
	SB-00009	Duff	0	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	80.63	5/14/2015	041514018	041514018-0003	4	J. Grillo	5/18/2015	F. Craig	6/8/2015	Indirect - Ashed	TEM-ISO	10	10.54	0.25	0.1	100	2.37E-05	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	1.0E+07	1	25	6	9.2E+06	9	8.3E+07	1	Sensitivity	CDM Smith	N. Ross (DDE)	8/26/2015		
	SB-00010	Duff	0	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0129	1359	75.92	5/14/2015	041514018	041514018-0004	4	J. Grillo	5/18/2015	P. Harrison	6/9/2015	Indirect - Ashed	TEM-ISO	10	7.22	0.26	0.1	100	3.6E-05	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	1.0E+07	1	25	4	9.6E+06	11	1.1E+08	2	Sensitivity	CDM Smith	N. Ross (DDE)	8/26/2015		
EF	SB-00011	Duff	1	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	95.59	5/14/2015	041514018	041514018-0005	4	J. Grillo	5/18/2015	F. Craig	6/10/2015	Indirect - Ashed	TEM-ISO	15	15.91	0.25	0.3	100	4.71E-05	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 6/11/15 C1 on 11/6/2015 to revise the grid and grid opening for the last 6 structures.	3:1	0.5	0	1.0E+07	1	25	4	5.8E+06	46	2.7E+08	10	Sensitivity	CDM Smith	N. Ross (DDE)	11/6/2015	Appears that the grid and grid openings for the last six rows in the Data entry 2 tab in the EDD were copied using the drag and drop method. It is likely that the grid should be I6 and the grid opening should be C8 for rows 61-66 , as only four grid openings were required to achieve the target analytical sensitivity, not 10.	11/6/2015
	SB-00012	Duff	0	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	126.95	5/14/2015	041514018	041514018-0006	4	J. Grillo	5/18/2015	F. Craig	6/11/2015	Indirect - Ashed	ISO 10312	15	14.54	0.25	0.1	100	1.72E-05	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	1.0E+07	1	25	5	9.7E+06	22	2.1E+08	6	Sensitivity	CDM Smith	N. Ross (DDE)	8/27/2015		

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - UNDERSTORY BURN DUFF (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA (mm^2)	Sample Mass (g dry weight)	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Analysis Method	Est Filter Loading	Ashed residue mass (g), total	Ashed residue mass (g), aliquot in dilution	Aliquot 1 (mL)	Volume 1 (mL)	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	Sensitivity	Total LA		PCME LA		Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date
																											Min AR	Min Length (um)	Min Width (um)	Target Sens	Max Area Examined	Target N Strucs			Structure Count	Conc.	Structure Count	Conc.				
	UB-00003	Duff	0	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	51.77	5/29/2015	041515450	041515450-0001	4	J Grillo	6/4/2015	F. Craig	6/22/2015	Indirect - Ashed	TEM-ISO	20	21.24	0.25	0.3	100	3.531E-05	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 6/23/15	3:1	0.5	0	1.0E+07	1	25	6	9.6E+06	21	2.0E+08	2	1.9E+07	Sensitivity	CDM Smith	N. Ross/DDE	9/1/2015
	UB-00004	Duff	0	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	51.57	5/29/2015	041515450	041515450-0002	4	J Grillo	6/4/2015	F. Craig	6/23/2015	Indirect - Ashed	TEM-ISO	20	7.07	0.25	0.3	100	0.0001061	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	1.0E+07	1	25	4	4.8E+06	5	2.4E+07	0	0	Sensitivity	CDM Smith	N. Ross/DDE	9/1/2015
	UB-00005	Duff	1	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	87.85	5/29/2015	041515450	041515450-0003	4	J. Grillo	6/4/2015	F. Craig	6/24/2015	Indirect - Ashed	TEM-ISO	10	16.74	0.26	0.1	100	1.553E-05	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 6/29/15 C1 on 11/17/2015 to correct the filter pore size.	3:1	0.5	0	1.0E+07	1	25	8	9.7E+06	14	1.4E+08	5	4.8E+07	Sensitivity	CDM Smith	N. Ross/DDE	11/17/2015
	UB-00006	Duff	0	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	61.54	5/29/2015	041515450	041515450-0004	4	J Grillo	6/4/2015	F. Craig	6/24/2015	Indirect - Ashed	TEM-ISO	20	11.73	0.26	0.3	100	6.65E-05	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	1.0E+07	1	25	4	6.4E+06	6	3.9E+07	1	6.4E+06	Sensitivity	CDM Smith	N. Ross/DDE	9/1/2015
	UB-00007	Duff	0	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	62.34	5/29/2015	041515450	041515450-0005	4	J. Grillo	6/4/2015	F. Craig	6/24/2015	Indirect - Ashed	TEM-ISO	20	10.29	0.25	0.3	100	7.289E-05	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	1.0E+07	1	25	4	5.8E+06	1	5.8E+06	1	5.8E+06	Sensitivity	CDM Smith	N. Ross/DDE	9/1/2015
EF	UB-00008	Duff	0	EMSL04	JEOL 100 CXII (04-01)	19000	0.0129	1359	52.64	5/29/2015	041515450	041515450-0006	4	J. Grillo	6/4/2015	F. Craig	6/25/2015	Indirect - Ashed	TEM-ISO	10	5.67	0.25	0.1	100	4.409E-05	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	1.0E+07	1	25	5	9.1E+06	6	5.4E+07	1	9.1E+06	Sensitivity	CDM Smith	N. Ross/DDE	9/1/2015

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - AUTHENTIC WILDFIRE DUFF (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA (mm^2)	Sample Mass (g dry weight)	Receipt Date	Lab Job Number	Lab SampleID	Number of Grids Prepped	Preparer Name	Preparation Date	Analyst Name	Analysis Date	Preparation Method	Analysis Method	Estimated Filter Loading	Ashed residue mass (g), total	Ashed residue mass (g), aliquot in dilution	Aliquot 1 (mL)	Volume 1 (mL)	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	Sensitivity (1/g)	Total LA		PCME LA		Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date
																											Min AR	Min Length (µm)	Min Width (µm)	Target Sens.	Max Area Examined (mm^2)	Target N Strucs			Structure Count	Conc. (s/g)	Structure Count	Conc. (s/g)				
	SM-30145	Duff	0	EMSL45	Hitachi H600	20000	0.0101	1295	625	9/11/2015	451500124	451500124-0001A	3	Q. Trieu	10/5/2015	K. Corbin	10/14/2015	Indirect - Ashed	ISO 10312	20	479	0.2136	0.3	100	1.34E-06		3:1	0.5	0	1.0E+07	1	50	16	9.6E+06	0	0	0	0	Sensitivity	CDM Smith	T. Miller	2/8/2016
	SM-30149	Duff	0	EMSL45	Hitachi H600	20000	0.0101	1295	441	9/11/2015	451500124	451500124-0002	3	Q. Trieu	10/5/2015	K. Corbin	10/14/2015	Indirect - Ashed	ISO 10312	25	180	0.2394	0.3	100	3.99E-06		3:1	0.5	0	1.0E+07	1	50	8	9.1E+06	0	0	0	0	Sensitivity	CDM Smith	T. Miller	2/8/2016
	SM-30157	Duff	0	EMSL45	Hitachi H600	20000	0.0101	1295	845	9/11/2015	451500124	451500124-0003B	3	Q. Trieu	10/9/2015	K. Corbin	10/21/2015	Indirect - Ashed	ISO 10312	25	669	0.242	0.3	100	1.09E-06		3:1	0.5	0	1.0E+07	1	50	14	1.0E+07	1	1.0E+07	0	0	Sensitivity	CDM Smith	T. Miller	2/8/2016
	SM-30165	Duff	0	EMSL45	Hitachi H600	20000	0.0101	1295	249	9/11/2015	451500124	451500124-0005A	3	Q. Trieu	10/14/2015	Q. Trieu	10/21/2015	Indirect - Ashed	ISO 10312	25	58	0.2291	0.3	100	1.19E-05		3:1	0.5	0	1.0E+07	1	50	5	8.7E+06	0	0	0	0	Sensitivity	CDM Smith	T. Miller	2/8/2016
x-NR	SM-30169	Duff	0	EMSL45	Hitachi H600	20000	0.0101	1295	264	9/11/2015	451500124	451500124-0006	3	Q. Trieu	10/14/2015	Q. Trieu	10/21/2015	Indirect - Ashed	ISO 10312	25	57	0.2351	0.3	100	1.24E-05		3:1	0.5	0	1.0E+07	1	50	4	9.8E+06	1	9.8E+06	0	0	Sensitivity	CDM Smith	T. Miller	2/8/2016
	SM-30169	Duff	0	EMSL45	Hitachi H600	20000	0.0101	1295	264	9/11/2015	451500124	451500124-0006B	3	Q. Trieu	10/14/2015	Q. Trieu	10/21/2015	Indirect - Ashed	ISO 10312	25	57	0.2368	0.3	100	1.25E-05		3:1	0.5	0	1.0E+07	1	50	4	9.7E+06	1	9.7E+06	0	0	Sensitivity	CDM Smith	T. Miller	2/8/2016

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE I TREE BARK

File Revision No	Field QC Type	Analysis Lab	Instrument	Voltage	Magnific	NGO	Grid Opening Size	EFA	SA	**Index ID**	Media	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	COC ID	Lab QC Type	Analyst	Analysis Date	Analysis Method	Grid Store	Dilute Aliquot1	Dilute Volume1	F Factor	Sensitivity	Verifier's Company	Verifier's Name	Comment
1	FS	EMSL04	JEOL 1200 EX (58)	100 kV	20,000 X	34	0.012	1295	16.30233	P1-00037	Tree Bark	10/8/2007	040724967	040724967-0010	3	D. Stanhope	11/29/2007	051007BK01	Not QA	G. Agnello	12/5/2007	10312	2007-002, F	2	100	0.02	9.7E+03	SRC	A. Bacom	
1	FS	EMSL04	JEOL 1200 EX (58)	100 Kv	20,000 X	29	0.012	1295	16.30233	P1-00037	Tree Bark	10/8/2007	040724967	040724967-0010	3	D. Stanhope	11/29/2007	051007BK01	RD	D. Little	12/14/2007	10312	2007-002, F	2	100	0.02	1.1E+04	SRC	A. Bacom	
1	FS	EMSL04	JEOL 1200 EX (58)	100kV	20,000 X	13	0.013	1295	16.30233	P1-00127	Tree Bark	10/17/2007	040726269	040726269-0006	3	D. Stanhope	12/20/2007	121007BK01	Not QA	G. Agnello	2/28/2008	10312	08-0001, B	5	100	0.05	9.4E+03	SRC	A. Bacom	
1	FS	EMSL19	JEOL 100 CX II (22)	100 kV	19,000 X	6	0.012	1295	16.30233	P1-00039	Tree Bark	10/8/2007	040724967	040724967-0011	3	D. Stanhope	11/29/2007	051007BK01	Not QA	B. Macey	1/11/2008	10312	2007-002	0.5	100	0.005	2.2E+05	SRC	A. Bacom	
1	FS	EMSL19	JEOL 100 CX II (22)	100 kV	19,000 X	34	0.012	1295	16.30233	P1-00045	Tree Bark	10/8/2007	040724967	040724967-0012	3	D. Stanhope	11/29/2007	051007BK01	Not QA	B. Macey	1/8/2008	10312	2007-002	2	100	0.02	9.7E+03	SRC	A. Bacom	Prep date is 11/29/2007, not 11/30/2007 according to benchsheet.
1	FS	EMSL19	JEOL 100 CX II (22)	100 kV	19,000 X	14	0.012	1295	16.30233	P1-00057	Tree Bark	10/8/2007	040724967	040724967-0007	3	D. Stanhope	11/30/2007	051007BK01	Not QA	B. Macey	1/4/2008	10312	2007-002	5	100	0.05	9.5E+03	SRC	A. Bacom	
1	FS	EMSL19	JEOL 100 CX II (22)	100 kV	19,000 X	14	0.012	1295	16.30233	P1-00063	Tree Bark	10/8/2007	040724967	040724967-0018	3	D. Stanhope	12/3/2007	051007BK01	Not QA	B. Macey	1/18/2008	10312	2007-002	5	100	0.05	9.5E+03	SRC	A. Bacom	
1	FS	EMSL19	JEOL100 CX II (22)	100	19,000 X	68	0.012	1295	16.30233	P1-00079	Tree Bark	10/8/2007	040724967	040724967-0024	3	D. Stanhope	12/13/2007	051007BK01	Not QA	B. Macey	3/12/2008	10312	Libby Tree Bark 02	1	100	0.01	9.7E+03	SRC	A. Bacom	kV not listed on voltage. Data Manually added kV to project database.
1	FS	EMSL27	JEOL 100 CX (30)	100 Kv	19,000 X	29	0.012	1295	16.30233	P1-00111	Tree Bark	10/17/2007	040726269	040726269-0028	5	D. Stanhope	12/31/2007	121007BK01	Not QA	R. Mahoney	2/18/2008	10312	Remedium 08-001, S	2	100	0.02	1.1E+04	SRC	A. Bacom	
1	FS	EMSL27	JEOL 100 CX II (49)	100	19,000 X	2	0.012	1295	17.18072	P1-00173	Tree Bark	10/17/2007	040726269	040726269-0047	3	D. Stanhope	1/8/2008	121007BK01	Not QA	R. Mahoney	3/10/2008	10312	Remedium08-003, A	2	100	0.02	1.6E+05	SRC	A. Bacom	kV not listed on voltage. Data Manually added kV to project database.
1	FS	EMSL27	JEOL 100 CX II (49)	100 kV	19,000 X	7	0.012	1295	17.25494	P1-00211	Tree Bark	10/17/2007	040726269	040726269-0051	3	D. Stanhope/L. Smith	1/8/2008	121007BK01	Not QA	R. Mahoney	2/28/2008	10312	Remedium 08-001, R	10	100	0.1	8.9E+03	SRC	A. Bacom	
1	FD	EMSL19	JEOL100 CX II (22)	100	19,000 X	34	0.012	1295	16.30233	P1-00076	Tree Bark	10/8/2007	040724967	040724967-0023	3	D. Stanhope	12/13/2007	051007BK01	Not QA	B. Macey	2/27/2008	10312	Libby Tree Bark 02	2	100	0.02	9.7E+03	SRC	A. Bacom	kV not listed on voltage. Data Manually added kV to project database.
1	FS	EMSL04	JEOL 1200 EX (58)	100 kV	20,000 X	7	0.013	1295	16.30233	P1-00101	Tree Bark	10/17/2007	040726269	040726269-0012	3	D. Stanhope	12/21/2007	121007BK01	Not QA	G. Agnello	3/6/2008	10312	Remedium 08-0001, E	10	100	0.1	8.7E+03	SRC	A. Bacom	Prepared by is D. Stanhope, not D. Stanhope/L. Smith according to benchsheet.
1	FS	EMSL04	JEOL 1200 EX (58)	100 kV	20,000 X	4	0.013	1295	16.30233	P1-00109	Tree Bark	10/17/2007	040726269	040726269-0015	3	D. Stanhope/L. Smith	12/21/2007	121007BK01	Not QA	G. Agnello	3/25/2008	10312	Remedium 08-0001, S	2	100	0.02	7.6E+04	SRC	A. Bacom	Prepared by is D. Stanhope/L. Smith
1	FS	EMSL19	JEOL 100 CX II (22)	100 kV	19,000 X	34	0.013	1295	16.30233	P1-00091	Tree Bark	10/8/2007	040724967	040724967-0013	3	D. Stanhope/B. Macey	1/21/2008	051007BK01	Not QA	B. Macey	3/26/2008	10312	Libby Tree Bark-02	2	100	0.02	9.7E+03	SRC	A. Bacom	Grid opening area changed to 0.013 on benchsheet.
1	FS	EMSL27	JEOL 100 CX II (49)	100 kV	19,000 X	2	0.012	1295	16.51981	P1-00201	Tree Bark	10/17/2007	040726269	040726269-0042	3	D. Stanhope	1/5/2008	121007BK01	Not QA	R. Mahoney	2/29/2008	10312	Remedium 08-001, U	5	100	0.05	6.5E+04	SRC	A. Bacom	Prepared by is D. Stanhope
1	Not Field	EMSL19	JEOL100 CX II (22)	100	19,000 X	10	0.012	1295	-0.31669	LB-03	Tree Bark	10/8/2007	040724967	040724967	3	D. Stanhope	12/19/2008	051007BK01	LB	B. Macey	3/12/2008	10312	07-002	10	100	0.1	-3.4E+05	SRC	A. Bacom	kV not listed on voltage. Data Manually added kV to project database. Data Manager manually changed receipt date to 10/8/2007 in project database.

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - COMMERCIAL LOGGING TREE BARK (2012)

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Receipt Date	Lab Job Number	Lab Sample ID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Analysis Method	Est Filter Loading	Aliquot 1 (mL)	Volume 1 (mL)	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	Sensitivity ($1/cm^2$)	Total LA		PCME LA		Stopping Rule Achieved	Verifier's Company	Verifier's Name	Comment	Correction Date
																								Min AR	Min Length (µm)	Min Width (µm)	Target Sens ($1/cm^2$)	Max Area Examined	Target N Strucs			Structure Count	Conc.	Structure Count	Conc.					
x-NR	CL-3-0002	Tree Bark	0	EMSL04	JEOL 1200 EX (04-03)	20000	0.0132	1282	8/13/2012	041221375	041221375-0002	3	D. Stanhope	8/15/2012	P. Harrison	8/20/2012	Indirect - Ashed	TEM-ISO	8	0.1	100	0.001	Pilot Hole data obtained from John Garr : 0.25 in =0.635 cm	3:1	0.5	0	100000	1	50	6	1.8E+05	52	9.5E+06	9	1.7E+06	Structure Count	CDM Smith	A. Coler		
x-NR	CL-3-0008	Tree Bark	1	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1282	8/13/2012	041221375	041221375-0008	3	D. Stanhope	8/15/2012	F. Craig	8/20/2012	Indirect - Ashed	TEM-ISO	5	1	100	0.01	Pilot Hole data obtained from John Garr : 0.25 in =0.635 cm; C1 on 2/17/2014 to revise the structure type for total structure #21 & 22.	3:1	0.5	0	100000	1	50	6	1.9E+04	32	6.0E+05	5	9.3E+04	Sensitivity	CDM Smith	A. Coler	For total structures #21 and #22 (page 3), the structure type was recorded on the benchsheet as MF but entered in the EDD as MFO. Please confirm the correct structure type and revise the EDD or benchsheet accordingly.	2/21/2014

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - REPLICATE ANALYSIS OF PHASE I AND COMMERCIAL LOGGING TREE BARK (2013)

DVC (100%)	Phase	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Analysis Method	Est Filter Loading	Aliquot 1 (mL)	Volume 1 (mL)	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	Sensitivity ($1/cm^2$)	Total LA		PCME LA		Verifier's Company	Verifier's Name	Comment	Correction Date
																									Min AR	Min Length (µm)	Min Width (µm)	Target Sens ($1/cm^2$)	Max Area Examined	Target N Strucs			Structure Count	Conc.	Structure Count	Conc.				
x-NR	Commercial Logging	CL-3-0002	Tree Bark	1	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1282	8/13/2012	041316497	041316497-0002B	4	D. Stanhope	6/26/2013	F. Craig	6/27/2013	Indirect - Ashed	TEM-ISO	10	0.1	100	0.001	Correction 1 on 2/14/2014 to revise the EDS marks for total structure #7 & 8, to remove the tick mark from the sketch field for MD10 structure at H6:C7, and to correct to correct the entry in the mineral class field for the last structure.	3:1	0.5	0	100,000	1	50	5	2.2E+05	56	1.2E+07	8	1.8E+06	CDM Smith	A. Coler	--EDS for total structure #8 was not marked on the benchsheet but was entered in the EDD. Please revise either the benchsheet or EDD accordingly. --The sketch field should not be marked in the EDD for non-countable MD10 structure on page 4. --For the last structure, "12" was entered into the mineral class field in the EDD rather than "1"; as a result, the total number of countable structures was incorrectly reported as 55, rather than 56.	2/21/2014
x-NR	Commercial Logging	CL-3-0012	Tree Bark	1	EMSL04	JEOL 100 CX II (04-05)	19000	0.0132	1282	8/13/2012	041316497	041316497-0010A	4	D. Stanhope	6/26/2013	L. McCluskey-Eissing	7/1/2013	Indirect - Ashed	TEM-ISO	5	1	100	0.01	Also analyzed on 7/2/2013. Correction 1 on 9/10/2014 to revise the EDXA observation for total structure 44.	3:1	0.5	0	100,000	1	50	4	2.8E+04	53	1.5E+06	8	2.2E+05	CDM Smith	A. Coler	*[8/21/14 - Verifier's note: A revised EDD was loaded on 8/21/2014 based on an additional change (pilot hole).]*	
x-NR	Phase I	P1-00039	Tree Bark	2	EMSL27	JEOL 100 CX II (27-4)	19000	0.013	1295	10/8/2007	041316628	041316628-0001B	5	D. Stanhope	12/6/2007	R. Pescador	7/22/2013	Indirect - Ashed	TEM-ISO	9	1	100	0.01	Correction 1 on 2/14/2014 to revise the length for total structure #18 Correction 2 on 8/5/2014 to enter correct pilot hole diameter.	3:1	0.5	0	10000		50	11	5.6E+04	52	2.9E+06	17	9.4E+05	CDM Smith	A. Coler	The length for primary structure #18 is 83.5, not 23.5 according to benchsheet. *[8/21/14 - Verifier's note: A revised EDD was loaded on 8/21/2014 based on an additional change (pilot hole).]*	2/21/2014
x-NR	Phase I	P1-00053	Tree Bark	1	EMSL27	JEOL 100 CX II (27-4)	19000	0.013	1295	10/8/2007	041316628	041316628-0003A	5	D. Stanhope	11/30/2007	R. Pescador	7/22/2013	Indirect - Ashed	TEM-ISO	5	5	100	0.05	Correction 1 on 8/5/2014 to enter correct pilot hole diameter.	3:1	0.5	0	10000		50	12	1.0E+04	0	0	0	0	CDM Smith	A. Coler		
x-NR	Phase I	P1-00219	Tree Bark	2	EMSL27	JEOL 100 CX II (27-2)	19000	0.013	1295	10/17/2007	041316629	041316629-0001B	5	D. Stanhope	1/4/2008	E. Wyatt-Pescador	7/25/2013	Indirect - Ashed	TEM-ISO	10	10	100	0.1	Correction 1 on 2/14/2014 to correct the number of grid prepared and to correct the structure type for total structure #25. Correction 2 on 8/5/2014 to enter the correct pilot hole diameter.	3:1	0.5	0	10000		50	4	1.4E+04	98	1.4E+06	40	5.8E+05	CDM Smith	A. Coler	--Number of grids prepared is 5 not 3, according to benchsheet. --Structure type for primary structure #25 was recorded on the benchsheet as MF but entered in the EDD as MFO. Please confirm the correct structure type and revise the benchsheet or EDD accordingly. --CH Not Counted for primary structure #54 was recorded on the benchsheet but was not entered in the EDD. *[8/21/14 - Verifier's note: A revised EDD was loaded on 8/21/2014 based on an additional change (pilot hole).]*	2/21/2014

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SLASH PILE BURN TREE BARK (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Area	Receipt Date	Lab Job Number	Lab Sample ID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Analysis Method	Est Filter Loading	Aliquot 1 (mL)	Volume 1 (mL)	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	Sensitivity ($1/cm^2$)	Total LA		PCME LA		Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
																									Min AR	Min Length (µm)	Min Width (µm)	Target Sens ($1/cm^2$)	Max Area Examined	Target N Strucs			Structure Count	Surface Loading (s/cm^2)	Structure Count	Surface Loading (s/cm^2)						
EF	SB-00001	Tree Bark	1	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	39.9	5/14/2015	041514012	041514012-0001	4	J. Grillo	5/14/2015	P. Harrison	5/28/2015	Indirect - Ashed	TEM-ISO	10	1	100	0.01	Are prepped grids acceptable for analysis? Y Additional analysis dates: 5/29/2015 Correction 1 on 9/25/2015 to revise the core diameter according to COC revision.	3:1	0.5	0	100,000	1	25	4	6.5E+04	29	1,884,856	3	194,985	Sensitivity	CDM Smith	N. Ross (DDE)	9/28/2015	The COC was incorrect; the core diameter was entered as 1 7/8 on the COC, rather than 1 5/8 (per the FSDS). A revised COC was forwarded to the lab by the Libby field office. The lab will need to correct the core diameter in the EDD.	9/28/2015
	SB-00002	Tree Bark	0	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	53.2	5/14/2015	041514012	041514012-0002	4	J. Grillo	5/14/2015	P. Harrison	5/29/2015	Indirect - Ashed	TEM-ISO	10	0.5	100	0.005	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 6/1/2015	3:1	0.5	0	100,000	1	25	4	9.7E+04	56	5,459,584	8	779,941	Sensitivity	CDM Smith	N. Ross (DDE)	8/26/2015		
	SB-00003	Tree Bark	0	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	53.2	5/14/2015	041514012	041514012-0003	4	J. Grillo	5/14/2015	P. Harrison	6/1/2015	Indirect - Ashed	TEM-ISO	10	0.5	100	0.005	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	0.5	0	100,000	1	25	4	9.7E+04	48	4,679,644	7	682,448	Sensitivity	CDM Smith	N. Ross (DDE)	8/26/2015		
	SB-00004	Tree Bark	0	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	53.2	5/14/2015	041514012	041514012-0004	4	J. Grillo	5/14/2015	P. Harrison	6/1/2015	Indirect - Ashed	TEM-ISO	10	1	100	0.01	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 6/2/15	3:1	0.5	0	100,000	1	25	4	4.9E+04	32	1,559,881	10	487,463	Sensitivity	CDM Smith	N. Ross (DDE)	8/26/2015		

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - UNDERSTORY BURN TREE BARK (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Area	Receipt Date	Lab Job Number	Lab Sample ID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Analysis Method	Est Filter Loading	Aliquot 1 (mL)	Volume 1 (mL)	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	Sensitivity ($1/cm^2$)	Total LA		PCME LA		Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date
																									Min AR	Min Length (µm)	Min Width (µm)	Target Sens ($1/cm^2$)	Max Area Examined	Target N Strucs			Structure Count	Conc.	Structure Count	Conc.				
	UB-00012	Tree Bark	0	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0129	1359	39.74378	5/29/2015	041515450	041515450-0007	4	J. Grillo	6/11/2015	P. Harrison	6/24/2015	Indirect - Ashed	TEM-ISO	10	1	100	0.01	Are prepped grids acceptable for analysis? Ye Additional analysis dates: N/A	3:1	0.5	0	100000	1	25	4	6.6E+04	0	0	0	0	Sensitivity	CDM Smith	N. Ross/DDE	9/1/2015
	UB-00013	Tree Bark	0	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0129	1359	39.90321	5/29/2015	041515450	041515450-0008	4	J. Grillo	6/11/2015	P. Harrison	6/24/2015	Indirect - Ashed	TEM-ISO	15	1	100	0.01	Are prepped grids acceptable for analysis? Ye Additional analysis dates: N/A	3:1	0.5	0	100000	1	25	4	6.6E+04	1	66,003	1	66,003	Sensitivity	CDM Smith	N. Ross/DDE	9/1/2015
	UB-00014	Tree Bark	0	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0129	1359	39.90321	5/29/2015	041515450	041515450-0009	4	J. Grillo	6/11/2015	P. Harrison	6/24/2015	Indirect - Ashed	TEM-ISO	10	5	100	0.05	Are prepped grids acceptable for analysis? Ye Additional analysis dates: N/A	3:1	0.5	0	100000	1	25	4	1.3E+04	2	26,401	0	0	Sensitivity	CDM Smith	N. Ross/DDE	9/1/2015
EF	UB-00015	Tree Bark	0	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0129	1359	19.9516	5/29/2015	041515450	041515450-0010	4	J. Grillo	6/11/2015	P. Harrison	6/25/2015	Indirect - Ashed	TEM-ISO	10	0.5	100	0.005	Are prepped grids acceptable for analysis? Ye Additional analysis dates: N/A	3:1	0.5	0	100000	1	25	11	9.6E+04	7	672,028	0	0	Sensitivity	CDM Smith	N. Ross/DDE	9/1/2015
	UB-00016	Tree Bark	1	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0129	1359	19.95161	5/29/2015	041515450	041515450-0011	4	J. Grillo	6/11/2015	P. Harrison	6/25/2015	Indirect - Ashed	TEM-ISO	15	1	100	0.01	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A. C1 on 9/29/2015 to revise sample ID according to COC revision.	3:1	0.5	0	100000	1	25	6	8.8E+04	18	1,584,065	2	176,007	Sensitivity	CDM Smith	N. Ross/DDE	9/30/2015

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - WILDFIRE CONTINGENCY MONITORING PLAN - JULY 2012 SOUSE GULCH WILDFIRE ASH

Libby Asbestos Superfund Site

DVC Check (100%)	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA	EFA2	Analysis Quantity (g dry weight)	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Est Filter Loading	Analysis Method	Ashed residue mass (g), total	Ashed residue mass (g), aliquot in dilution	Resuspension volume (mL)	Volume applied to filter (mL)	F Factor	Analysis Comments	Lab QC Type	Recording Rules			Stopping Rules			Grid Openings Counted	Total LA			Area Examined	Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date
																													Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs		Sensitivity	Structure Count	Conc.					
x-NR	SM-20001	Ash	1	EMSL04	JEOL 100 CX II (04-01)	19000	0.0132	1280	0	0.26	11/15/2013	041330976	041330976-0001	4	R. Denton	11/18/2013	F.Craig	11/22/2013	Indirect - Ashed	15	TEM-ISO	0.26	0.26	100	0.3	0.003	C1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	NOT QC	3:1	0.5	0	1.0E+07	1	50	11	1.1E+07	4	4.5E+07	0.1452	none	CDM Smith	N. Ross	9/23/2015
x-NR	SM-20002	Ash	1	EMSL04	JEOL 1200 EX (04-03)	20000	0.0132	1280	0	0.26	11/15/2013	041330976	041330976-0002A	4	R. Denton	11/18/2013	P. Harrison	11/26/2013	Indirect - Ashed	10	TEM-ISO	0.26	0.26	100	0.3	0.003	Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	NOT QC	3:1	0.5	0	1.0E+07	1	50	11	1.1E+07	8	9.0E+07	0.1452	none	CDM Smith	N. Ross	9/23/2015
x-NR	SM-20003	Ash	1	EMSL04	JEOL 1200 EX (04-03)	20000	0.0132	1280	0	0.26	11/15/2013	041330976	041330976-0003B	8	R. Denton	11/18/2013	P. Harrison	12/4/2013	Indirect - Ashed	10	TEM-ISO	0.26	0.26	100	0.3	0.003	Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	NOT QC	3:1	0.5	0	1.0E+07	1	50	11	1.1E+07	7	7.9E+07	0.1452	none	CDM Smith	N. Ross	9/23/2015

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SLASH PILE BURN ASH (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA (mm^2)	Sample Mass (g dry weight)	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Est Filter Loading	Analysis Method	Ashed residue mass (g), total	Ashed residue mass (g), aliquot in dilution	Aliquot 1 (mL)	Volume 1 (mL)	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	Sensitivity	Total LA		PCME LA		Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date
																											Min AR	Min Length (um)	Min Width (um)	Target Sens	Max Area Examined	Target N Strucs			Structure Count	Conc.	Structure Count	Conc.				
	SB-00132	Ash	1	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	0.26	5/19/2015	041514462	041514462-0001	4	J. Grillo	6/2/2015	P. Harrison	6/12/2015	Indirect - Ashed	10	TEM-ISO	0.26	0.26	0.1	100	0.001	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	3:1	0.5	0	1.0E+07	1	25	4	1.0E+08	31	3.1E+09	6	6.0E+08	Structure Count	CDM Smith	N. Ross (DDE)	9/17/2015
	SB-00132	Ash	1	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	0.26	5/19/2015	041514462	041514462-0001A	4	J. Grillo	6/2/2015	P. Harrison	6/17/2015	Indirect - Ashed	10	TEM-ISO	0.26	0.26	0.1	100	0.001	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	3:1	0.5	0	1.0E+07	1	25	4	1.0E+08	34	3.4E+09	7	7.0E+08	Structure Count	CDM Smith	N. Ross (DDE)	9/17/2015
	SB-00132	Ash	1	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	0.26	5/19/2015	041514462	041514462-0001B	4	J. Grillo	6/2/2015	P. Harrison	6/10/2015	Indirect - Ashed	10	TEM-ISO	0.26	0.26	0.1	100	0.001	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	3:1	0.5	0	1.0E+07	1	25	4	1.0E+08	26	2.6E+09	6	6.0E+08	Structure Count	CDM Smith	N. Ross (DDE)	9/17/2015
	SB-00133	Ash	1	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	0.26	5/19/2015	041514462	041514462-0002	4	J. Grillo	6/2/2015	P. Harrison	6/10/2015	Indirect - Ashed	10	TEM-ISO	0.26	0.26	0.3	100	0.003	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 6/11/2015 Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	3:1	0.5	0	1.0E+07	1	25	4	3.3E+07	52	1.7E+09	15	5.0E+08	Structure Count	CDM Smith	N. Ross (DDE)	9/17/2015
	SB-00133	Ash	1	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	0.25	5/19/2015	041514462	041514462-0002A	4	J. Grillo	6/2/2015	P. Harrison	6/11/2015	Indirect - Ashed	8	TEM-ISO	0.25	0.25	0.1	100	0.001	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	3:1	0.5	0	1.0E+07	1	25	5	8.3E+07	27	2.2E+09	5	4.1E+08	Structure Count	CDM Smith	N. Ross (DDE)	9/17/2015
	SB-00133	Ash	1	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	0.25	5/19/2015	041514462	041514462-0002B	4	J. Grillo	6/2/2015	P. Harrison	6/18/2015	Indirect - Ashed	10	TEM-ISO	0.25	0.25	0.1	100	0.001	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	3:1	0.5	0	1.0E+07	1	25	6	6.9E+07	29	2.0E+09	1	6.9E+07	Structure Count	CDM Smith	N. Ross (DDE)	9/17/2015
	SB-00134	Ash	1	EMSL04	JEOL-1200-EX II (04-06)	20000	0.0131	1359	0.26	5/19/2015	041514462	041514462-0003	4	J. Grillo	6/9/2015	P. Harrison	6/12/2015	Indirect - Ashed	10	TEM-ISO	0.26	0.26	0.1	100	0.001	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	3:1	0.5	0	1.0E+07	1	25	4	1.0E+08	25	2.5E+09	1	1.0E+08	Structure Count	CDM Smith	N. Ross (DDE)	9/17/2015
	SB-00134	Ash	1	EMSL04	JEOL 100 CXII (04-01)	19000	0.0131	1359	0.25	5/19/2015	041514462	041514462-0003A	4	J Grillo	6/9/2015	F. Craig	6/14/2015	Indirect - Ashed	10	TEM-ISO	0.25	0.25	0.1	100	0.001	Are prepped grids acceptable for analysis? Yes Additional analysis dates: 6/15/15 Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	3:1	0.5	0	1.0E+07	1	25	5	8.3E+07	26	2.2E+09	8	6.6E+08	Structure Count	CDM Smith	N. Ross (DDE)	9/17/2015
EF	SB-00134	Ash	1	EMSL04	JEOL 100 CXII (04-01)	19000	0.0131	1359	0.26	5/19/2015	041514462	041514462-0003B	4	J Grillo	6/2/2015	F. Craig	6/16/2015	Indirect - Ashed	10	TEM-ISO	0.26	0.26	0.1	100	0.001	Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A Correction 1 on 9/10/2015 to revise sample mass and ashed residue mass at Doug Kent's request.	3:1	0.5	0	1.0E+07	1	25	4	1.0E+08	33	3.3E+09	7	7.0E+08	Structure Count	CDM Smith	N. Ross (DDE)	9/17/2015

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - UNDERSTORY BURN ASH (2015)

Libby Asbestos Superfund Site

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ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE I AMBIENT AIR

Index ID	Field QC Type	Lab ID	Instrument	Voltage	Magnific	Grid Opening Size	EFA	EFA2	Media	Total Volume L	Receipt Date	Lab Job Number	Lab Sample ID	Number Grid Prep	Preparer Name	Prep Date	COC ID	Lab QC Type	Analyst Name	Analysis Date	Analysis Method	Grid Store	Verifier's Company	Verifier's Name	Comment
P1-00005	FS	EMSL04	JEM 1200 EX (58)	100 kV	20,000 X	0.012	385	1295	Ambient Air	14381.88	10/10/2007	040725130	040725130-0005	3	L. Smith	10/10/2007	081007AA01	Not QA	D. Young	11/15/2007	10312	OU3 2007-0001, B	SRC	A. Bacom	
P1-00007	FS	EMSL04	JEM 1200 EX (58)	100 kV	20,000 X	0.012	385	1295	Ambient Air	12973.61	10/10/2007	040725130	040725130-0007	3	L. Smith	10/10/2007	081007AA01	Not QA	D. Young	11/15/2007	10312	OU3 2007-0001, C	SRC	A. Bacom	
P1-00245	FS	EMSL04	JEOL 100 CX II (02)	100 kV	19,000 X	0.012	385	1295	Ambient Air	14076.62	10/18/2007	040726254	040726254-0005	3	L. Smith	11/12/2007	171007AA01	Not QA	D. Young	11/16/2007	10312	2007-001, N Remedium OU3	SRC	A. Bacom	
P1-00276	FS	EMSL04	JEOL 100 CX II (02)	100 kV	19,000 X	0.012	385	1295	Ambient Air	14382	10/25/2007	040726758	040726758-0002	3	L. Smith	11/12/2007	221007AA01	Not QA	D. Young	11/16/2007	10312	2007-001, I Remedium OU3	SRC	A. Bacom	
P1-00279	FS	EMSL04	JEOL 100 CX II (02)	100 kV	19,000 X	0.012	385	1295	Ambient Air	14207.505	10/25/2007	040726758	040726758-0005	3	L. Smith	11/12/2007	221007AA01	Not QA	D. Young	11/16/2007	10312	2007-001, J Remedium OU3	SRC	A. Bacom	

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE II PART B AMBIENT AIR

Index ID	Volume	Analysis Lab	Lab Job Number	Lab SampleID	Analysis Date	Analysis Method	Prep Method	Grid Opening Size	EFA	F Factor	Gox	Result	Verifier's Company	Verifier	Comments
P2-00605	14240.25	EMSL27	270800571	270800571-0006	7/16/08	10312	Direct	0.013	385	1	4	0	SRC	E. Kelly	
P2-00614	14096	EMSL27	270800637	270800637-0001	7/29/08	10312	Direct	0.013	385	1	4	0	SRC	E. Kelly	
P2-00615	8100.7	EMSL27	270800637	270800637-0002	7/29/08	10312	Direct	0.013	385	1	4	1	SRC	E. Kelly	
P2-00626	14430	EMSL27	270800714	270800714-0002	8/12/08	10312	Direct	0.013	385	1	4	14	SRC	E. Kelly	
P2-00630	14449	EMSL27	270800714	270800714-0006	8/13/08	10312	Direct	0.013	385	1	4	8	SRC	E. Kelly	
P2-00642	14230	EMSL27	270800782	270800782-0007	8/25/08	10312	Direct	0.013	385	1	4	9	SRC	E. Kelly	
P2-00648	14392.05	EMSL27	270800829	270800829-0003	9/25/08	10312	Direct	0.013	385	1	4	0	SRC	E. Kelly	
P2-00658	14523.25	EMSL27	270800913	270800913-0002	9/26/08	10312	Direct	0.013	385	1	4	4	SRC	E. Kelly	
P2-00670	14240	EMSL27	270800997	270800997-0003	10/14/08	10312	Direct	0.013	385	1	4	0	SRC	E. Kelly	
P2-00685	14350	EMSL27	270801077	270801077-0006	10/22/08	10312	Direct	0.013	385	1	4	0	SRC	E. Kelly	

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE III

IndexID	COC VolArea	Analysis ID	Analysis Method	Analysis Date	Analysis Lab	Lab Job Number	Lab SampleID	Prep Method	EFA	Grid Opening Number	Grid Opening Size	F Factor	Lab QC Type	Result Char	Mineral Class	Result	Verifier's Company	Verifier	Comments
P3-00460	70	21749	10312	09/01/09	Hygeia	12302090011	12302090011-1184140	Direct	385	92	0.01	1	Not QA	G_count	LA	1	SRC	N. Ross	
P3-00472	70	21752	10312	09/04/09	Hygeia	12302090011	12302090011-1184200	Direct	385	93	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-00496	40	21772	10312	09/08/09	Hygeia	12302090011	12302090011-1184218	Direct	385	160	0.01	1	Not QA	G_count	LA	2	SRC	N. Ross	
P3-00507	80	21773	10312	09/09/09	Hygeia	12302090011	12302090011-1184229	Direct	385	80	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-00516	70	21775	10312	09/10/09	Hygeia	12302090011	12302090011-1184238	Direct	385	92	0.01	1	Not QA	G_count	LA	1	SRC	N. Ross	
P3-00519	79	21776	10312	09/10/09	Hygeia	12302090011	12302090011-1184241	Direct	385	81	0.01	1	Not QA	G_count	LA	6	SRC	N. Ross	
P3-00523	320	21777	10312	09/09/09	Hygeia	12302090011	12302090011-1184245	Direct	385	20	0.01	1	Not QA	G_count	LA	1	SRC	N. Ross	
P3-00527	140	21778	10312	09/10/09	Hygeia	12302090011	12302090011-1184249	Direct	385	46	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-00551	320	21762	10312	09/03/09	Hygeia	12302090011	12302090011-1184171	Direct	385	20	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-00563	320	21765	10312	09/03/09	Hygeia	12302090011	12302090011-1184159	Direct	385	20	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-00677	140	21827	10312	09/25/09	Hygeia	12302090013	12302090013-1186081	Direct	385	46	0.01	1	Not QA	G_count	LA	1	SRC	N. Ross	
P3-00730	70	21786	10312	09/15/09	Hygeia	12302090012	12302090012-1185458	Direct	385	92	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-00754	139.5	21793	10312	09/16/09	Hygeia	12302090012	12302090012-1185482	Direct	385	46	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-00805	70	21829	10312	09/25/09	Hygeia	12302090013	12302090013-1186090	Direct	385	92	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-00898	70	21907	10312	10/22/09	Hygeia	12302090015	12302090015-1187237	Direct	385	93	0.01	1	Not QA	G_count	LA	6	SRC	N. Ross	
P3-00966	70	21915	10312	10/26/09	Hygeia	12302090015	12302090015-1187269	Direct	385	92	0.01	1	Not QA	G_count	LA	1	SRC	N. Ross	
P3-01120	70	21914	10312	10/23/09	Hygeia	12302090015	12302090015-1187249	Direct	385	92	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-01151	160	21926	10312	10/28/09	Hygeia	12302090015	12302090015-1187314	Direct	385	40	0.01	1	Not QA	G_count	LA	1	SRC	N. Ross	
P3-01225	80	21936	10312	11/04/09	Hygeia	12302090016	12302090016-1187850	Direct	385	80	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-01325	160	21955	10312	11/09/09	Hygeia	12302090016	12302090016-1187952	Direct	385	40	0.01	1	Not QA	G_count	LA	1	SRC	N. Ross	
P3-01344	80	21975	10312	11/23/09	Hygeia	12302090017	12302090017-1189684	Direct	385	80	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-01378	70	21982	10312	11/20/09	Hygeia	12302090017	12302090017-1189657	Direct	385	92	0.01	1	Not QA	G_count	LA	2	SRC	N. Ross	
P3-01385	322	21987	10312	12/02/09	Hygeia	12302090025	12302090025-1193400	Direct	385	20	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-01426	70	21986	10312	11/18/09	Hygeia	12302090017	12302090017-1189649	Direct	385	92	0.01	1	Not QA	G_count	LA	0	SRC	N. Ross	
P3-01445	320	21991	10312	12/02/09	Hygeia	12302090025	12302090025-1193388	Direct	385	20	0.01	1	Not QA	G_count	LA	2	SRC	N. Ross	

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE IVA ABS AIR

Samp No	File Revision No	Lab ID	Instrument	Mag High	GO Size	EFA	EFA2	Analysis Quantity	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material	Analysis Method	Indirect Fraction Primary Filter	Aliquot 1	Volume 1	F Factor	Analysis Comments	Recording Rules			Stopping Rules		Grid Openings Counted	Sensitivity		Structure Count			AnalysisID	TAS	Max Area Examined	Stopping Rule Achieved	Verifier's Company	Verifier's Name	Comment	Correction Date
																									Min AR	Min Length	Min Width	Target Sens	Target N Strucs		LA/OA	CH	LA	OA	CH							
P4-00066	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	60	7/21/2010	12302100010	12302100010-1225121	3	QT	7/27/2010	Q. Trieu	8/3/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0048	50	100	0.0064	0.0064	3	0	0	22023	0.0048	1.0	Max area examined	CDM Smith	N. Ross		
P4-00076	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	30	7/21/2010	12302100010	12302100010-1225131	3	QT	7/27/2010	K. Corbin	8/4/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0048	50	100	0.0128	0.0128	6	0	0	22026	0.0048	1.0	Max area examined	CDM Smith	N. Ross		
P4-00077	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	312	7/26/2010	12302100011	12302100011-1225722	3	DL	7/29/2010	Q. Trieu	8/5/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0373	50	4	0.0308	0.0308	0	0	0	22027	0.0373	0.0	Sensitivity	CDM Smith	N. Ross		
P4-00083	0	Hygeia	Hitachi H600	20,000X	0.0103	346	0	200	9/15/2010	12302100024	12302100024-1225728	3	QT/KC/DL	10/2/2010	Q. Trieu	10/25/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0047	50	48	0.0047	0.0047	2	0	0	22189	0.0047	0.5	Sensitivity	CDM Smith	N. Ross		
P4-00136	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	30	8/2/2010	12302100012	12302100012-1227252	3	DL	8/6/2010	Q. Trieu	8/10/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0048	50	100	0.0128	0.0128	0	0	0	22038	0.0048	1.0	Max area examined	CDM Smith	N. Ross		
P4-00163	0	Hygeia	Hitachi H600	20,000X	0.0103	346	0	80	9/15/2010	12302100024	12302100024-1227279	3	QT/KC/DL	10/2/2010	K. Corbin	10/29/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0048	50	100	0.0056	0.0056	2	0	0	22199	0.0047	1.0	TAS Incorrect	CDM Smith	N. Ross	Target sensitivity IS 0.0047, not 0.0048 according to benchsheet.	
P4-00244	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	220	8/9/2010	12302100013	12302100013-1229538	3	DL	8/11/2010	Q. Trieu	8/19/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0373	50	5	0.0350	0.0350	0	0	0	22069	0.0373	0.1	Sensitivity	CDM Smith	N. Ross		
P4-00247	0	Hygeia	Hitachi H600	20,000X	0.0103	346	0	80	9/15/2010	12302100025	12302100025-1229541	3	QT/KC/DL	10/9/2010	Q. Trieu	11/5/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0047	50	100	0.0056	0.0056	0	0	0	22213	0.0047	1.0	Max area examined	CDM Smith	N. Ross		
P4-00283	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	248	8/9/2010	12302100014	12302100014-1229594	3	DL	8/12/2010	K. Corbin	8/22/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0373	50	5	0.0310	0.0310	0	0	0	22059	0.0373	0.1	Sensitivity	CDM Smith	N. Ross		
P4-00338	0	Hygeia	Hitachi H600	20,000X	0.0103	346	0	120	9/15/2010	12302100026	12302100026-1229649	3	QT/KC/DL	10/28/2010	K. Corbin	11/19/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0047	50	80	0.0047	0.0047	5	0	0	22231	0.0047	0.8	Sensitivity	CDM Smith	N. Ross		
P4-00365	0	Hygeia	Hitachi H600	20,000X	0.01	346	0	60	9/15/2010	12302100022	12302100022-1229676	3	QT	9/16/2010	K. Corbin	9/30/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0048	50	100	0.0077	0.0077	16	0	0	22157	0.0048	1.0	Max area examined	CDM Smith	N. Ross		
P4-00377	0	Hygeia	Hitachi H600	20,000X	0.0103	346	0	80	9/15/2010	12302100026	12302100026-1229688	3	QT/KC/DL	10/28/2010	K. Corbin	11/29/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0047	50	100	0.0056	0.0056	1	0	0	22237	0.0047	1.0	Max area examined	CDM Smith	N. Ross		
P4-00391	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	15	8/9/2010	12302100015	12302100015-1229702	3	DL	8/12/2010	K. Corbin	8/26/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0048	50	100	0.0257	0.0257	0	0	0	22081	0.0048	1.0	Max area examined	CDM Smith	N. Ross		
P4-00412	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	66	8/12/2010	12302100016	12302100016-1230422	3	DL	8/12/2010	K. Corbin	8/31/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0373	50	16	0.0365	0.0365	0	0	0	22096	0.0373	0.2	Sensitivity	CDM Smith	N. Ross		
P4-00454	0	Hygeia	Hitachi H600	20,000X	0.0103	346	0	39.9	9/15/2010	12302100026	12302100026-1230432	3	QT/KC/DL	10/28/2010	K. Corbin	11/30/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0047	50	100	0.0112	0.0112	0	0	0	22242	0.0047	1.0	Max area examined	CDM Smith	N. Ross		
P4-00507	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	30	8/16/2010	12302100017	12302100017-1231248	3	DL	8/19/2010	Q. Trieu	9/8/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0048	50	100	0.0128	0.0128	0	0	0	22116	0.0048	1.0	Max area examined	CDM Smith	N. Ross		
P4-00508	0	Hygeia	Hitachi H600	20,000X	0.01	346	0	60	9/15/2010	12302100022	12302100022-1231249	3	QT	9/16/2010	K. Corbin	10/3/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0048	50	100	0.0077	0.0077	5	0	0	22159	0.0048	1.0	Max area examined	CDM Smith	N. Ross		
P4-00530	0	Hygeia	Hitachi H600	20,000X	0.0103	346	0	60	9/15/2010	12302100027	12302100027-1231270	3	QT/KC/DL	11/6/2010	Q. Trieu	12/4/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0048	50	100	0.0075	0.0075	1	0	0	22283	0.0048	1.0	Max area examined	CDM Smith	N. Ross		
P4-00566	1	Hygeia	Hitachi H600	20,000X	0.0103	346	0	40	9/15/2010	12302100028	12302100028-1231306	3	QT/MEB	11/6/2010	Q. Trieu	12/7/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75	A2_3H-3 ch	≥ 3:1	0.5	0	0.0047	50	100	0.0112	0.0112	0	0	0	22291	0.0047	1.0	Max area examined	CDM Smith	N. Ross		
P4-00639	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	30	8/23/2010	12302100019	12302100019-1232233	3	DL	8/30/2010	Q. Trieu	9/10/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0048	50	100	0.0128	0.0128	0	0	0	22130	0.0048	1.0	Max area examined	CDM Smith	N. Ross		
P4-00665	0	Hygeia	Hitachi H600	20,000X	0.0103	346	0	240	9/15/2010	12302100028	12302100028-1232259	3	QT/MEB	11/6/2010	Q. Trieu	12/9/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0017	50	100	0.0019	0.0019	30	0	0	22302	0.0017	1.0	Max area examined	CDM Smith	N. Ross		
P4-00683	0	Hygeia	Hitachi H600	20,000X	0.01	346	0	120	9/15/2010	12302100022	12302100022-1232277	3	QT/KC	9/20/2010	K. Corbin	10/12/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0048	50	81	0.0047	0.0047	1	0	0	22172	0.0048	0.8	Sensitivity	CDM Smith	N. Ross		
P4-00720	0	Hygeia	Hitachi H600	20,000X	0.01	346	0	120	9/15/2010	12302100022	12302100022-1232101	3	QT/KC	9/22/2010	Q. Trieu	10/14/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0048	50	81	0.0047	0.0047	8	1	0	22179	0.0048	0.8	Sensitivity	CDM Smith	N. Ross		
P4-00734	0	Hygeia	Hitachi H600	20,000X	0.01	385	0	30	8/30/2010	12302100020	12302100020-1232722	3	DL	8/30/2010	K. Corbin	9/14/2010	Direct	No	10312				1		≥ 3:1	0.5	0	0.0048	50	100	0.0128	0.0128	0	0	0	22141	0.0048	1.0	Max area examined	CDM Smith	N. Ross		
P4-00766	0	Hygeia	Hitachi H600	20,000X	0.0103	346	0	120	9/15/2010	12302100022	12302100022-1232754	3	QT/KC	9/30/2010	Q. Trieu	10/21/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0048	50	78	0.0048	0.0048	12	0	0	22202	0.0048	0.8	Sensitivity	CDM Smith	N. Ross		
P4-00769	0	Hygeia	Hitachi H600	20,000X	0.0103	346	0	240	9/15/2010	12302100028	12302100028-1232757	3	QT/MEB	11/6/2010	K. Corbin	12/12/2010	Indirect - Ashed	Yes	10312	1	75	100	0.75		≥ 3:1	0.5	0	0.0017	50	100	0.0019	0.0019	37	0	0	22308	0.0017	1.0	Max area examined	CDM Smith	N. Ross		

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - PHASE V PART A ABS AIR
Libby Asbestos Superfund Site

DVC	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA	Analysis Quantity	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material	Analysis Method	Est Filter Loading	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	PCME LA			Area Examined	Stopping Rule Achieved	Verifier's Company	Verifier's Name	Comment	Correction Date
																								Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs		Sensitivity	Structure Count	Conc.						
x-NR	P5-10097	Air	1	EMSL27	JEOL 100 CX II (27-2)	4800	0.013	385	243	10/3/2012	27120104	271201049-0002	10	D. Barney	10/11/2012	E. Wyatt-Pescador	10/12/2012	Direct	No	TEM-ISO	2	1	Correction 1 on 2/3/2014 to revise grid openings F2:H1, F2:J1, and F4:H1	3:1	5	0.25	0.00037	20	25	395	0.00031	0	0	5.1	Sensitivity	CDM Smith	A. Coler	Grid_Grid opening is F2_H1 not F2_H10, according to benchsheet (page 20). Grid_Grid opening is F2_J1 not F2_J10, according to benchsheet (page 20). Grid_Grid opening is F4_H1 not F4_H10, according to benchsheet (page 23).	2/4/2014
x-NR	P5-10099	Air	1	EMSL27	JEOL 100 CX II (27-2)	4800	0.013	385	241	10/3/2012	27120104	271201049-0004	10	D. Barney	10/11/2012	E. Wyatt-Pescador	10/12/2012	Direct	No	TEM-ISO	2	1	Correction 1 on 2/3/2014 to revised grid openings C3:J1 and C7:H1.	3:1	5	0.25	0.00037	20	25	395	0.00031	0	0	5.1	Sensitivity	CDM Smith	A. Coler	Grid_Grid opening is C3_J1 not C3_J10, according to benchsheet (page 7). Grid_Grid opening is C7_H1 not C7_H10, according to benchsheet (page 13).	2/4/2014

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - COMMERCIAL LOGGING ABS AIR (2012)

OVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA	AirVol (COC)	Air Volume	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material	Analysis Method	Est Filter Loading	Indirect Fraction Primary Filter	Aliquot 1	Volume 1	Aliquot 2	Volume 2	Aliquot 3	Volume 3	Indirect Fraction Secondary Filter	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	PCME LA			Stopping Rule Achieved	Verifier's Company	Verifier's Name	Comment	Correction Date
																																Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs		Sensitivity	Structure Count	Conc.					
																																													Verifier's Note: The laboratory only needed to examine 34 grid openings to reach the target sensivity; uncertain as to why the analysis continued until 137 grid openings were examined.	
	CL-30050	Air	0	EMSL27	JEOL 100 CX	4800	0.013	385	484.8	484.8	10/3/2012	271201048	271201048-0001	5	R. Pescador	10/9/2012	R. Mahoney	10/18/2012	Direct	No	TEM-ISO	4									1	Also prepped by D. Barney	3:1	5	0.25	0.0018	20	25	137	0.00045	2	0.00089	Sensitivity	CDM Smith	N. Ross		
	CL-30054	Air	0	EMSL27	JEOL 100 CX	4800	0.013	385	243.6	243.6	10/3/2012	271201048	271201048-0005	5	R. Pescador	10/9/2012	R. Mahoney	10/19/2012	Direct	No	TEM-ISO	4									1	Also prepped by D. Barney	3:1	5	0.25	0.0018	20	25	84	0.0014	3	0.0043	Sensitivity	CDM Smith	N. Ross		
	CL-30056	Air	1	EMSL27	JEOL 100 CX	4800	0.013	385	121.8	121.8	10/3/2012	271201048	271201048-0007	3	D. Barney	10/9/2012	R. Mahoney	10/22/2012	Direct	No	TEM-ISO	3									1	C1 on 3/21/13 to correct grid opening	3:1	5	0.25	0.0018	20	25	145	0.0017	3	0.0050	Sensitivity	CDM Smith	N. Ross	Grid_grid opening should be C3_H3, not C3_A3 according to benchsheet (page 4).	3/21/2013
x-EF	CL-30057	Air	1	EMSL27	JEOL 100 CX	4800	0.013	360	481.8	481.8	10/3/2012	271201048	271201048-0008	5	R. Pescador	10/9/2012	R. Mahoney	10/23/2012	Indirect - Ashed	No	TEM-ISO	17	1	25	100						0.25	also prepped by D. Barney. Correction 1 on 2/28/2014 to revise magnification.	3:1	5	0.25	0.0018	20	25	23	0.010	27	0.27	Structure Count	CDM Smith	N. Ross	Magnification entered in EDD should be LOW, not HIGH.	2/28/2014
	CL-30061	Air	0	EMSL27	JEOL 100 CX	4800	0.013	360	243	243	10/3/2012	271201048	271201048-0012	5	R. Pescador	10/9/2012	R. Mahoney	11/1/2012	Indirect - Ashed	Yes	TEM-ISO	4	1	25	100						0.25	also prepped by D. Barney	3:1	5	0.25	0.0018	20	25	36	0.013	26	0.33	Structure Count	CDM Smith	N. Ross		
	CL-30062	Air	0	EMSL27	JEOL 100 CX	4800	0.013	360	475.2	475.2	10/3/2012	271201048	271201048-0013	5	R. Pescador	10/9/2012	R. Mahoney	10/25/2012	Indirect - Ashed	Yes	TEM-ISO	20	1	25	100						0.25	also prepped by D. Barney	3:1	5	0.25	0.0018	20	25	20	0.012	26	0.30	Structure Count	CDM Smith	N. Ross		
	CL-30064	Air	0	EMSL27	JEOL 100 CX	4800	0.013	360	417.9	417.9	10/3/2012	271201048	271201048-0015	5	R. Pescador	10/9/2012	R. Mahoney	10/26/2012	Indirect - Ashed	Yes	TEM-ISO	20	1	25	100						0.25	also prepped by D. Barney	3:1	5	0.25	0.0018	20	25	18	0.015	27	0.40	Structure Count	CDM Smith	N. Ross		
	CL-30066	Air	1	EMSL27	JEOL 100 CX	4800	0.013	385	503.7	503.7	10/3/2012	271201048	271201048-0017	5	R. Pescador	10/9/2012	R. Mahoney	10/29/2012	Direct	No	TEM-ISO	20									1	also prepped by D. Barney C1 on 3/21/13 to revise analysis date	3:1	5	0.25	0.0018	20	25	40	0.0015	3	0.0044	Sensitivity	CDM Smith	N. Ross	Analysis date is 10/29/12 not 10/26/12 according to the benchsheet.	3/21/2013
	CL-30069	Air	0	EMSL27	JEOL 100 CX	4800	0.013	385	480.6	480.6	10/3/2012	271201048	271201048-0020	5	R. Pescador	10/9/2012	R. Mahoney	10/29/2012	Direct	No	TEM-ISO	3									1	also prepped by D. Barney	3:1	5	0.25	0.0018	20	25	40	0.0015	1	0.0015	Sensitivity	CDM Smith	N. Ross		
	CL-30076	Air	2	EMSL27	JEOL 100 CX	4800	0.013	360	114.57	114.57	10/3/2012	271201048	271201048-0023	5	R. Pescador	10/9/2012	R. Mahoney	10/30/2012	Indirect - Ashed	Yes	TEM-ISO	4	1	50	100						0.5	also prepped by D. Barney C1 on 3/21/13 to revise volume, C2 on 2/17/2014 to revise grid opening D8_C1.	3:1	5	0.25	0.0018	20	25	291	0.0017	7	0.012	Sensitivity	CDM Smith	N. Ross	Volume should be 114.57 on the benchsheet and in the EDD. Grid_grid opening is D8_C1, not D8_C10 according to benchsheet (page 20).	2/21/2014
	CL-30078	Air	0	EMSL27	JEOL 100 CX	4800	0.013	360	114.3	114.3	10/3/2012	271201048	271201048-0025	5	R. Pescador	10/9/2012	R. Mahoney	10/31/2012	Indirect - Ashed	Yes	TEM-ISO	4	1	50	100						0.5	also prepped by D. Barney.	3:1	5	0.25	0.0018	20	25	279	0.0017	13	0.023	Sensitivity	CDM Smith	N. Ross		
	CL-30080	Air	1	EMSL27	JEOL 100 CX	4800	0.013	360	239.7	239.7	10/3/2012	271201048	271201048-0027	5	R. Pescador	10/9/2012	R. Mahoney	11/1/2012	Indirect - Ashed	Yes	TEM-ISO	12	1	50	100						0.5	C1 on 3/21/13 to add particulate loading	3:1	5	0.25	0.0018	20	25	42	0.0055	25	0.14	Structure Count	CDM Smith	N. Ross	Estimated particulate loading is null in EDD and 12 on benchsheet	3/21/2013
	CL-30082	Air	0	EMSL27	JEOL 100 CX	4800	0.013	360	238.2	238.2	10/3/2012	271201048	271201048-0029	5	R. Pescador	10/9/2012	R. Mahoney	11/5/2012	Indirect - Ashed	Yes	TEM-ISO	20	1	50	100						0.5	also prepped by D. Barney	3:1	5	0.25	0.0018	20	25	144	0.0016	15	0.024	Sensitivity	CDM Smith	N. Ross		

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - WILDFIRE CONTINGENCY MONITORING PLAN - JULY 2012 SOUSE GULCH WILDFIRE ABS AIR

DVC Check (100%)	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA	Analysis Quantity	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material	Analysis Method	Est Filter Loading	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	PCME LA			Stopping Rule Achieved	Verifier's Company	Verifier's Name	Comment	Correction Date	Date Sent to Lab
																								Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs		Sensitivity	Structure Count	Conc.						
x-NR	SM-10061	Air	0	EMSL27	JEOL 100 CX II (27-4)	4800	0.013	385	60	7/27/2013	271300572	271300572-0002	8	R. Pescador	7/27/2013	R. Pescador	7/27/2013	Direct	No	TEM-ISO	4	1	Sample loading is extremely low. May need to consider collecting at a higher flowrate.	3:1	5	0.25	0.0018	20	50	310	0.0016	1	0.0016	Sensitivity	CDM Smith	A. Coler			
x-NR	SM-10062	Air	0	EMSL27	JEOL 100 CX II (27-4)	4800	0.013	385	56	7/27/2013	271300572	271300572-0003	8	R. Pescador	7/27/2013	R. Pescador	7/27/2013	Direct	No	TEM-ISO	2	1	Also analyzed 8/1/2013. Sample loading is extremely low. May need to consider collecting at a higher flowrate.	3:1	5	0.25	0.0018	20	50	306	0.0017	0	0	Sensitivity	CDM Smith	A. Coler			
x-NR	SM-10064	Air	1	EMSL27	JEOL 100 CX II (27-4)	4800	0.013	385	60	7/27/2013	271300572	271300572-0005	8	R. Pescador	7/27/2013	R. Pescador	7/28/2013	Direct	No	TEM-ISO	4	1	Sample loading is extremely low. May need to consider collecting at a higher flowrate. Correction 1 on 1/23/2014 to revise length to total structure #1.	3:1	5	0.25	0.0018	20	50	321	0.0015	2	0.0031	Sensitivity	CDM Smith	A. Coler	The length for total structure #1 is 15.75, not 15.25 according to benchsheet (page 2).	1/29/2014	1/23/2014
x-NR	SM-10068	Air	1	EMSL27	JEOL 100 CX II (27-4)	4800	0.013	385	482	7/27/2013	271300572	271300572-0009	3	R. Pescador	7/27/2013	R. Pescador	7/28/2013	Direct	No	TEM-ISO	2	1	Correction 1 on 1/23/2014 to revise Instrument ID and air volume.	3:1	5	0.25	0.0009	1	50	85	0.0007	0	0	Sensitivity	CDM Smith	A. Coler	--The analysis quantity originally recorded on the benchsheet as 480 but was later crossed out and changed to 482. The EDD needs to reflect this change. --Instrument ID is JEOL 100 CX II (27-4), not JEOL 100 CX II (27-2) according to benchsheet.	1/29/2014	1/23/2014
x-NR	SM-10071	Air	1	EMSL27	JEOL 100 CX II (27-2)	4800	0.013	385	60	7/27/2013	271300572	271300572-0012	8	R. Pescador	7/27/2013	E. Wyatt-Pescador	7/28/2013	Direct	No	TEM-ISO	2	1	Analysis performed on 7/28/2013 and 8/1/2013 on TEM 27-2. Note: 60L loading is exceptionally low, may need to consider colleting at a higher flow rate. Correction 1 on 1/23/2014 to add grid opening F2:F4 and to correct instrument ID.	3:1	5	0.25	0.0018	20	50	280	0.0018	0	0	Sensitivity	CDM Smith	A. Coler	--Grid_grid opening F2_F4 was recorded on the benchsheet but was not entered in the EDD (page 6). Total number of grid openings examined increases from 279 to 280. --Instrument is JEOL 100 CX II (27-2), not JEOL 100 CX II (27-), according to benchsheet.	1/29/2014	1/23/2014
x-NR	SM-10076	Air	1	EMSL27	JEOL 100 CX II (27-2)	4800	0.013	385	60	7/27/2013	271300572	271300572-0017	8	R. Pescador	7/27/2013	E. Wyatt-Pescador	7/27/2013	Direct	No	TEM-ISO	2	1	Additional GO analyzed on 7/28/2013 on TEM 27-2 by E. Wyatt-Pescador. Note: 60L loading is exceptionally low. May need to consider collecting at a higher flow rate. Correction 1 on 1/23/2014 to revise minimum length recording rule	3:1	5	0.25	0.0018	20	50	280	0.0018	0	0	Sensitivity	CDM Smith	A. Coler	Minimum length recording rule is 5, not 0.5 according to benchsheet.	1/29/2014	1/23/2014

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SUPPLEMENTAL ANALYSIS OF PHASE III AND PHASE IV PART A ABS AIR (2013)

DVC Check (100%)	Phase	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA	Analysis Quantity	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material	Analysis Method	Est Filter Loading	Indirect Fraction Primary Filter	Aliquot 1	Volume 1	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	PCME LA			Stopping Rule Achieved	Verifier's Company	Verifier's Name	Comment	Correction Date
																												Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs		Sensitivity	Structure Count	Conc.					
x-NR	Phase III	P3-00486	Air	0	EMSL27	JEOL 100 CX II (27-02)	4800	0.013	385	164	8/15/2013	271300675	271300675-0001	10	R. Pescador	8/16/2013	R. Pescador	9/4/2013	Direct	No	TEM-ISO	3				1																
x-NR	Phase III	P3-00725	Air	1	EMSL27	JEOL 100 CX II (27-2)	4800	0.013	385	320	8/15/2013	271300675	271300675-0002	5	R. Pescador	8/16/2013	R. Pescador	9/6/2013	Direct	No	TEM-ISO	2				1	Correction 1 on 2/14/2014 to revise particulate loading.	3:1	5	0.25	0.00055	10	25	160	0.00058	0	0	Sensitivity	CDM Smith	A. Coler	Estimated particulate loading is 2 not 0.602, according to benchsheet.	2/21/2014
x-NR	Phase IVA-Forest	P4-00011	Air	0	EMSL22	JEOL 1200 (22-2)	5000	0.0133	385	50	8/23/2013	221303200	221303200-0002	3	E. Orthun	9/20/2013	E. Orthun	9/20/2013	Direct	No	TEM-ISO	2				1		3:1	5	0.25	0.0027	10	25	141	0.00411	0	0	Sensitivity	CDM Smith	A. Coler		
x-NR	Phase IVA-Pulaski	P4-00035	Air	0	EMSL22	JEOL 1200 (22-2)	5000	0.0133	385	30	8/23/2013	221303202	221303202-0001	3	E. Orthun	9/13/2013	E. Orthun	9/17/2013	Direct	No	TEM-ISO	2				1		3:1	5	0.25	0.0063	10	25	79	0.01221	0	0	Sensitivity	CDM Smith	A. Coler		
x-NR	Phase IVA-Forest	P4-00083	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0099	346	200	12/13/2012	A130303	A130303-01	4	QT, DL, KC	10/2/2010	N. DelHierro	8/9/2013	Indirect - Ashed	Yes	TEM-ISO	5	1	75	100	0.75	Received on 346 mm2 filters from Hygeia. Put on grids by N. Delhierro 12-27-2012. Supplemental Analysis.	3:1	5	0.25	0.0027	10	25	41	0.00568	0	0	Sensitivity	CDM Smith	A. Coler		
x-NR	Phase IVA-Forest	P4-00120	Air	0	EMSL22	JEOL 1200 (22-2)	5000	0.0133	346	80	8/23/2013	221303190	221303190-0002	10	E. Orthun	9/9/2013	E. Orthun	9/12/2013	Indirect - Ashed	No	TEM-ISO	3	1	25	100	0.25	Also analyzed on 9/13/2013.	3:1	5	0.25	0.0027	10	25	451	0.00288	0	0	Sensitivity	CDM Smith	A. Coler		
x-NR	Phase IVA-Pulaski	P4-00151	Air	0	EMSL22	JEOL 1200 (22-2)	5000	0.0133	346	60	8/23/2013	221303198	221303198-0001	2	E. Orthun	9/9/2013	E. Orthun	9/11/2013	Indirect - Ashed	No	TEM-ISO	12	1	75	100	0.75		3:1	5	0.25	0.0063	10	25	19	0.03043	1	0.030	Sensitivity	CDM Smith	A. Coler		
x-NR	Phase IVA-Forest	P4-00241	Air	0	EMSL22	JEOL 1200 (22-2)	5000	0.0133	385	220	8/23/2013	221303188	221303188-0005	3	E. Orthun	9/5/2013	E. Orthun	9/6/2013	Direct	No	TEM-ISO	2				1		3:1	5	0.25	0.0027	10	25	45	0.00292	1	0.0029	Sensitivity	CDM Smith	A. Coler		
x-NR	Phase IVA-Forest	P4-00247	Air	0	EMSL22	JEOL 1200 (22-2)	5000	0.0133	346	80	8/23/2013	221303188	221303188-0006	3	E. Orthun	9/5/2013	E. Orthun	9/7/2013	Indirect - Ashed	No	TEM-ISO	2	1	75	100	0.75		3:1	5	0.25	0.0027	10	25	93	0.00466	0	0	Sensitivity	CDM Smith	A. Coler		
x-NR	Phase IVA-Pulaski	P4-00362	Air	1	EMSL22	JEOL 1200 (22-2)	5000	0.0133	346	60	8/23/2013	221303192	221303192-0001	2	E.Orthun	9/10/2013	E. Othun	9/10/2013	Indirect - Ashed	No	TEM-ISO	5	1	75	100	0.75	Correction 1 on 2/14/2014 to revise minimum length recording rule.	3:1	5	0.25	0.0063	10	25	19	0.03043	4	0.12	Sensitivity	CDM Smith	A. Coler	Minimum length recording rule is 5 not 0.5, according to benchsheet.	2/21/2014
x-NR	Phase IVA-Pulaski	P4-00593	Air	0	EMSL22	JEOL 1200 (22-2)	5000	0.0133	346	60	8/23/2013	221303183	221303183-0003	2	E. Orthun	9/5/2013	E. Orthun	9/5/2013	Indirect - Ashed	No	TEM-ISO	2	1	75	100	0.75		3:1	5	0.25	0.0063	10	25	19	0.03043	0	0	Sensitivity	CDM Smith	A. Coler		

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA	Air Volume (L)	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material	Analysis Method	Est Filter Loading	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	PCME LA			Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date
																								Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs		Sensitivity	Structure Count	Conc.				
EF	SB-00020	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	95	5/14/2015	A150107	A150107-01	3	N. DelHierro	5/20/2015	N. DelHierro	5/21/2015	Direct	No	TEM-ISO	10	1		3:1	5	0.25	0.004	7	25	107	0.0039	13	0.051	Sensitivity	CDM Smith	N. Ross	9/22/2015
	SB-00022	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	81	5/14/2015	A150107	A150107-03	3	N. DelHierro	5/20/2015	N. DelHierro	5/21/2015	Direct	No	TEM-ISO	15	1		3:1	5	0.25	0.004	7	25	70	0.0070	27	0.19	Structure Count	CDM Smith	N. Ross	9/22/2015
	SB-00027	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	577	5/18/2015	041514418	041514418-0002	4	J. Grillo	6/3/2015	P. Harrison	6/4/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	13	0.0039	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00029	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	574	5/18/2015	041514418	041514418-0004	4	J. Grillo	6/3/2015	P. Harrison	6/4/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	13	0.0039	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00031	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	590	5/18/2015	041514418	041514418-0006	4	J. Grillo	6/3/2015	P. Harrison	6/4/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	13	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00033	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	565	5/18/2015	041514418	041514418-0008	4	J. Grillo	6/3/2015	P. Harrison	6/4/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	14	0.0037	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00046	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	608	5/18/2015	041514418	041514418-0010	4	J. Grillo	6/3/2015	P. Harrison	6/4/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	13	0.0037	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00048	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	663	5/18/2015	041514418	041514418-0012	4	J. Grillo	6/3/2015	P. Harrison	6/4/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0037	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00050	Air	0	EMSL03	JEOL 100 CXII (03-04)	5,000	0.0131	385	683	5/18/2015	041514422	041514422-0002	4	J. Grillo	6/9/2015	D. YOUNG	6/18/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0036	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00052	Air	0	EMSL03	JEOL 100 CXII (03-04)	5,000	0.0131	385	580	5/18/2015	041514422	041514422-0004	4	J. Grillo	6/9/2015	D. YOUNG	6/18/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	13	0.0039	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00055	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0131	385	618	5/18/2015	041514422	041514422-0007	4	J. Grillo	6/9/2015	A. FOLGAR	6/19/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0040	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00057	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0131	385	670	5/18/2015	041514422	041514422-0009	4	J. Grillo	6/9/2015	A. FOLGAR	6/19/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	11	0.0040	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00059	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0131	385	665	5/18/2015	041514422	041514422-0011	4	J. Grillo	6/9/2015	A, FOLGAR	6/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0037	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00061	Air	0	EMSL03	JEOL 100 CXII(03-02)	5,000	0.0131	385	583	5/18/2015	041514422	041514422-0013	4	J. Grillo	6/9/2015	A. FOLGAR	6/19/2015	Direct	No	TEM-ISO	0	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	13	0.0039	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00063	Air	0	EMSL03	JEOL 100CXII (03-04)	5,000	0.0131	385	627	5/18/2015	041514458	041514458-0002	4	J. Grillo	5/20/2015	D. YOUNG	6/4/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: 6/9/15	3:1	5	0.25	0.004	7	25	12	0.0039	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00065	Air	1	EMSL03	JEOL 100CXII (03-04)	5,000	0.0131	385	652	5/18/2015	041514458	041514458-0004	4	J. Grillo	5/20/2015	D. YOUNG	6/4/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: 6/9/15C1 on 7/29/2015 to revise laboratory ID.	3:1	5	0.25	0.004	7	25	12	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00067	Air	0	EMSL03	JEOL 100CXII (03-02)	5,000	0.0131	385	696	5/18/2015	041514458	041514458-0006	4	J. Grillo	5/20/2015	J. ARRIAGA	6/6/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	11	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00069	Air	0	EMSL03	JEOL 100 CXII (03-04)	5,000	0.0127	385	577	5/18/2015	041514458	041514458-0008	4	J. Grillo	5/20/2015	J. ARRIAGA	6/8/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	15	0.0035	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00071	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0131	385	640	5/18/2015	041514458	041514458-0010	4	J. Grillo	5/20/2015	A. FOLGAR	6/7/2015	Direct	No	TEM-ISO	15	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0038	2	0.0077	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00073	Air	0	EMSL03	JEOL 100CXII (03-04)	5,000	0.0127	385	627	5/18/2015	041514458	041514458-0012	4	J. Grillo	5/20/2015	J. ARRIAGA	6/8/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	13	0.0037	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00075	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0131	385	615	5/18/2015	041514425	041514425-0002	4	J. Grillo	5/20/2015	A. FOLGAR	5/28/2015	Direct	No	TEM-ISO	15	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0040	3	0.012	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
EF	SB-00077	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0131	385	674	5/18/2015	041514425	041514425-0004	4	J. Grillo	5/20/2015	A. FOLGAR	5/29/2015	Direct	No	TEM-ISO	20	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	11	0.0040	18	0.071	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00079	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0131	385	630	5/18/2015	041514425	041514425-0006	4	J. Grillo	5/20/2015	A. FOLGAR	5/29/2015	Direct	No	TEM-ISO	7	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0039	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00081	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0131	385	621	5/18/2015	041514425	041514425-0008	4	J. Grillo	5/20/2015	A. FOLGAR	6/1/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0039	1	0.0039	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00083	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0131	385	615	5/18/2015	041514425	041514425-0010	4	J. Grillo	5/20/2015	A. FOLGAR	6/3/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0040	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00085	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0131	385	652	5/18/2015	041514425	041514425-0012	4	J. Grillo	5/20/2015	A. FOLGAR	6/4/2015	Direct	No	TEM-ISO	15	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0038	7	0.026	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA	Air Volume (L)	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material	Analysis Method	Est Filter Loading	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	PCME LA			Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date
																								Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs		Sensitivity	Structure Count	Conc.				
	SB-00087	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.0131	385	624	5/18/2015	041514414	041514414-0002	4	J.Grillo	6/2/2015	F. Craig	6/4/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0039	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00089	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.0131	385	618	5/18/2015	041514414	041514414-0004	4	J. Grillo	6/2/2015	F. Craig	6/4/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0040	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00091	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.0131	385	612	5/18/2015	041514414	041514414-0006	4	J. Grillo	6/2/2015	F. Craig	6/4/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	13	0.0037	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00093	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.0131	385	646	5/18/2015	041514414	041514414-0008	4	J. Grillo	6/2/2015	F. Craig	6/4/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	12	0.0038	1	0.0038	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00101	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	209	5/18/2015	A150108	A150108-02	3	N. DelHierro	5/20/2015	N. DelHierro	5/22/2015	Direct	No	TEM-ISO	6	1		3:1	5	0.25	0.004	7	25	49	0.0039	1	0.0039	Sensitivity	CDM Smith	N. Ross	9/22/2015
	SB-00103	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	187	5/18/2015	A150108	A150108-04	3	N. DelHierro	5/20/2015	N. DelHierro	5/22/2015	Direct	No	TEM-ISO	4	1		3:1	5	0.25	0.004	7	25	55	0.0039	5	0.019	Sensitivity	CDM Smith	N. Ross	9/22/2015
	SB-00105	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	206	5/18/2015	A150108	A150108-06	3	N. DelHierro	5/20/2015	N. DelHierro	5/22/2015	Direct	No	TEM-ISO	3	1		3:1	5	0.25	0.004	7	25	50	0.0039	1	0.0039	Sensitivity	CDM Smith	N. Ross	9/22/2015
EF	SB-00107	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	193	5/18/2015	A150108	A150108-08	3	N. DelHierro	5/20/2015	D. Kent	5/22/2015	Direct	No	TEM-ISO	4	1	Also analyzed on 05/26/2015.	3:1	5	0.25	0.004	7	25	52	0.0040	5	0.020	Sensitivity	CDM Smith	N. Ross	9/22/2015
	SB-00108	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	88	5/18/2015	A150108	A150108-09	3	N. DelHierro	5/20/2015	N. DelHierro	5/26/2015	Direct	No	TEM-ISO	4	1		3:1	5	0.25	0.004	7	25	115	0.0039	2	0.0078	Sensitivity	CDM Smith	N. Ross	9/22/2015
	SB-00111	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	193	5/18/2015	A150108	A150108-12	3	N. DelHierro	5/20/2015	N. DelHierro	5/26/2015	Direct	No	TEM-ISO	4	1		3:1	5	0.25	0.004	7	25	53	0.0039	2	0.0078	Sensitivity	CDM Smith	N. Ross	9/22/2015
	SB-00113	Air	1	EMSL04	JEOL 100 CXII (04-01)	10,000	0.0131	385	222	5/18/2015	041514397	041514397-0002	4	J. Grillo	5/19/2015	F. Craig	5/20/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/AC1 on 7/29/2015 to revise laboratory ID.	3:1	5	0.25	0.004	7	25	34	0.0039	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00115	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.0131	385	203	5/18/2015	041514397	041514397-0004	4	J. Grillo	5/19/2015	F. Craig	5/20/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	37	0.0039	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00117	Air	1	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	175	5/18/2015	041514397	041514397-0006	4	J. Grillo	5/19/2015	P. Harrison	5/20/2015	Direct	No	TEM-ISO	10	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A C1 on 9/23/2015 to revise structure type for primary structure #2. Sketch tick marks also added for primary	3:1	5	0.25	0.004	7	25	42	0.0040	6	0.024	Sensitivity	CDM Smith	N. Ross (DDE)	10/1/2015
	SB-00119	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	162	5/18/2015	041514397	041514397-0008	4	J. Grillo	5/19/2015	P. Harrison	5/21/2015	Direct	No	TEM-ISO	5	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	46	0.0039	7	0.028	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00137	Air	1	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	53	5/18/2015	041514397	041514397-0010	4	J. Grillo	5/19/2015	P. Harrison	5/20/2015	Direct	No	TEM-ISO	5	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/AC1 on 7/29/2015 to revise Laboratory ID.	3:1	5	0.25	0.004	7	25	139	0.0040	19	0.076	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00139	Air	1	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	50	5/18/2015	041514400	041514400-0002	4	J. Grillo	5/19/2015	P. Harrison	5/21/2015	Direct	No	TEM-ISO	5	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A C1 on 9/23/2015 to revise structure type for primary structure #17.	3:1	5	0.25	0.004	7	25	84	0.0070	25	0.17	Structure Count	CDM Smith	N. Ross (DDE)	10/1/2015
EF	SB-00143	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.0131	385	53	5/18/2015	041514400	041514400-0004	4	J. Grillo	5/19/2015	F. Craig	5/22/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: 5/29/15	3:1	5	0.25	0.004	7	25	139	0.0040	11	0.044	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00145	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	59	5/18/2015	041514400	041514400-0006	4	J. Grillo	5/19/2015	P. Harrison	5/26/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: 5/27/2015	3:1	5	0.25	0.004	7	25	125	0.0040	12	0.048	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00147	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	50	5/18/2015	041514400	041514400-0008	4	J. Grillo	5/19/2015	P. Harrison	5/27/2015	Direct	No	TEM-ISO	5	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	147	0.0040	10	0.040	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00149	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.0131	385	47	5/18/2015	041514400	041514400-0010	4	J Grillo	5/19/2015	F. Craig	5/21/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	116	0.0054	26	0.14	Structure Count	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00205	Air	1	EMSL03	JEOL 100 CX11 (03-02)	5,000	0.0127	385	565	5/20/2015	041514595	041514595-0002	4	W. Bis	6/8/2015	A. FOLGAR	6/9/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A C1 on 9/23/2015 to revise data entry date.	3:1	5	0.25	0.004	7	25	14	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	10/1/2015
	SB-00207	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0127	385	565	5/20/2015	041514595	041514595-0004	3	W. Bis	6/8/2015	A. FOLGAR	6/9/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	14	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00209	Air	0	EMSL03	JEOL 100 CX11 (03-04)	5,000	0.0127	385	565	5/20/2015	041514595	041514595-0006	4	W. Bis	6/8/2015	D. YOUNG	6/9/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	14	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00211	Air	1	EMSL03	JEOL 100 CX11 (03-04)	5,000	0.0127	385	565	5/20/2015	041514595	041514595-0008	4	W. Bis	6/8/2015	D. YOUNG	6/9/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A C1 on 9/23/2015 to revise instrument ID.	3:1	5	0.25	0.004	7	25	14	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	10/1/2015
	SB-00214	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0127	385	565	5/20/2015	041514595	041514595-0011	4	W. Bis	6/8/2015	A. FOLGAR	6/9/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	14	0.0038	1	0.0038	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00216	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0127	385	565	5/20/2015	041514595	041514595-0013	4	W. BIS	6/8/2015	A. FOLGAR	6/9/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	14	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00218	Air	0	EMSL03	JEOL 100 CXII (03-04)	5,000	0.0127	385	565	5/20/2015	041514588	041514588-0002	4	W. BIS	6/8/2015	D. YOUNG	6/10/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	14	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA	Air Volume (L)	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material	Analysis Method	Est Filter Loading	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	PCME LA			Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date
																								Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs		Sensitivity	Structure Count	Conc.				
	SB-00220	Air	0	EMSL03	JEOL 100 CXII (03-04)	5,000	0.0127	385	565	5/20/2015	041514588	041514588-0004	4	W. BIS	6/8/2015	D. YOUNG	6/10/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	14	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00222	Air	1	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0127	385	583	5/20/2015	041514588	041514588-0006	4	W. BIS	6/8/2015	A. FOLGAR	6/10/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A C1 on 9/24/2015 to revise the data entry date.	3:1	5	0.25	0.004	7	25	13	0.0040	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	10/1/2015
	SB-00224	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.0127	385	565	5/20/2015	041514588	041514588-0008	4	W. BIS	6/8/2015	A. FOLGAR	6/10/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	14	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00226	Air	0	EMSL03	JEOL 100 CXII (03-04)	5,000	0.0127	385	565	5/20/2015	041514588	041514588-0010	4	W. BIS	6/8/2015	D. YOUNG	6/11/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.004	7	25	14	0.0038	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00228	Air	0	EMSL03	JEOL 100 CXII (03-04)	5,000	0.0127	385	583	5/20/2015	041514588	041514588-0012	4	W. BIS	6/8/2015	D. YOUNG	6/11/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YESAdditional analysis dates: N/A	3:1	5	0.25	0.004	7	25	13	0.0040	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	9/22/2015
	SB-00231	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	565	5/20/2015	A150121	A150121-02	3	N. DelHierro	5/28/2015	N. DelHierro	5/28/2015	Direct	No	TEM-ISO	3	1		3:1	5	0.25	0.004	7	25	20	0.0035	0	0	Sensitivity	CDM Smith	N. Ross	9/22/2015
	SB-00233	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	565	5/20/2015	A150121	A150121-04	3	N. DelHierro	5/28/2015	N. DelHierro	5/28/2015	Direct	No	TEM-ISO	2	1		3:1	5	0.25	0.004	7	25	20	0.0035	0	0	Sensitivity	CDM Smith	N. Ross	9/22/2015
	SB-00235	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	565	5/20/2015	A150121	A150121-06	3	N. DelHierro	5/28/2015	N. DelHierro	5/28/2015	Direct	No	TEM-ISO	2	1		3:1	5	0.25	0.004	7	25	20	0.0035	0	0	Sensitivity	CDM Smith	N. Ross	9/22/2015
	SB-00237	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	565	5/20/2015	A150121	A150121-08	3	N. DelHierro	5/28/2015	N. DelHierro	5/28/2015	Direct	No	TEM-ISO	2	1		3:1	5	0.25	0.004	7	25	20	0.0035	0	0	Sensitivity	CDM Smith	N. Ross	9/22/2015

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

																			Indirect Preparation Only																			
																											Recording Rules			Stopping Rules				PCME LA						
DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size	EFA	Air Volume	Receipt Date	Lab Job Number	Lab SampleID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material	Analysis Method	Est Filter Loading (%)	Indirect - Fraction Primary Filter	Volume Applied to Secondary Filter (mL)	Final Suspension Volume (mL)	F Factor	Analysis Comments	Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs	Grid Openings Counted	Sensitivity	Structure Count	Conc.	Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
	UB-00107	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.013	385	960	7/1/2015	041519144	041519144-0002	3	W. BIS	7/17/2015	A. FOLGAR	7/20/2015	Direct	No	TEM-ISO	7				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.002	7	25	16	0.0019	0	0	Sensitivity	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00109	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.013	385	967	7/1/2015	041519144	041519144-0004	3	W. BIS	7/17/2015	A. FOLGAR	7/20/2015	Direct	No	TEM-ISO	7				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.002	7	25	16	0.0019	0	0	Sensitivity	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00111	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.013	385	967	7/1/2015	041519144	041519144-0006	3	W. BIS	7/17/2015	A. FOLGAR	7/20/2015	Direct	No	TEM-ISO	5				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.002	7	25	16	0.0019	0	0	Sensitivity	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00113	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.013	385	967	7/1/2015	041519144	041519144-0008	3	W. BIS	7/17/2015	A. FOLGAR	7/20/2015	Direct	No	TEM-ISO	3				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.002	7	25	16	0.0019	0	0	Sensitivity	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00115	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.013	385	977	7/1/2015	041519144	041519144-0010	3	W. BIS	7/17/2015	A. FOLGAR	7/20/2015	Direct	No	TEM-ISO	3				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.002	7	25	16	0.0019	0	0	Sensitivity	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00117	Air	0	EMSL03	JEOL 100 CXII (03-02)	5,000	0.013	385	970	7/1/2015	041519144	041519144-0012	3	W. BIS	7/17/2015	A. FOLGAR	7/20/2015	Direct	No	TEM-ISO	10				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.002	7	25	16	0.0019	0	0	Sensitivity	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00051	Air	1	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	677	7/1/2015	041519128	041519128-0002	4	J. Grillo	7/8/2015	P. Harrison	7/8/2015	Direct	No	TEM-ISO	5				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: / A C1 on 11/12/2015 to correct GOA.	3:1	5	0.25	0.002	7	25	23	0.0019	1	0.0019	Sensitivity	CDM Smith	N. Ross/DDE	11/13/2015		
	UB-00052	Air	1	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	43	7/1/2015	041519128	041519128-0003	8	J. Grillo	7/8/2015	P. Harrison	7/8/2015	Direct	No	TEM-ISO	8				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: 7/9/2015 & 7/10/2015 C1 on 11/12/2015 to correct the number of grids prepared.	3:1	5	0.25	0.002	7	25	342	0.0020	12	0.024	Sensitivity	CDM Smith	N. Ross/DDE	11/13/2015		
	UB-00054	Air	1	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	40	7/1/2015	041519128	041519128-0005	9	J. Grillo	7/8/2015	P. Harrison	7/9/2015	Direct	No	TEM-ISO	8				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: 7/10/201 5 C1 on 11/12/2015 to correct the number of grids prepared and to correct the structure type for structure #13.	3:1	5	0.25	0.002	7	25	368	0.0020	18	0.036	Sensitivity	CDM Smith	N. Ross/DDE	11/13/2015	Structure type for total structure #13 should be MFO, not MDFO.	11/12/2015
EF	UB-00057	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.0131	385	60	7/1/2015	041519133	041519133-0002	9	J Grillo	7/8/2015	F. Craig	7/12/2015	Direct	No	TEM-ISO	10				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Additional analysis dates: 7/13/15 | 7/14/15	3:1	5	0.25	0.002	7	25	155	0.0032	26	0.082	Structure Count	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00059	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.0131	385	72	7/1/2015	041519133	041519133-0004	9	J. Grillo	7/8/2015	F. Craig	7/14/2015	Direct	No	TEM-ISO	10				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: 7/15/15 | 7/16/15 | 7/17/15	3:1	5	0.25	0.002	7	25	193	0.0021	25	0.053	Structure Count	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00061	Air	0	EMSL04	JEOL-1200-EX (04-06)	5,000	0.0131	385	47	7/1/2015	041519133	041519133-0006	5	J. Grillo	7/8/2015	P. Harrison	7/11/2015	Direct	No	TEM-ISO	15				1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: 7/13/2015	3:1	5	0.25	0.002	7	25	168	0.0037	25	0.093	Structure Count	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00069	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	364.9	92	7/1/2015	041519141	041519141-0002	4	N. Smith	7/10/2015	P. Harrison	7/13/2015	Indirect - Ashed	Yes	TEM-ISO	20	1	5	100	0.05	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: 7/13/2015	3:1	5	0.25	0.002	7	25	40	0.15	25	3.8	Structure Count	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00071	Air	1	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	364.9	80	7/1/2015	041519141	041519141-0004	4	N. Smith	7/10/2015	P. Harrison	7/15/2015	Indirect - Ashed	No	TEM-ISO	25	0.5	25	100	0.125	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: / A C1 on 11/6/2015 correction made to show that there was not loose debris in the cowl for this sample. The original entry was a data entry error. The grid opening area was also corrected.	3:1	5	0.25	0.002	7	25	32	0.087	25	2.2	Structure Count	CDM Smith	N. Ross/DDE	11/6/2015	It was noted that only half of the filter was ashed and loose material was indicated to be present. This is not consistent with the Indirect prep SOP and requires explanation from the lab. If indeed this occurred as reported and there isn't an error in the reporting (e.g., there actually was loose material), this result may need to be R-qualified. Due to the difficulties in the verification process based on the direct entry of data into the EDD (i.e., hand-written benchsheets are not available), it is recommended that the data field "Loose Material in the Cowl? Y/N" be added to the preparation documentation.	11/6/2015
	UB-00073	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5,000	0.0131	385	543	7/1/2015	041519141	041519141-0006	4	J. Grillo	7/8/2015	P. Harrison	7/13/2015	Direct	No	TEM-ISO	5				1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.002	7	25	28	0.0019	1	0.0019	Sensitivity	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00119	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.013	385	967	7/1/2015	041519151	041519151-0002	4	J. Grillo	7/23/2015	F. Craig	7/24/2015	Direct	No	TEM-ISO	5				1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.002	7	25	16	0.0019	0	0	Sensitivity	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00121	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.013	385	967	7/1/2015	041519151	041519151-0004	4	J. Grillo	7/23/2015	F. Craig	7/24/2015	Direct	No	TEM-ISO	5				1	Primary Filter Pore Size (um): 0.25econdary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.002	7	25	16	0.0019	1	0.0019	Sensitivity	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00123	Air	0	EMSL04	JEOL 100 CXII (04-01)	10,000	0.013	385	962	7/1/2015	041519151	041519151-0006	4	J. Grillo	7/23/2015	F. Craig	7/24/2015	Direct	No	TEM-ISO	5				1	Primary Filter Pore Size (um): 0.8Secondary Filter Pore Size (um):Are prepped grids acceptable for analysis? YesAdditional analysis dates: N/A	3:1	5	0.25	0.002	7	25	16	0.0019	0	0	Sensitivity	CDM Smith	N. Ross/DDE	8/27/2015		
	UB-00028	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	948	6/1/2015	A150147	A150147-03	3	P. Young	6/1/2015	P. Young	6/2/2015	Direct	No	TEM-ISO	3				1		3:1	5	0.25	0.002	7	25	21	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		
	UB-00030	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	960	6/1/2015	A150147	A150147-05	3	P. Young	6/1/2015	P. Young	6/2/2015	Direct	No	TEM-ISO	3				1		3:1	5	0.25	0.002	7	25	21	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		
	UB-00032	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	960	6/1/2015	A150147	A150147-07	3	P. Young	6/1/2015	P. Young	6/2/2015	Direct	No	TEM-ISO	3				1		3:1	5	0.25	0.002	7	25	21	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		
	UB-00034	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	954	6/1/2015	A150147	A150147-09	3	P. Young	6/1/2015	P. Young	6/2/2015	Direct	No	TEM-ISO	2				1		3:1	5	0.25	0.002	7	25	21	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		
	UB-00037	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	1061	7/1/2015	A150228	A150228-03	3	N. DelHierro	7/14/2015	P. Young	7/16/2015	Direct	No	TEM-ISO	3				1		3:1	5	0.25	0.002	7	25	20	0.0019	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015	Analyst examined 20 grid openings, however, only 19 were needed to achieve the target sensitivity.	n/a
	UB-00038	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	1095	7/1/2015	A150228	A150228-04	3	N. DelHierro	7/14/2015	P. Young	7/16/2015	Direct	No	TEM-ISO	5				1		3:1	5	0.25	0.002	7	25	20	0.0018	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015	Analyst examined 20 grid openings, however, only 19 were needed to achieve the target sensitivity.	n/a
	UB-00041	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	1119	7/1/2015	A150228	A150228-07	3	N. DelHierro	7/14/2015	P. Young	7/16/2015	Direct	No	TEM-ISO	5				1		3:1	5	0.25	0.002	7	25	18	0.0020	1	0.0020	Sensitivity	CDM Smith	N. Ross	8/25/2015		
	UB-00042	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	1097	7/1/2015	A150228	A150228-08	3	N. DelHierro	7/14/2015	P. Young	7/16/2015	Direct	No	TEM-ISO	5				1		3:1	5	0.25	0.002	7	25	20	0.0018	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015	Analyst examined 20 grid openings, however, only 19 were needed to achieve the target sensitivity.	n/a
EF	UB-00075	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	506	7/1/2015	A150229	A150229-02	3	N. DelHierro	7/14/2015	P. Young	7/15/2015	Direct	No	TEM-ISO	3				1		3:1	5	0.25	0.002	7	25	41	0.0019	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015	Analyst examined 41 grid openings, however, only 40 were needed to achieve the target sensitivity.	n/a
EF	UB-00077	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	357	40	7/1/2015	A150229	A150229-04	5	N. DelHierro	7/10/2015	P. Young	7/13/2015	Indirect - Ashed	Yes	TEM-ISO	20	1	35	100	0.35	Also Analyzed on 7/14/2015	3:1	5	0.25	0.002	7	25	59	0.045	26	1.2	Structure Count	CDM Smith	N. Ross	8/25/2015		
	UB-00078	Air	1	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	23	7/1/2015	A150229	A150229-05	10	P. Young	7/1/2015	N. DelHierro	7/2/2015	Direct	No	TEM-ISO	15				1	Also Analyzed on 7/8/2015 and 7/21/2015. For correction 1 EDD added structure comment "XGBLD" to total structure number 5.	3:1	5	0.25	0.002	7	25	284	0.0061	25	0.15	Structure Count	CDM Smith	N. Ross	12/3/2015	For total structure #5, the structure comment in the EDD is missing the comment "XGBLD", based on the benchsheet (page 6).	12/3/2015
	UB-00081	Air	0	ESATR8	JEOL JEM-1011 (C24)	5,000	0.0097	385	69	7/1/2015	A150229	A150229-08	5	P. Young	7/1/2015	N. DelHierro	7/9/2015	Direct	No	TEM-ISO	9				1	Also Analyzed on 7/10/2015	3:1	5	0.25	0.002	7	25	290	0.0020	18	0.036	Sensitivity	CDM Smith	N. Ross	8/25/2015	Analyst examined 290 grid openings, however, only 288 were needed to achieve the target sensitivity.	n/a
	UB-00043	Air	0	Hygeia	Hitachi H600	8,000	0.0101	385	1106	7/1/2015	38995150088	38995150088-1461655	3	Q. Trieu	7/9/2015	K. Corbin	7/10/2015	Direct	No	TEM-ISO	5				1		3:1	5	0.25	0.002	7	25	18	0.0019	0	0	Sensitivity	CDM Smith	N. Ross	8/24/2015		
	UB-00045	Air	0	Hygeia	Hitachi H600	8,000	0.0101	346	626	7/1/2015	38995150088	38995150088-1461657	3	Q. Trieu	7/14/2015	K. Corbin	7/31/2015	Indirect - Ashed	Yes	TEM-ISO	15	1	75	100	0.75		3:1	5	0.25	0.002	7	25	37	0.0020	2	0.0039	Sensitivity	CDM Smith	N. Ross	8/27/2015		
	UB-00046	Air	0	Hygeia	Hitachi H600	8,000	0.0101	346	1129	7/1/2015	38995150088	38995150088-1461658	3	Q. Trieu	7/14/2015	Q. Trieu	8/1/2015	Indirect - Ashed	Yes	TEM-ISO	20	1	75	100	0.75		3:1	5	0.25	0.002	7	25	21	0.0019	3	0.0058	Sensitivity	CDM Smith	N. Ross	8/27/2015		
	UB-00047	Air	0	Hygeia	Hitachi H600	8,000	0.0101	346	1122	7/1/2015	38995150088	38995150088-1461659	3	Q. Trieu	7/14/2015	Q. Trieu	8/1/2015	Indirect - Ashed	Yes	TEM-ISO	10	1	75	100	0.75		3:1	5	0.25	0.002	7	25	21	0.0019	2	0.0039	Sensitivity	CDM Smith	N. Ross	8/27/2015		
	UB-00048	Air	0	Hygeia	Hitachi H600	8,000	0.0101	346	1165	7/1/2015	38995150088	38995150088-1461660	3	Q. Trieu	7/14/2015	Q. Trieu	8/1/2015	Indirect - Ashed	Yes	TEM-ISO	20	1	75	100	0.75		3:1	5	0.25	0.002	7	25	20	0.0020	0	0	Sensitivity	CDM Smith	N. Ross	8/25/2015		
	UB-00049	Air	0	Hygeia	Hitachi H600	8,000	0.0101	385	1168	7/1/2015	38995150088	38995150088-1461661	3	Q. Trieu	7/9/2015	K. Corbin	7/10/2015	Direct	No	TEM-ISO	5				1		3:1	5	0.25	0.002	7	25	17	0.0019	0	0	Sensitivity	CDM Smith	N. Ross	8/25/2015		
	UB-00062	Air	1	Hygeia	Hitachi H600	8,000	0.0101	385	33	7/1/2015	38995150089	38995150089-1461662	10	Q. Trieu	7/13/2015	K. Corbin	7/14/2015	Direct	No	TEM-ISO	20				1	C1: Structure #4 type corrected to F from R. kc 11/6/15	3:1	5	0.25	0.002	7	25	312	0.0037	25	0.093	Structure Count	CDM Smith	N. Ross	12/8/2015	Structure type for total structure #4 is "F", not "R", according to benchsheet (page 2).	12/8/2015
	UB-00065	Air	0	Hygeia	Hitachi H600	8,000	0.0101	346	67	7/1/2015	38995150089	38995150089-1461665	11	Q. Trieu	7/14/2015	Q. Trieu	7/23/2015	Indirect - Ashed	Yes	TEM-ISO	25	1	25	100	0.25		3:1	5	0.25	0.002	7	25	136	0.015	25	0.38	Structure Count	CDM Smith	N. Ross	8/27/2015		
	UB-00067	Air	1	Hygeia	Hitachi H600	8,000	0.0101	346	64	7/1/2015	38995150089	38995150089-1461667	11	Q. Trieu	7/14/2015	Q. Trieu	7/28/2015	Indirect - Ashed	Yes	TEM-ISO	25	1	75	100	0.75	C1: Structure #12 and #20 NaK corrected to NaX and the last grid opening corrected to C5-1 from C5-2 as written on the benchsheets. Kc 11/6/15	3:1	5	0.25	0.002	7	25	75	0.0095	25	0.24	Structure Count	CDM Smith	N. Ross	12/8/2015	For total structure #12, EDXA is NaX, not NaK according to benchsheet. For total structure #20, EDXA is NaX, not NaK according to benchsheet. The last grid opening on page 6 is C5-1, not C5-2.	12/8/2015
	UB-00083	Air	1	Hygeia	Hitachi H600	8,000	0.0101	346	80	7/1/2015	38995150090	38995150090-1461669	11	Q. Trieu	7/14/2015	Q. Trieu	7/29/2015	Indirect - Ashed	Yes	TEM-ISO	23	1	25	100	0.25	C1: A8_B5-3 corrected to A8_B5-2 as written on the benchsheet. Kc 11/6/15	3:1	5	0.25	0.002	7	25	107	0.016	24	0.38	none	CDM Smith	N. Ross	12/8/2015	Grid_grid opening is A8_B5-2, not A8_B5-3 according to benchsheet (page 2).	12/8/2015
	UB-00085	Air	0	Hygeia	Hitachi H600	8,000	0.0101	346	77	7/1/2015	38995150090	38995150090-1461671	11	Q. Trieu	7/14/2015	K. Corbin	8/3/2015	Indirect - Ashed	Yes	TEM-ISO	25	1	25	100	0.25		3:1	5	0.25	0.002	7	25	43	0.041	25	1.0	Structure Count	CDM Smith	N. Ross	8/27/2015		
	UB-00087	Air	0	Hygeia	Hitachi H600	8,000	0.0101	385	72	7/1/2015	38995150090	38995150090-1461673	11	Q. Trieu	7/14/2015	K. Corbin	8/4/2015	Indirect - Ashed	Yes	TEM-ISO	10	1	25	100	0.25		3:1	5	0.25	0.002	7	25	150	0.013	25	0.32	Structure Count	CDM Smith	N. Ross	8/27/2015		
	UB-00089	Air	0	Hygeia	Hitachi H600	8,000	0.0101	385	962	7/1/2015	38995150090	38995150090-1461675	3	Q. Trieu	7/9/2015	K. Corbin	7/10/2015	Direct	No	TEM-ISO	7				1		3:1	5	0.25	0.002	7	25	20	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		
	UB-00092	Air	0	Hygeia	Hitachi H600	8,000	0.0101	385	960	7/1/2015	38995150091	38995150091-1461678	3	Q. Trieu	7/9/2015	K. Corbin	7/10/2015	Direct	No	TEM-ISO	10				1		3:1	5	0.25	0.002	7	25	20	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		
	UB-00094	Air	0	Hygeia	Hitachi H600	8,000	0.0101	385	967	7/1/2015	38995150091	38995150091-1461680	3	Q. Trieu	7/9/2015	K. Corbin	7/10/2015	Direct	No	TEM-ISO	5				1		3:1	5	0.25	0.002	7	25	20	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		
	UB-00095	Air	0	Hygeia	Hitachi H600	8,000	0.0101	385	480	7/1/2015	38995150091	38995150091-1461681	3	Q. Trieu	7/9/2015	K. Corbin	7/10/2015	Direct	No	TEM-ISO	3				1		3:1	5	0.25	0.002	7	25	40	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		
	UB-00101	Air	0	Hygeia	Hitachi H600	8,000	0.0101	385	960	7/1/2015	38995150091	38995150091-1461684	3	Q. Trieu	7/9/2015	K. Corbin	7/10/2015	Direct	No	TEM-ISO	5				1		3:1	5	0.25	0.002	7	25	20	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		
	UB-00102	Air	0	Hygeia	Hitachi H600	8,000	0.0101	385	480	7/1/2015	38995150091	38995150091-1461685	3	Q. Trieu	7/13/2015	K. Corbin	7/14/2015	Direct	No	TEM-ISO	8				1		3:1	5	0.25	0.002	7	25	40	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		
	UB-00104	Air	0	Hygeia	Hitachi H600	8,000	0.0101	385	480	7/1/2015	38995150091	38995150091-1461687	3	Q. Trieu	7/9/2015	K. Corbin	7/10/2015	Direct	No	TEM-ISO	3				1		3:1	5	0.25	0.002	7	25	40	0.0020	0	0	Sensitivity	CDM Smith	T. Miller	8/25/2015		

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Air Volume (L)	Receipt Date	Lab Job Number	Lab Sample ID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material in Cowl?	Analysis Method	Est Filter Loading	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	PCME LA			Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
																								Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs		Sensitivity	Structure Count	Conc.						
EF	TS-00002	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150500	A150500-02	3	N. DelHierro	10/5/2015	N. DelHierro	10/6/2015	Direct	No	TEM-ISO	3	1		3:1	5	0.25	0.006	7	25	112	0.0059	0	0	Sensitivity	CDM Smith	N. Ross	10/29/2015		
	TS-00004	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150500	A150500-04	3	N. DelHierro	10/5/2015	P. Young	10/6/2015	Direct	No	TEM-ISO	5	1		3:1	5	0.25	0.006	7	25	111	0.0060	2	0.012	Sensitivity	CDM Smith	N. Ross	10/29/2015		
	TS-00006	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150500	A150500-06	3	N. DelHierro	10/5/2015	P. Young	10/6/2015	Direct	No	TEM-ISO	3	1	Also analyzed on 10/7/2015.	3:1	5	0.25	0.006	7	25	111	0.0060	0	0	Sensitivity	CDM Smith	N. Ross	10/29/2015		
	TS-00008	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150500	A150500-08	3	N. DelHierro	10/5/2015	N. DelHierro	10/6/2015	Direct	No	TEM-ISO	3	1	Also analyzed: 10/7/2015	3:1	5	0.25	0.006	7	25	113	0.0059	0	0	Sensitivity	CDM Smith	N. Ross	10/29/2015		
	TS-00010	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150500	A150500-10	3	N. DelHierro	10/5/2015	N. DelHierro	10/7/2015	Direct	No	TEM-ISO	4	1		3:1	5	0.25	0.006	7	25	111	0.0060	0	0	Sensitivity	CDM Smith	N. Ross	10/29/2015		
	TS-00012	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150500	A150500-12	3	N. DelHierro	10/5/2015	N. DelHierro	10/7/2015	Direct	No	TEM-ISO	3	1	Also analyzed on 10/8/2015.	3:1	5	0.25	0.006	7	25	111	0.0060	1	0.0060	Sensitivity	CDM Smith	N. Ross	10/29/2015		
	TS-00027	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5000	0.0134	385	60	9/30/2015	041529347	041529347-0003	4	J. Grillo	10/2/2015	P. Harrison	10/7/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	80	0.0060	1	0.0060	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00029	Air	1	EMSL04	JEOL-1200-EX II (04-06)	5000	0.0134	385	60	9/30/2015	041529347	041529347-0005	4	J. Grillo	10/7/2015	P. Harrison	10/8/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 12/28/2015 to add comment to non-countable structure.	3:1	5	0.25	0.006	7	25	80	0.0060	1	0.0060	Sensitivity	CDM Smith	N. Ross (DDE)	12/29/2015	Reason for noncountable structure in grid_grid opening Q1_B4 was not provided in the comments.	12/29/2015
	TS-00031	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5000	0.0134	385	60	9/30/2015	041529347	041529347-0007	8	J. Grillo	10/8/2015	P. Harrison	10/9/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	80	0.0060	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00033	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5000	0.0134	385	60.75	9/30/2015	041529347	041529347-0009	4	J. Grillo	10/2/2015	P. Harrison	10/7/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	79	0.0060	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00035	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5000	0.0134	385	64	9/30/2015	041529347	041529347-0011	4	J. Grillo	10/2/2015	P. Harrison	10/6/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	75	0.0060	3	0.018	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00037	Air	0	EMSL04	JEOL-1200-EX (04-06)	5000	0.0134	385	64	9/30/2015	041529357	041529357-0001	4	J. Grillo	10/2/2015	P. Harrison	10/5/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	75	0.0060	2	0.012	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00054	Air	0	EMSL03	JEOL 100 CXII (03-02)	5000	0.0127	385	60.75	9/30/2015	031531899	031531899-0006	3	F. LIANG	10/1/2015	A. FOLGAR	10/7/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis?YES Additional analysis dates:N/A	3:1	5	0.25	0.006	7	25	84	0.0059	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00056	Air	0	EMSL03	JEOL 100 CXII (03-02)	5000	0.0127	385	60	9/30/2015	031531899	031531899-0008	3	F. LIANG	10/1/2015	A. FOLGAR	10/7/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis?YES Additional analysis dates:N/A	3:1	5	0.25	0.006	7	25	85	0.0059	2	0.012	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00058	Air	0	EMSL03	JEOL 100CXII (03-04)	5000	0.0127	385	61.13	9/30/2015	031531899	031531899-0010	3	F. LIANG	10/1/2015	D. YOUNG	10/12/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	83	0.0060	2	0.012	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00060	Air	0	EMSL03	JEOL 100CXII (03-04)	5000	0.0127	385	60.75	9/30/2015	031531899	031531899-0012	3	F. LIANG	10/1/2015	D. YOUNG	10/12/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	84	0.0059	2	0.012	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00062	Air	1	EMSL03	JEOL 100 CXII (03-02)	5000	0.0128	385	60	9/30/2015	031531900	031531900-0002	3	A.FOLGAR	10/15/2015	A. FOLGAR	10/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis?YES Additional analysis dates:N/A C1 on 12/29/2015 to correct data entry date. Grid Opening Area confirmed per J. Arriaga.	3:1	5	0.25	0.006	7	25	84	0.0060	4	0.024	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015	The grid opening area was entered in the EDD as 0.0128 for this sample, however, the grid opening area for all other samples in this lab job is 0.0127. Please confirm the correct grid opening area.	12/29/2015
	TS-00064	Air	0	EMSL03	JEOL 100 CXII (03-02)	5000	0.0127	385	60	9/30/2015	031531900	031531900-0004	3	H. POLANCO	10/1/2015	A. FOLGAR	10/15/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis?YES Additional analysis dates:N/A	3:1	5	0.25	0.006	7	25	85	0.0059	4	0.024	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00066	Air	0	EMSL03	JEOL 100 CXII (03-02)	5000	0.0127	385	60	9/30/2015	031531900	031531900-0006	3	H. POLANCO	10/1/2015	A. FOLGAR	10/15/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis?YES Additional analysis dates:N/A	3:1	5	0.25	0.006	7	25	85	0.0059	1	0.0059	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00068	Air	0	EMSL03	JEOL 100 CXII (03-04)	5000	0.0127	385	60.75	9/30/2015	031531900	031531900-0008	3	H. POLANCO	10/1/2015	D. YOUNG	10/15/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	84	0.0059	4	0.024	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00070	Air	0	EMSL03	JEOL 100CXII (03-04)	5000	0.0127	385	60	9/30/2015	031531900	031531900-0010	3	H. POLANCO	10/1/2015	D. YOUNG	10/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	85	0.0059	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00072	Air	0	EMSL03	JEOL 100CXII (03-04)	5000	0.0127	385	60	9/30/2015	031531900	031531900-0012	3	H. POLANCO	10/1/2015	D. YOUNG	10/20/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	85	0.0059	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00074	Air	0	EMSL45	Hitachi H600	8000	0.0101	385	60	10/2/2015	451500387	451500387-0002	10	Q, Trieu	10/7/2015	K. Corbin	10/9/2015	Direct	No	TEM-ISO	2	1		3:1	5	0.25	0.006	7	25	106	0.0060	2	0.012	Sensitivity	CDM Smith	N. Ross	11/17/2015		
	TS-00076	Air	0	EMSL45	Hitachi H600	8000	0.0101	385	60	10/2/2015	451500387	451500387-0004	4	Q, Trieu	10/13/2015	Q,Trieu	10/13/2015	Direct	No	TEM-ISO	5	1	Small amount of dust present in cowl. Filter appeared homogeneously loaded.	3:1	5	0.25	0.006	7	25	106	0.0060	7	0.042	Sensitivity	CDM Smith	N. Ross	1/5/2016	Loose material or debris in the cowl is Yes on the benchsheet, but was entered as "No" in the EDD. This should likely be changed to "No" on the benchsheet since an direct preparation was performed.	1/5/2016
	TS-00077	Air	0	EMSL45	Hitachi H600	8000	0.0101	385	30.75	10/2/2015	451500387	451500387-0005	4	Q, Trieu	10/13/2015	Q,Trieu	10/13/2015	Direct	No	TEM-ISO	5	1	Small amount of dust present in the cowl. Filter appeared homogeneously loaded. Additional analysis on 10/15/15 and 10/16/15.	3:1	5	0.25	0.006	7	25	212	0.0058	7	0.041	Sensitivity	CDM Smith	N. Ross	1/5/2016	Loose material or debris in the cowl is Yes on the benchsheet, but was entered as "No" in the EDD. This should likely be changed to "No" on the benchsheet since an direct preparation was performed.	1/5/2016
	TS-00079	Air	0	EMSL45	Hitachi H600	8000	0.0101	385	30.75	10/2/2015	451500387	451500387-0007	4	Q, Trieu	10/13/2015	K. Corbin	10/15/2015	Direct	No	TEM-ISO	3	1	Small amount of dust present on cowl. Filter appeared homogeneously loaded. C1 on 12/28/2015 to correct the structure type for total structure #2 and to remove unnecessary checks for EDXA that were not provided.	3:1	5	0.25	0.006	7	25	207	0.0060	8	0.048	Sensitivity	CDM Smith	N. Ross	1/5/2016	1) Loose material or debris in the cowl is Yes on the benchsheet, but was entered as "No" in the EDD. This should likely be changed to "No" on the benchsheet since an direct preparation was performed. 2) Structure type for total structure #2 is MFO, not MF, according to benchsheet (page 8).	1/5/2016
	TS-00081	Air	1	EMSL45	Hitachi H600	8000	0.0101	385	30	10/2/2015	451500387	451500387-0009	10	Q, Trieu	10/7/2015	K. Corbin	10/9/2015	Direct	No	TEM-ISO	2	1	C1 on 12/28/2015 to revise the EDXA observation for total structure #8 and to correct the grid opening names for D7:E5-1 and E5-2.	3:1	5	0.25	0.006	7	25	212	0.0060	11	0.066	Sensitivity	CDM Smith	N. Ross	12/29/2015	1) The EDXA observation for total structure #8 is NaK, not NaX, according to benchsheet (page 10). 2) Grid_grid opening is D7_E5-1, not D7_D5-1, according to benchsheet (page 4). 3) Grid_grid opening is D7_E5-2, not D7_D5-2, according to benchsheet (page 4).	12/29/2015
	TS-00084	Air	0	EMSL45	Hitachi H600	8000	0.0101	385	59.63	10/2/2015	451500387	451500387-0012	4	Q, Trieu	10/13/2015	Q, Trieu	10/16/2015	Direct	No	TEM-ISO	5	1	Small amount of dust present in cowl. Filter appeared homogeneously loaded.	3:1	5	0.25	0.006	7	25	107	0.0060	6	0.036	Sensitivity	CDM Smith	N. Ross	1/5/2016	Loose material or debris in the cowl is Yes on the benchsheet, but was entered as "No" in the EDD. This should likely be changed to "No" on the benchsheet since an direct preparation was performed.	1/5/2016
	TS-00087	Air	2	EMSL45	Hitachi H600	8000	0.0101	385	61.13	10/2/2015	451500389	451500389-0003	4	Q, Trieu	10/13/2015	K. Corbin	10/16/2015	Direct	No	TEM-ISO	3	1	Small amount of dust present in cowl. Filter appeared homogenously loaded C1 on 12/29/2015 to revise the minimum length recording rule. C2 on 1/20/2016 to correct the grid storage location.	3:1	5	0.25	0.006	7	25	105	0.0059	8	0.048	Sensitivity	CDM Smith	N. Ross	1/21/2016	Minimum length recording rule is 5, not 0.5, according to benchsheet and analytical requirements summary sheet.	12/29/2015
	TS-00088	Air	1	EMSL45	Hitachi H600	8000	0.0101	385	30	10/2/2015	451500389	451500389-0004	10	Q, Trieu	10/7/2015	Q,Trieu	10/9/2015	Direct	No	TEM-ISO	2	1	C1 on 12/29/2015 to revise the minimum length recording rule and the structure type for total structure #2.	3:1	5	0.25	0.006	7	25	212	0.0060	4	0.024	Sensitivity	CDM Smith	N. Ross	12/29/2015	1) Minimum length recording rule is 5, not 0.5, according to benchsheet and analytical requirements summary sheet. 2) Structure type for total structure #2 should be MFO, not MF0 (the letter O not the number zero).	12/29/2015

ATTACHMENT 1. DATA SUMMARY OF ANALYTICAL AND RESULT INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

DVC - 5% Check	Samp No	Media	File Revision No	Lab ID	Instrument	Magnification	GO Size (mm^2)	EFA (mm^2)	Air Volume (L)	Receipt Date	Lab Job Number	Lab Sample ID	Number Grid Prep	Preparer Name	Prep Date	Analyst Name	Analysis Date	Prep Method	Loose Material in Cowl?	Analysis Method	Est Filter Loading	F Factor	Analysis Comments	Recording Rules			Stopping Rules			Grid Openings Counted	PCME LA			Stopping Rule Achieved	Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
																								Min AR	Min Length	Min Width	Target Sens	Max Area Examined	Target N Strucs		Sensitivity	Structure Count	Conc.						
	TS-00091	Air	1	EMSL45	Hitachi H600	8000	0.0101	385	60	10/2/2015	451500389	451500389-0007	4	Q, Trieu	10/13/2015	K. Corbin	10/19/2015	Direct	No	TEM-ISO	5	1	Small amount of dust present in cowl. Filter appeared homogenously loaded. C1 on 12/29/2015 to revise the minimum length recording rule, the width for total structure #3, and the structure type for total structure #11.	3:1	5	0.25	0.006	7	25	106	0.0060	11	0.066	Sensitivity	CDM Smith	N. Ross	12/29/2015	1) Minimum length recording rule is 5, not 0.5, according to benchsheet and analytical requirements summary sheet. 2) Width for total structure #3 is 5, not 3, according to benchsheet (page 4). 3) Structure type for total structure #11 should be MFO, not MF0 (the letter O not the number zero).	12/29/2015
	TS-00093	Air	1	EMSL45	Hitachi H600	8000	0.0101	385	60	10/2/2015	451500389	451500389-0009	4	Q, Trieu	10/13/2015	Q. Trieu	10/19/2015	Direct	No	TEM-ISO	3	1	C1 on 12/29/2015 to revise the minimum length recording rule.	3:1	5	0.25	0.006	7	25	106	0.0060	5	0.030	Sensitivity	CDM Smith	N. Ross	11/17/2015	Minimum length recording rule is 5, not 0.5, according to benchsheet and analytical requirements summary sheet.	12/29/2015
	TS-00095	Air	2	EMSL45	Hitachi H600	8000	0.0101	385	60	10/2/2015	451500389	451500389-0011	4	Q, Trieu	10/13/2015	K. Corbin	10/20/2015	Direct	No	TEM-ISO	5	1	Small amount of dust present in cowl. Filter appeared homogenously loaded. C1 on 12/29/2015 to revise the minimum length stopping rule, to correct the analysis date, and to add a comment for the non-countable structure. C2 on 1/20/2016 to correct the	3:1	5	0.25	0.006	7	25	106	0.0060	0	0	Sensitivity	CDM Smith	N. Ross	1/21/2016	1) Analysis Date is 10/20/2015, not 10/9/2015, according to benchsheet. 2) Minimum length recording rule is 5, not 0.5, according to benchsheet and analytical requirements summary sheet. 3) Reason for noncountable structure in grid_grid opening E8_H3-3 was not provided in the comments.	12/29/2015
	TS-00097	Air	0	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	60.38	10/1/2015	221506264	221506264-0001	2	W. Nguyen	10/8/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	82	0.0059	1	0.0059	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00099	Air	0	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	60	10/1/2015	221506264	221506264-0003	2	W. Nguyen	10/8/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	82	0.0060	1	0.0060	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00101	Air	0	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	60	10/1/2015	221506264	221506264-0005	2	W. Nguyen	10/8/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	82	0.0060	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00103	Air	1	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	61.13	10/1/2015	221506264	221506264-0007	2	W. Nguyen	10/8/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A C1 on 12/28/2015 to correct magnification.	3:1	5	0.25	0.006	7	25	81	0.0059	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	12/29/2015	Magnification should be 5,000, not 20,000.	12/29/2015
	TS-00105	Air	0	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	60.75	10/1/2015	221506264	221506264-0009	2	W. Nguyen	10/8/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	81	0.0060	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00107	Air	0	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	60	10/1/2015	221506264	221506264-0011	2	W. Nguyen	10/8/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	82	0.0060	1	0.0060	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00109	Air	0	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	60	10/1/2015	221506265	221506265-0001	2	W. Nguyen	10/8/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	82	0.0060	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00111	Air	0	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	59.63	10/1/2015	221506265	221506265-0003	2	W. Nguyen	10/8/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	83	0.0059	1	0.0059	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00113	Air	0	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	60	10/1/2015	221506265	221506265-0005	2	W. Nguyen	10/8/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.006	7	25	82	0.0060	0	0	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00014	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150501	A150501-02	3	N. DelHierro	10/5/2015	N. DelHierro	10/9/2015	Direct	No	TEM-ISO	4	1	Also Analyzed on: 10/12/2015	3:1	5	0.25	0.004	7	25	167	0.0040	16	0.063	Sensitivity	CDM Smith	N. Ross	11/17/2015		
	TS-00016	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150501	A150501-04	3	N. DelHierro	10/5/2015	N. DelHierro	10/12/2015	Direct	No	TEM-ISO	4	1		3:1	5	0.25	0.004	7	25	51	0.0130	25	0.32	Structure Count	CDM Smith	N. Ross	1/6/2016	Mineral ID and EDXA observation for total structure #7 were not recorded on the benchsheet (page 2).	1/6/2016
	TS-00018	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60.75	10/1/2015	A150501	A150501-06	3	N. DelHierro	10/5/2015	N. DelHierro	10/12/2015	Direct	No	TEM-ISO	3	1	Also Analyzed: 10/13/2015	3:1	5	0.25	0.004	7	25	76	0.0086	25	0.21	Structure Count	CDM Smith	N. Ross	11/17/2015		
	TS-00020	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150501	A150501-08	3	N. DelHierro	10/5/2015	N. DelHierro	10/13/2015	Direct	No	TEM-ISO	3	1	Also Analyzed: 10/14/2015 and 10/15/2015	3:1	5	0.25	0.004	7	25	58	0.0114	25	0.29	Structure Count	CDM Smith	N. Ross	11/17/2015		
	TS-00022	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150501	A150501-10	3	N. DelHierro	10/5/2015	P. Young	10/13/2015	Direct	No	TEM-ISO	5	1	Also Analyzed: 10/14/2015	3:1	5	0.25	0.004	7	25	124	0.0053	25	0.13	Structure Count	CDM Smith	N. Ross	11/17/2015		
	TS-00024	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60.75	10/1/2015	A150501	A150501-12	3	N. DelHierro	10/5/2015	P. Young	10/14/2015	Direct	No	TEM-ISO	5	1	Also Analyzed on: 10/15/2015	3:1	5	0.25	0.004	7	25	102	0.0064	25	0.16	Structure Count	CDM Smith	N. Ross	11/17/2015		
	TS-00041	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5000	0.0134	385	30.38	9/30/2015	041529357	041529357-0005	4	J. Grillo	10/27/2015	P. Harrison	10/28/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.004	7	25	124	0.0076	28	0.21	Structure Count	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00044	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5000	0.0134	385	60.75	9/30/2015	041529357	041529357-0008	4	J. Grillo	10/2/2015	P. Harrison	10/5/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.004	7	25	119	0.0040	25	0.099	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00046	Air	1	EMSL04	JEOL-1200-EX II (04-06)	5000	0.0134	385	58.88	9/30/2015	041529357	041529357-0010	4	J. Grillo	10/2/2015	P. Harrison	10/5/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: 10/6/2015 C1 on 12/28/2015 to add comment for the first non-countable structure recorded.	3:1	5	0.25	0.004	7	25	122	0.0040	8	0.032	Sensitivity	CDM Smith	N. Ross (DDE)	12/29/2015	Reason for noncountable structure in grid_grid opening A8_F was not provided in the comments.	12/29/2015
	TS-00048	Air	0	EMSL04	JEOL-1200-EX II (04-06)	5000	0.0134	385	59.25	9/30/2015	041529357	041529357-0012	4	J. Grillo	10/2/2015	P. Harrison	10/6/2015	Direct	No	TEM-ISO	3	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.004	7	25	73	0.0066	25	0.17	Structure Count	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00050	Air	0	EMSL03	JEOL 100 CXII (03-02)	5000	0.0127	385	60	9/30/2015	031531899	031531899-0002	3	F. LIANG	10/1/2015	A. FOLGAR	10/2/2015	Direct	No	TEM-ISO	7	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates:N/A	3:1	5	0.25	0.004	7	25	90	0.0056	34	0.19	Structure Count	CDM Smith	N. Ross (DDE)	11/17/2015		
EF	TS-00052	Air	0	EMSL03	JEOL 100CXII (03-04)	5000	0.0127	385	60	9/30/2015	031531899	031531899-0004	3	F. LIANG	10/1/2015	D. YOUNG	10/5/2015	Direct	No	TEM-ISO	10	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? YES Additional analysis dates: 10/6/15	3:1	5	0.25	0.004	7	25	93	0.0054	28	0.15	Structure Count	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00115	Air	0	EMSL22	JEOL1200 EX (22-1)	5000	0.0131	385	60.38	10/1/2015	221506265	221506265-0007	3	W. Nguyen	10/19/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.004	7	25	122	0.0040	2	0.0080	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00117	Air	0	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	60.75	10/1/2015	221506265	22150626S-0009	3	W. Nguyen	10/19/2015	W. Nguyen	10/19/2015	Direct	No	TEM-ISO	1	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: 10-20-15	3:1	5	0.25	0.004	7	25	121	0.0040	4	0.016	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00119	Air	0	EMSL22	JEOL 1200 EX (22-1)	5000	0.0131	385	60.75	10/1/2015	221506265	221506265-0011	3	W. Nguyen	10/19/2015	W. Nguyen	10/20/2015	Direct	No	TEM-ISO	2	1	Primary Filter Pore Size (um): 0.8 Secondary Filter Pore Size (um): Are prepped grids acceptable for analysis? Yes Additional analysis dates: N/A	3:1	5	0.25	0.004	7	25	121	0.0040	9	0.036	Sensitivity	CDM Smith	N. Ross (DDE)	11/17/2015		
	TS-00121	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150502	A150502-01	3	N. DelHierro	10/5/2015	N. DelHierro	10/15/2015	Direct	No	TEM-ISO	3	1	Also Analyzed on: 10/16/2015	3:1	5	0.25	0.004	7	25	141	0.0047	25	0.12	Structure Count	CDM Smith	N. Ross	11/17/2015		
	TS-00123	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150502	A150502-03	3	N. DelHierro	10/5/2015	P. Young	10/19/2015	Direct	No	TEM-ISO	7	1		3:1	5	0.25	0.004	7	25	110	0.0060	25	0.15	Structure Count	CDM Smith	N. Ross	1/6/2016	Mineral ID and EDXA observation for total structure #12 were not recorded on the benchsheet (page 6).	1/6/2016
	TS-00125	Air	0	ESATR8	JEOL JEM-1011 (C24)	5000	0.0097	385	60	10/1/2015	A150502	A150502-05	3	N. DelHierro	10/5/2015	P. Young	10/20/2015	Direct	No	TEM-ISO	5	1	Also analyzed by D. Kent on 10/20/2015	3:1	5	0.25	0.004	7	25	82	0.0081	25	0.20	Structure Count	CDM Smith	N. Ross	11/17/2015		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - AUTHENTIC WILDFIRE DUFF (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length_Revised	Width_Revised	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Verification Comment	Correction Date	DVC - 5%
SM-30145	451500124-0001A	258553	1	E6	C4-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258554	2	E6	E4-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258555	3	E6	F4-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258556	4	E6	G4-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258557	5	E6	G5-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258558	6	E6	E5-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258559	7	E6	F5-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258560	8	E6	C5-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258561	9	E7	E4-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258562	10	E7	F3-3	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258563	11	E7	G3-3	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258564	12	E7	H4-4	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258565	13	E7	G5-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258566	14	E7	F5-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258567	15	E7	E5-1	ND														CDM Smith	T. Miller			
SM-30145	451500124-0001A	258568	16	E7	C5-1	ND														CDM Smith	T. Miller			
SM-30149	451500124-0002	258584	1	A8	G4-3	ND														CDM Smith	T. Miller			
SM-30149	451500124-0002	258585	2	A8	F4-3	ND														CDM Smith	T. Miller			
SM-30149	451500124-0002	258586	3	A8	E5-2	ND														CDM Smith	T. Miller			
SM-30149	451500124-0002	258587	4	A8	C5-1	ND														CDM Smith	T. Miller			
SM-30149	451500124-0002	258588	5	A9	E5-1	ND														CDM Smith	T. Miller			
SM-30149	451500124-0002	258589	6	A9	F5-1	ND														CDM Smith	T. Miller			
SM-30149	451500124-0002	258590	7	A9	G5-1	ND														CDM Smith	T. Miller			
SM-30149	451500124-0002	258591	8	A9	H4-4	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258637	1	B8	E4-2	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258638	2	B8	F4-2	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258639	3	B8	G4-2	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258640	4	B8	G5-1	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258641	5	B8	F5-1	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258642	6	B8	E5-1	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258643	7	B8	C5-1	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258644	8	B9	E4-1	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258645	9	B9	F4-1	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258646	10	B9	G4-1	F	1	1	40	8	5	LA		ADX	1	1	1		NaK, WRTA; Photo #603	CDM Smith	T. Miller			
SM-30157	451500124-0003B	258647	11	B9	H4-1	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258648	12	B9	G5-1	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258649	13	B9	F5-1	ND														CDM Smith	T. Miller			
SM-30157	451500124-0003B	258650	14	B9	E5-1	ND														CDM Smith	T. Miller			
SM-30165	451500124-0005A	258686	1	B3	F3-4	ND														CDM Smith	T. Miller			
SM-30165	451500124-0005A	258687	2	B3	F4-4	ND														CDM Smith	T. Miller			
SM-30165	451500124-0005A	258688	3	B3	C4-3	ND														CDM Smith	T. Miller			
SM-30165	451500124-0005A	258689	4	B4	E4-3	ND														CDM Smith	T. Miller			
SM-30165	451500124-0005A	258690	5	B4	G4-3	ND														CDM Smith	T. Miller			
SM-30169	451500124-0006	258696	1	B9	E4-1	F	1	1	23	2.5	9.2	LA		ADX	1	1	1		NaK, WRTA; Photo #604	CDM Smith	T. Miller			x-NR
SM-30169	451500124-0006	258697	2	B9	F4-2	ND														CDM Smith	T. Miller			x-NR
SM-30169	451500124-0006	258698	3	B10	E3-3	ND														CDM Smith	T. Miller			x-NR
SM-30169	451500124-0006	258699	4	B10	E4-4	ND														CDM Smith	T. Miller			x-NR
SM-30169	451500124-0006B	258704	1	C5	C4-2	ND														CDM Smith	T. Miller			
SM-30169	451500124-0006B	258705	2	C5	F4-2	ND														CDM Smith	T. Miller			
SM-30169	451500124-0006B	258706	3	C6	G4-4	F	1	1	37	8	4.625	LA		ADX	1	1	1		NaK, WRTA; Photo #605	CDM Smith	T. Miller			
SM-30169	451500124-0006B	258707	4	C6	E3-4	ND														CDM Smith	T. Miller			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - GROUNDWATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10061	1511063-00(	235279	1	A4	A10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10061	1511063-00(	235280	2	A4	B8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10061	1511063-00(	235281	3	A4	B6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10061	1511063-00(	235282	4	A4	C4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10061	1511063-00(	235283	5	A4	D2	F	1	1	3	0.2	15	LA		ADX	1	1	1		NaK, WRTA; Asbestos_347, Asbestos_348	Groundwater	CDM Smith	N. Ross/DDE			
WT-10061	1511063-00(	235284	6	A4	E9	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235285	7	A4	F7	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235286	8	A4	G4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235287	9	A4	H2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235288	10	A4	I4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235289	11	A4	J8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235290	12	A5	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235291	13	A5	B4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235292	14	A5	C2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235293	15	A5	D9	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235294	16	A5	E7	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235295	17	A5	F10	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235296	18	A5	G8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235297	19	A5	H10	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235298	20	A5	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10061	1511063-00(	235299	21	A5	J4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235300	1	B1	A6	F	1	1	1.3	0.15	8.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235301	2	B1	A6	F	2	2	4.6	0.9	5.111111111	LA		ADX	1	1	1		NaK, WRTA; Photo #330	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235302	3	B1	A6	F	3	3	4.5	0.1	45	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235303	4	B1	A6	F	4	4	3.3	0.15	22	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235304	5	B1	A6	MD10	5													Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235305	6	B1	A6	MFO		5	1.1	0.2	5.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235306	7	B1	A6	F	6	6	2.3	0.25	9.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235307	8	B1	A6	F	7	7	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235308	9	B1	A6	MD11	8													Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235309	10	B1	A6	MFO		8	8.1	0.1	81	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235310	11	B1	A6	F	9	9	2.7	0.3	9	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235311	12	B1	A6	F	10	10	10.7	0.15	71.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235312	13	B1	A6	F	11	11	3.5	0.25	14	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235313	14	B1	A6	F	12	12	2.3	0.3	7.666666667	LA		ADX	1	1	1		XK, AC; Photo #332	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235314	15	B1	A6	F	13	13	3.6	0.15	24	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235315	16	B1	H8	F	14	14	2.2	0.2	11	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235316	17	B1	H8	F	15	15	3.1	0.25	12.4	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235317	18	B1	H8	F	16	16	2.9	0.25	11.6	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235318	19	B1	H8	F	17	17	2.4	0.2	12	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235319	20	B1	H8	F	18	18	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235320	21	B1	H8	F	19	19	2.7	0.1	27	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235321	22	B1	H8	F	20	20	26.6	0.15	177.3333333	LA		ADX	1		1		NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235322	23	B2	A9	F	21	21	3	0.05	60	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235323	24	B2	A9	F	22	22	2.8	0.25	11.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235324	25	B2	A9	F	23	23	12.6	0.15	84	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235325	26	B2	A9	F	24	24	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235326	27	B2	A9	F	25	25	2	0.15	13.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235327	28	B2	A9	F	26	26	2.9	0.35	8.285714286	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235328	29	B2	A9	MD10	27													Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235329	30	B2	A9	MFO		27	3.5	0.4	8.75	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235330	31	B2	A9	F	28	28	1.3	0.3	4.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235331	32	B2	A9	MD11	29													Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235332	33	B2	A9	MF		29	7.8	0.3	26	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235333	34	B2	A9	F	30	30	2.8	0.4	7	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235334	35	B2	A9	F	31	31	2.1	0.25	8.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235335	36	B2	A9	F	32	32	6.6	0.3	22	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235336	37	B2	I8	MD10	33													Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235337	38	B2	I8	MFO		33	2.3	0.3	7.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235338	39	B2	I8	F	34	34	2	0.2	10	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235339	40	B2	I8	F	35	35	2.9	0.2	14.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235340	41	B2	I8	F	36	36	5.4	0.5	10.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235341	42	B2	I8	MD10	37													Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235342	43	B2	I8	MF		37	2.4	0.35	6.857142857	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235343	44	B2	I8	F	38	38	2.4	0.3	8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235344	45	B2	I8	F	39	39	5.8	0.15	38.66666667	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10062	1511063-00(	235345	46	B2	I8	F	40	40	4.8	0.1	48	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235346	1	G1	J3	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235347	2	G1	I6	F	1	1	6.25	0.5	12.5	LA		ADX	1	1	1		NaK, WRTA; Photo #334	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235348	3	G1	H2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235349	4	G1	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235350	5	G1	F8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235351	6	G1	E4	F	2	2	1.75	0.25	7	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235352	7	G1	E4	MD10	3													Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235353	8	G1	E4	MFO		3	2.8	0.8	3.5	LA		ADX	1	1	1		NaK, TR; Photo #336	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235354	9	G1	D2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235355	10	G1	D10	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235356	11	G1	C5	F	4	4	16.5	0.55	30	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235357	12	G1	C5	B	0	0	7.4	0.8	9.25	NAM		NAM	1	1	1		NaK, OT; XGBLD; Photo #338	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235358	13	G1	B3	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235359	14	G1	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235360	15	G2	J5	F	5	5	1	0.25	4	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235361	16	G2	I7	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235362	17	G2	H2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235363	18	G2	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235364	19	G2	F3	F	6	6	2.5	0.3	8.333333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235365	20	G2	E7	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235366	21	G2	D5	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235367	22	G2	C2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235368	23	G2	B4	F	7	7	4.3	0.2	21.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10063	1511063-00(	235369	24	G2	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235370	1	H4	A10	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235371	2	H4	A8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235372	3	H4	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235373	4	H4	A4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235374	5	H4	A2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235375	6	H4	C2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235376	7	H4	C4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235377	8	H4	C6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235378	9	H4	C8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235379	10	H4	C10	MD10	1													Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235380	11	H4	C10	MFO		1	2.8	0.2	14	LA		ADX	1	1	1		NaK, WRTA; Asbestos_353, Asbestos_354	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235381	12	H4	E8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235382	13	H4	E6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235383	14	H4	E4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235384	15	H4	E2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235385	16	H4	G2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235386	17	H4	G4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235387	18	H4	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235388	19	H4	G8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235389	20	H4	G10	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235390	21	H4	I10	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235391	22	H4	I8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235392	23	H4	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235393	24	H4	I4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235394	25	H4	I2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235395	26	H5	A7	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235396	27	H5	A5	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235397	28	H5	A3	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235398	29	H5	B2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235399	30	H5	B4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235400	31	H5	B6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235401	32	H5	B8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235402	33	H5	C10	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235403	34	H5	C7	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235404	35	H5	C5	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235405	36	H5	C3	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235406	37	H5	C1	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235407	38	H5	D2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235408	39	H5	D4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235409	40	H5	D6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235410	41	H5	D8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235411	42	H5	E7	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235412	43	H5	E5	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235413	44	H5	E3	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235414	45	H5	E1	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235415	46	H5	F2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235416	47	H5	F4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235417	48	H5	F6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235418	49	H5	F8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235419	50	H5	G7	ND													Analysis continued on 5/11/2015	Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235420	51	H5	G5	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235421	52	H5	H2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235422	53	H5	H6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235423	54	H5	H10	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235424	55	H5	I7	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235425	56	H5	I5	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235426	57	H5	I3	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235427	58	H5	I1	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235428	59	H5	J2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235429	60	H6	A1	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235430	61	H6	A3	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235431	62	H6	A5	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235432	63	H6	A7	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235433	64	H6	B10	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235434	65	H6	B8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235435	66	H6	B6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235436	67	H6	B2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235437	68	H6	C1	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235438	69	H6	C3	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235439	70	H6	C5	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235440	71	H6	C7	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235441	72	H6	C9	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235442	73	H6	D8	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235443	74	H6	D6	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235444	75	H6	D4	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235445	76	H6	D2	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235446	77	H6	E1	ND														Groundwater	CDM Smith	N. Ross/DDE			EF
WT-10064	1511063-00(	235447	78	H6	E3	ND														Groundwater	CDM Smith	N. Ross/DDE			EF

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - GROUNDWATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10065	1511063-00(	235448	1	D1	J2	F	0	0	9.2	0.3	30.66666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235449	2	D1	J2	F	1	1	3.1	0.25	12.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235450	3	D1	J2	F	2	2	4.5	0.45	10	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235451	4	D1	J5	F	3	3	15.1	0.3	50.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235452	5	D1	J5	F	4	4	8.6	0.5	17.2	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235453	6	D1	J5	F	5	5	3.7	0.45	8.222222222	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235454	7	D1	J5	MD10	6													Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235455	8	D1	J5	MFO		6	2.6	0.2	13	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235456	9	D1	J5	MD10	7													Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235457	10	D1	J5	MF		7	4.6	0.3	15.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235458	11	D1	I7	MD10	8													Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235459	12	D1	I7	MFO		8	3.4	0.5	6.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235460	13	D1	I7	F	9	9	1.3	0.25	5.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235461	14	D1	I7	F	10	10	13.3	0.6	22.16666667	LA		ADX	1	1	1		XX, AC, Asbestos_367, Asbestos_368	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235462	15	D1	I7	MD10	11													Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235463	16	D1	I7	MFO		11	2.4	0.2	12	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235464	17	D1	I7	F	12	12	5.6	0.8	7	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235465	18	D1	I7	F	13	13	2.3	0.25	9.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235466	19	D1	I7	F	14	14	2.1	0.25	8.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235467	20	D1	I9	F	15	15	5.7	0.2	28.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235468	21	D1	I9	MD10	16													Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235469	22	D1	I9	MF		16	4.6	0.45	10.22222222	LA		ADX	1	1	1		NaK, WRTA; Asbestos_369, Asbestos_370	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235470	23	D1	I9	F	17	17	27.1	1.2	22.58333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235471	24	D1	I9	F	18	18	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235472	25	D1	H3	F	19	19	16.6	0.8	20.75	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235473	26	D1	H3	F	20	20	3.4	0.25	13.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235474	27	D1	H3	F	21	21	3.4	0.2	17	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235475	28	D1	H3	F	22	22	13.1	0.45	29.11111111	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235476	29	D1	H3	F	23	23	8.4	1.4	6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235477	30	D1	H3	F	24	24	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235478	31	D1	H3	F	0	0	9.6	0.3	32	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235479	32	D2	A9	F	25	25	1.25	0.15	8.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235480	33	D2	A9	F	26	26	7.8	0.5	15.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235481	34	D2	A9	F	27	27	7.2	1.2	6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235482	35	D2	E10	F	28	28	2.1	0.35	6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235483	36	D2	E10	F	29	29	5.6	0.3	18.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235484	37	D2	E10	F	30	30	2.2	0.15	14.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235485	38	D2	E10	F	31	31	0.9	0.2	4.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235486	39	D2	E10	MD10	32													Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235487	40	D2	E10	MF		32	3.3	0.25	13.2	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10065	1511063-00(	235488	41	D2	E10	F	33	33	13.6	0.75	18.13333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235489	1	D7	J2	F	1	1	4.6	0.45	10.22222222	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235490	2	D7	J2	F	2	2	2.1	0.45	4.666666667	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235491	3	D7	J2	MD10	3													Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235492	4	D7	J2	MFO		3	2.5	0.55	4.545454546	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235493	5	D7	J2	F	4	4	10.2	0.3	34	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235494	6	D7	J2	F	5	5	1.6	0.25	6.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235495	7	D7	J2	F	6	6	3	0.35	8.571428571	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235496	8	D7	J2	MD11	7													Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235497	9	D7	J2	MF		7	12.4	0.4	31	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235498	10	D7	J2	F	8	8	2.6	0.1	26	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235499	11	D7	J2	F	9	9	1.8	0.2	9	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235500	12	D7	J2	F	10	10	2.8	0.55	5.090909091	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235501	13	D7	G3	F	11	11	3.7	0.45	8.222222222	LA		ADX	1	1	1		XX, AC, Asbestos_373, Asbestos_374	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235502	14	D7	G3	F	12	12	2.4	0.4	6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235503	15	D7	G3	F	13	13	1	0.2	5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235504	16	D7	G3	MD10	14													Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235505	17	D7	G3	MF		14	2.1	0.15	14	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235506	18	D7	G3	F	15	15	7.3	1.6	4.5625	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235507	19	D7	G3	MD10	16													Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235508	20	D7	G3	MF		16	4.7	0.2	23.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235509	21	D7	G3	F	17	17	6.4	1.8	3.555555556	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235510	22	D7	G3	F	18	18	0.9	0.2	4.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235511	23	D7	G3	MD10	19													Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235512	24	D7	G3	MF		19	4.3	0.2	21.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235513	25	D7	G3	F	20	20	3.3	0.4	8.25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235514	26	D7	G3	F	21	21	0.6	0.15	4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235515	27	D7	G3	F	22	22	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235516	28	D8	A9	F	23	23	2.5	0.25	10	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235517	29	D8	A9	F	24	24	15.2	0.5	30.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235518	30	D8	A9	F	25	25	3.7	0.35	10.57142857	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235519	31	D8	A9	F	26	26	2.1	0.4	5.25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235520	32	D8	A9	F	27	27	4.8	0.2	24	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235521	33	D8	A9	F	28	28	3	0.3	10	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235522	34	D8	A9	F	29	29	4.4	0.45	9.777777778	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235523	35	D8	A9	F	30	30	2.9	0.8	3.625	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235524	36	D8	A9	MD10	31													Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235525	37	D8	A9	MFO		31	1.3	0.15	8.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235526	38	D8	A9	F	32	32	6.8	0.2	34	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235527	39	D8	A9	F	33	33	6.4	0.2	32	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235528	40	D8	E7	F	34	34	2.5	0.3	8.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235529	41	D8	E7	F	0	0	9.6	0.45	21.33333333	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235530	42	D8	E7	F	35	35	1.3	0.15	8.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235531	43	D8	E7	MD11	36													Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235532	44	D8	E7	MF		36	5.4	0.1	54	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235533	45	D8	E7	F	37	37	2.9	0.5	5.8	LA		ADX	1	1	1		NaK, WRTA; Asbestos_375, Asbestos_376	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235534	46	D8	E7	F	38	38	4.2	0.2	21	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235535	47	D8	E7	MD10	39													Groundwater	CDM Smith	N. Ross/DDE			
WT-10066	1511063-00(	235536	48	D8	E7	MFO		39	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235537	1	E4	J3	F	1	1	1	0.25	4	LA		ADX	1	1	1		XX, AC; Asbestos_355, Asbestos_356	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235538	2	E4	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235539	3	E4	H9	F	2	2	6.1	0.25	24.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235540	4	E4	H9	F	3	3	2.5	0.15	16.66666667	LA		ADX	1	1	1		NaK, WRTA; Asbestos_359, Asbestos_360	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235541	5	E4	H9	F	4	4	2.2	0.3	7.333333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235542	6	E4	G5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235543	7	E4	F3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235544	8	E4	E1	F	5	5	0.8	0.05	16	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235545	9	E4	D3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235546	10	E4	D5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235547	11	E4	C7	F	6	6	2.8	0.3	9.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235548	12	E4	B4	F	7	7	2.4	0.2	12	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235549	13	E4	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235550	14	E5	J6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235551	15	E5	I4	F	8	8	0.9	0.15	6	LA		ADX	1		1		XX, AC	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235552	16	E5	I4	F	9	9	1.1	0.15	7.333333333	LA		ADX	1		1		XX, AC	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235553	17	E5	I4	F	10	10	2.1	0.1	21	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235554	18	E5	H7	F	11	11	3.1	0.2	15.5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235555	19	E5	G5	F	12	12	2.2	0.7	3.142857143	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235556	20	E5	G5	F	13	13	2.4	0.3	8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235557	21	E5	G5	F	14	14	6.8	0.25	27.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235558	22	E5	F2	F	15	15	2.1	0.25	8.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235559	23	E5	F2	F	16	16	12.4	0.25	49.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235560	24	E5	F2	F	17	17	2.2	0.2	11	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235561	25	E5	E5	F	18	18	4.4	0.25	17.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235562	26	E5	E5	F	19	19	2	0.15	13.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235563	27	E5	D2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235564	28	E5	C4	F	20	20	6.4	0.55	11.63636364	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235565	29	E5	C4	F	21	21	5	0.55	9.090909091	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235566	30	E5	B7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10067	1511063-00(	235567	31	E5	A4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235568	1	F1	J3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235569	2	F1	J5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235570	3	F1	I1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235571	4	F1	H3	F	1	1	3.3	0.8	4.125	LA		ADX	1	1	1		NaK, WRTA; Asbestos_361, Asbestos_362	Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235572	5	F1	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235573	6	F1	F8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235574	7	F1	E5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235575	8	F1	D3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235576	9	F1	C1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235577	10	F1	B3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235578	11	F1	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235579	12	F2	A5	ND													Continued analysis on 5/14/2015	Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235580	13	F2	B10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235581	14	F2	C3	F	2	2	1.8	0.15	12	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235582	15	F2	D1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235583	16	F2	E4	MD10	3													Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235584	17	F2	E4	MFO		3	1.6	0.25	6.4	LA		ADX	1	1	1		XX, TR; Asbestos_363, Asbestos_364	Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235585	18	F2	F8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235586	19	F2	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235587	20	F2	H1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235588	21	F2	I4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10070	1511063-00(	235589	22	F2	J7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237076	1	I2	A10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237077	2	I2	A8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237078	3	I2	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237079	4	I2	A4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237080	5	I2	A2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237081	6	I2	B5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237082	7	I2	B7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237083	8	I2	B9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237084	9	I2	C10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237085	10	I2	C8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237086	11	I2	C6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237087	12	I2	C4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237088	13	I2	C2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237089	14	I2	D1	ND														Groundwater	CDM Smith	N. Ross/DDE	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - GROUNDWATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10073	1511395-00(	237101	26	I2	F5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237102	27	I2	F7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237103	28	I2	F9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237104	29	I2	G10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237105	30	I2	G8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237106	31	I2	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237107	32	I2	G4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237108	33	I2	G2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237109	34	I2	H1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237110	35	I2	H3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237111	36	I2	H5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237112	37	I2	H7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237113	38	I2	H9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237114	39	I2	I10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237115	40	I2	I8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237116	41	I2	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237117	42	I2	I4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237118	43	I2	I2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237119	44	I2	J1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237120	45	I2	J3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237121	46	I2	J5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237122	47	I2	J7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237123	48	I2	J9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237124	49	I3	J2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237125	50	I3	J4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237126	51	I3	J10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237127	52	I3	I9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237128	53	I3	I5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237129	54	I3	I3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237130	55	I3	H4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237131	56	I3	H6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237132	57	I3	G5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237133	58	I3	G3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237134	59	I3	F2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237135	60	I3	F4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237136	61	I3	F6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237137	62	I3	E7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237138	63	I3	E5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237139	64	I3	E3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237140	65	I3	E1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237141	66	I3	D2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237142	67	I3	D4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237143	68	I3	D6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237144	69	I3	C9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237145	70	I3	C7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237146	71	I3	C5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237147	72	I3	C1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237148	73	I3	B2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237149	74	I3	B4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237150	75	I3	B6	F	1	1	5.5	0.9	6.111111111	LA		ADX	1	1	1		NaK, WRTA; Photo #322	Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237151	76	I3	B8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10073	1511395-00(	237152	77	I3	B10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262019	1	C1	J1	F	1	1	13.4	0.25	53.6	LA		ADX	1	1	1		NaK, WRTA; Photo #320	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262020	2	C1	J1	F	2	2	4.8	1.3	3.692307692	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262021	3	C1	J1	F	3	3	5.6	0.2	28	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262022	4	C1	I3	F	4	4	12.7	0.8	15.875	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262023	5	C1	H5	MD10	5													Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262024	6	C1	H5	MFO		5	0.6	0.15	4	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262025	7	C1	G3	F	6	6	3.2	0.2	16	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262026	8	C1	G3	F	7	7	4.4	0.8	5.5	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262027	9	C1	F6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262028	10	C1	F8	F	8	8	3.8	0.4	9.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262029	11	C1	F8	F	9	9	3.5	0.6	5.833333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262030	12	C1	E3	F	10	10	5.9	0.25	23.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262031	13	C1	D5	MD10	11													Groundwater	CDM Smith	N. Ross/DDE	Structure type for primary structure #11 should likely be MD10, not MD11, since the secondary structure is less than 5 µm (2.6 µm).	12/2/2015	
WT-10074	1511395-00(	262032	14	C1	D5	MF		11	2.6	0.3	8.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262033	15	C1	D5	F	12	12	2.5	0.25	10	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262034	16	C1	C7	F	13	13	2.1	0.25	8.4	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262035	17	C1	C7	F	14	14	4.3	0.3	14.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262036	18	C2	A4	F	15	15	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262037	19	C2	B7	F	16	16	2	0.25	8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262038	20	C2	B7	F	17	17	4.6	0.5	9.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262039	21	C2	C2	F	18	18	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262040	22	C2	C2	F	19	19	7.5	0.4	18.75	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262041	23	C2	C2	F	20	20	1.5	0.45	3.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262042	24	C2	D5	F	21	21	5.5	0.35	15.71428571	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262043	25	C2	D5	F	22	22	2.2	0.3	7.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262044	26	C2	E7	F	23	23	25.1	0.6	41.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262045	27	C2	E7	F	24	24	3.1	0.7	4.428571429	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10074	1511395-00(	262046	28	C2	F4	F	25	25	5.1	0.3	17	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237181	1	D1	A4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237182	2	D1	B2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237183	3	D1	C5	F	1	1	7.9	0.85	9.294117647	LA		ADX	1	1	1		NaK, WRTA; Photo #340	Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237184	4	D1	D7	F	2	2	2.2	0.5	4.4	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237185	5	D1	E5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237186	6	D1	E3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237187	7	D1	F1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237188	8	D1	G4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237189	9	D1	H8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237190	10	D1	J4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237191	11	D2	A1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237192	12	D2	B3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237193	13	D2	C7	F	3	3	5.7	0.25	22.8	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237194	14	D2	D5	F	4	4	4.4	0.3	14.66666667	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237195	15	D2	E3	F	5	5	5.7	1.1	5.181818182	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237196	16	D2	F6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237197	17	D2	G4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237198	18	D2	H7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237199	19	D2	I4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237200	20	D2	J6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10075	1511395-00(	237201	21	D2	J3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237202	1	E1	J2	F	1	1	4.3	0.25	17.2	LA		ADX	1	1	1		NaK, WRTA; Photo #324	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237203	2	E1	J2	MD11	2													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237204	3	E1	J2	MF		2	5.7	0.2	28.5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237205	4	E1	J2	MD11	3													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237206	5	E1	J2	MFO		3	6.1	0.2	30.5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237207	6	E1	J2	MD11	4													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237208	7	E1	J2	MB		4	10.7	1.8	5.944444444	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237209	8	E1	J2	F	5	5	3.2	0.8	4	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237210	9	E1	J2	F	6	6	4.4	0.4	11	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237211	10	E1	J2	F	7	7	2.8	0.25	11.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237212	11	E1	J2	F	8	8	1.1	0.25	4.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237213	12	E1	J2	F	9	9	2.5	0.25	10	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237214	13	E1	J2	MD11	10													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237215	14	E1	J2	MF		10	7.6	0.35	21.71428571	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237216	15	E1	J2	F	11	11	4.6	0.25	18.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237217	16	E1	J2	F	12	12	2.4	0.15	16	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237218	17	E1	D5	F	13	13	1.2	0.2	6	LA		ADX	1				NaK, WRTA; Started analysis on 4/30/2015	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237219	18	E1	D5	F	0	0	21.2	0.35	60.57142857	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237220	19	E1	D5	F	14	14	7.5	0.5	15	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237221	20	E1	D5	MD10	15													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237222	21	E1	D5	MFO		15	1.8	0.2	9	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237223	22	E1	D5	F	16	16	0.9	0.25	3.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237224	23	E1	D5	MD10	17													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237225	24	E1	D5	MF		17	2.8	0.2	14	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237226	25	E1	D5	MD10	18													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237227	26	E1	D5	MFO		18	1.6	0.25	6.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237228	27	E1	D5	F	19	19	3.8	0.45	8.444444444	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237229	28	E1	D5	F	20	20	10.8	0.15	72	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237230	29	E1	D5	F	21	21	10	0.3	33.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237231	30	E1	D5	MD10	22													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237232	31	E1	D5	MFO		22	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237233	32	E2	A7	F	23	23	2.4	0.4	6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237234	33	E2	A7	F	24	24	12.9	0.6	21.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237235	34	E2	A7	F	25	25	4.2	0.25	16.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237236	35	E2	A7	F	26	26	1.4	0.15	9.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237237	36	E2	A7	F	27	27	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237238	37	E2	A7	MD10	28													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237239	38	E2	A7	MFO		28	1.4	0.3	4.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237240	39	E2	A7	F	29	29	6.2	0.6	10.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237241	40	E2	A7	F	30	30	3.3	0.7	4.714285714	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237242	41	E2	A7	F	31	31	2.4	0.15	16	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237243	42	E2	A7	F	32	32	0.8	0.2	4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237244	43	E2	A7	MD10	33													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237245	44	E2	A7	MF		33	3.2	0.5	6.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237246	45	E2	A7	B	34	34	2.2	0.3	7.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237247	46	E2	A7	F	35	35	4.2	0.8	5.25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237248	47	E2	A7	MD10	36													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237249	48	E2	A7	MFO		36	2.2	0.3	7.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237250	49	E2	A7	MD10	37													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237251	50	E2	A7	MF		37	4.6	0.3	15.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237252	51	E2	A7	F	38	38	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237253	52	E2	A7	F	39	39	5.6	0.25	22.4	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237254	53	E2	G8	F	40	40	1.4	0.1	14	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237255	54	E2	G8	F	41	41	2.8	0.5	5.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237256	55	E2	G8	F	42	42	1	0.15	6.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237257	56	E2	G8	F	43	43	1.4	0.2	7	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237258	57	E2	G8	MD10	44													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237259	58	E2	G8	MFO		44	1.9	0.6	3.166666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237260	59	E2	G8	F	45	45	1.8	0.15	12	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237261	60	E2	G8	F	46	46	1.8	0.35	5.142857143	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237262	61	E2	G8	F	47	47	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237263	62	E2	G8	F	48	48	1.2	0.15	8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237264	63	E2	G8	F	49	49	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237265	64	E2	G8	MD11	50													Groundwater	CDM Smith	N. Ross/DDE			
WT

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - GROUNDWATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10076	1511395-00(	237269	68	E2	G8	F	53	53	25.9	0.3	86.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237270	69	E2	G8	F	54	54	1	0.15	6.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237271	70	E2	G8	F	55	55	1.8	0.6	3	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237272	71	E2	G8	MD11	56													Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237273	72	E2	G8	MF		56	5.6	0.25	22.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10076	1511395-00(	237274	73	E2	G8	F	57	57	1.8	0.25	7.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237275	1	F5	J1	MD10	1													Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237276	2	F5	J1	MF		1	2.3	0.25	9.2	LA		ADX	1	1	1		NaK, WRTA; Photo #326	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237277	3	F5	J1	F	2	2	1.8	0.15	12	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237278	4	F5	J1	F	3	3	1.6	0.5	3.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237279	5	F5	J1	MD10	4													Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237280	6	F5	J1	MFO		4	1.7	0.3	5.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237281	7	F5	J1	F	5	5	27.2	0.4	68	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237282	8	F5	J1	F	6	6	0.9	0.3	3	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237283	9	F5	F3	F	7	7	4.3	0.35	12.28571429	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237284	10	F5	F3	F	8	8	1.3	0.3	4.333333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237285	11	F5	F3	MD10	9													Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237286	12	F5	F3	MF		9	3.1	0.15	20.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237287	13	F5	F3	MD10	10													Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237288	14	F5	F3	MFO		10	2.2	0.2	11	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237289	15	F5	F3	F	11	11	2.7	0.3	9	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237290	16	F5	F3	MD10	12													Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237291	17	F5	F3	MFO		12	1.8	0.2	9	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237292	18	F5	F3	F	13	13	6.8	0.2	34	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237293	19	F6	B9	F	14	14	2.2	0.1	22	LA		ADX	1				NaK, WRTA; Started analysis on 5/1/2015	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237294	20	F6	B9	F	15	15	5.7	0.25	22.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237295	21	F6	B9	F	16	16	1.2	0.3	4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237296	22	F6	B9	F	17	17	5.4	1.1	4.909090909	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237297	23	F6	B9	MD10	18													Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237298	24	F6	B9	MF		18	2.1	0.1	21	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237299	25	F6	B9	F	19	19	1.2	0.3	4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237300	26	F6	B9	MD10	20													Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237301	27	F6	B9	MF		20	1.4	0.05	28	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237302	28	F6	B9	F	21	21	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237303	29	F6	B9	F	22	22	15.9	0.5	31.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237304	30	F6	B9	F	23	23	1.3	0.3	4.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237305	31	F6	B9	F	24	24	0.6	0.1	6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237306	32	F6	B9	F	25	25	5.5	0.1	55	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237307	33	F6	H8	MD10	26													Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237308	34	F6	H8	MFO		26	2	0.25	8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237309	35	F6	H8	F	27	27	1	0.3	3.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237310	36	F6	H8	F	28	28	2.3	0.3	7.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237311	37	F6	H8	F	29	29	4.6	0.2	23	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237312	38	F6	H8	MD10	30													Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237313	39	F6	H8	MF		30	3.2	0.3	10.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237314	40	F6	H8	F	31	31	5	0.5	10	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237315	41	F6	H8	MD10	32													Groundwater	CDM Smith	N. Ross/DDE			
WT-10077	1511395-00(	237316	42	F6	H8	MF		32	3.7	0.15	24.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237327	1	G5	A8	F	0	0	15.2	0.3	50.66666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237328	2	G5	A8	F	1	1	3.2	0.2	16	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237329	3	G5	A8	F	2	2	2.6	0.3	8.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237330	4	G5	A8	F	3	3	5.3	0.6	8.833333333	LA		ADX	1	1	1		NaK, WRTA; Photo #328	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237331	5	G5	A8	F	4	4	2.7	0.3	9	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237332	6	G5	A8	F	5	5	5.8	0.25	23.2	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237333	7	G5	A8	F	6	6	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237334	8	G5	A8	F	7	7	6.6	0.3	22	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237335	9	G5	A8	F	8	8	12.6	0.6	21	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237336	10	G5	A8	F	9	9	5.8	0.15	38.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237337	11	G5	A8	F	10	10	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237338	12	G5	A8	F	11	11	4.2	0.5	8.4	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237339	13	G5	A8	F	12	12	11.8	0.5	23.6	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237340	14	G5	A8	F	13	13	3.4	0.5	6.8	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237341	15	G5	A8	F	14	14	2.3	0.15	15.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237342	16	G5	H10	F	15	15	0.9	0.2	4.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237343	17	G5	H10	F	16	16	2	0.3	6.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237344	18	G5	H10	MD10	17													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237345	19	G5	H10	MFO		17	3	0.4	7.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237346	20	G5	H10	F	18	18	2.6	0.1	26	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237347	21	G5	H10	F	19	19	37	1.4	26.42857143	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237348	22	G5	H10	F	20	20	1.6	0.5	3.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237349	23	G5	H10	F	21	21	2.7	0.15	18	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237350	24	G5	H10	MD10	22													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237351	25	G5	H10	MF		22	4.3	0.6	7.166666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237352	26	G5	H10	F	23	23	1.9	0.2	9.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237353	27	G5	H10	F	24	24	2.6	0.3	8.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237354	28	G5	H10	F	25	25	5.8	0.3	19.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237355	29	G5	H10	F	26	26	0.8	0.2	4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237356	30	G5	H10	F	27	27	3.3	0.35	9.428571429	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237357	31	G5	H10	F	28	28	3.7	0.2	18.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237358	32	G5	H10	F	29	29	7.7	0.3	25.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237359	33	G5	H10	F	30	30	4.8	0.2	24	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237360	34	G5	H10	F	0	0	3.2	0.1	32	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237361	35	G5	H10	MD11	31													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237362	36	G5	H10	MF		31	5.5	0.25	22	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237363	37	G6	A7	F	32	32	2.8	0.2	14	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237364	38	G6	A7	F	33	33	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237365	39	G6	A7	F	34	34	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237366	40	G6	A7	MD10	35													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237367	41	G6	A7	MFO		35	1.4	0.1	14	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237368	42	G6	A7	MD10	36													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237369	43	G6	A7	MFO		36	2.9	0.5	5.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237370	44	G6	A7	F	37	37	1.5	0.45	3.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237371	45	G6	I9	F	38	38	1.4	0.2	7	LA		ADX	1				NaK, WRTA; Analysis started on 5/4/2015	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237372	46	G6	I9	F	39	39	3.2	0.25	12.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237373	47	G6	I9	MD11	40													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237374	48	G6	I9	MF		40	6.5	0.25	26	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237375	49	G6	I9	MD11	41													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237376	50	G6	I9	MF		41	5.4	0.2	27	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237377	51	G6	I9	MD10	42													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237378	52	G6	I9	MF		42	4.8	0.25	19.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237379	53	G6	I9	MD10	43													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237380	54	G6	I9	MFO		43	2.5	0.05	50	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237381	55	G6	I9	F	44	44	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237382	56	G6	I9	F	45	45	3.4	0.15	22.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237383	57	G6	I9	F	46	46	5.1	0.15	34	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237384	58	G6	I9	MD10	47													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237385	59	G6	I9	MFO		47	1.9	0.3	6.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237386	60	G6	I9	MD10	48													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237387	61	G6	I9	MF		48	2.7	0.5	5.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237317	62	G6	I9	F	49	49	6.7	0.35	19.14285714	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237318	63	G6	I9	MD10	50													Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237319	64	G6	I9	MF		50	3.8	0.6	6.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237320	65	G6	I9	F	51	51	1.25	0.35	3.571428571	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237321	66	G6	I9	F	52	52	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237322	67	G6	I9	F	0	0	2.6	0.2	13	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237323	68	G6	I9	F	53	53	2.4	0.6	4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237324	69	G6	I9	F	54	54	2.6	0.2	13	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237325	70	G6	I9	F	55	55	5.6	0.2	28	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10078	1511395-00(	237326	71	G6	I9	F	56	56	2.4	0.15	16	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237388	1	H1	A5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237389	2	H1	B7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237390	3	H1	C9	F	1	1	7.3	0.6	12.16666667	LA		ADX	1	1	1		NaK, WRTA; Photo:Asbestos_343,344	Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237391	4	H1	D5	F	2	2	8.3	0.3	27.66666667	LA		ADX	1	1	1		XK, WRTA; Photo:Asbestos_345,346; Analysis started on 5/7/2015	Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237392	5	H1	D5	F	3	3	3.1	0.3	10.33333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237393	6	H1	E2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237394	7	H1	F7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237395	8	H1	G10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237396	9	H1	G3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237397	10	H1	H5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237398	11	H1	I7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237399	12	H1	J9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237400	13	H4	J2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237401	14	H4	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237402	15	H4	H9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237403	16	H4	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237404	17	H4	E8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237405	18	H4	D6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237406	19	H4	C9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237407	20	H4	B6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237408	21	H4	A8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10079	1511395-00(	237409	22	H4	F1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247702	1	A4	A7	F	1	1	1.3	0.2	6.5	LA		ADX	1	1	1		NaK, WRTA; Asbestos_604	Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247703	2	A4	B4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247704	3	A4	C1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247705	4	A4	D4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247706	5	A4	E1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247707	6	A4	F3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247708	7	A4	G5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247709	8	A4	H9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247710	9	A4	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247711	10	A4	J4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247712	11	A5	J8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247713	12	A5	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247714	13	A5	H9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247715	14	A5	G5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247716	15	A5	F10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10221	1514992-00(	247717	16	A5

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - GROUNDWATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10222	1514992-00(	247728	6	B1	C9	F	5	5	9.5	0.6	15.83333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247729	7	B1	C9	F	6	6	5.5	0.24	22.91666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247730	8	B1	C9	F	7	7	5.2	0.18	28.88888889	LA		ADX	1				NaK, WRTA; XCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247731	9	B1	F7	F	8	8	3.1	0.48	6.458333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247732	10	B1	F7	MD10	9													Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247733	11	B1	F7	MFO		9	3.3	0.24	13.75	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247734	12	B1	F7	F	10	10	2.4	0.36	6.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247735	13	B1	F7	B	11	11	17.3	0.72	24.02777778	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247736	14	B1	I7	F	12	12	17	0.24	70.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247737	15	B1	I7	F	13	13	3.9	0.12	32.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247738	16	B2	D2	F	14	14	4.8	0.24	20	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247739	17	B2	D2	F	15	15	3.1	0.12	25.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247740	18	B2	D2	F	16	16	7.4	0.72	10.27777778	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247741	19	B2	G3	F	17	17	2.4	0.72	3.333333333	LA		ADX	1				NaK, WRTA; Additional analysis 8/5/15	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247742	20	B2	G3	F	18	18	4.9	0.72	6.805555556	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247743	21	B2	G3	F	19	19	8.2	0.24	34.16666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247744	22	B2	G3	F	20	20	2.6	0.24	10.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247745	23	B2	I5	F	21	21	0.7	0.18	3.888888889	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247746	24	B2	I5	F	22	22	6	0.6	10	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247747	25	B2	I5	F	23	23	2.1	0.24	8.75	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247748	26	B2	I5	F	0	0	23.8	0.18	132.2222222	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247749	27	B2	I5	F	24	24	3.3	0.96	3.4375	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247750	28	B2	I5	F	25	25	1.3	0.36	3.611111111	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247751	29	B2	I5	F	26	26	2.1	0.1	21	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10222	1514992-00(	247752	30	B2	I5	F	27	27	3.8	0.24	15.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247753	1	Q1	A10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247754	2	Q1	A8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247755	3	Q1	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247756	4	Q1	A4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247757	5	Q1	A2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247758	6	Q1	C2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247759	7	Q1	C4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247760	8	Q1	C6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247761	9	Q1	C8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247762	10	Q1	C10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247763	11	Q1	E10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247764	12	Q1	E8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247765	13	Q1	E6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247766	14	Q1	E4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247767	15	Q1	E2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247768	16	Q1	G2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247769	17	Q1	G4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247770	18	Q1	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247771	19	Q1	G8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247772	20	Q1	G10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247773	21	Q1	I10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247774	22	Q1	I8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247775	23	Q1	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247776	24	Q1	I4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247777	25	Q1	I2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247778	26	Q2	A2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247779	27	Q2	A4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247780	28	Q2	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247781	29	Q2	A8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247782	30	Q2	A10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247783	31	Q2	C10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247784	32	Q2	C8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247785	33	Q2	C6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247786	34	Q2	C4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247787	35	Q2	C2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247788	36	Q2	E2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247789	37	Q2	E4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247790	38	Q2	E6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247791	39	Q2	E8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247792	40	Q2	E10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247793	41	Q2	G10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247794	42	Q2	G8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247795	43	Q2	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247796	44	Q2	G4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247797	45	Q2	G2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247798	46	Q2	I2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247799	47	Q2	I4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247800	48	Q2	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247801	49	Q2	I8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247802	50	Q2	I10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247803	51	Q3	J4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247804	52	Q3	J7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247805	53	Q3	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247806	54	Q3	I2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247807	55	Q3	H3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247808	56	Q3	H5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247809	57	Q3	H7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247810	58	Q3	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247811	59	Q3	G4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247812	60	Q3	G2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247813	61	Q3	F1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247814	62	Q3	F3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247815	63	Q3	F5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247816	64	Q3	F7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247817	65	Q3	E4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247818	66	Q3	E2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247819	67	Q3	D1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247820	68	Q3	D3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247821	69	Q3	D5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247822	70	Q3	D7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247823	71	Q3	C4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247824	72	Q3	C2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247825	73	Q3	B1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247826	74	Q3	B3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247827	75	Q3	B5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247828	76	Q3	B7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10223	1514992-00(	247829	77	Q3	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247830	1	D1	I1	F	1	1	1.75	0.2	8.75	LA		ADX	1	1			NaK, WRTA; Asbestos_607	Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247831	2	D1	I1	F	2	2	3.1	0.8	3.875	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247832	3	D1	I9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247833	4	D1	H3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247834	5	D1	G8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247835	6	D1	F4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247836	7	D1	E2	F	3	3	5.7	0.3	19	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247837	8	D1	D5	F	4	4	1.3	0.2	6.5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247838	9	D1	C8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247839	10	D1	B4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247840	11	D1	A9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247841	12	D2	A7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247842	13	D2	B10	F	5	5	3	0.25	12	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247843	14	D2	C6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247844	15	D2	D10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247845	16	D2	E7	F	6	6	0.9	0.25	3.6	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247846	17	D2	E7	F	7	7	3.2	0.3	10.66666667	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247847	18	D2	F9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247848	19	D2	G6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247849	20	D2	H8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247850	21	D2	H10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247851	22	D2	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10224	1514992-00(	247852	23	D2	J8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247853	1	E1	A9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247854	2	E1	B1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247855	3	E1	C3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247856	4	E1	D7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247857	5	E1	E9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247858	6	E1	F6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247859	7	E1	G4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247860	8	E1	H7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247861	9	E1	I4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247862	10	E1	J8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247863	11	E2	C4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247864	12	E2	C6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247865	13	E2	C8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247866	14	E2	D2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247867	15	E2	E4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247868	16	E2	F8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247869	17	E2	G4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247870	18	E2	H9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247871	19	E2	I2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247872	20	E2	J9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10225	1514992-00(	247873	21	E3	B2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247894	1	F1	B8	F	1	1	5.7	0.48	11.875	LA		ADX	1	1	1		NaK, WRTA; 010953D	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247895	2	F1	B8	F	2	2	2.4	0.48	5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247896	3	F1	B8	F	3	3	4.3	0.36	11.94444444	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247897	4	F1	B8	F	4	4	24.7	0.6	41.16666667	LA		ADX	1		1		NaK, WRTA; XCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247898	5	F1	B8	F	5	5	19	0.24	79.16666667	LA		ADX	1		1		NaK, WRTA; XCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247899	6	F1	E9	F	6	6	3.1	0.48	6.458333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247900	7	F1	E9	F	7	7	1.7	0.24	7.083333333	LA		AX	1				NaK, WRTA; Matrix Inerference	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247901	8	F1	E9	F	0	0	7.2	0.36	20	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247902	9	F1	E9	F	8	8	2.4	0.48	5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247903	10	F1	E9	F	9	9	1.9	0.24	7.916666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247904	11	F1	E9	F	10	10	6.2	0.72	8.611111111	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247905	12	F1	E9	F	11	11	3.8	0.96	3.958333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247906	13	F2	G7	F	0	0	14.1	0.24	58.75	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247907	14	F2	G7	F	12	12	4.7	0.84	5.595238095	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247908	15	F2	G7	B	13	13	7.6	0.24	31.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247874	16	F2	G7	MD10	14													Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247875	17	F2	G7	MFO		14	2.6	0.24	10.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247876	18	F2	G7	F	15	15	7.8	0.12	65	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247877	19	F2	G7	F	16	16	8.3	0.36	23.05555556	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247878	20	F2	D8	F	0	0	2.8	0.12	23.33333333	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247879	21	F2	D8	F	17	17	16.9	0.36	46.94444444	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247880	22	F2	D8	F	18	18	1.7	0.36	4.722222222	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247881	23	F2	D8	F	19	19	3.3	0.36	9.166666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247882	24	F2	D8	F	20	20	4.3	0.36	11.94444444	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247883	25	F2	D8	F	21	21	3.8	0.36	10.55555556	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - GROUNDWATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10226	1514992-00(	247884	26	F2	B9	MD21	22												Additional analysis 8/6/15	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247885	27	F2	B9	MF		22	16.4	0.48	34.16666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247886	28	F2	B9	MFO		23	4.7	0.24	19.58333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247887	29	F2	B9	F	23	24	2.1	0.18	11.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247888	30	F2	B9	B	24	25	17.8	0.72	24.72222222	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247889	31	F2	B9	MD21	25													Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247890	32	F2	B9	MF		26	16.6	0.36	46.11111111	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247891	33	F2	B9	MF		27	1.7	0.18	9.444444444	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247892	34	F2	B9	MD10	26													Groundwater	CDM Smith	N. Ross/DDE			
WT-10226	1514992-00(	247893	35	F2	B9	MFO		28	2.6	0.12	21.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247909	1	G1	B6	F	1	1	0.75	0.1	7.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247910	2	G1	B6	F	0	0	25	0.4	62.5	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247911	3	G1	B6	F	2	2	8.7	0.25	34.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247912	4	G1	B6	MD10	3													Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247913	5	G1	B6	MF		3	2.2	0.15	14.66666667	LA		ADX	1	1			NaK, WRTA; Asbestos_611	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247914	6	G1	B6	MD21	4													Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247915	7	G1	B6	MF		4	5.5	0.3	18.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247916	8	G1	B6	MF		5	4	0.45	8.888888889	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247917	9	G1	B6	F	5	6	1.9	0.1	19	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247918	10	G1	B6	F	6	7	2.8	0.15	18.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247919	11	G1	B6	MD10	7													Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247920	12	G1	B6	MF		8	1.3	0.25	5.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247921	13	G1	B6	F	8	9	0.9	0.3	3	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247922	14	G1	B6	F	9	10	2.7	0.15	18	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247923	15	G1	B6	F	10	11	6	0.45	13.33333333	LA		ADX	1		1		NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247924	16	G1	E7	F	11	12	13.1	0.2	65.5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247925	17	G1	E7	F	12	13	2.7	0.45	6	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247926	18	G1	E7	F	13	14	4.4	0.25	17.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247927	19	G1	E7	F	14	15	6.8	0.2	34	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247928	20	G1	E7	MD10	15													Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247929	21	G1	E7	MF		16	4.3	0.2	21.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247930	22	G1	E7	MD11	16													Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247931	23	G1	E7	MF		17	6.2	0.2	31	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247932	24	G1	E7	F	17	18	3.7	0.25	14.8	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247933	25	G1	E7	F	18	19	2.8	0.15	18.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247934	26	G1	E7	F	19	20	10.6	0.4	26.5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247935	27	G2	A8	MD10	20													Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247936	28	G2	A8	MFO		21	0.8	0.2	4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247937	29	G2	A8	F	21	22	2.5	0.4	6.25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247938	30	G2	A8	F	22	23	4.4	0.2	22	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247939	31	G2	A8	F	23	24	0.8	0.1	8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247940	32	G2	A8	F	24	25	1.3	0.15	8.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247941	33	G2	A8	F	25	26	3	0.25	12	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247942	34	G2	A8	MD20	26													Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247943	35	G2	A8	MF		27	3.4	0.25	13.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247944	36	G2	A8	MFO		28	0.8	0.2	4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247945	37	G2	A8	MD11	27													Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247946	38	G2	A8	MF		29	10.4	0.5	20.8	LA		ADX	1				NaK, WRTA; XGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247947	39	G2	G7	F	28	30	2.4	0.3	8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247948	40	G2	G7	F	29	31	3.4	0.3	11.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247949	41	G2	G7	F	30	32	52.4	0.2	162	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247950	42	G2	G7	F	31	33	2.4	0.15	16	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247951	43	G2	G7	F	32	34	4.4	0.5	8.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247952	44	G2	G7	F	33	35	4.2	0.7	6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10227	1514992-00(	247953	45	G2	G7	F	34	36	2.6	0.2	13	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248613	1	H2	B4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248614	2	H2	C6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248615	3	H2	D8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248616	4	H2	E10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248617	5	H2	I9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248618	6	H2	H7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248619	7	H2	G5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248620	8	H2	F3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248621	9	H2	C2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248622	10	H2	J3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248623	11	H3	B10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248624	12	H3	C8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248625	13	H3	C3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248626	14	H3	D1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248627	15	H3	E3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248628	16	H3	E7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248629	17	H3	F9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248630	18	H3	G7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248631	19	H3	H5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248632	20	H3	I3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10228	1514992-00(	248633	21	H3	J1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248634	1	I5	I3	F	0	0	1.2	0.24	5	NAM		NAM	1		1		NaX, UN	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248635	2	I5	I3	MD20	1													Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248636	3	I5	I3	MF		1	4.8	0.48	10	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248637	4	I5	I3	MF		2	2.5	0.82	3.048780488	LA		ADX	1	1	1		XX, WRTA; D109610	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248638	5	I5	I3	F	2	3	5.2	0.48	10.83333333	LA		ADX	1	1	1		NaK, WRTA; D109602	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248639	6	I5	I3	F	3	4	7.4	1.68	4.404761905	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248640	7	I5	I3	F	4	5	47.1	1.2	39.25	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248641	8	I5	I3	F	5	6	2.1	0.12	17.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248642	9	I5	I3	F	6	7	1.4	0.36	3.888888889	LA		ADX	1				XX, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248643	10	I5	I3	B	7	8	9.7	0.72	13.47222222	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248644	11	I5	I3	F	8	9	2.3	0.1	23	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248645	12	I5	I3	F	9	10	6.6	0.24	27.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248646	13	I5	I3	F	10	11	1.2	0.24	5	LA		ADX	1				XX, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248647	14	I5	I3	F	11	12	1.2	0.24	5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248648	15	I5	I3	F	12	13	9.6	0.1	96	LA		ADX	1				NaK, WRTA; XCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248649	16	I5	C4	F	0	0	18	0.48	37.5	LA		ADX	1				NaK, WRTA; Additional analysis 8/7/15 | XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248650	17	I5	C4	F	13	14	4.1	0.24	17.08333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248651	18	I5	C4	F	14	15	1.7	0.12	14.16666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248652	19	I5	C4	F	15	16	2.9	0.24	12.08333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248653	20	I5	C4	F	0	0	8.5	0.36	23.61111111	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248654	21	I5	C4	F	16	17	3.3	0.36	9.166666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248655	22	I5	C4	F	17	18	3.6	0.24	15	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248656	23	I5	C4	F	18	19	2.2	0.6	3.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248657	24	I5	C4	F	19	20	3.1	0.48	6.458333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248658	25	I5	C4	F	20	21	2.9	0.1	29	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248659	26	I5	C4	F	21	22	1.7	0.12	14.16666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248660	27	I5	C4	B	22	23	17.1	1.2	14.25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248661	28	I5	C4	F	23	24	3.8	0.24	15.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248662	29	I5	C4	F	24	25	2.7	0.18	15	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248663	30	I5	C4	F	25	26	2	0.12	16.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248664	31	I4	G3	F	26	27	6.2	0.18	34.44444444	LA		ADX	1				NaK, WRTA; Additional analysis 8/10/15	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248665	32	I4	G3	F	27	28	6.4	0.24	26.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248666	33	I4	G3	F	28	29	1.7	0.18	9.444444444	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248667	34	I4	G3	F	29	30	4.9	0.24	20.41666667	LA		ADX	1				XX, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248668	35	I4	G3	F	30	31	4.1	0.24	17.08333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248669	36	I4	G3	F	31	32	2.1	0.24	8.75	LA		ADX	1				XX, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248670	37	I4	G3	F	32	33	2.1	0.18	11.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248671	38	I4	G3	F	33	34	5.2	0.36	14.44444444	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248672	39	I4	G3	F	34	35	15	0.6	25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248673	40	I4	G3	F	35	36	6.1	0.24	25.41666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248674	41	I4	G3	F	0	0	3.1	0.36	8.611111111	NAM		NAM	1	1	1		NaK, PY: D10976D	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248675	42	I4	D4	F	36	37	9.3	0.24	38.75	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248676	43	I4	D4	F	37	38	5.2	0.48	10.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248677	44	I4	D4	F	38	39	1.4	0.24	5.833333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10229	1514992-00(	248678	45	I4	D4	F	39	40	1.8	0.12	15	LA		ADX	1				XX, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247954	1	J1	J3	F	0	0	5.4	0.2	27	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247955	2	J1	J3	F	1	1	2.7	0.25	10.8	LA		ADX	1	1	1		NaK, WRTA; Asbestos_613	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247956	3	J1	I6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247957	4	J1	H1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247958	5	J1	G7	F	2	2	0.7	0.15	4.666666667	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247959	6	J1	G7	F	3	3	2.3	0.4	5.75	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247960	7	J1	F2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247961	8	J1	E7	F	4	4	2.2	0.2	11	LA		ADX	1		1		NaK, WRTA; Analysis continued on 8/7/2015	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247962	9	J1	D1	MD10	5													Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247963	10	J1	D1	MB		5	1.9	0.4	4.75	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247964	11	J1	D1	F	6	6	13.4	0.6	22.33333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247965	12	J1	C4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247966	13	J1	B8	F	7	7	3.2	0.5	6.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247967	14	J1	A5	F	8	8	3.6	0.2	18	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247968	15	J2	J1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247969	16	J2	I10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247970	17	J2	H7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247971	18	J2	G2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247972	19	J2	F4	F	9	9	3.2	0.55	5.818181818	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247973	20	J2	E9	F	10	10	2.4	0.1	24	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247974	21	J2	D3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247975	22	J2	C8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247976	23	J2	B3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247977	24	J2	A7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10230	1514992-00(	247978	25	J3	D8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00(	248722	1	R1	J1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00(	248723	2	R1	J3	MD10	1													Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00(	248724	3	R1	J3	MF		1	1.6	0.25	6.4	LA		ADX	1	1			NaK, WRTA; Asbestos_623	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00(	248725	4	R1	J5	F	0	0	3	0.2	15	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00(	248726	5	R1	J5	F	2	2	5	0.6	8.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00(	248727	6	R1	J7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00(	248728	7	R1	J10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00(	248729	8	R1	H9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00(	248730	9	R1	H7	ND														Groundwater	CDM Smith	N. Ross/DDE

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - GROUNDWATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10231	1514992-00	248744	23	R1	B1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248745	24	R1	B3	F	3	3	1.3	0.4	3.25	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248746	25	R1	B5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248747	26	R1	B7	F	4	4	3.4	0.5	6.8	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248748	27	R1	B9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248749	28	R2	J9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248750	29	R2	J7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248751	30	R2	J1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248752	31	R2	H1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248753	32	R2	H3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248754	33	R2	H5	F	5	5	4	0.6	6.666666667	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248755	34	R2	H7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248756	35	R2	H9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248757	36	R2	F9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248758	37	R2	F7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248759	38	R2	F5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248760	39	R2	F3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248761	40	R2	F1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248762	41	R2	D1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248763	42	R2	D3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248764	43	R2	D5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248765	44	R2	D7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248766	45	R2	D9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248767	46	R2	B9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248768	47	R2	B7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248769	48	R2	B5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248770	49	R2	B3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248771	50	R2	B1	F	6	6	1.6	0.45	3.555555556	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248772	51	R3	A10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248773	52	R3	A8	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248774	53	R3	A6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248775	54	R3	A4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248776	55	R3	B3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248777	56	R3	B5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248778	57	R3	B7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248779	58	R3	C10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248780	59	R3	C4	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248781	60	R3	C2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248782	61	R3	D1	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248783	62	R3	D3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248784	63	R3	D5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248785	64	R3	D7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248786	65	R3	D9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248787	66	R3	E10	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248788	67	R3	E8	F	7	7	1.2	0.35	3.428571429	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248789	68	R3	E6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248790	69	R3	E4	F	8	8	2.3	0.5	4.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248791	70	R3	E2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248792	71	R3	F3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248793	72	R3	F5	MD10	9													Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248794	73	R3	F5	MF		9	1.6	0.2	8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248795	74	R3	G10	F	10	10	1.6	0.5	3.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248796	75	R3	G8	F	11	11	1.7	0.3	5.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248797	76	R3	G2	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248798	77	R3	H5	F	12	12	2.5	0.5	5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248799	78	R3	H7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248800	79	R3	H9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10231	1514992-00	248801	80	R3	I8	F	13	13	3.8	0.25	15.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248802	1	L1	J6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248803	2	L1	I1	F	1	1	2	0.1	20	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248804	3	L1	H6	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248805	4	L1	G4	F	2	2	0.9	0.2	4.5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248806	5	L1	G4	F	3	3	2.6	0.15	17.33333333	LA		ADX	1	1	1		NaK, WRTA; Asbestos_618	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248807	6	L1	F2	F	4	4	0.7	0.1	7	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248808	7	L1	E5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248809	8	L1	D3	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248810	9	L1	C5	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248811	10	L1	B8	F	5	5	2.5	0.4	6.25	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248812	11	L1	B8	F	6	6	2.1	0.35	6	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248813	12	L1	A5	F	7	7	4.9	0.8	6.125	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248814	13	L2	A5	F	8	8	1.8	0.2	9	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248815	14	L2	B7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248816	15	L2	C4	F	9	9	3	0.25	12	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248817	16	L2	C4	F	10	10	0.7	0.2	3.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248818	17	L2	D7	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248819	18	L2	E3	F	11	11	2.7	0.3	9	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248820	19	L2	F6	F	12	12	6.2	0.25	24.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248821	20	L2	G8	F	13	13	10.1	0.2	51.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248822	21	L2	H6	F	14	14	1.9	0.2	9.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248823	22	L2	H6	F	15	15	2.1	0.15	14	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248824	23	L2	I9	ND														Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248825	24	L2	J6	F	16	16	1.3	0.3	4.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248826	25	L3	J6	F	17	17	7.9	0.55	14.36363636	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248827	26	L3	J6	CD22	0													Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248828	27	L3	J6	CF		0	6.4	0.15	42.66666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248829	28	L3	J6	CF		0	5.6	0.2	28	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10232	1514992-00	248830	29	L3	J6	F	18	18	4.6	0.2	23	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248831	1	M4	J3	F	1	1	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248832	2	M4	J3	F	2	2	5.5	0.2	27.5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248833	3	M4	J3	MD10	3													Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248834	4	M4	J3	MF		3	1.3	0.15	8.666666667	LA		ADX	1	1	1		XK, AC, Asbestos_637	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248835	5	M4	J5	F	4	4	1.1	0.1	11	LA		ADX	1	1			NaK, WRTA; Asbestos_640	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248836	6	M4	J5	F	5	5	1.3	0.25	5.2	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248837	7	M4	I7	F	0	0	7.8	0.15	52	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248838	8	M4	I7	F	6	6	5.3	0.9	5.888888889	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248839	9	M4	I7	F	7	7	1.3	0.3	4.333333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248840	10	M4	I7	F	8	8	1	0.15	6.666666667	LA		ADX	1				XK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248841	11	M4	I7	F	9	9	2.8	0.25	11.2	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248842	12	M4	G4	F	10	10	12.6	0.55	22.90909091	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248843	13	M4	G4	F	11	11	2.7	0.2	13.5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248844	14	M4	G4	F	12	12	3.2	0.3	10.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248845	15	M4	G4	F	13	13	6.2	0.3	20.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248846	16	M5	A7	F	14	14	0.8	0.15	5.333333333	LA		ADX	1				NaK, WRTA; Analysis continued on 8/21/2015	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248847	17	M5	A7	F	15	15	2.5	0.15	16.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248848	18	M5	A7	F	16	16	3.2	0.15	21.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248849	19	M5	A7	F	17	17	4.5	0.25	18	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248850	20	M5	A7	F	18	18	2.8	0.2	14	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248851	21	M5	D8	F	19	19	1.6	0.1	16	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248852	22	M5	D8	F	20	20	2.2	0.25	8.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248853	23	M5	D8	MD10	21													Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248854	24	M5	D8	MF		21	4.6	0.6	7.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248855	25	M5	E4	F	22	22	1.9	0.25	7.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248856	26	M5	E4	F	23	23	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248857	27	M5	E4	F	24	24	5.3	0.4	13.25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10233	1514992-00	248858	28	M5	E4	F	25	25	1.3	0.35	3.714285714	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248859	1	S4	F7	MD10	1													Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248860	2	S4	F7	MF		1	3.8	0.24	15.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248861	3	S4	F7	F	2	2	4.3	0.2	21.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248862	4	S4	F7	F	3	3	14.3	0.72	19.86111111	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248863	5	S4	F7	F	0	0	10.5	0.24	43.75	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248864	6	S4	F7	F	4	4	6.7	0.48	13.95833333	LA		ADX	1		1		NaK, WRTA; XCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248865	7	S4	C9	F	5	5	2.9	0.24	12.08333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248866	8	S4	C9	F	6	6	2.3	0.24	9.583333333	LA		ADX	1		1		XK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248867	9	S4	C9	F	7	7	12.6	0.72	17.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248868	10	S4	C9	F	8	8	8.6	0.6	14.33333333	LA		ADX	1	1			NaK, WRTA; 0110540	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248869	11	S4	C9	F	9	9	1.9	0.24	7.916666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248870	12	S4	C9	F	10	10	6.2	0.6	10.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248871	13	S4	C9	F	11	11	4.8	0.36	13.33333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248872	14	S5	B8	F	12	12	7.4	0.12	61.66666667	LA		ADX	1				NaK, WRTA; XCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248873	15	S5	B8	F	13	13	7.8	0.72	10.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248874	16	S5	B8	F	14	14	10.1	1.2	8.416666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248875	17	S5	B8	F	15	15	3	0.84	3.571428571	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248876	18	S5	B8	F	16	16	9.8	0.36	27.22222222	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248877	19	S5	E7	F	17	17	1.2	0.12	10	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248878	20	S5	E7	F	18	18	2.9	0.18	16.11111111	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248879	21	S5	E7	F	19	19	5.1	0.24	21.25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248880	22	S5	E7	F	20	20	4.1	0.24	17.08333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248881	23	S5	E7	F	21	21	11.6	0.25	46.4	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248882	24	S5	I6	F	22	22	4.3	0.48	8.958333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248883	25	S5	I6	F	23	23	1.7	0.24	7.083333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248884	26	S5	I6	F	24	24	2	0.36	5.555555556	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248885	27	S5	I6	F	25	25	3.8	0.18	21.11111111	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248886	28	S5	I6	F	26	26	6.1	0.24	25.41666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248887	29	S5	I6	F	27	27	1.9	0.18	10.55555556	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248888	30	S5	I6	B	28	28	5.2	0.24	21.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10234	1514992-00	248889	31	S5	I6	F	29	29	5.5	0.24	22.91666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248890	1	T4	I3	F	1	1	17.1	0.96	17.8125	LA		ADX	1	1	1		NaK, WRTA; 0110640	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248891	2	T4	I3	F	2	2	2.1	0.24	8.75	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248892	3	T4	G1	B	3	3	70.8	0.6	118	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248893	4	T4	G1	F	0	0	2.6	0.25	10.4	NAM		NAM	1	1	1		NaK, OT; 011066D	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248894	5	T4	G3	F	0	0	3.4	0.24	14.16666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248895	6	T4	G3	F	4	4	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248896	7	T4	G3	F	5	5	3.6	0.12	30	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248897	8	T4	G3	MD10	6													Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248898	9	T4	G3	MFO		6	2	0.24	8.333333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248899	10	T4	G3	F	7	7	2.5	0.24	10.41666667	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248900	11	T4	G3	F	8	8	12	0.36	33.33333333	LA		ADX	1				NaK, WRTA; XCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248901	12

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - GROUNDWATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10235	1514992-00	248913	24	T5	E3	MD10	16													Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248914	25	T5	E3	MFO		16	3.8	0.25	15.2	LA		AX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248915	26	T5	E1	F	17	17	8.4	1.32	6.363636364	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248916	27	T5	E1	F	18	18	5.4	0.48	11.25	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248917	28	T5	D2	F	19	19	9.9	0.48	20.625	LA		ADX	1				KK, WRTA; XCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248918	29	T5	D4	F	20	20	2.6	0.24	10.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248919	30	T5	D4	F	21	21	3.6	0.18	20	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248920	31	T5	D4	F	22	22	10.8	2.74	3.941605839	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248921	32	T5	C3	F	23	23	4.8	0.48	10	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248922	33	T5	C3	F	24	24	2	0.12	16.66666667	LA		ADX	1				KK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10235	1514992-00	248923	34	T5	C3	F	25	25	8.6	0.48	17.91666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248924	1	T7	C9	F	1	1	1.7	0.48	3.541666667	LA		ADX	1	1	1		NaK, WRTA; 011072D	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248925	2	T7	C9	F	2	2	6	0.48	12.5	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248926	3	T7	D6	F	3	3	2.1	0.24	8.75	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248927	4	T7	F8	F	4	4	2.4	0.12	20	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248928	5	T7	F8	MD10	5													Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248929	6	T7	F8	MFO		5	1.4	0.12	11.66666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248930	7	T7	F8	F	6	6	10	0.96	10.41666667	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248931	8	T7	F8	F	7	7	2.9	0.24	12.08333333	LA		ADX	1		1		NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248932	9	T7	F8	F	8	8	10.7	0.72	14.86111111	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248933	10	T7	I10	F	9	9	4.5	0.36	12.5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248934	11	T7	I10	F	10	10	3.6	0.72	5	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248935	12	T7	I10	F	11	11	3.6	0.18	20	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248936	13	T7	I10	F	12	12	7.1	0.24	29.58333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248937	14	T7	I10	F	13	13	3.1	0.24	12.91666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248938	15	T7	I10	F	14	14	5.5	0.72	7.638888889	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248939	16	T7	I10	F	15	15	3.2	0.48	6.666666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248940	17	T8	C2	F	0	0	5.5	0.48	11.45833333	LA		ADX	1				NaK, WRTA; XNCGBLD; Additional analysis 8/24/15	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248941	18	T8	C2	F	16	16	5.2	0.36	14.44444444	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248942	19	T8	C2	F	17	17	8.8	0.72	12.22222222	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248943	20	T8	C2	F	18	18	6.7	0.12	55.83333333	LA		ADX	1				NaK, WRTA; XCGBLD	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248944	21	T8	C2	F	19	19	3.1	0.48	6.458333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248945	22	T8	C2	F	20	20	4.8	0.12	40	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248946	23	T8	C2	F	21	21	11.5	0.6	19.16666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248947	24	T8	C2	F	22	22	5.5	0.48	11.45833333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248948	25	T8	E3	F	23	23	5.5	0.36	15.27777778	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248949	26	T8	E3	F	24	24	7.5	0.36	20.83333333	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248950	27	T8	H1	F	25	25	2.5	0.24	10.41666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248951	28	T8	H1	F	26	26	3.7	0.24	15.41666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			
WT-10236	1514992-00	248952	29	T8	H1	F	27	27	4.1	0.75	5.466666667	LA		ADX	1				NaK, WRTA	Groundwater	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10087	1512830-00(	262235	17	D2	G7	F	9	9	2.5	0.24	10.41666667	OA		ADX	1	1			NaK, NR; 010507D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262255	4	G1	C9	MF		2	4.4	0.24	18.33333333	OA		ADX	1	1	1		NaK, NR; 010513D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261815	1	B4	H7	F	0	0	12.2	0.25	48.8	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261816	2	B4	H7	MD11	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261817	3	B4	H7	MF		1	6.1	0.65	9.384615385	LA		ADX	1	1	1		XX, TR; D(#158)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261818	4	B4	H7	F	2	2	6.75	0.25	27	LA		ADX	1	1	1		NaK, WRTA; D(#159)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261819	5	B4	H7	F	3	3	3	0.25	12	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261820	6	B4	H7	F	4	4	2.5	0.23	10.86956522	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261821	7	B4	H7	F	0	0	3.75	0.45	8.333333333	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261822	8	B4	H7	F	5	5	3.5	0.35	10	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261823	9	B4	H7	F	6	6	2.25	0.2	11.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261824	10	B4	H7	F	7	7	5.4	0.2	27	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261825	11	B4	H7	F	8	8	18.5	0.8	23.125	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261826	12	B4	H7	F	9	9	8.5	0.5	17	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261827	13	B4	H7	B	10	10	4.5	0.4	11.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261828	14	B4	H7	F	11	11	5.75	0.25	23	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261829	15	B4	H7	MD11	12													Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261830	16	B4	H7	MF		12	11.75	0.5	23.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261831	17	B4	H7	F	13	13	6	0.45	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261832	18	B4	H7	F	14	14	7.4	0.5	14.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261833	19	B5	D3	F	15	15	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261834	20	B5	D3	MD10	16													Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261835	21	B5	D3	MF		16	2.6	0.15	17.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261836	22	B5	D3	F	17	17	9	0.25	36	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261837	23	B5	D3	F	18	18	2.85	0.55	5.181818182	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261838	24	B5	D3	MD11	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261839	25	B5	D3	MF		19	7.75	0.35	22.14285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE	The Structure Type for total structure #19 should likely be MF, not MD. Please confirm.	12/2/2015	
WT-10001	1511057-00(	261840	26	B5	D3	F	20	20	1.25	0.25	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261841	27	B5	D3	F	21	21	6.85	0.75	9.133333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261842	28	B5	D3	F	0	0	4.5	0.15	30	NAM		NAM	1		1		NaK, UN; POSSIBLE MAGNESIO RIEBECKITE-AMBIGUOUS DIFFRACTION	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261843	29	B5	D1	F	22	22	15.5	0.25	62	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261844	30	B5	D1	MD10	23													Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261845	31	B5	D1	MF		23	2.25	0.15	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261846	32	B5	D1	F	24	24	6	0.35	17.14285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261847	33	B5	D1	MD10	25													Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261848	34	B5	D1	MF		25	3	0.2	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261849	35	B5	D1	F	26	26	6.1	0.45	13.55555556	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261850	36	B5	D1	F	27	27	2.5	0.15	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261851	37	B5	D1	F	28	28	1.5	0.2	7.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261852	38	B5	D1	F	29	29	2.25	0.2	11.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261853	39	B5	D1	F	30	30	21.75	0.75	29	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261854	40	B5	D1	F	31	31	7	0.65	10.76923077	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261855	41	B4	G1	F	32	32	1.7	0.24	7.083333333	LA		ADX	1				NaK, WRTA; ADD'L ANALYSIS-5/6/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261856	42	B4	G1	F	33	33	1.8	0.25	7.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261857	43	B4	G1	MD10	34													Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261858	44	B4	G1	MF		34	1.3	0.25	5.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261859	45	B4	G1	F	35	35	1.28	0.2	6.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261860	46	B4	G1	F	36	36	1.4	0.24	5.833333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261861	47	B4	G1	F	37	37	3	0.5	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261862	48	B4	G1	MD10	38													Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261863	49	B4	G1	MF		38	1.65	0.12	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261864	50	B4	G1	MD11	39													Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261865	51	B4	G1	MF		39	17.6	0.6	29.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261866	52	B4	G1	MF		40	4.8	0.15	32	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10001	1511057-00(	261867	53	B4	G1	MF		41	1.1	0.23	4.782608696	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236388	1	C1	I8	F	1	1	2	0.15	13.33333333	LA		ADX	1	1	1		NaK, WRTA; Photo #27797	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236389	2	C1	I8	F	2	2	2.75	0.28	9.821428571	LA		ADX	1	1	1		NaK, WRTA; Photo #27798	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236390	3	C1	I8	F	3	3	1.5	0.25	6	LA		ADX	1	1	1		XX, TR; Photo #27802	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236391	4	C1	I8	MD10	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236392	5	C1	I8	MF		4	2.5	0.1	25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236393	6	C1	I8	F	5	5	1.38	0.1	13.8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236394	7	C1	I8	MD20	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236395	8	C1	I8	MF		6	3.65	0.95	3.842105263	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236396	9	C1	I8	MF		7	4.85	1.25	3.88	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236397	10	C1	I8	MD10	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236398	11	C1	I8	MF		8	1.9	0.15	12.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236399	12	C1	I8	F	8	9	2	0.15	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236400	13	C1	I8	F	9	10	1.95	0.2	9.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236401	14	C1	I8	F	10	11	0.75	0.1	7.5	LA		ADX	1	1			XX, TR; Photo #27803	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236402	15	C1	I8	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236403	16	C2	J4	MF		12	1.25	0.25	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236404	17	C2	J4	F	12	13	7.5	0.25	30	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236405	18	C2	J4	F	13	14	6.45	0.35	18.42857143	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236406	19	C2	J4	MD10	14													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236407	20	C2	J4	MF		15	2.4	0.4	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236408	21	C2	J4	F	15	16	2.5	0.5	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236409	22	C2	J4	F	16	17	4.65	0.45	10.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236410	23	C2	J4	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236411	24	C2	J2	MF		18	2.75	0.15	18.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236412	25	C2	J2	MD10	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236413	26	C2	J2	MF		19	2	0.15	13.33333333	LA		ADX	1				XX, TR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236414	27	C2	J2	MD10	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236415	28	C2	J2	MF		20	2.75	0.5	5.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236416	29	C2	J2	MD10	20													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236417	30	C2	J2	MF		21	2.75	0.35	7.857142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236418	31	C3	C8	F	21	22	2.5	0.25	10	LA		ADX	1				XX, TR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236419	32	C3	C8	MD10	22													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236420	33	C3	C8	MF		23	2.5	0.1	25	LA		ADX	1				XX, TR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236421	34	C3	C8	F	23	24	3.75	0.75	5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236422	35	C3	C8	MD10	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236423	36	C3	C8	MF		25	3.25	0.35	9.285714286	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236424	37	C3	C8	F	25	26	4.5	0.45	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236425	38	C3	C8	B	26	27	4.25	0.95	4.473684211	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236426	39	C3	C8	F	27	28	1.9	0.15	12.66666667	LA		ADX	1		1		XX, TR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10002	1511057-00(	236427	40	C3	C8	F	28	29	1.5	0.1	15	LA		ADX	1		1		XX, TR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236428	1	D7	G9	F	1	1	9	0.3	30	LA		ADX	1	1	1		NaK, WRTA; DIFFRACTION (#161)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236429	2	D7	G9	F	2	2	1.8	0.2	9	LA		ADX	1	1	1		NaK, WRTA; DIFFRACTION (#162)-Thin fibril near grid Cu grid bar	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236430	3	D7	G9	F	3	3	1.6	0.3	5.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236431	4	D7	G7	F	4	4	14	0.4	35	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236432	5	D7	G5	F	5	5	1.5	0.23	6.52173913	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236433	6	D7	G5	F	6	6	6.1	0.45	13.55555556	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236434	7	D7	E2	F	7	7	2.5	0.25	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236435	8	D7	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236436	9	D7	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236437	10	D8	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236438	11	D8	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236439	12	D8	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236440	13	D8	D6	MD10	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236441	14	D8	D6	MF		8	2.5	0.45	5.555555556	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236442	15	D8	D6	F	9	9	2	0.25	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236443	16	D8	D4	F	10	10	3.5	0.3	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236444	17	D8	D4	F	11	11	8.5	1.1	7.727272727	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236445	18	D8	D4	F	12	12	2.7	0.48	5.625	LA		ADX	1				NaK, WRTA; STRUCTURE EMBEDDED IN CELLULOSE NOT AMBIENT AIR PARTICULATE	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236446	19	D8	C3	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236447	20	D8	C3	MF		13	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236448	21	D8	C3	B	14	14	18.25	1.3	14.03846154	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236449	22	D8	C5	F	15	15	5.1	0.25	20.4	LA		ADX	1				NaK, WRTA; STRUCTURE EMBEDDED IN CELLULOSE NOT AMBIENT AIR PARTICULATE	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236450	23	D9	E3	F	16	16	2.25	0.25	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236451	24	D9	E6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236452	25	D9	E10	F	17	17	6.1	1	6.1	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236453	26	D9	E10	F	18	18	1.5	0.18	8.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236454	27	D9	E10	F	19	19	1.5	0.15	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236455	28	D9	F7	B	20	20	1.3	0.4	3.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236456	29	D9	F7	F	21	21	5.8	0.35	16.57142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236457	30	D9	A5	F	22	22	3	0.6	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236458	31	D9	D9	F	23	23	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236459	32	D9	G10	F	24	24	2.5	0.22	11.36363636	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10003	1511057-00(	236460	33	D9	G10	F	25	25	3.8	0.2	19	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10004	1511057-00(	261868	1	E4	J10	MD11	1													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261869	2	E4	J10	MF		1	7.5	0.12	62.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261870	3	E4	J10	F	2	2	4.8	1	4.8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261871	4	E4	J10	F	0	0	2	0.25	8	NAM		NAM	1		1		XX, UN; NO Ca PEAK, AMBIGUOUS DIFFRACTION	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261872	5	E4	J10	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261873	6	E4	J10	MBO		3	0.9	0.3	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261874	7	E4	J10	F	4	4	6.1	0.25	24.4	LA		ADX	1				NaK, WRTA; HIGH Al	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261875	8	E4	J10	F	0	0	1.5	0.25	6	NAM		NAM	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261876	9	E4	J10	F	5	5	4.25	0.15	28.33333333	LA		ADX	1	1	1		NaK, WRTA; DIFFRACTION (#163)	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261877	10	E4	J10	F	6	6	2.1	0.4	5.25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261878	11	E4	J10	F	7	7	3.75	0.2	18.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261879	12	E4	J10	F	8	8	2.6	0.25	10.4	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261880	13	E4	J10	F	0	0	1.2	0.2	6	NAM		NAM	1		1		XX, UN; HIGH Al/Fe	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261881	14	E4	J10	F	0	0	2.5	0.6	4.166666667	NAM		NAM	1		1		XX, UN; HIGH Al/Fe-STRUCTURE EMBEDDED IN CELLULOSE NOT AMBIENT AIR PARTICULATE	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261882	15	E4	J10	F	9	9	1.85	0.25	7.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261883	16	E4	J10	MD10	10													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261884	17	E4	J10	MFO		10	1.75	0.15	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10004	1511057-00(	261896	29	E5	H2	F	19	19	5.5	0.25	22	LA		ADX	1				NaK, WRTA; STRUCTURE EMBEDDED IN CELLULOSE NOT AMBIENT AIR PARTICULATE	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261897	30	E5	H2	F	20	20	5.1	0.25	20.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261898	31	E5	H2	F	21	21	1.1	0.25	4.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261899	32	E5	H2	F	22	22	8.5	0.6	14.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261900	33	E5	H2	MD10	23													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261901	34	E5	H2	MFO		23	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261902	35	E5	H2	MD11	24													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261903	36	E5	H2	MF		24	10.75	0.75	14.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261904	37	E5	H2	F	25	25	1.5	0.5	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261905	38	E5	H2	F	0	0	2	0.5	4	NAM		NAM	1				NaK, UN; HIGH Al, HIGH K	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261906	39	E4	D4	F	0	0	13	0.15	86.66666667	LA		ADX	1				NaK, WRTA; ADD'L ANALYSIS-5/6/15;XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261907	40	E4	D4	F	0	0	24.75	1.3	19.03846154	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261908	41	E4	D4	MC10	26													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261909	42	E4	D4	MF		26	1.1	0.15	7.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261910	43	E4	D4	F	0	0	2.8	0.85	3.294117647	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261911	44	E4	D4	F	27	27	1.7	0.15	11.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261912	45	E4	D4	MC10	28													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261913	46	E4	D4	MFO		28	4	0.45	8.888888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261914	47	E4	D4	MD11	29													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261915	48	E4	D4	MF		29	6.5	0.1	65	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261916	49	E4	D4	F	30	30	4	0.38	10.52631579	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261917	50	E4	D4	F	31	31	6.8	0.25	27.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261918	51	E4	D4	F	32	32	2.6	0.27	9.629629629	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261919	52	E4	D4	F	33	33	4	0.5	8	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261920	53	E4	D4	MC10	34													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261921	54	E4	D4	MFO		34	0.6	0.15	4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261922	55	E4	D2	B	35	35	6	0.3	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261923	56	E4	D2	MD21	36													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261924	57	E4	D2	MF		36	5.15	0.8	6.4375	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261925	58	E4	D2	MF		37	1.2	0.24	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261926	59	E4	D2	F	37	38	3.2	0.6	5.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10004	1511057-00(	261927	60	E4	D2	F	0	0	3	0.25	12	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10005	1511057-00(	236521	1	F4	D8	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236522	2	F4	D8	MFO		1	0.75	0.25	3	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236523	3	F4	D8	F	2	2	16.2	0.65	24.92307692	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236524	4	F4	D8	B	3	3	3.8	0.17	22.35294118	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236525	5	F4	D8	MD10	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236526	6	F4	D8	MF		4	2.2	0.1	22	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236527	7	F4	D8	F	0	0	1.3	0.2	6.5	NAM		NAM	1		1		NaK, UN; Low Ca/ Additional Analysis 4/29/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236528	8	F4	D8	F	5	5	0.8	0.15	5.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236529	9	F4	D8	F	6	6	2.4	0.25	9.6	LA		ADX	1		1		NaK, WRTA; Low Ca	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236530	10	F4	D8	F	7	7	1.1	0.15	7.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236531	11	F4	D8	F	8	8	6.6	0.73	9.04109589	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236532	12	F4	D8	F	9	9	4.8	0.15	32	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236533	13	F4	D8	F	10	10	5.6	0.05	112	LA		ADX	1				NaK, WRTA; Low Ca	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236534	14	F4	D8	F	11	11	5	0.82	6.097560976	LA		ADX	1				NaK, WRTA; Structure embeded in cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236535	15	F4	D8	F	12	12	3.4	0.3	11.33333333	LA		ADX	1				NaK, WRTA; Structure embeded in cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236536	16	F4	D8	F	13	13	1.8	0.07	25.71428571	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236537	17	F4	D8	F	14	14	4.7	0.26	18.07692308	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236538	18	F4	D8	F	15	15	3.1	0.5	6.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236539	19	F4	D8	F	16	16	5.5	0.3	18.33333333	LA		ADX	1				NaK, WRTA; Structure embeded in cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236540	20	F4	D8	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236541	21	F4	D8	MFO		17	1	0.25	4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236542	22	F4	D8	F	18	18	19.2	0.63	30.47619048	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236543	23	F5	G7	F	19	19	8.7	0.08	108.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236544	24	F5	G7	MD10	20													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236545	25	F5	G7	MF		20	1.1	0.14	7.857142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236546	26	F5	G7	F	21	21	11.6	0.5	23.2	LA		ADX	1	1			NaK, WRTA; 00171 (Diffraction)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236547	27	F5	G7	B	22	22	19.2	1.7	11.29411765	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236548	28	F5	G7	MD10	23												KK,	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236549	29	F5	G7	MF		23	1.5	0.38	3.947368421	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236550	30	F5	G7	F	24	24	2.1	0.23	9.130434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236551	31	F5	G7	MD10	25													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236552	32	F5	G7	MF		25	1.3	0.06	21.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236553	33	F5	G7	MD10	26												, Additional Analysis 5/1/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236554	34	F5	G7	MF		26	1.7	0.23	7.391304348	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236555	35	F5	G7	F	27	27	1.1	0.36	3.055555556	LA		ADX	1		1		NaK, WRTA; Some Al Present	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236556	36	F5	G7	F	0	0	4	1.2	3.333333333	NAM		NAM	1		1		XK, UN; High Al	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236557	37	F5	G7	F	28	28	1.7	0.48	3.541666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236558	38	F5	G7	F	29	29	3.3	0.12	27.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236559	39	F5	G7	F	30	30	3.4	0.18	18.88888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236560	40	F5	G7	F	31	31	3.1	0.19	16.31578947	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236561	41	F5	G7	F	32	32	1.7	0.22	7.727272727	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236562	42	F5	G7	F	33	33	11.2	0.13	86.15384615	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236563	43	F5	G7	F	34	34	3.8	0.22	17.27272727	LA		ADX	1		1		NaK, WRTA; High Fe	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236564	44	F5	G7	MD11	35													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236565	45	F5	G7	MF		35	10.1	0.48	21.04166667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236566	46	F5	G7	F	36	36	1.2	0.22	5.454545455	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236567	47	F5	G7	F	37	37	3.8	0.75	5.066666667	LA		ADX	1	1			NaK, WRTA; High Fe/ 27836 (Diffraction)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236568	48	F5	E9	F	0	0	7.8	0.26	30	NAM		NAM	1		1		NaK, UN; Additional Anaysis 5/6/15, No Ca	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236569	49	F5	E9	CD20	38													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236570	50	F5	E9	CF		38	3.3	0.2	16.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236571	51	F5	E9	CF		39	2.3	0.1	23	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236572	52	F5	E9	F	0	0	4.8	0.34	14.11764706	NAM		NAM	1		1		XK, UN; Low Ca	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236573	53	F5	E9	F	39	40	3.6	0.48	7.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236574	54	F5	E9	F	40	41	3.4	0.29	11.72413793	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236575	55	F5	E9	F	41	42	5	0.75	6.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236576	56	F5	E9	MD21	42													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236577	57	F5	E9	MF		43	9.4	0.22	42.72727273	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236578	58	F5	E9	MF		44	3.5	0.1	35	LA		ADX	1				KK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236579	59	F5	E9	MD10	43													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236580	60	F5	E9	MF		45	4.3	0.07	61.42857143	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236581	61	F5	E9	F	0	0	2.4	0.29	8.275862069	NAM		NAM	1				KK, UN; Low Ca/ High Fe	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236582	62	F5	E9	MD10	44													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236583	63	F5	E9	MF		46	1.2	0.19	6.315789474	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236584	64	F5	E9	MD11	45													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236585	65	F5	E9	MF		47	13.5	0.1	135	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236586	66	F5	E9	F	46	48	4.1	0.77	5.324675325	LA		ADX	1				NaK, WRTA; Additional analysis 5/7/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236587	67	F5	E9	F	0	0	5.6	0.3	18.66666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236588	68	F5	E9	F	47	49	13.5	0.67	20.14925373	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236589	69	F5	E9	F	0	0	2.7	0.22	12.27272727	NAM		NAM	1				KK, UN; No Cs	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236590	70	F6	H7	F	48	50	1.2	0.11	10.90909091	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236591	71	F6	H7	F	49	51	1.1	0.25	4.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236592	72	F6	H7	F	50	52	16.1	0.35	46	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236593	73	F6	H7	F	51	53	3.3	0.21	15.71428571	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236594	74	F6	H7	F	0	0	2.9	0.09	32.22222222	NAM		NAM	1				NaK, UN; Low Ca	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236595	75	F6	H7	F	52	54	3.9	1.2	3.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236596	76	F6	H7	MD10	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236597	77	F6	H7	MF	0	0	4.81	0.24	20.04166667	NAM		NAM	1				KK, UN; High Al, Low Mg & Ca	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236598	78	F6	H7	F	53	55	5.4	0.11	49.09090909	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236599	79	F6	H7	MD11	54													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236600	80	F6	H7	MF		56	8.9	0.62	14.35483871	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236601	81	F6	H7	MD21	55													Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236602	82	F6	H7	MF		57	22.1	1.1	20.09090909	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236603	83	F6	H7	MF		58	3.6	0.36	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10005	1511057-00(	236604	84	F6	H7	F	56	59	2.9	0.15	19.33333333	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236605	1	G1	D8	F	1	1	2.775	0.24	11.5625	LA		ADX	1	1		1	NaK, WRTA; Photo #27807	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236606	2	G1	D8	F	2	2	1.15	0.24	4.791666667	LA		ADX	1				NaK, WRTA; Fe Peak High	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236607	3	G1	D8	MD10	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236608	4	G1	D8	MF		0	1.855	0.15	12.36666667	NAM		NAM	1		1		NaK, UN; Low Ca; High Fe, & Al	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236609	5	G1	D8	B	3	3	2.13	0.71	3	LA		ADX	1	1	1		NaK, WRTA; Photo #27808	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236610	6	G1	D8	F	4	4	5.1	0.46	11.08695652	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236611	7	G1	D8	F	0	0	1.38	0.23	6	NAM		NAM	1				KK, UN; Al Peak High	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236612	8	G1	D8	MD10	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236613	9	G1	D8	MF		5	1.61	0.23	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236614	10	G1	D8	MD10	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236615	11	G1	D8	MF		6	1.38	0.23	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236616	12	G1	D8	MD41	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236617	13	G1	D8	MF		7	5.09	0.23	22.13043478	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236618	14	G1	D8	MF		8	3.24	0.12	27	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236619	15	G1	D8	MF		9	1.4	0.23	6.086956522	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236620	16	G1	D8	MF		10	0.71	0.23	3.086956522	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236621	17	G1	D8	F	8	11	8.8	0.5	17.6	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236622	18	G1	D8	F	9	12	1.17	0.23	5.086956522	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236623	19	G1	D8	F	10	13	2.98	0.46	6.47826087	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236624	20	G1	D8	F	11	14	1.84	0.23	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236625	21	G1	D8	MD11	12													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236626	22	G1	D8	MF		15	5.32	0.23	23.13043478	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236627	23	G1	D8	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236628	24	G1	D8	MF		16	2.78	0.15	18.53333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236629	25	G1	D8	F	14	17	2.09	0.2	10.45	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236630	26	G1	D8	MD11	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236631	27	G1	D8	MF		0	6.01	0.46	13.06521739	NAM		NAM	1		1		NaK, UN; Ca Peak Very Low	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236632	28	G1	D8	MD11	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236633	29	G1	D8	MF

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10006	1511057-00(	236651	47	G3	F8	MF		28	6.01	0.23	26.13043478	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236652	48	G3	F8	F	24	29	13.43	0.55	24.41818182	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236653	49	G3	F8	MD10	25													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236654	50	G3	F8	MF		30	1.84	0.15	12.26666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236655	51	G3	F8	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236656	52	G3	F8	MF		31	1.15	0.3	3.833333333			ADX	1	1			NaK, WRTA; Photo #27809	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236657	53	G3	F8	F	27	32	1.38	0.2	6.9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236658	54	G3	F8	F	28	33	1.02	0.1	10.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236659	55	G3	F8	F	29	34	2.77	0.3	9.233333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236660	56	G3	F8	MD10	30													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236661	57	G3	F8	MF		35	1.38	0.2	6.9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236662	58	G3	F8	F	31	36	0.92	0.23	4	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236663	59	G3	F8	F	32	37	1.61	0.23	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236664	60	G3	F8	MD10	33		4.75	1										Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236665	61	G3	F8	MF		38	2.32	0.15	15.46666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236666	62	G3	F8	F	34	39	6.72	1.15	5.843478261	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236667	63	G3	B8	F	35	40	1.61	0.23	7	LA		ADX	1				NaK, WRTA; Structure embedded in cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236668	64	G3	B8	MD10	36													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236669	65	G3	B8	MF		41	1.51	0.23	6.565217391	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236670	66	G3	B8	F	37	42	2.61	0.2	13.05	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236671	67	G3	B8	MD10	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236672	68	G3	B8	MF		0	2.13	0.47	4.531914894	NAM		NAM	1				XK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236673	69	G3	B8	MD10	38													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236674	70	G3	B8	MF		43	2.36	0.25	9.44	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236675	71	G3	B8	MD10	39													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236676	72	G3	B8	MF		44	1.61	0.15	10.73333333	LA		ADX	1				NaK, WRTA; High Fe Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236677	73	G3	B8	F	40	45	1.19	0.23	5.173913044	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236678	74	G3	B8	F	41	46	2.98	0.23	12.95652174	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236679	75	G3	B8	F	42	47	0.7	0.2	3.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236680	76	G3	B8	F	43	48	1.45	0.23	6.304347826	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236681	77	G3	B8	F	44	49	4.25	0.23	18.47826087	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236682	78	G3	B8	MD10	45													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236683	79	G3	B8	MFO		50	1.31	0.1	13.1	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236684	80	G3	B8	MD10	46													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236685	81	G3	B8	MF		51	2.26	0.25	9.04	LA		ADX	1				NaK, WRTA; Low Ca Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236686	82	G3	B8	F	47	52	2.83	0.2	14.15	LA		ADX	1				NaK, WRTA; High Fe Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236687	83	G3	B8	MD20	48													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236688	84	G3	B8	MF		53	3.08	0.25	12.32	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236689	85	G3	B8	MF		54	1.41	0.1	14.1	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236690	86	G3	B8	MD10	49													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236691	87	G3	B8	MB		55	2.83	0.47	6.021276596	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236692	88	G3	B8	F	50	56	4.24	0.55	7.709090909	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236693	89	G3	B8	F	51	57	1.09	0.23	4.739130435	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236694	90	G3	B8	F	52	58	1	0.1	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236695	91	G1	I6	MD11	53													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236696	92	G1	I6	MF		59	5.89	0.7	8.414285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236697	93	G1	I6	F	54	60	5.29	0.5	10.58	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236698	94	G1	I6	F	55	61	0.94	0.15	6.266666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236699	95	G1	I6	F	56	62	1.09	0.15	7.266666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236700	96	G1	I6	MD10	57													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236701	97	G1	I6	MF		63	2.82	0.1	28.2	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236702	98	G1	I6	F	58	64	2.36	0.3	7.866666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236703	99	G1	I6	F	59	65	30.2	0.94	32.12765957	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236704	100	G1	I6	F	60	66	2.83	0.15	18.86666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236705	101	G1	I6	MD10	61													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236706	102	G1	I6	MF		67	2.13	0.2	10.65	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236707	103	G1	I6	F	62	68	1.09	0.05	21.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236708	104	G1	I6	MD10	63													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236709	105	G1	I6	MF		69	1.88	0.2	9.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236710	106	G1	I6	MD10	64													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236711	107	G1	I6	MFO		70	1.9	0.23	8.260869565	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236712	108	G1	I6	MD11	65													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236713	109	G1	I6	MF		71	6.6	0.47	14.04255319	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236714	110	G1	I6	F	66	72	1.41	0.23	6.130434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236715	111	G1	I6	MD10	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236716	112	G1	I6	MFO		0	1.41	0.25	5.64	NAM		NAM	1				XK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236717	113	G1	I6	F	67	73	1.4	0.23	6.086956522	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236718	114	G1	I6	MD10	68													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236719	115	G1	I6	MF		74	4.95	0.35	14.14285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236720	116	G1	I6	MD10	69													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236721	117	G1	I6	MFO		75	3.3	0.15	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236722	118	G1	I6	MD10	70													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236723	119	G1	I6	MF		76	4.95	0.15	33	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236724	120	G1	I6	MD31	71													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236725	121	G1	I6	MF		77	14.16	0.23	61.56521739	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236726	122	G1	I6	MB		78	2.36	0.25	9.44	LA		ADX	1				NaK, WRTA; High Ca Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236727	123	G1	I6	MF		79	1.93	0.1	19.3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236728	124	G1	I6	MD11	72													Surface Water	CDM Smith	N. Ross/DDE			
WT-10006	1511057-00(	236729	125	G1	I6	MB		80	38.7	1.41	27.44680851	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236730	1	H4	J6	F	0	0	2.2	0.6	3.666666667	NAM		NAM	1		1		XK, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236731	2	H4	J6	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236732	3	H4	J6	MF		1	1.35	0.1	13.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236733	4	H4	J6	B	2	2	62.5	1.95	32.05128205	LA		ADX	1	1	1		NaK, WRTA; XGBLD Photo #27811	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236734	5	H4	J6	F	0	0	7.5	1.5	5	NAM		NAM	1		1		XK, UN; Al Present	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236735	6	H4	J6	MD11	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236736	7	H4	J6	MF		3	25.1	0.6	41.83333333	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236737	8	H4	J6	F	0	0	1.25	0.4	3.125	NAM		NAM	1		1		XK, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236738	9	H4	J6	F	4	4	8.75	0.75	11.66666667	LA		ADX	1	1	1		NaK, WRTA; Photo #27812	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236739	10	H4	J6	MD10	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236740	11	H4	J6	MF		5	1.5	0.1	15	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236741	12	H4	J6	F	6	6	1.25	0.4	3.125	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236742	13	H4	J6	MD10	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236743	14	H4	J6	MF		7	1.5	0.1	15	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236744	15	H4	J6	MD10	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236745	16	H4	J6	MF		8	1.45	0.25	5.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236746	17	H4	J6	MD10	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236747	18	H4	J6	MF		9	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236748	19	H5	B2	F	10	10	12.5	1.5	8.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236749	20	H5	B2	F	11	11	4.5	0.25	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236750	21	H5	B2	MD10	12													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236751	22	H5	B2	MF		12	2	0.5	4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236752	23	H5	B2	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236753	24	H5	B2	MF		13	2.8	0.15	18.66666667	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236754	25	H5	B2	F	14	14	10.5	0.05	210	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236755	26	H5	B2	MD21	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236756	27	H5	B2	MFO		15	5.1	0.15	34	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236757	28	H5	B2	MF		16	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236758	29	H5	B2	F	16	17	3.5	0.5	7	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236759	30	H5	B2	F	17	18	2.5	0.25	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236760	31	H5	B2	F	18	19	14.9	0.3	49.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236761	32	H5	B2	F	19	20	5.5	0.6	9.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236762	33	H5	B2	F	20	21	2.5	0.15	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236763	34	H5	B2	F	21	22	0.9	0.1	9	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236764	35	H5	B2	F	22	23	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236765	36	H6	C2	MD10	23													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236766	37	H6	C2	MF		24	2.7	0.15	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236767	38	H6	C2	MD10	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236768	39	H6	C2	MF		25	2	0.15	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236769	40	H6	C2	B	25	26	13.9	0.9	15.44444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236770	41	H6	C2	F	26	27	4.5	0.15	30	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236771	42	H6	C2	B	27	28	2.25	0.3	7.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236772	43	H6	C2	MD10	28													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236773	44	H6	C2	MF		29	1.95	0.15	13	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236774	45	H6	C2	F	29	30	4	0.5	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236775	46	H6	C2	F	30	31	4.75	0.2	23.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236776	47	H6	C2	F	31	32	0.9	0.25	3.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236777	48	H6	C2	F	32	33	6.7	0.5	13.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236778	49	H6	C7	F	33	34	2.5	0.25	10	LA		ADX	1				NaK, WRTA; Additional analysis 5/6/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236779	50	H6	C7	CD21	34													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236780	51	H6	C7	CF		35	35	0.5	70	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236781	52	H6	C7	CF		36	3	0.5	6	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236782	53	H6	C7	MD10	35													Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236783	54	H6	C7	MF		37	3.97	0.4	9.925	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10007	1511057-00(	236784	55	H6	C7	F	0	0	17.5	0.8	21.875	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261928	1	N2	A4	F	1	1	8	0.75	10.66666667	LA		ADX	1	1	1		NaK, WRTA; Diffraction #173	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261929	2	N2	A4	MC10	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261930	3	N2	A4	MFO		2	1.8	0.25	7.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261931	4	N2	A4	MC10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261932	5	N2	A4	MFO		3	0.8	0.2	4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261933	6	N2	A4	F	0	0	3.4	0.24	14.16666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261934	7	N2	A4	F	4	4	9.2	0.49	18.7755102	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261935	8	N2	A4	MC10	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261936	9	N2	A4	MFO		5	0.75	0.24	3.125	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261937	10	N2	A4	MC11	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261938	11	N2	A4	MFO		6	15	0.23	65.2173913	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261939	12	N2	A4	F	7	7	13	0.24	54.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261940	13	N2	A4	F	8	8	13	0.53	24.52830189	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261941	14	N2	A4	F	9	9	2.4	0.6	4	LA		ADX	1		1		XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261942	15	N2	A4	F	10	10	2.3	0.22	10.45454546	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261943	16	N2	A4	F	11	11	3.25	0.25	13	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261944	17	N3	E3	F	12	12	6.8	0.7	9.714285714	LA		AD

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10008	1511057-00(	261964	37	N3	F4	F	26	26	5.3	0.24	22.08333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261965	38	N3	F4	MD11	27													Surface Water	CDM Smith	N. Ross/DDE	Structure type for primary structure #27 should likely be MD11, not MD10, since the secondary structure is > 5 µm (5.4 µm).	12/2/2015	
WT-10008	1511057-00(	261966	39	N3	F4	MF		27	5.4	0.38	14.21052632	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261967	40	N3	F4	F	28	28	7.2	0.3	24	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261968	41	N3	F4	MD10	29													Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261969	42	N3	F4	MF		29	3.8	0.26	14.61538462	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261970	43	N2	D1	F	30	30	2.75	0.25	11	LA		ADX	1				NaK, WRTA; ADD'L ANALYSIS-5/7/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261971	44	N2	D1	F	0	0	13	1.35	9.629629631	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261972	45	N2	D1	F	31	31	5.65	0.6	9.416666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261973	46	N2	D1	MC10	32													Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261974	47	N2	D1	MFO		32	1.6	0.24	6.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261975	48	N2	D1	MD11	33													Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261976	49	N2	D1	MB		33	6.2	0.55	11.27272727	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261977	50	N2	D1	F	34	34	7.4	0.6	12.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261978	51	N2	D1	F	35	35	2.9	0.85	3.411764706	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10008	1511057-00(	261979	52	N2	D1	B	36	36	2.7	0.5	5.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236837	1	T4	B1	F	0	0	5.1	0.2	25.5	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236838	2	T4	B1	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236839	3	T4	B1	MF		1	2.75	0.2	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236840	4	T4	B1	F	2	2	2.6	0.35	7.428571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236841	5	T4	B1	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236842	6	T4	B1	MF		3	2.7	0.3	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236843	7	T4	B1	F	4	4	5.1	0.2	25.5	LA		ADX	1	1			NaK, WRTA; Photo#27825	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236844	8	T4	B1	F	5	5	2.5	0.15	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236845	9	T4	B1	F	6	6	0.6	0.1	6	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236846	10	T4	B1	F	7	7	2.5	0.75	3.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236847	11	T4	B1	F	0	0	5.9	0.95	6.210526316	NAM		NAM	1		1		XK, UN; Al Present.	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236848	12	T4	B1	F	8	8	8.5	0.3	28.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236849	13	T4	B1	F	9	9	5.1	1	5.1	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236850	14	T4	B3	F	10	10	3.1	0.25	12.4	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236851	15	T4	B3	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236852	16	T4	B3	MF		11	2.5	0.25	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236853	17	T4	B3	MD11	12													Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236854	18	T4	B3	MF		12	12.5	0.25	50	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236855	19	T4	B3	F	13	13	5.1	0.6	8.5	LA		ADX	1		1		NaK, WRTA; Structure touching Cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236856	20	T4	B3	B	14	14	7.5	1.5	5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236857	21	T4	B3	MD21	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236858	22	T4	B3	MF		15	5.7	0.1	57	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236859	23	T4	B3	MF		16	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236860	24	T4	B3	F	16	17	9.5	0.3	31.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236861	25	T5	E2	F	17	18	15.7	0.4	39.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236862	26	T5	E2	F	0	0	2	0.25	8	LA		ADX	1				XK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236863	27	T5	E2	F	18	19	1.5	0.15	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236864	28	T5	E2	F	19	20	2.75	0.2	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236865	29	T5	E2	F	20	21	1.5	0.45	3.333333333	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236866	30	T5	E2	MD10	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236867	31	T5	E2	MF		22	1.25	0.1	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236868	32	T5	E2	F	22	23	10	0.5	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236869	33	T5	E2	MD40	23												Fibers embedded in cellulose/matrix material	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236870	34	T5	E2	MF		24	2.5	0.15	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236871	35	T5	E2	MF		25	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236872	36	T5	E2	MF		26	1.5	0.1	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236873	37	T5	E2	MF		27	1	0.1	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236874	38	T5	E2	F	24	28	1.9	0.15	12.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236875	39	T5	E2	F	25	29	3.5	0.25	14	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236876	40	T5	E2	MD10	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236877	41	T5	E2	MF		0	1.7	0.25	6.8	NAM		NAM	1		1		NaK, UN; Al Present	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236878	42	T5	H5	F	26	30	4.9	0.3	16.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236879	43	T5	H5	MD11	27													Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236880	44	T5	H5	MF		31	15.2	0.5	30.4	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236881	45	T5	H5	F	28	32	6.5	0.25	26	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236882	46	T5	H5	F	29	33	2	0.6	3.333333333	LA		ADX	1				NaK, WRTA; Fiber attached to cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236883	47	T5	H5	F	30	34	4.8	0.4	12	LA		ADX	1				NaK, WRTA; Fiber attached to cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236884	48	T5	H5	MD20	31													Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236885	49	T5	H5	MF		35	2.7	0.6	4.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10009	1511057-00(	236886	50	T5	H5	MF		36	0.9	0.15	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236887	1	P1	E5	B	0	0	1.41	0.25	5.64	NAM		NAM	1		1		NaK, UN; Fe,Na Peaks High; Mg, Ca Peaks Low	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236888	2	P1	E5	F	0	0	0.94	0.23	4.086956522	NAM		NAM	1		1		XK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236889	3	P1	E5	F	1	1	2.83	0.25	11.32	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236890	4	P1	E5	F	0	0	5.19	0.22	23.59090909	NAM		NAM	1		1		XK, UN; Ca Peak Low; Fe Peak High	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236891	5	P1	E5	F	0	0	1.41	0.45	3.133333333	NAM		NAM	1		1		XK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236892	6	P1	E5	F	2	2	5.19	0.37	14.02702703	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236893	7	P1	E5	F	0	0	1.89	0.25	7.56	NAM		NAM	1		1		XK, UN; Al Peak High; Ca Peak Low	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236894	8	P1	E5	F	3	3	2.46	0.25	9.84	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236895	9	P1	E5	F	4	4	3.3	0.23	14.34782609	LA		ADX	1	1	1		NaK, WRTA; D/#27820	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236896	10	P1	E5	F	5	5	0.5	0.1	5	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236897	11	P1	E5	F	6	6	3.53	0.24	14.70833333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236898	12	P1	E5	F	7	7	2.03	0.23	8.826086957	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236899	13	P1	E5	MD10	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236900	14	P1	E5	MF		8	3.06	0.23	13.30434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236901	15	P1	E5	MD10	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236902	16	P1	E5	MFO		0	1.41	0.37	3.810810811	NAM		NAM	1		1		NaK, UN; Fe Peak High; Mg Peak Low	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236903	17	P1	E5	F	9	9	3.3	0.5	6.6	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236904	18	P1	E5	F	10	10	2.23	0.4	5.575	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236905	19	P1	E5	F	11	11	5.66	0.23	24.60869565	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236906	20	P1	E5	MD20	12													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236907	21	P1	E5	MF		12	1.64	0.23	7.130434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236908	22	P1	E5	MF		13	2.82	0.2	14.1	LA		ADX	1	1			NaK, WRTA; XGBLD; D/#27823	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236909	23	P2	C7	F	13	14	1	0.23	4.347826087	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236910	24	P2	C7	MD10	14													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236911	25	P2	C7	MFO		15	0.5	0.15	3.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236912	26	P2	C7	MD10	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236913	27	P2	C7	MF		16	2.83	0.23	12.30434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236914	28	P2	C7	F	16	17	4.7	0.25	18.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236915	29	P2	C7	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236916	30	P2	C7	MF		18	1.88	0.23	8.173913043	LA		ADX	1				NaK, WRTA; Structure embedded in cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236917	31	P2	C7	F	0	0	1.64	0.23	7.130434783	NAM		NAM	1				XK, UN; High Al, Fe; Low Mg (Structure embedded in cellulose)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236918	32	P2	C7	F	0	0	2.59	0.16	17.26666667	NAM		NAM	1				XK, UN; High Ca, Low Mg	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236919	33	P2	C7	F	18	19	3.53	0.45	7.844444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236920	34	P2	C7	F	19	20	4.75	0.23	20.65217391	LA		ADX	1				NaK, WRTA; Low Ca	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236921	35	P2	C7	MD11	20													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236922	36	P2	C7	MF		21	7.55	0.67	11.26865672	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236923	37	P2	C7	F	21	22	2.13	0.2	10.65	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236924	38	P2	C7	MD10	22													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236925	39	P2	C7	MF		23	0.94	0.1	9.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236926	40	P2	C7	F	23	24	1.68	0.23	7.304347826	LA		ADX	1				NaK, WRTA; Structure embedded in cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236927	41	P2	C7	F	24	25	2.59	0.2	12.95	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236928	42	P2	C7	F	25	26	2.36	0.23	10.26086957	LA		ADX	1				NaK, WRTA; Structure embedded in cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236929	43	P2	C7	F	0	0	4.52	0.25	18.08	NAM		NAM	1				XK, UN; XGBLD; Low Ca; High Al	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236930	44	P2	E7	F	0	0	0.94	0.23	4.086956522	NAM		NAM	1				XK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236931	45	P2	E7	F	0	0	0.72	0.23	3.130434783	NAM		NAM	1				XK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236932	46	P2	E7	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236933	47	P2	E7	MF		27	3.3	0.47	7.021276596	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236934	48	P2	E7	F	27	28	0.94	0.1	9.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236935	49	P2	E7	F	28	29	1.64	0.25	6.56	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236936	50	P2	E7	F	29	30	1.19	0.25	4.76	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236937	51	P2	E7	F	30	31	1.64	0.23	7.130434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236938	52	P2	E7	F	31	32	5.19	0.47	11.04255319	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236939	53	P2	E7	MD10	32													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236940	54	P2	E7	MF		33	3.06	0.23	13.30434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236941	55	P2	E7	MD10	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236942	56	P2	E7	MFO		0	0.7	0.15	4.666666667	NAM		NAM	1				XK, UN; High Al; Low Ca	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236943	57	P2	E7	MD10	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236944	58	P2	E7	MFO		0	0.67	0.15	4.466666667	NAM		NAM	1				XK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236945	59	P2	E7	F	33	34	3.03	0.23	13.17391304	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236946	60	P2	E7	F	34	35	9.9	0.2	49.5	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236947	61	P2	E7	MD10	35													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236948	62	P2	E7	MF		36	1.9	0.23	8.260869565	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236949	63	P2	E7	F	36	37	1.41	0.25	5.64	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236950	64	P2	E7	MD10	37													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236951	65	P2	E7	MF		38	1.88	0.23	8.173913043	LA		ADX	1				NaK, WRTA; XGBLD; Fe Peak High	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236952	66	P3	H6	F	38	39	1.41	0.23	6.130434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236953	67	P3	H6	MD10	39													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236954	68	P3	H6	MF		40	3.3	0.15	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236955	69	P3	H6	F	40	41	0.55	0.05	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236956	70	P3	H6	F	41	42	4.65	0.23	20.2173913	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236957	71	P3	H6	MD10	42													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236958	72	P3	H6	MF		43	0.95	0.1	9.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236959	73	P3	H6	F	0	0	1.17	0.2	5.85	NAM		NAM	1				XK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236960	74	P3	H6	B	43	44	1.5	0.25	6	LA		ADX	1				NaK, WRTA; Low Ca Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236961	75	P3	H6	MD10	44													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236962	76	P3	H6	MB		45	2.83	0.25	11.32	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236963	77	P3	H6	MD10	45													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236964	78	P3	H6	MF		46	4.97	0.3	16.56666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236965	79	P3	H6	MD10	46													Surface Water	CDM Smith	N. Ross/DDE			
WT-10010	1511057-00(	236966	80	P3	H6	MF	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10011	1511057-00(	261994	15	Q2	G4	F	13	13	7.6	0.28	27.14285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	261995	16	Q2	G4	F	14	14	7	0.25	28	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	261996	17	Q2	G4	MD10	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	261997	18	Q2	G4	MF		15	2	0.15	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	261998	19	Q2	E4	CD21	16													Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	261999	20	Q2	E4	CF		16	12.5	1.6	7.8125			ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262000	21	Q2	E4	CF		17	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262001	22	Q2	E4	F	17	18	1.1	0.15	7.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262002	23	Q2	E4	MD10	18								1					Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262003	24	Q2	E4	MFO		19	1.25	0.25	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262004	25	Q2	E4	MD11	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262005	26	Q2	E4	MF		20	6.6	0.25	26.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262006	27	Q2	E4	MD10	20													Surface Water	CDM Smith	N. Ross/DDE	The Structure Type for primary structure #20 should likely be MD10, not MD11, since the secondary structure is 1 µm.	12/2/2015	
WT-10011	1511057-00(	262007	28	Q2	E4	MFO		21	1	0.12	8.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262008	29	Q2	E4	F	21	22	1	0.08	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262009	30	Q2	E4	MD10	22													Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262010	31	Q2	E4	MF		23	2.65	0.25	10.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262011	32	Q2	E4	F	23	24	7.5	0.4	18.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262012	33	Q3	D2	B	24	25	4.5	0.6	7.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262013	34	Q3	D2	F	25	26	5.2	0.48	10.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262014	35	Q3	D2	B	26	27	17.25	0.25	69	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262015	36	Q3	D2	F	27	28	1.6	0.08	20	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262016	37	Q3	D2	F	0	0	6.8	0.25	27.2	NAM		NAM	1		1		NaK, UN; No Ca Presence	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262017	38	Q3	D2	F	28	29	2.5	0.08	31.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10011	1511057-00(	262018	39	Q3	D2	F	29	30	1.4	0.12	11.66666667	LA		ADX	1				NaK, WRTA; STRUCTURE EMBEDDED IN CELLULOSE	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237008	1	R1	A1	F	1	1	4.1	0.75	5.466666667	LA		ADX	1	1	1		NaK, WRTA; Photo #27824	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237009	2	R1	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237010	3	R1	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237011	4	R1	C2	F	2	2	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237012	5	R1	C2	F	3	3	11.7	0.2	58.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237013	6	R1	C2	B	4	4	12	0.25	48	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237014	7	R1	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237015	8	R1	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237016	9	R1	C8	F	5	5	1.5	0.15	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237017	10	R1	D1	B	6	6	6.1	0.1	61	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237018	11	R1	D1	F	7	7	17.1	0.6	28.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237019	12	R1	D1	F	8	8	3	0.3	10	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237020	13	R1	D3	F	9	9	2.6	0.5	5.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237021	14	R1	D5	F	10	10	10.9	0.2	54.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237022	15	R1	D5	MD20	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237023	16	R1	D5	MF		11	1.9	0.1	19	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237024	17	R1	D5	MFO		12	0.75	0.2	3.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237025	18	R1	D5	MD10	12													Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237026	19	R1	D5	MF		13	1.5	0.1	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237027	20	R1	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237028	21	R3	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237029	22	R3	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237030	23	R3	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237031	24	R3	G3	F	13	14	2.3	0.1	23	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237032	25	R3	E10	B	14	15	19	1	19	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237033	26	R3	E10	F	15	16	0.9	0.25	3.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237034	27	R3	E8	F	16	17	2.6	0.15	17.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237035	28	R3	E6	F	0	0	1.5	0.5	3	NAM		NAM	1		1		XK, UN; Al Present	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237036	29	R3	E6	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237037	30	R3	E6	MF		18	2	0.1	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237038	31	R3	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237039	32	R3	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10012	1511057-00(	237040	33	R3	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237440	1	A4	D3	F	1	1	3.4	0.04	85	LA		ADX	1	1	1		XX, WRTA; 1312-Morphology, 1313-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237441	2	A4	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237442	3	A4	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237443	4	A4	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237444	5	A4	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237445	6	A4	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237446	7	A4	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237447	8	A5	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237448	9	A5	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237449	10	A5	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237450	11	A5	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237451	12	A5	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237452	13	A5	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237453	14	A5	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237454	15	A6	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237455	16	A6	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237456	17	A6	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237457	18	A6	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237458	19	A6	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237459	20	A6	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10015	1511388-00(	237460	21	A6	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237461	1	A7	I8	F	1	1	2.83	0.51	5.549019608	LA		ADX	1	1	1		NaK, WRTA; 1314-Morphology; 1315-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237462	2	A7	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237463	3	A7	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237464	4	A7	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237465	5	A7	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237466	6	A7	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237467	7	A7	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237468	8	A8	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237469	9	A8	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237470	10	A8	B5	F	2	2	2.52	0.11	22.90909091	LA		ADX	1	1	1		NaK, WRTA; 1316-Morph; 1318-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237471	11	A8	B5	F	3	3	2.9	0.52	5.576923077	LA		ADX	1	1	1		XX, WRTA; 1319-Morph; 1320-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237472	12	A8	B5	F	4	4	3.67	0.31	11.83870968	LA		ADX	1	1	1		NaK, WRTA; 1321-Morph, 1322-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237473	13	A8	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237474	14	A8	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237475	15	A8	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237476	16	A8	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237477	17	A8	J1	F	5	5	3.22	0.07	46	LA		ADX	1	1	1		NaK, WRTA; 1323-Morph; 1324-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237478	18	A7	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237479	19	A7	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237480	20	A7	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237481	21	A8	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237482	22	A8	B10	F	6	6	5.8	0.28	20	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10016	1511388-00(	237483	23	A8	E10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237484	1	A10	B1	F	1	1	5.04	0.52	9.692307692	LA		LA	1	1	1		XX, WRTA; 1325-Morph; 1326-Diff; ~6 microns away from top gridbar	Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237485	2	A10	B3	F	2	2	8.5	0.26	32.69230769	LA		LA	1	1	1		NaK, WRTA; 1327-Morph; 1328-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237486	3	A10	B5	F	3	3	3.08	0.51	6.039215686	LA		LA	1	1	1		NaK, WRTA; 1329-Morph; 1330-Diff; Near left Grid Bar	Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237487	4	A10	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237488	5	A10	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237489	6	A10	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237490	7	A10	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237491	8	B1	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237492	9	B1	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237493	10	B1	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237494	11	B1	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237495	12	B1	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237496	13	B1	F5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237497	14	B1	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237498	15	B2	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237499	16	B2	H3	F	4	4	8.7	0.28	31.07142857	LA		ADX	1	1	1		XX, WRTA; 1331-Morph; 1332-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237500	17	B2	H5	F	5	5	3.12	0.25	12.48	LA		AX	1	1	1		XX, WRTA; 1333-Morph	Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237501	18	B2	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237502	19	B2	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237503	20	B2	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10017	1511388-00(	237504	21	B2	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237505	1	B3	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237506	2	B3	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237507	3	B3	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237508	4	B3	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237509	5	B3	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237510	6	B3	C7	F	0	0	6.2	0.27	22.96296296	NAM		UF	1	1			.XNCGBLD; 1334-Morph; 1335-Diff)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237511	7	B3	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237512	8	B3	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237513	9	B3	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237514	10	B3	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237515	11	B4	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237516	12	B4	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237517	13	B4	I10	F	1	1	2.7	0.25	10.8	LA		ADX	1	1	1		NaK, WRTA; 1336-Morph; 1337-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237518	14	B4	D1	F	2	2	2.9	0.31	9.35483871	LA		ADX	1	1	1		XX, WRTA; 1338-Morph; 1339-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237519	15	B4	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237520	16	B4	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237521	17	B4	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237522	18	B4	E10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237523	19	B4	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237524	20	B4	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10018	1511388-00(	237525	21	B4	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237526	1	B6	I6	F	1	1	5.9	0.69	8.550724638	LA		ADX	1	1	1		NaK, WRTA; 1340-Morph;1341-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237527	2	B6	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237528	3	B6	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237529	4	B6	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237530	5	B6	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237531	6	B6	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237532	7	B6	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237533	8	B7	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237534	9	B7	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237535	10	B7	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237536	11	B7	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237537	12	B7	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237538	13	B7	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237539	14	B7	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237540	15	B8	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237541	16	B8	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237542	17	B8	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237543	18	B8	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	1511388-00(	237544	19	B8	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10019	151138B-00(	237545	20	B8	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10019	151138B-00(	237546	21	B8	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237547	1	B9	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237548	2	B9	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237549	3	B9	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237550	4	B9	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237551	5	B9	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237552	6	B9	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237553	7	B9	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237554	8	B10	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237555	9	B10	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237556	10	B10	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237557	11	B10	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237558	12	B10	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237559	13	B10	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237560	14	B10	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237561	15	C1	I10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237562	16	C1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237563	17	C1	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237564	18	C1	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237565	19	C1	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237566	20	C1	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10020	151138B-00(	237567	21	C1	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237568	1	P7	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237569	2	P7	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237570	3	P7	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237571	4	P7	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237572	5	P7	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237573	6	P7	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237574	7	P7	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237575	8	P7	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237576	9	P7	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237577	10	P7	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237578	11	P7	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237579	12	P7	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237580	13	P7	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237581	14	P7	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237582	15	P7	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237583	16	P7	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237584	17	P7	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237585	18	P7	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237586	19	P7	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237587	20	P7	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237588	21	P7	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237589	22	P7	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237590	23	P7	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237591	24	P7	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237592	25	P7	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237593	26	P8	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237594	27	P8	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237595	28	P8	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237596	29	P8	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237597	30	P8	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237598	31	P8	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237599	32	P8	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237600	33	P8	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237601	34	P8	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237602	35	P8	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237603	36	P8	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237604	37	P8	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237605	38	P8	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237606	39	P8	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237607	40	P8	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237608	41	P8	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237609	42	P8	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237610	43	P8	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237611	44	P8	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237612	45	P8	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237613	46	P8	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237614	47	P8	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237615	48	P8	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237616	49	P8	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237617	50	P8	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237618	51	P8	A1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237619	52	P9	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237620	53	P9	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237621	54	P9	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237622	55	P9	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237623	56	P9	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237624	57	P9	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237625	58	P9	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237626	59	P9	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237627	60	P9	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237628	61	P9	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237629	62	P9	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237630	63	P9	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237631	64	P9	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237632	65	P9	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237633	66	P9	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237634	67	P9	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237635	68	P9	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237636	69	P9	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237637	70	P9	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237638	71	P9	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237639	72	P9	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237640	73	P9	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237641	74	P9	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237642	75	P9	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237643	76	P9	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10021	151138B-00(	237644	77	P9	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237645	1	C5	J7	F	1	1	0.88	0.28	3.142857143	LA		ADX	1	1	1		NoK, WRTA; 1346-morph, 1347-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237646	2	C5	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237647	3	C5	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237648	4	C5	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237649	5	C5	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237650	6	C5	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237651	7	C5	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237652	8	C6	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237653	9	C6	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237654	10	C6	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237655	11	C6	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237656	12	C6	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237657	13	C6	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237658	14	C6	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237659	15	C7	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237660	16	C7	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237661	17	C7	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237662	18	C7	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237663	19	C7	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237664	20	C7	J9	F	2	2	3.09	0.31	9.967741936	LA		ADX	1	1	1		XK, WRTA; 1348-Morph, 1349-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10022	151138B-00(	237665	21	C7	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237666	1	C8	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237667	2	C8	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237668	3	C8	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237669	4	C8	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237670	5	C8	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237671	6	C8	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237672	7	C8	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237673	8	C8	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237674	9	C8	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237675	10	C8	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237676	11	C8	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237677	12	C9	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237678	13	C9	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237679	14	C9	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237680	15	C9	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237681	16	C9	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237682	17	C9	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237683	18	C9	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237684	19	C9	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237685	20	C9	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10023	151138B-00(	237686	21	C9	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237687	1	K10	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237688	2	K10	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237689	3	K10	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237690	4	K10	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237691	5	K10	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237692	6	K10	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237693	7	K10	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237694	8	L1	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237695	9	L1	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237696	10	L1	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237697	11	L1	I10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237698	12	L1	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237699	13	L1	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237700	14	L1	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237701	15	L2	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237702	16	L2	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237703	17	L2	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237704	18	L2	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237705	19	L2	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237706	20	L2	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237707	21	L2	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10024	151138B-00(	237708	22	L2	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	151138B-00(	262124	1	L3	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	151138B-00(	262125	2	L3	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	151138B-00(	262126	3	L3	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	151138B-00(	262127	4	L3	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	151138B-00(	262128	5	L3	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	151138B-00(	262129	6	L3	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	151138B-00(	262130	7	L3	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10025	1511388-00	262131	8	L4	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262132	9	L4	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262133	10	L4	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262134	11	L4	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262135	12	L4	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262136	13	L4	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262137	14	L4	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262138	15	L5	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262139	16	L5	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262140	17	L5	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262141	18	L5	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262142	19	L5	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262143	20	L5	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10025	1511388-00	262144	21	L5	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237730	1	L7	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237731	2	L7	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237732	3	L7	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237733	4	L7	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237734	5	L7	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237735	6	L7	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237736	7	L7	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237737	8	L7	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237738	9	L7	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237739	10	L7	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237740	11	L7	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237741	12	L8	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237742	13	L8	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237743	14	L8	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237744	15	L8	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237745	16	L8	F9	F	1	1	3.94	0.52	7.576923077	LA		ADX	1	1	1		NaK, WRTA; 1351-Morph; 1352-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237746	17	L8	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237747	18	L8	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237748	19	L8	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237749	20	L8	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10026	1511388-00	237750	21	L8	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237751	1	L9	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237752	2	L9	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237753	3	L9	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237754	4	L9	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237755	5	L9	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237756	6	L9	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237757	7	L9	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237758	8	L10	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237759	9	L10	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237760	10	L10	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237761	11	L10	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237762	12	L10	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237763	13	L10	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237764	14	L10	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237765	15	M1	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237766	16	M1	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237767	17	M1	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237768	18	M1	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237769	19	M1	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237770	20	M1	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10027	1511388-00	237771	21	M1	C1	F	1	1	5.8	0.27	21.48148148	LA		ADX	1	1	1		XX, WRTA; 1353-Morph, 1354-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10028	1511388-00	245646	1	M3	B7	F	1	1	3.09	0.29	10.65517241	LA		ADX	1	1	1		NaK, WRTA; 1355-Morph; 1356-Diff	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245647	2	M3	B7	F	2	2	8.81	0.14	62.92857143	LA		ADX	1	1			NaK, WRTA; 1357-Morph; 1358-Diff	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245648	3	M3	B7	F	3	3	3.1	0.51	6.078431373	LA		ADX	1	1	1		NaK, WRTA; 1359-Morph; 1360-Diff; next to circular matrix	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245649	4	M3	B7	F	4	4	3.7	0.67	5.52238806	LA		ADX	1	1	1		NaK, WRTA; 1361-Morph; 1362-Diff	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245650	5	M3	B7	F	5	5	3	0.09	33.33333333	LA		ADX	1	1			XX, WRTA; 1363-Morph; 1364-Diff	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245651	6	M3	B7	F	6	6	6.92	0.63	10.98412698	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245652	7	M3	B7	F	7	7	8.7	0.56	15.53571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245653	8	M3	B7	F	8	8	7.9	0.51	15.49019608	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245654	9	M3	B7	MD10	9													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245655	10	M3	B7	MF		9	2.7	0.25	10.8	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245656	11	M3	B7	F	10	10	8.5	0.24	35.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245657	12	M3	B7	F	0	0	17.4	0.31	56.12903226	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245658	13	M3	B7	F	11	11	8.2	0.32	25.625	LA		AX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245659	14	M3	C6	F	12	12	3.66	0.26	14.07692308	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245628	15	M3	C6	F	13	13	2.67	0.32	8.34375	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245629	16	M3	C6	F	14	14	5.04	0.28	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245630	17	M3	C6	F	15	15	2.3	0.08	28.75	LA		AX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245631	18	M3	C6	F	16	16	3.08	0.33	9.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245632	19	M3	C6	F	17	17	1.6	0.13	12.30769231	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245633	20	M3	C6	F	18	18	4.9	0.44	11.13636364	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245634	21	M3	C6	F	19	19	10.2	0.55	18.54545455	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245635	22	M3	C6	F	20	20	1.3	0.4	3.25	LA		AX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245636	23	M3	C6	F	21	21	2.7	0.53	5.094339623	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245637	24	F1	I8	F	22	22	9.47	0.72	13.15277778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245638	25	F1	I8	F	23	23	6.73	0.13	51.76923077	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245639	26	F1	I8	F	0	0	1.12	0.28	4	NAM		NAM	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245640	27	F1	I8	F	24	24	4.8	0.78	6.153846154	LA		ADX	1				XX, WRTA; High Fe, Low Ca	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245641	28	F1	I8	F	25	25	3.58	0.55	6.509090909	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245642	29	F1	F8	F	26	26	10.1	0.26	38.84615385	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245643	30	F1	F8	MD22	27													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245644	31	F1	F8	MF		27	12.3	0.55	22.36363636	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10028	1511388-00	245645	32	F1	F8	MF		28	5.6	0.71	7.887323944	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10031	1511388-00	237804	1	F2	D5	F	1	1	8.9	0.58	15.34482759	LA		ADX	1	1	1		NaK, WRTA; 1365-Morph, 1366-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237805	2	F2	D5	F	2	2	12.62	0.14	90.14285714	LA		ADX	1	1	1		XX, WRTA; 1367-Morph, 1368-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237806	3	F2	D5	F	3	3	2.8	0.12	23.33333333	LA		ADX	1	1	1		XX, WRTA; 1369-Morph; 1370-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237807	4	F2	D5	F	4	4	6.83	0.55	12.41818182	LA		ADX	1	1	1		NaK, WRTA; 1371-Morph; 1372-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237808	5	F2	D5	F	5	5	3	0.58	5.172413793	LA		ADX	1	1	1		NaK, WRTA; 1374-Morph; 1375-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237809	6	F3	J6	F	6	6	5.7	0.61	9.344262295	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237810	7	F3	J6	F	7	7	2.95	0.42	7.023809524	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237811	8	F3	J6	F	0	0	4.8	0.44	10.90909091	NAM		ADX	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237812	9	F3	J8	F	8	8	25.3	0.72	35.13888889	LA		ADX	1				XX, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237813	10	F4	B4	F	9	9	6.2	0.56	11.07142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237814	11	F4	B4	F	10	10	13	0.71	18.30985915	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237815	12	F4	B4	F	11	11	9.24	0.68	13.58823529	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237816	13	F4	B4	F	12	12	3.66	0.16	22.875	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237817	14	F4	B6	F	13	13	9.7	0.71	13.66197183	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237818	15	F4	B6	F	14	14	3.94	0.27	14.59259259	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237819	16	F4	B6	F	15	15	4.12	0.54	7.62962963	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237820	17	F2	J9	F	16	16	6.92	0.48	14.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237821	18	F2	J9	F	0	0	2.8	0.42	6.666666667	NAM		ADX	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237822	19	F2	J9	F	17	17	3.56	0.28	12.71428571	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237823	20	F2	J9	F	18	18	7.3	0.58	12.5862069	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237824	21	F4	C7	F	19	19	1.35	0.28	4.821428571	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237825	22	F4	C7	F	20	20	8.9	0.55	16.18181818	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237826	23	F4	C7	F	21	21	2.54	0.56	4.535714286	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237827	24	F3	I7	F	22	22	14.5	0.29	50	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237828	25	F3	I7	F	23	23	1.36	0.12	11.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237829	26	F3	I7	F	24	24	3.2	0.31	10.32258065	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237830	27	F3	I7	F	25	25	9.4	0.55	17.09090909	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10031	1511388-00	237831	28	F3	I7	F	26	26	1.42	0.31	4.580645161	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237832	1	F5	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237833	2	F5	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237834	3	F5	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237835	4	F5	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237836	5	F5	D4	F	0	0	2.7	0.53	5.094339623	NAM		NAM	1	1	1		XX, UN; Morph-1376, Diff-1377	Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237837	6	F5	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237838	7	F5	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237839	8	F6	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237840	9	F6	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237841	10	F6	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237842	11	F6	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237843	12	F6	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237844	13	F6	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237845	14	F7	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237846	15	F7	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237847	16	F7	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237848	17	F7	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237849	18	F7	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237850	19	F7	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237851	20	F6	G2	ND													Additional analysis 5/28/2015	Surface Water	CDM Smith	N. Ross/DDE			
WT-10032	1511388-00	237852	21	F7	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237853	1	F8	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237854	2	F8	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237855	3	F8	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237856	4	F8	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237857	5	F8	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237858	6	F8	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237859	7	F8	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237860	8	F9	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237861	9	F9	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237862	10	F9	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237863	11	F9	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237864	12	F9	H3	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237865	13	F9	H3	MF		1	2.3	0.72	3.194444444	LA		ADX	1	1	1		XX, WRTA; 1378-Morph; 1379-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237866	14	F9	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237867	15	F9	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237868	16	F10	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237869	17	F10	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237870	18	F10	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237871	19	F10	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237872	20	F10	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237873	21	F10	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10033	1511388-00	237874	22	F10	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237875	1	G1	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237876	2	G1	I1	F	1	1	5	0.58	8.620689655	LA		ADX	1	1	1		XX, WRTA; 1381-Morph; 1382-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237877	3	G1	I1	F	2	2	3.34	0.52	6.423076923	LA		ADX	1	1			XX, WRTA; 1383-Morph, 1384-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237878	4	G1	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237879	5	G1	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237880	6	G1	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237881	7	G1	A1	F	3	3	10	0.28	35.71428571	LA		ADX	1	1			NaK, WRTA; 1385-Morph; 1386-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237882	8	G1	A1	F	4	4	2.8	0.09	31.11111111	LA		ADX	1	1	1		NaK, WRTA; 1387-Morph; 1388-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237883	9	G1	G1	ND														Surface Water	C

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10034	1511388-00	237886	12	G2	A8	MFO		5	3.7	0.1	37	LA		ADX	1	1	1		XX, WRTA; Morph-1389; Diff-1390	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237887	13	G2	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237888	14	G2	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237889	15	G2	H10	F	6	6	10.8	0.5	21.6	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237890	16	G2	H10	F	7	7	5.2	0.31	16.77419355	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237891	17	G2	H10	F	8	8	1.65	0.3	5.5	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237892	18	G2	H10	F	9	9	1.4	0.42	3.333333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237893	19	G2	H10	F	10	10	4	0.63	6.349206349	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237894	20	G2	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237895	21	G2	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237896	22	G3	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237897	23	G3	F9	F	11	11	4.1	0.31	13.22580645	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237898	24	G3	H10	F	12	12	9.7	0.32	30.3125	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237899	25	G3	H7	F	13	13	3.45	0.28	12.32142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237900	26	G3	H5	F	14	14	3.4	0.52	6.538461539	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237901	27	G3	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10034	1511388-00	237902	28	G3	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237919	1	P3	D4	F	1	1	3.9	1.14	3.421052632	LA		ADX	1	1	1		XX, WRTA; 1391-Morph; 1392-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237920	2	P3	D4	F	2	2	8.85	0.74	11.95945946	LA		ADX	1	1	1		XX, WRTA; 1393-Morph; 1394-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237921	3	P3	D4	F	3	3	17.36	1.04	16.69230769	LA		ADX	1	1	1		NaX, WRTA; XGBLD; 1395- Morph; 1396-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237922	4	P3	D7	F	4	4	9.82	0.85	11.55294118	LA		ADX	1	1	1		NaK, WRTA; 1397-Morph; 1398-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237923	5	P3	C8	F	5	5	1.7	0.2	8.5	LA		ADX	1	1	1		NaX, WRTA; Embedded in matrix; 1399-Morph; 1400-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237924	6	P3	C8	F	6	6	1.7	0.56	3.035714286	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237925	7	P3	C8	F	7	7	2.5	0.03	83.33333333	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237926	8	P3	C8	F	8	8	1.9	0.29	6.551724138	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237927	9	P3	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237928	10	P3	B5	F	9	9	1.69	0.28	6.035714286	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237929	11	P3	B5	F	10	10	6	0.28	21.42857143	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237930	12	P3	B5	F	11	11	3.66	0.14	26.14285714	LA		AX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237931	13	P3	C4	F	12	12	4	0.13	30.76923077	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237932	14	P3	C2	F	13	13	5	0.55	9.090909091	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237933	15	P4	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237903	16	P4	H6	F	14	14	12.3	0.29	42.4137931	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237904	17	P4	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237905	18	P4	J6	F	15	15	20.5	0.6	34.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237906	19	P4	I3	F	16	16	2.4	0.7	3.428571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237907	20	P4	I3	F	17	17	4.9	0.25	19.6	LA		ADX	1				NaX, WRTA; Al peak from matrices	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237908	21	P4	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237909	22	P4	G9	F	18	18	0.86	0.27	3.185185185	LA		AX	1				NaX, WRTA; Al peak from matrix to right	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237910	23	P4	G9	F	19	19	10	0.61	16.39344262	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237911	24	P4	F8	F	20	20	3.3	0.68	4.852941176	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237912	25	P4	E9	F	21	21	3.37	0.31	10.87096774	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237913	26	P4	E7	F	22	22	1.3	0.2	6.5	LA		AX	1				NaX, WRTA; Thin fiber next to matrix; Al peak present	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237914	27	P4	E3	F	23	23	1.7	0.5	3.4	LA		ADX	1				XX, WRTA; High Fe; Low Ca	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237915	28	P4	D6	F	24	24	2.7	0.11	24.54545455	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237916	29	P4	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237917	30	P4	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10035	1511388-00	237918	31	P4	C9	F	25	25	10.1	0.56	18.03571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238412	1	B4	D9	F	1	1	2	0.1	20	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238413	2	B4	D9	B	2	2	49.9	0.9	55.44444444	LA		ADX	1	1	1		NaK, WRTA; Photo#27828	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238414	3	B4	D9	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238415	4	B4	D9	MF		3	3.9	0.25	15.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238416	5	B4	D9	F	4	4	2.5	0.35	7.142857143	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238417	6	B4	D9	CD20	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238418	7	B4	D9	CF		5	2.75	0.5	5.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238419	8	B4	D9	CF		6	1.8	0.5	3.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238420	9	B4	D9	F	6	7	5.7	0.9	6.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238421	10	B4	D9	B	7	8	5.5	0.45	12.22222222	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238422	11	B4	D9	F	8	9	8.9	0.9	9.888888889	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238423	12	B4	D9	F	9	10	3	0.25	12	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238424	13	B4	D9	F	10	11	1.9	0.1	19	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238425	14	B4	D9	MD20	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238426	15	B4	D9	MF		12	4.9	0.35	14	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238427	16	B4	D9	MF		13	1.5	0.1	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238428	17	B4	D9	F	12	14	5.9	0.2	29.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238429	18	B4	D9	F	13	15	7.1	0.5	14.2	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238430	19	B4	D7	F	0	0	2.75	0.35	7.857142857	NAM		NAM	1		1		NaX, UN; Mn Present	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238431	20	B4	D7	F	14	16	2	0.1	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238432	21	B4	D7	F	15	17	3.5	0.25	14	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238433	22	B4	D7	F	16	18	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238434	23	B4	D7	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238435	24	B4	D7	MF		19	4.7	0.15	31.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238436	25	B4	D7	MD11	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238437	26	B4	D7	MF		20	5.1	0.5	10.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238438	27	B4	D7	MD10	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238439	28	B4	D7	MF		21	2.1	0.1	21	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238440	29	B4	D7	F	0	0	6.5	0.9	7.222222222	NAM		NAM	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238441	30	B4	D7	F	20	22	1.5	0.05	30	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238442	31	B4	D7	MD10	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238443	32	B4	D7	MF		23	0.9	0.15	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238444	33	B4	D7	F	22	24	5.9	0.25	23.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238445	34	B4	D7	F	23	25	1.9	0.1	19	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238446	35	B4	D7	MD10	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238447	36	B4	D7	MF		26	2.2	0.1	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238448	37	B5	F8	F	0	19	0.95	0.15	126.6666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238449	38	B5	F8	F	25	27	1.25	0.1	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238450	39	B5	F8	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238451	40	B5	F8	MF		28	1.5	0.5	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238452	41	B5	F8	F	27	29	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238453	42	B5	F8	F	28	30	9	0.25	36	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238454	43	B5	F8	F	29	31	6	0.1	60	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238455	44	B5	F8	F	30	32	3	0.2	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238456	45	B5	F8	MD10	31													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238457	46	B5	F8	MF		33	2.9	0.1	29	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238458	47	B5	F8	F	32	34	8.9	0.3	29.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238459	48	B5	F8	B	33	35	7.5	0.9	8.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238460	49	B5	F8	F	34	36	2.75	0.1	27.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238461	50	B5	F8	F	35	37	1.5	0.15	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238462	51	B5	F6	F	36	38	1.95	0.1	19.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238463	52	B5	F6	B	37	39	4.85	0.5	9.7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238464	53	B5	F6	F	38	40	1.1	0.25	4.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238465	54	B5	F6	MD11	0								1				XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238466	55	B5	F6	MF		0	14.5	0.6	24.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238467	56	B5	F6	F	39	41	1.5	0.4	3.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238468	57	B5	F6	F	0	0	11	0.45	24.44444444	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238469	58	B5	F6	F	40	42	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238470	59	B5	F6	MD10	41													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238471	60	B5	F6	MF		43	2.5	0.15	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238472	61	B5	F6	MD11	42													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238473	62	B5	F6	MF		44	7.5	0.05	150	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238474	63	B5	F6	MD10	43													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238475	64	B5	F6	MF		45	2.2	0.25	8.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238476	65	B5	F6	MD40	44													Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238477	66	B5	F6	MF		46	1.25	0.25	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238478	67	B5	F6	MF		47	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238479	68	B5	F6	MF		48	0.8	0.05	16	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238480	69	B5	F6	MF		49	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238481	70	B5	F6	F	45	50	11.1	0.9	12.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238482	71	B5	F6	F	46	51	2	0.1	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238483	72	B5	F6	F	47	52	2.25	0.35	6.428571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238484	73	B5	F6	F	48	53	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10036	1511862-00	238485	74	B5	F6	B	49	54	1.75	0.55	3.181818182	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238486	1	C1	C4	F	1	1	11.8	0.23	51.30434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238487	2	C1	C4	F	0	0	1.17	0.15	7.8	NAM		NAM	1				XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238488	3	C1	C4	MD21	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238489	4	C1	C4	MF		2	7.33	0.5	14.66	LA		ADX	1	1	1		NaK, WRTA; Photo # 27830	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238490	5	C1	C4	MF		3	4.72	0.23	20.52173913	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238491	6	C1	C4	F	3	4	9.44	0.25	37.76	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238492	7	C1	C4	MD11	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238493	8	C1	C4	MF		5	15.1	0.23	65.65217391	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238494	9	C1	C4	MD20	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238495	10	C1	C4	MF		6	4.25	0.25	17	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238496	11	C1	C4	MF		7	3.77	0.2	18.85	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238497	12	C1	C4	MD11	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238498	13	C1	C4	MB		8	23.13	0.47	49.21276596	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238499	14	C1	C4	F	7	9	5.66	0.1	56.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238500	15	C1	C4	F	8	10	1.88	0.23	8.173913044	LA		ADX					NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238501	16	C1	C4	MD10	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238502	17	C1	C4	MF		11	4.5	0.94	4.787234043	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238503	18	C1	E2	MD10	10													Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238504	19	C1	E2	MFO		12	0.94	0.2	4.7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238505	20	C1	E2	F	0	0	4.72	0.67	7.044776119	NAM		NAM	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238506	21	C1	E2	F	11	13	2.59	0.23	11.26086957	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238507	22	C1	E2	F	12	14	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238508	23	C1	E2	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238509	24	C1	E2	MFO		15	1	0.05	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238510	25	C1	E2	B	14	16	6.61	0.47	14.06382979	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238511	26	C1	E2	MD10	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00	238512	27	C1	E2	MFO		17	0.94	0.2	4.7	LA		ADX	1				NaK, WRTA	Surface Water	CDM

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10037	1511862-00(	238531	46	C2	H2	MF		0	1.41	0.4	3.525	NAM		NAM	1				XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238532	47	C2	H2	MD10	0													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238533	48	C2	H2	MF	7	0	2.11	0.47	4.489361702	NAM		NAM	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238534	49	C2	H2	F	0	0	1.56	0.5	3.12	NAM		NAM	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238535	50	C2	H2	F	0	0	2.59	0.7	3.7	NAM		NAM	1				XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238536	51	C2	H2	MD10	23													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238537	52	C2	H2	MF		26	1.88	0.25	7.52	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238538	53	C2	H2	MD20	0													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238539	54	C2	H2	MF		0	3.06	0.23	13.30434783	NAM		NAM	1				XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238540	55	C2	H2	MF		0	2.36	0.23	10.26086957	NAM		NAM	1				XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238541	56	C2	H2	F	24	27	4.72	1.17	4.034188034	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238542	57	C2	H2	MD10	25													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238543	58	C2	H2	MF		28	1.04	0.23	4.52173913	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238544	59	C2	H2	MD10	26													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238545	60	C2	H2	MFO		29	0.5	0.15	3.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238546	61	C2	H2	MD10	27													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238547	62	C2	H2	MB		30	3.53	0.5	7.06	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238548	63	C2	H2	MD10	28													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238549	64	C2	H2	MF		31	1.41	0.1	14.1	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238550	65	C2	H2	MD20	0													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238551	66	C2	H2	MFO		0	1.41	0.05	28.2	NAM		NAM	1				XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238552	67	C2	H2	MFO		0	0.94	0.05	18.8	NAM		NAM	1				XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238553	68	C2	H2	F	29	32	2.69	0.25	10.76	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238554	69	C2	H2	MD11	30													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238555	70	C2	H2	MF		33	15.33	0.67	22.88059702	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238556	71	C2	H2	MD10	31													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238557	72	C2	H2	MF		34	2.13	0.2	10.65	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238558	73	C2	H2	MD10	32													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238559	74	C2	H2	MF		35	4.62	0.25	18.48	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238560	75	C3	D6	MD10	33													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238561	76	C3	D6	MFO		36	0.94	0.1	9.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238562	77	C3	D6	MD10	34													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238563	78	C3	D6	MF		37	3.3	0.23	14.34782609	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238564	79	C3	D6	F	35	38	5.66	0.23	24.60869565	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238565	80	C3	D6	MD21	36													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238566	81	C3	D6	MF		39	5.02	0.47	10.68085106	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238567	82	C3	D6	MF		40	2.83	0.5	5.66	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238568	83	C3	D6	MD10	0													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238569	84	C3	D6	MF		0	4.25	0.43	9.88372093	NAM		NAM	1				XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238570	85	C3	D6	F	0	0	2.36	0.55	4.290909091	NAM		NAM	1				XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238571	86	C3	D6	MD10	0													Surface Water	CDM Smith	N. Ross/DDE				
WT-10037	1511862-00(	238572	87	C3	D6	MF		0	1.51	0.23	6.565217391	NAM		NAM	1				XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238573	88	C3	D6	F	37	41	2.36	0.23	10.26086957	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10037	1511862-00(	238574	89	C3	D6	F	38	42	11.32	0.23	49.2173913	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238575	1	D1	D9	MD10	1													Surface Water	CDM Smith	N. Ross/DDE				
WT-10038	1511862-00(	238576	2	D1	D9	MF		1	2.5	0.25	10	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238577	3	D1	D9	F	2	2	0.9	0.25	3.6	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238578	4	D1	D9	F	3	3	3.75	0.15	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238579	5	D1	D9	F	0	0	3	0.1	30	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238580	6	D1	D9	F	4	4	1.1	0.15	7.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238581	7	D1	D9	F	5	5	0.8	0.25	3.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238582	8	D1	D9	F	6	6	2.75	0.9	3.055555556	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238583	9	D1	D9	F	7	7	0.7	0.2	3.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238584	10	D1	D9	F	8	8	2.9	0.4	7.25	LA		ADX	1	1	1		NaK, WRTA; Photo #27848	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238585	11	D1	D5	MD10	9													Surface Water	CDM Smith	N. Ross/DDE				
WT-10038	1511862-00(	238586	12	D1	D5	MF		9	2.5	0.25	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238587	13	D1	D5	F	10	10	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238588	14	D1	D5	F	11	11	1.2	0.4	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238589	15	D1	D5	F	12	12	1.6	0.1	16	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238590	16	D1	D5	F	13	13	1.5	0.25	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238591	17	D1	D5	F	14	14	4.5	0.35	12.85714286	OA		OA	1		1		NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238592	18	D1	D5	F	15	15	3.5	0.3	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238593	19	D2	F8	F	0	0	4.5	0.25	18	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238594	20	D2	F8	F	16	16	2	0.15	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238595	21	D2	F8	F	17	17	4.75	0.45	10.55555556	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238596	22	D2	F8	F	18	18	2	0.1	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238597	23	D2	F8	F	19	19	2	0.15	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238598	24	D2	F8	F	20	20	0.9	0.23	3.913043478	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238599	25	D2	C3	F	21	21	3.5	0.35	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238600	26	D2	C3	B	22	22	6	1	6	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238601	27	D2	C3	F	23	23	0.75	0.25	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238602	28	D2	C3	F	24	24	4.5	0.9	5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238603	29	D2	C3	F	25	25	0.8	0.25	3.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238604	30	D2	C3	F	26	26	4.5	0.25	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238605	31	D2	C3	F	27	27	2	0.1	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10038	1511862-00(	238606	32	D2	C3	MD10	28													Surface Water	CDM Smith	N. Ross/DDE				
WT-10038	1511862-00(	238607	33	D2	C3	MF		28	2.5	0.5	5	LA		ADX	1		1		XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238608	1	E1	D8	F	1	1	3.85	0.4	9.625	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238609	2	E1	D6	F	2	2	2.7	0.26	10.38461539	LA		ADX	1	1			NaK, WRTA; DIFFRACTION #180	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238610	3	E1	D6	MD10	3													Surface Water	CDM Smith	N. Ross/DDE				
WT-10039	1511862-00(	238611	4	E1	D6	MFO		3	2.4	0.23	10.43478261	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238612	5	E1	D4	F	4	4	27.5	0.9	30.55555556	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238613	6	E1	D4	F	5	5	0.95	0.22	4.318181818	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238614	7	E1	D4	B	6	6	3.6	0.25	14.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238615	8	E1	D4	F	7	7	2.5	0.12	20.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238616	9	E1	D4	F	8	8	1.2	0.12	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238617	10	E1	F4	F	9	9	3.2	0.15	21.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238618	11	E1	F6	F	10	10	1.6	0.4	4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238619	12	E1	F6	F	11	11	5.75	0.46	12.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238620	13	E1	F6	B	12	12	1.4	0.2	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238621	14	E1	F6	F	13	13	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238622	15	E2	D3	F	14	14	3.2	0.5	6.4	LA		ADX	1		1		NaK, WRTA; ADD'L ANALYSIS-5/12/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238623	16	E2	D3	F	15	15	1.4	0.2	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238624	17	E2	G9	F	0	0	5	0.24	20.83333333	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238625	18	E2	G9	B	16	16	33	0.38	86.84210526	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238626	19	E2	G6	F	17	17	2.5	0.22	11.36363636	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238627	20	E2	G4	B	18	18	2.1	0.3	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238628	21	E2	G4	F	19	19	5.6	0.25	22.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238629	22	E2	G4	MD10	20													Surface Water	CDM Smith	N. Ross/DDE				
WT-10039	1511862-00(	238630	23	E2	G4	MFO		20	0.95	0.3	3.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238631	24	E2	G4	F	21	21	1.6	0.22	7.272727273	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238632	25	E2	I5	B	22	22	4.4	0.23	19.13043478	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238633	26	E2	I5	F	23	23	2.4	0.25	9.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238634	27	E2	I5	MD10	24													Surface Water	CDM Smith	N. Ross/DDE				
WT-10039	1511862-00(	238635	28	E2	I5	MF		24	2.24	0.15	14.93333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10039	1511862-00(	238636	29	E2	I5	F	25	25	1.25	0.12	10.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238637	1	F7	I8	F	1	1	11.7	1	11.7	LA		ADX	1	1	1		NaK, WRTA; 27833	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238638	2	F7	I8	MD21	2													Surface Water	CDM Smith	N. Ross/DDE				
WT-10040	1511862-00(	238639	3	F7	I8	MF		2	9.5	0.15	63.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238640	4	F7	I8	MF		3	4.5	0.2	22.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238641	5	F7	I8	F	3	4	2.75	0.2	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238642	6	F7	I8	F	4	5	0.65	0.2	3.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238643	7	F7	I8	B	5	6	12.9	1.2	10.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238644	8	F7	I8	F	6	7	5.1	0.25	20.4	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238645	9	F7	I5	MD10	7													Surface Water	CDM Smith	N. Ross/DDE				
WT-10040	1511862-00(	238646	10	F7	I5	MF		8	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238647	11	F7	I5	MD10	0								1					Surface Water	CDM Smith	N. Ross/DDE				
WT-10040	1511862-00(	238648	12	F7	I5	MF		0	1.7	0.5	3.4	NAM		NAM	1		1		NaK, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238649	13	F7	I5	F	8	9	3.75	0.5	7.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238650	14	F7	I5	B	9	10	2.5	0.37	6.756756757	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238651	15	F7	I5	F	10	11	7	0.3	23.33333333	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238652	16	F7	I5	B	11	12	21.5	0.7	30.71428571	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238653	17	F8	D6	F	12	13	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238654	18	F8	D6	F	13	14	4.2	0.2	21	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238655	19	F8	D6	MD10	14													Surface Water	CDM Smith	N. Ross/DDE				
WT-10040	1511862-00(	238656	20	F8	D6	MF		15	0.6	0.15	4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238657	21	F8	D6	F	15	16	0.6	0.2	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238658	22	F8	D6	F	16	17	2	0.1	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238659	23	F8	D6	F	0	0	10.9	1.5	7.266666667	NAM		NAM	1		1		NaK, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238660	24	F8	D6	F	17	18	0.9	0.2	4.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238661	25	F8	G7	F	0	0	10.5	0.6	17.5	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238662	26	F8	G7	F	18	19	2	0.15	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238663	27	F8	G7	B	19	20	19	0.6	31.66666667	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238664	28	F8	G7	MD11	20													Surface Water	CDM Smith	N. Ross/DDE				
WT-10040	1511862-00(	238665	29	F8	G7	MF		21	17.9	0.25	71.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238666	30	F8	G7	F	21	22	2	0.05	40	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238667	31	F8	G7	F	22	23	4.75	0.3	15.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238668	32	F8	G7	F	23	24	0.7	0.2	3.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238669	33	F8	J4	F	24	25	10	0.9	11.11111111	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238670	34	F8	J4	F	25	26	3.75	0.25	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10040	1511862-00(	238671	35	F8	J4	F	26	27	1.5	0.1	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238672	1	G7	D3	F	0	0	3.8	1.25	3.04	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238673	2	G7	D3	B	1	1	10.5	0.6	17.5	LA		ADX	1	1	1		NaK, WRTA; Photo#27834	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238674	3	G7	D3	F	2	2	5.75	0.4	14.375	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238675	4	G7	D3	B	3	3	10.75	0.5	21.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238676	5	G7	D3	B	4	4	8.25	0.5	16.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238677	6	G7	D3	MD

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10041	1511862-00(	238702	31	G8	I3	F	22	22	4.2	0.4	10.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238703	32	G8	J2	F	0	0	2.2	0.15	14.66666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238704	33	G8	J2	F	23	23	2.5	0.75	3.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238705	34	G8	J2	B	24	24	20	0.3	66.66666667	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238706	35	G8	J2	F	25	25	8.5	0.9	9.444444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10041	1511862-00(	238707	36	G8	J2	F	26	26	9.8	0.35	28	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238708	1	H1	E10	F	1	1	3.75	0.45	8.333333333	LA		ADX	1				NaK, WRTA; STRUCTURE DIRECTLY ADJACENT TO MATRIX	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238709	2	H1	E10	B	2	2	2.75	0.5	5.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238710	3	H1	E10	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238711	4	H1	E10	MF		3	1.8	0.3	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238712	5	H1	E10	F	4	4	7.4	0.4	18.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238713	6	H1	E10	F	5	5	3.75	0.9	4.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238714	7	H1	E10	MD11	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238715	8	H1	E10	MF		6	7.3	0.3	24.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238716	9	H1	E10	F	7	7	10.4	0.23	45.2173913	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238717	10	H1	E10	B	8	8	4	0.24	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238718	11	H1	E10	MD11	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238719	12	H1	E10	MB		9	12.3	0.95	12.94736842	LA		ADX					NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238720	13	H1	E10	F	10	10	10.6	0.24	44.16666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238721	14	H1	E10	MD11	11	6												Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238722	15	H1	E10	MF		11	7.5	0.12	62.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238723	16	H1	E10	F	12	12	3	0.2	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238724	17	H1	E10	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238725	18	H1	E10	MF		13	4.15	0.23	18.04347826	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238726	19	H1	E10	MD10	14													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238727	20	H1	E10	MF		14	1.6	0.26	6.153846154	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238728	21	H1	E10	MD10	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238729	22	H1	E10	MFO	7	15	0.7	0.21	3.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238730	23	H1	E10	F	16	16	2.8	0.45	6.222222222	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238731	24	H1	G7	F	17	17	1.1	0.3	3.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238732	25	H1	G7	MD10	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238733	26	H1	G7	MF		18	2.5	0.3	8.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238734	27	H1	G7	MD11	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238735	28	H1	G7	MF		19	6.1	0.5	12.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238736	29	H1	G7	F	20	20	5.5	0.23	23.91304348	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238737	30	H1	G7	MD10	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238738	31	H1	G7	MF		21	4.2	0.2	21	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238739	32	H1	G7	F	22	22	1.5	0.3	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238740	33	H1	G7	F	23	23	3.75	0.25	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238741	34	H1	G7	B	24	24	8	0.5	16	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238742	35	H1	G7	F	25	25	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238743	36	H1	G7	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238744	37	H1	G7	MF		26	3.5	0.8	4.375	OA		ADX	1	1	1		NaX, NR; DIFFRACTION #181; POSSIBLY MAGNESIO-RIEBECKITE	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238745	38	H1	G7	F	27	27	1.1	0.05	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238746	39	H1	G7	MD20	28													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238747	40	H1	G7	MF		28	4	0.22	18.18181818	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238748	41	H1	G7	MF		29	3	0.15	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238749	42	H1	G7	F	0	0	9	0.47	19.14893617	LA		ADX	1				_XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238750	43	H1	G7	MD10	29													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238751	44	H1	G7	MF		30	1.85	0.12	15.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238752	45	H1	G7	MD21	30													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238753	46	H1	G7	MF		31	22	0.3	73.33333333	LA		ADX	1	1	1		NaK, WRTA; DIFFRACTION #182	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238754	47	H1	G7	MF		32	2.6	0.23	11.30434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238755	48	H1	G7	MD11	31													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238756	49	H1	G7	MF		33	7.3	1.1	6.636363636	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238757	50	H1	G7	F	32	34	2.2	0.13	16.92307692	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238758	51	H3	C3	MD20	33													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238759	52	H3	C3	MFO		35	3.5	0.3	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238760	53	H3	C3	MFO		36	1.5	0.12	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238761	54	H3	C3	MD10	34													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238762	55	H3	C3	MF		37	1.6	0.09	17.77777778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238763	56	H3	C3	MD20	35													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238764	57	H3	C3	MF		38	4.6	0.24	19.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238765	58	H3	C3	MF		39	2.4	0.24	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238766	59	H3	C3	F	36	40	18	0.6	30	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238767	60	H3	C3	B	37	41	3.7	0.4	9.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238768	61	H3	C3	CD20	38													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238769	62	H3	C3	CF		42	2.4	0.55	4.363636364	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238770	63	H3	C3	CF		43	1.3	0.24	5.416666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238771	64	H3	C3	F	39	44	11.5	0.16	71.875	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238772	65	H3	C3	MD11	40													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238773	66	H3	C3	MF		45	12	0.08	150	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238774	67	H3	J2	MD11	41													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238775	68	H3	J2	MF		46	12.2	1.4	8.714285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238776	69	H3	J2	MD10	42													Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238777	70	H3	J2	MFO		47	2.55	0.09	28.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238778	71	H3	J2	F	43	48	4.5	0.26	17.30769231	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238779	72	H3	J2	F	44	49	3.2	0.29	11.03448276	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10042	1511862-00(	238780	73	H3	J2	F	45	50	5.75	0.9	6.388888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238781	1	I7	C8	MD11	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238782	2	I7	C8	MF		1	6	0.5	12	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238783	3	I7	C8	F	2	2	0.6	0.2	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238784	4	I7	C8	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238785	5	I7	C8	MF		3	2.5	0.5	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238786	6	I7	C8	F	4	4	2.5	0.15	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238787	7	I7	C8	F	5	5	2.75	0.15	18.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238788	8	I7	C8	F	6	6	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238789	9	I7	C8	F	7	7	8	0.15	53.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238790	10	I7	C8	MD20	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238791	11	I7	C8	MB		8	2.5	0.25	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238792	12	I7	C8	MF		9	1.9	0.5	3.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238793	13	I7	B6	B	0	0	28	0.9	31.11111111	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238794	14	I7	B6	CD21	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238795	15	I7	B6	CF		10	10.5	1.5	7	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238796	16	I7	B6	CF		11	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238797	17	I7	B6	B	10	12	8.5	0.35	24.28571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238798	18	I7	B6	F	11	13	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238799	19	I7	B6	F	12	14	10	1	10	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238800	20	I7	B6	MD21	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238801	21	I7	B6	MF		15	7.9	0.9	8.777777778	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238802	22	I7	B6	MF		16	2.5	0.05	50	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238803	23	I7	B6	B	14	17	6.5	0.5	13	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238804	24	I7	B6	F	15	18	1	0.2	5	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238805	25	I8	G4	MD10	16													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238806	26	I8	G4	MF		19	2.75	0.1	27.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238807	27	I8	G4	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238808	28	I8	G4	MF		20	2.5	0.5	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238809	29	I8	G4	B	18	21	3	0.75	4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238810	30	I8	G4	F	19	22	8.9	0.8	11.125	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238811	31	I8	G4	B	20	23	37.5	0.9	41.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238812	32	I8	G4	F	21	24	1.5	0.5	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238813	33	I8	E4	MD10	22													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238814	34	I8	E4	MF		25	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238815	35	I8	E4	MD10	23													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238816	36	I8	E4	MF		26	1	0.2	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238817	37	I8	E4	MD11	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238818	38	I8	E4	MF		27	7.5	0.25	30	LA		ADX	1	1			NaK, WRTA; Photo#27839	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238819	39	I8	E4	F	0	0	2	0.1	20	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238820	40	I8	E4	F	0	0	2.1	0.5	4.2	NAM		NAM	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238821	41	I8	E4	B	25	28	2.5	0.4	6.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238822	42	I8	E4	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238823	43	I8	E4	MF		29	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238824	44	I8	E4	F	27	30	16	0.8	20	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238825	45	I8	E4	B	28	31	10.5	0.5	21	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10043	1511862-00(	238826	46	I8	E4	F	29	32	1.9	0.1	19	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238827	1	J1	C9	F	1	1	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238828	2	J1	C9	MD10	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238829	3	J1	C9	MFO		2	1.2	0.24	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238830	4	J1	C9	CD20	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238831	5	J1	C9	CF		3	2.6	0.5	5.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238832	6	J1	C9	CF		4	2.4	0.25	9.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238833	7	J1	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238834	8	J1	C5	MD10	0								1					Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238835	9	J1	C5	MF	0	3.2	0.2	16	LA			ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238836	10	J1	C5	B	4	5	10.4	0.26	40	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238837	11	J1	C5	MD10	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238838	12	J1	C5	MF		6	3	0.27	11.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238839	13	J1	C5	F	6	7	8.75	0.5	17.5	LA		ADX	1	1	1		NaK, WRTA; DIFFRACTION #183	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238840	14	J1	C5	F	7	8	3.5	0.12	29.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238841	15	J1	C5	F	8	9	3.1	0.23	13.47826087	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238842	16	J1	C5	MD10	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238843	17	J1	C5	MBO		10	4.3	0.42	10.23809524	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238844	18	J1	C5	F	10	11	3.15	0.32	9.84375	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238845	19	J1	C5	F	11	12	1.3	0.24	5.416666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238846	20	J1	C5	F	12	13	11.6	0.76	15.2631579	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238847	21	J1	C5	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238848	22	J1	C5	MFO		14	1.1	0.18	6.111111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238849	23	J1	C5	MD11	14													Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238850	24	J1	C5	MF		15	9	0.15	60	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238851	25	J2	C2	F	15	16	6.25	0.3	20.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00(	238852	26	J2	C2	MD10	16													Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10044	1511862-00	238871	45	J2	C2	F	28	31	2.7	0.48	5.625	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00	238872	46	J2	C2	F	29	32	3.65	0.26	14.03846154	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00	238873	47	J2	C2	F	30	33	2.9	0.18	16.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00	238874	48	J2	C2	MD10	31													Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00	238875	49	J2	C2	MF		34	2.6	0.3	8.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00	238876	50	J2	C2	MD10	32													Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00	238877	51	J2	C2	MF		35	2.4	0.2	12	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00	238878	52	J2	C2	F	33	36	3	0.96	3.125	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00	238879	53	J2	C2	F	34	37	8.1	0.35	23.14285714	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00	238880	54	J2	C2	B	35	38	6.4	0.57	11.22807018	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10044	1511862-00	238881	55	J2	C2	F	36	39	2.4	0.4	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238882	1	K1	C2	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238883	2	K1	C2	MF		1	1.6	0.28	5.714285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238884	3	K1	C2	F	2	2	3.8	0.12	31.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238885	4	K1	C2	F	3	3	2.3	0.4	5.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238886	5	K1	C2	F	4	4	8.7	0.2	43.5	LA		ADX	1	1	1		NaK, WRTA; DIFFRACTION #184	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238887	6	K1	C2	F	5	5	1.6	0.15	10.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238888	7	K1	C2	F	6	6	0.9	0.23	3.913043478	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238889	8	K1	C4	F	7	7	2.1	0.46	4.565217391	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238890	9	K1	C4	F	8	8	11.75	0.24	48.95833333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238891	10	K1	C4	MD10	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238892	11	K1	C4	MF		9	1.3	0.24	5.416666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238893	12	K1	C4	MD11	10													Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238894	13	K1	C4	MFO		10	7.8	0.2	39	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238895	14	K1	C4	MD11	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238896	15	K1	C4	MF		11	6.1	0.48	12.70833333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238897	16	K1	C4	F	0	0	4.5	0.48	9.375	LA		ADX	1				XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238898	17	K2	G6	F	12	12	1.1	0.09	12.22222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238899	18	K2	G6	F	13	13	0.7	0.2	3.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238900	19	K2	G6	B	14	14	2.3	0.22	10.45454546	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238901	20	K2	G6	F	15	15	11.2	0.9	12.44444444	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238902	21	K3	G8	F	16	16	2.4	0.2	12	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238903	22	K3	G8	F	17	17	3.9	0.48	8.125	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238904	23	K3	G8	F	18	18	1.1	0.2	5.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238905	24	K3	G8	F	19	19	1.6	0.49	3.265306122	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238906	25	K3	G8	F	20	20	3	0.24	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238907	26	K3	G8	F	21	21	4.1	0.13	31.53846154	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238908	27	K3	F4	F	22	22	0.98	0.3	3.266666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238909	28	K3	F4	F	23	23	1.8	0.2	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238910	29	K3	F4	MD10	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238911	30	K3	F4	MF		24	3.4	0.31	10.96774194	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238912	31	K3	F4	B	25	25	5.3	0.6	8.833333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238913	32	K3	F4	MD21	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238914	33	K3	F4	MF		26	9.5	0.3	31.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238915	34	K3	F4	MF		27	3.3	0.6	5.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238916	35	K3	F4	F	27	28	1.6	0.18	8.888888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238917	36	K3	F4	MD21	28													Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238918	37	K3	F4	MF		29	13	0.26	50	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10045	1511862-00	238919	38	K3	F4	MF		30	4	0.15	26.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238920	1	L1	B3	MD11	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238921	2	L1	B3	MF		1	7.5	1.5	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238922	3	L1	B3	F	2	2	26.5	1.5	17.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238923	4	L1	B3	F	3	3	1.9	0.35	5.428571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238924	5	L1	B3	MD11	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238925	6	L1	B3	MB		4	47	1.5	31.33333333	LA		ADX	1	1			NaK, WRTA; Photo# 27842	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238926	7	L1	B3	B	5	5	1.5	0.5	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238927	8	L1	B3	MD11	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238928	9	L1	B3	MB		6	11	0.9	12.22222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238929	10	L1	B5	F	7	7	0.6	0.1	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238930	11	L1	B5	MD10	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238931	12	L1	B5	MF		8	1	0.1	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238932	13	L1	B5	MD10	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238933	14	L1	B5	MF		9	1	0.1	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238934	15	L1	B5	F	10	10	1.15	0.1	11.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238935	16	L1	B5	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238936	17	L1	B5	MF		11	2.2	0.1	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238937	18	L1	B5	MD10	12													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238938	19	L1	B5	MF		12	3.5	0.9	3.888888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238939	20	L2	H2	F	13	13	1.75	0.3	5.833333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238940	21	L2	H2	F	14	14	9.75	1.5	6.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238941	22	L2	H2	F	15	15	1	0.1	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238942	23	L2	H2	MD32	16													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238943	24	L2	H2	MF		16	10.75	0.9	11.94444444	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238944	25	L2	H2	MF		17	10.5	0.8	13.125	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238945	26	L2	H2	MF		18	0.9	0.3	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238946	27	L2	H2	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238947	28	L2	H2	MF		19	1.5	0.25	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238948	29	L2	H2	F	18	20	8	0.5	16	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238949	30	L2	H2	MD10	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238950	31	L2	H2	MF		21	3	0.2	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238951	32	L2	H2	F	20	22	1.6	0.15	10.66666667	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238952	33	L2	J6	MD11	0								1					Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238953	34	L2	J6	MF		0	15	0.35	42.85714286	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238954	35	L2	J6	F	21	23	1.75	0.7	5.357142857	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238955	36	L2	J6	F	22	24	12	0.25	48	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238956	37	L2	J6	F	23	25	2	0.3	6.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238957	38	L2	J6	F	24	26	5.75	0.2	28.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238958	39	L2	J6	B	25	27	3.5	0.4	8.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238959	40	L2	J6	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238960	41	L2	J6	MF		28	2	0.1	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238961	42	L2	J6	F	27	29	0.5	0.05	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238962	43	L2	J6	F	28	30	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238963	44	L2	J6	MD10	29													Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238964	45	L2	J6	MF		31	1.75	0.35	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238965	46	L2	J6	F	30	32	2	0.5	4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238966	47	L2	J6	F	31	33	2.1	0.4	5.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238967	48	L2	J6	MD11	0								1					Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238968	49	L2	J6	MF		0	22.75	0.3	75.83333333	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238969	50	L2	J6	F	32	34	0.8	0.05	16	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10046	1511862-00	238970	51	L2	J6	F	33	35	1.5	0.1	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238163	1	M1	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238164	2	M1	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238165	3	M1	E5	F	1	1	2.3	0.2	11.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238166	4	M1	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238167	5	M1	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238168	6	M1	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238169	7	M1	C4	F	2	2	1.1	0.08	13.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238170	8	M1	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238171	9	M1	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238172	10	M1	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238173	11	M1	A10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238174	12	M2	B10	F	3	3	7.2	0.24	30	LA		ADX	1	1	1		NaK, WRTA; DIFFRACTION #187	Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238175	13	M2	B10	F	4	4	3.2	0.28	11.42857143	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238176	14	M2	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238177	15	M2	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238178	16	M2	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238179	17	M2	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238180	18	M2	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238181	19	M2	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238182	20	M2	D6	F	5	5	2.25	0.11	20.45454546	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238183	21	M2	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10047	1511862-00	238184	22	M2	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238185	1	N1	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238186	2	N1	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238187	3	N1	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238188	4	N1	C6	CD31	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238189	5	N1	C6	CF		1	5.75	0.8	7.1875	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238190	6	N1	C6	CF		2	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238191	7	N1	C6	CF		3	1	0.05	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238192	8	N1	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238193	9	N1	C10	B	2	4	21.8	0.8	27.25	LA		ADX	1	1	1		NaK, WRTA; XGBLD; Photo#27844	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238194	10	N1	D7	F	3	5	3.25	0.1	32.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238195	11	N1	D9	F	4	6	1.25	0.25	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238196	12	N1	D9	F	5	7	1.1	0.05	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238197	13	N1	D9	MD10	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238198	14	N1	D9	MF		8	4.75	0.1	47.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238199	15	N1	G4	F	0	0	3	0.4	7.5	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238200	16	N1	G6	F	7	9	3	0.1	30	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238201	17	N1	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238202	18	N1	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238203	19	N2	C1	F	8	10	26	2.75	9.454545455	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238204	20	N2	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238205	21	N2	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238206	22	N2	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238207	23	N2	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238208	24	N2	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238209	25	N2	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238210	26	N2	D8	F	0	0	9	0.25	36	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238211	27	N2	D8	F	9	11	3	0.2	15	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10048	1511862-00	238212	28	N2	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10049	1511862-00	238213	1	O1	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10049	1511862-00	238214	2	O1	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10049	1511862-00	238215	3	O1	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10049	1511862-00	238216	4	O1	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10049	1511862-00	238217	5	O1	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10049	1511862-00	238218	6	O1	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10049	1511862-00	238219	7	O1	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10049	1511862-00	238220	8	O1	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10049	1511862-00	238221	9	O1	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10050	1511862-00	238234	1	P1	A10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238235	2	P1	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238236	3	P1	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238237	4	P1	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238238	5	P1	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238239	6	P1	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238240	7	P1	D4	F	1	1	2.4	0.12	20	LA		ADX	1	1	1		NaK, WRTA; DIFFRACTION #188- ACQUIRED	Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238241	8	P1	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238242	9	P1	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238243	10	P1	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238244	11	P1	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238245	12	P2	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238246	13	P2	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238247	14	P2	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238248	15	P2	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238249	16	P2	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238250	17	P2	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238251	18	P2	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238252	19	P2	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238253	20	P2	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10050	1511862-00	238254	21	P2	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238255	1	R1	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238256	2	R1	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238257	3	R1	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238258	4	R1	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238259	5	R1	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238260	6	R1	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238261	7	R1	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238262	8	R2	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238263	9	R2	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238264	10	R2	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238265	11	R2	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238266	12	R2	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238267	13	R2	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238268	14	R2	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238269	15	R3	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238270	16	R3	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238271	17	R3	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238272	18	R3	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238273	19	R3	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238274	20	R3	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10051	1511862-00	238275	21	R3	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238276	1	S1	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238277	2	S1	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238278	3	S1	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238279	4	S1	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238280	5	S1	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238281	6	S1	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238282	7	S1	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238283	8	S1	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238284	9	S2	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238285	10	S2	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238286	11	S2	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238287	12	S2	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238288	13	S2	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238289	14	S2	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238290	15	S2	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238291	16	S2	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238292	17	S3	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238293	18	S3	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238294	19	S3	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238295	20	S3	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10052	1511862-00	238296	21	S3	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238297	1	T1	G10	F	0	0	0.8	0.25	3.2	NAM		NAM	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238298	2	T1	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238299	3	T1	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238300	4	T1	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238301	5	T1	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238302	6	T1	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238303	7	T1	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238304	8	T1	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238305	9	T1	J7	F	1	1	2.4	0.23	10.43478261	LA		ADX	1	1	1		NaK, WRTA; DIFFRACTION #189	Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238306	10	T1	J7	F	2	2	2.1	0.15	14	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238307	11	T1	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238308	12	T1	C10	F	3	3	2.8	0.22	12.72727273	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238309	13	T1	C10	F	4	4	2.1	0.08	26.25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238310	14	T2	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238311	15	T2	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238312	16	T2	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238313	17	T2	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238314	18	T2	H2	F	5	5	8.5	0.28	30.35714286	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238315	19	T2	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238316	20	T2	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238317	21	T2	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238318	22	T2	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10053	1511862-00	238319	23	T2	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238320	1	U1	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238321	2	U1	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238322	3	U1	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238323	4	U1	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238324	5	U1	E9	F	1	1	21	0.9	23.33333333	LA		ADX	1	1	1		NaK, WRTA; XGBLD; Photo# 27849	Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238325	6	U1	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238326	7	U1	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238327	8	U1	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238328	9	U1	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238329	10	U1	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238330	11	U1	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238331	12	U2	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238332	13	U2	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238333	14	U2	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238334	15	U2	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238335	16	U2	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238336	17	U2	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238337	18	U2	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238338	19	U3	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238339	20	U3	F5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10054	1511862-00	238340	21	U3	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241319	1	A1	H5	B	1	1	13.46	0.47	28.63829787	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241320	2	A1	H5	F	0	0	3.3	0.47	7.021276596	NAM		NAM	1		1		NaK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241321	3	A1	H5	F	2	2	2.36	0.45	5.244444444	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241322	4	A1	H3	B	0	0	9.91	0.7	14.15714286	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241323	5	A1	H3	F	3	3	1.41	0.23	6.130434783	LA		ADX	1	1	1		NaK, WRTA; Photo#27850	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241324	6	A1	H3	MD10	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241325	7	A1	H3	MF		4	3.77	0.2	18.85	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241326	8	A1	J2	CD21	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241327	9	A1	J2	CF		5	18.88	0.7	26.97142857	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241328	10	A1	J2	CF		6	4.7	0.3	15.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241329	11	A1	J2	F	6	7	3.06	0.23	13.30434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241330	12	A1	J2	MD11	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241331	13	A1	J2	MF		8	5.19	0.2	25.95	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241332	14	A1	J2	F	8	9	0.94	0.15	6.266666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241333	15	A1	J2	F	0	0	1.41	0.23	6.130434783	NAM		NAM	1				NaK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241334	16	A1	D8	F	9	10	1.17	0.25	4.68	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241335	17	A1	D8	B	10	11	3.3	0.2	16.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241336	18	A1	D8	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241337	19	A1	D8	MF		12	1.64	0.23	7.130434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241338	20	A1	D8	F	12	13	10.38	1.17	8.871794872	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241339	21	A1	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241340	22	A1	C2	F	13	14	1.31	0.25	5.24	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241341	23	A1	C2	F	14	15	3.3	0.2	16.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241342	24	A1	C2	F	15	16	2.13	0.15	14.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241343	25	A2	C8	MD11	16													Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241344	26	A2	C8	MF		17	7.08	0.23	30.7826087	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241345	27	A2	C8	F	17	18	0.94	0.1	9.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241346	28	A2	C8	F	18	19	4.95	0.47	10.53191489	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241347	29	A2	C8	F	19	20	7.33	0.47	15.59574468	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241348	30	A2	C8	B	0	0	10.85	2.36	4.597457627	NAM		NAM	1		1		XX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241349	31	A3	F3	B	20	21	4.75	0.47	10.10638298	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241350	32	A3	F3	MD11	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241351	33	A3	F3	MF		22	7.33	0.25	29.32	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241352	34	A3	F3	F	22	23	5.66	0.23	24.60869565	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241353	35	A3	F3	B	23	24	9.44	0.47	20.08510638	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241354	36	A3	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241355	37	A3	F9	F	24	25	5.42	0.43	12.60465116	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241356	38	A3	F9	F	25	26	3.3	0.25	13.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10055	1511862-00	241357	39	A3	F9	F	0	0	1.45	0.3	4.833333333	NAM		NAM	1		1		NaK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10056	1511862-00	238341	1	B1	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238342	2	B1	A5	F	1	1	4	0.25	16	LA		ADX	1	1	1		NaK, WRTA; Photo #27851	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238343	3	B1	A7	CD21	2													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238344	4	B1	A7	CF		2	5.1	0.35	14.57142857	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238345	5	B1	A7	CF		3	4.15	0.1	41.5	LA		ADX	1				NaK, WRTA; Fibers embedded in cellulose material.	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238346	6	B1	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238347	7	B1	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238348	8	B1	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238349	9	B1	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238350	10	B1	F4	CD20	3													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238351	11	B1	F4	CF		4	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238352	12	B1	F4	CF		5	0.55	0.1	5.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238353	13	B1	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238354	14	B1	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238355	15	B1	H8	F	4	6	8.25	0.75	11	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238356	16	B2	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238357	17	B2	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238358	18	B2	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238359	19	B2	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238360	20	B2	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238361	21	B2	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238362	22	B2	E1	F	5	7	15	0.4	37.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-00	238363	23	B2	G1	F	6	8	22.5	0.7	32.14285714	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10056	1511862-001	238364	24	B2	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10056	1511862-001	238365	25	B3	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10057	1511862-001	238366	1	D1	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238367	2	D1	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238368	3	D1	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238369	4	D1	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238370	5	D1	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238371	6	D1	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238372	7	D1	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238373	8	D1	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238374	9	D1	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238375	10	D1	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238376	11	D1	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238377	12	D2	E2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238378	13	D2	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238379	14	D2	E8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238380	15	D2	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238381	16	D2	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238382	17	D2	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238383	18	D2	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238384	19	D2	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238385	20	D2	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238386	21	D2	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10057	1511862-001	238387	22	D2	H4	ND													Additional analysis 5/26/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241358	1	F1	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241359	2	F1	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241360	3	F1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241361	4	F1	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241362	5	F1	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241363	6	F1	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241364	7	F1	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241365	8	F1	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241366	9	F1	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241367	10	F2	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241368	11	F2	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241369	12	F2	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241370	13	F2	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241371	14	F2	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241372	15	F2	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241373	16	F2	E4	F	1	1	3.25	0.2	16.25	LA		ADX	1	1	1		NaK, WRTA; Photo #27857	Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241374	17	F2	E2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241375	18	F2	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241376	19	F2	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241377	20	F2	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10058	1511862-001	241378	21	F2	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241379	1	G1	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241380	2	G1	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241381	3	G1	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241382	4	G1	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241383	5	G1	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241384	6	G1	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241385	7	G1	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241386	8	G1	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241387	9	G1	E8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241388	10	G1	E6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241389	11	G1	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241390	12	G1	D5	F	1	1	2.5	0.75	3.333333333	LA		ADX	1	1	1		NaK, WRTA; Photo #27863	Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241391	13	G2	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241392	14	G2	G5	F	0	0	6.5	0.8	8.125	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241393	15	G2	G3	F	2	2	2.8	0.7	4	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241394	16	G2	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241395	17	G2	E8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241396	18	G2	E6	F	3	3	4.5	0.6	7.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241397	19	G2	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241398	20	G2	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10059	1511862-001	241399	21	G2	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241400	1	H7	I8	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241401	2	H7	I8	MF		1	2.83	0.25	11.32	LA		ADX	1	1			NaK, WRTA; Photo#27853	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241402	3	H7	I8	F	2	2	1.88	0.23	8.173913044	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241403	4	H7	I8	MD11	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241404	5	H7	I8	MB		3	8.25	0.35	23.57142857	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241405	6	H7	J6	F	4	4	0.95	0.23	4.130434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241406	7	H7	J6	MD10	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241407	8	H7	J6	MFO		5	3.3	0.25	13.2	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241408	9	H7	J6	MD10	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241409	10	H7	J6	MF		6	2.61	0.23	11.34782609	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241410	11	H7	J6	B	7	7	1.89	0.15	12.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241411	12	H7	J6	F	8	8	1.17	0.1	11.7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241412	13	H7	J6	F	0	0	2.83	0.7	4.042857143	NAM		NAM	1		1		NaK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241413	14	H7	J6	MD20	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241414	15	H7	J6	MF		9	0.94	0.05	18.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241415	16	H7	J6	MF		10	0.57	0.05	11.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241416	17	H7	J6	F	10	11	8.5	0.47	18.08510638	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241417	18	H7	J6	F	0	0	2.16	0.47	4.595744681	NAM		NAM	1		1		NaK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241418	19	H7	J6	F	11	12	1.04	0.1	10.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241419	20	H7	G4	B	0	0	58.52	1.19	49.17647059	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241420	21	H7	G4	F	12	13	1.09	0.15	7.266666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241421	22	H7	G4	F	13	14	4.25	0.2	21.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241422	23	H7	G4	MD10	14													Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241423	24	H7	G4	MF		15	2.4	0.3	8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241424	25	H7	G4	F	15	16	3.08	0.25	12.32	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241425	26	H7	G4	B	16	17	6.6	1.17	5.641025641	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241426	27	H8	G7	F	0	0	2.82	0.2	14.1	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241427	28	H8	G7	F	17	18	1.88	0.23	8.173913044	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241428	29	H8	G7	F	0	0	2.36	0.47	5.021276596	NAM		NAM	1		1		NaK, UN; High Al Peak	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241429	30	H8	G7	F	18	19	1.17	0.05	23.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241430	31	H8	G7	MD10	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241431	32	H8	G7	MF		20	2.83	0.23	12.30434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241432	33	H8	G7	F	20	21	0.9	0.15	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241433	34	H8	G7	B	21	22	15.1	0.5	30.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241434	35	H8	G7	F	22	23	2.13	0.35	6.085714286	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241435	36	H8	G7	MD10	23													Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241436	37	H8	G7	MF		24	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241437	38	H8	G7	F	24	25	1.17	0.2	5.85	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241438	39	H9	B2	F	25	26	1.41	0.4	3.525	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241439	40	H9	B2	F	0	0	8.98	0.23	39.04347826	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241440	41	H9	B2	F	26	27	1.61	0.35	4.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241441	42	H9	B2	F	27	28	1.89	0.1	18.9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241442	43	H9	B2	B	28	29	6.13	0.3	20.43333333	LA		ADX	1	1			NaK, WRTA; Photo# 27854	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241443	44	H9	B2	F	29	30	2.36	0.47	5.021276596	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241444	45	H9	B2	F	30	31	2.13	0.47	4.531914894	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241445	46	H9	B2	F	31	32	2.83	0.47	6.021276596	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241446	47	H9	B2	F	32	33	2.83	0.23	12.30434783	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241447	48	H9	B2	MD11	33													Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241448	49	H9	B2	MF		34	9.21	0.23	40.04347826	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241449	50	H9	B2	F	34	35	15.1	0.23	65.65217391	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10060	1511862-001	241450	51	H9	B2	F	35	36	2.61	0.15	17.4	LA		ADX	1				KK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241577	1	J1	I4	F	1	1	9.1	0.48	18.95833333	LA		ADX	1	1	1		NaK, WRTA; 0107490	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241578	2	J1	I4	F	2	2	2.6	0.36	7.222222222	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241579	3	J1	I4	F	3	3	12.4	0.24	51.66666667	LA		ADX	1		1		NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241580	4	J1	I4	F	4	4	1.4	0.36	3.888888889	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241581	5	J1	I4	F	5	5	4.2	0.24	17.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241582	6	J1	I4	F	6	6	1.4	0.24	5.833333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241583	7	J1	I4	F	7	7	1.2	0.1	12	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241584	8	J1	I4	F	8	8	8.6	0.24	35.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241585	9	J1	I4	F	9	9	16.2	1.2	13.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241586	10	J1	I4	F	10	10	2.9	0.18	16.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241587	11	J1	I4	MD20	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241588	12	J1	I4	MFO		11	2.1	0.18	11.66666667	LA		ADX	1				KK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241589	13	J1	I4	MF		12	1.4	0.12	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241590	14	J1	D3	MD10	12													Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241591	15	J1	D3	MFO		13	4.8	0.24	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241592	16	J1	D3	F	13	14	14.9	2.62	5.687022901	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241593	17	J1	D3	F	14	15	4.8	0.36	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241594	18	J1	D3	F	15	16	2.6	0.12	21.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241595	19	J1	D3	F	16	17	9	1.8	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241596	20	J1	D3	F	17	18	2.3	0.48	4.791666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241597	21	J1	D3	F	18	19	2.6	0.6	4.333333333	LA		ADX	1				KK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241598	22	J1	D3	F	19	20	1.4	0.24	5.833333333	LA		ADX	1				KK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241599	23	J1	D3	MD11	20													Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241600	24	J1	D3	MFO		21	8.8	0.96	9.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241601	25	J2	G7	F	21	22	4.7	0.18	26.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241602	26	J2	G7	F	22	23	1	0.12	8.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241603	27	J2	G7	F	23	24	14.7	2.16	6.805555556	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241604	28	J2	G7	F	24	25	3.1	0.24	12.91666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241605	29	J2	G7	F	25	26	7.5	0.24	31.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241606	30	J2	G7	F	26	27	3.7	0.24	15.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241607	31	J2	G7	F	27	28	4.8	0.24	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241608	32	J2	G7	F	28	29	5.2	0.36	14.44444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241609	33	J2	C8	F	29	30	4.8	0.6	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241610	34	J2	C8	F	30	31	4.8	0.36	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241611	35	J2	C8	F	31	32	2.4	0.24	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241612	36	J2	C8	F	32	33	4.1	0.24	17.08333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241613	37	J2	C8	F	33	34	1.8	0.48	3.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241614	38	J2	C8	F	34	35	2.6	0.12	21.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241615	39	J2	C8	MD10	35													Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241616	40	J2	C8	MFO		36	2.9	0.12	24.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10080	1512830-001	241617	41	J2	C8	F	36	37	9.7	0.96	10.10416667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241451	1	I4	C3	F	0	0	19.5	0.8	24.375	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241452	2	I4	C3	F	1	1	21.5	0.4	53.75	LA		ADX	1	1	1		NaK, WRTA; Photo #27864	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241453	3	I4	C3	F	2	2	4.5	0.3	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10081	1511862-001	241464	14	I4	C5	F	10	10	5.25	0.9	5.833333333	LA		ADX					NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241465	15	I4	C5	CD21	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241466	16	I4	C5	CF		11	55.75	1.9	29.34210526	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241467	17	I4	C5	CF		12	2.95	0.7	4.214285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241468	18	I4	C5	F	0	0	5.25	0.9	5.833333333	NAM		UN	1		1		KK, UN; AI Present	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241469	19	I4	C5	F	12	13	5.5	0.5	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241470	20	I4	C5	F	13	14	6	0.8	7.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241471	21	I4	C5	MD10	14													Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241472	22	I4	C5	MF		15	0.75	0.15	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241473	23	I4	C5	MD10	15								1					Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241474	24	I4	C5	MF		16	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241475	25	I5	A6	MD20	16													Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241476	26	I5	A6	MF		17	4.9	0.5	9.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241477	27	I5	A6	MF		18	2.5	0.25	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241478	28	I5	A6	F	17	19	5	0.4	12.5	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241479	29	I5	A6	F	18	20	1.25	0.1	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241480	30	I5	A6	F	19	21	2.75	0.1	27.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241481	31	I5	A6	MD10	20													Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241482	32	I5	A6	MF		22	2.25	0.15	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241483	33	I5	A6	F	21	23	5.75	0.15	38.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241484	34	I5	A6	MD11	22													Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241485	35	I5	A6	MF		24	9.5	0.15	63.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241486	36	I5	A6	B	23	25	7.5	0.9	8.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241487	37	I5	A6	MD10	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241488	38	I5	A6	MFD		26	0.8	0.1	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241489	39	I5	A8	F	25	27	4.95	0.15	33	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10081	1511862-001	241490	40	I5	A8	F	0	0	5	0.15	33.33333333	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241491	1	J4	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241492	2	J4	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241493	3	J4	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241494	4	J4	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241495	5	J4	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241496	6	J4	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241497	7	J4	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241498	8	J4	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241499	9	J4	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241500	10	J4	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241501	11	J4	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241502	12	J4	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241503	13	J4	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241504	14	J4	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241505	15	J5	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241506	16	J5	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241507	17	J5	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241508	18	J5	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241509	19	J5	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241510	20	J5	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241511	21	J5	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241512	22	J5	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241513	23	J5	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241514	24	J5	F5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241515	25	J5	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241516	26	J5	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241517	27	J5	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241518	28	J5	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241519	29	J6	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241520	30	J6	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241521	31	J6	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241522	32	J6	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241523	33	J6	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241524	34	J6	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241525	35	J6	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241526	36	J6	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241527	37	J6	F5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241528	38	J6	E6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241529	39	J6	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241530	40	J6	E2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241531	41	J6	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10082	1511862-001	241532	42	J6	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241533	1	K4	H10	F	1	1	4.1	0.48	8.541666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241534	2	K4	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241535	3	K4	H6	F	2	2	4	0.3	13.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241536	4	K4	H4	F	3	3	4.6	0.4	11.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241537	5	K4	H4	F	4	4	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241538	6	K4	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241539	7	K4	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241540	8	K4	F5	F	5	5	7.2	0.7	10.28571429	OA		ADX	1	1	1		NaK, NR; MAGNESIO-RIEBECKITE DIFFRACTION #202	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241541	9	K4	F7	F	6	6	2.5	0.3	8.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241542	10	K4	F7	F	7	7	3.75	0.23	16.30434783	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241543	11	K4	F9	F	8	8	2.6	0.75	3.466666667	OA		ADX	1		1		NaK, NR; MAGNESIO-RIEBECKITE	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241544	12	K4	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241545	13	K4	D8	F	9	9	16.5	0.85	19.41176471	LA		ADX	1	1	1		NaK, WRTA; DIFFRACTION #203	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241546	14	K4	D6	F	10	10	2.9	0.15	19.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241547	15	K4	D6	F	11	11	1.15	0.25	4.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241548	16	K4	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241549	17	K4	D2	F	12	12	2.5	0.5	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241550	18	K5	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241551	19	K5	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241552	20	K5	J6	F	13	13	2.75	0.25	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241553	21	K5	J6	F	14	14	3.75	0.3	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241554	22	K5	J8	F	15	15	7.5	0.5	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241555	23	K5	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241556	24	K5	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241557	25	K5	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241558	26	K5	F10	F	16	16	17	0.65	26.15384615	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241559	27	K5	F8	F	17	17	5.75	0.6	9.583333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241560	28	K5	F8	F	18	18	2.5	0.6	4.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241561	29	K5	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241562	30	K5	F4	F	19	19	1.3	0.25	5.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241563	31	K5	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241564	32	K5	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241565	33	K5	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241566	34	K5	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241567	35	K5	B2	F	20	20	5	0.8	6.25	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241568	36	K5	B2	F	21	21	1	0.15	6.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241569	37	K5	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241570	38	K5	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241571	39	K5	B8	F	22	22	6	0.4	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241572	40	K5	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241573	41	K6	J10	F	23	23	7	0.8	8.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241574	42	K6	J8	F	24	24	1.1	0.2	5.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241575	43	K6	J8	MD10	25													Surface Water	CDM Smith	N. Ross/DDE			
WT-10083	1511862-001	241576	44	K6	J8	MF		25	2.6	0.4	6.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242281	1	L1	D1	F	1	1	3.5	0.25	14	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242282	2	L1	D1	F	2	2	3.8	0.8	4.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242283	3	L1	D1	F	3	3	8.5	0.25	34	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242284	4	L1	D1	F	4	4	3.25	0.5	6.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242285	5	L1	D3	MD10	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242286	6	L1	D3	MF		5	3.6	0.8	4.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242287	7	L1	D3	F	6	6	4	0.2	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242288	8	L1	D5	F	7	7	0.9	0.25	3.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242289	9	L1	D5	F	8	8	0.95	0.25	3.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242290	10	L1	D5	F	9	9	16.5	0.35	47.14285714	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242291	11	L1	D5	F	10	10	7.5	0.2	37.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242292	12	L2	G3	F	11	11	1	0.23	4.347826087	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242293	13	L2	G3	F	12	12	3.15	0.22	14.31818182	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242294	14	L2	G3	MD11	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242295	15	L2	G3	MF		13	13.25	0.24	55.20833333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242296	16	L2	G5	F	0	0	1.3	0.3	4.333333333	NAM		NAM	1		1		NaK, UN; HIGH AI	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242297	17	L2	G5	MD10	14													Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242298	18	L2	G5	MF		14	3.1	0.75	4.133333333	OA		ADX	1		1		NaK, NR; MAGNESIO-RIEBECKITE; DIFFRACTION #209	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242299	19	L2	G5	MD10	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242300	20	L2	G5	MF		15	1.35	0.28	4.821428571	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242301	21	L2	G5	F	16	16	3	0.4	7.5	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242302	22	L2	G5	F	17	17	2	0.24	8.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242303	23	L2	G5	MD10	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242304	24	L2	G5	MF		18	0.8	0.2	4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242305	25	L2	E3	MD10	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242306	26	L2	E3	MF		19	0.95	0.3	3.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242307	27	L2	E3	F	20	20	3.25	0.5	6.5	OA		ADX	1		1		NaK, NR; MAGNESIO-RIEBECKITE	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242308	28	L2	E3	F	21	21	46	1.75	26.28571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242309	29	L2	E3	MD11	22													Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242310	30	L2	E3	MF		22	7.7	0.38	20.2631579	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242311	31	L2	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242312	32	L2	C9	F	23	23	2.5	0.28	8.928571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242313	33	L2	C9	F	24	24	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242314	34	L2	C9	F	25	25	11	1.75	6.285714286	LA		ADX	1	1			NaK, WRTA; DIFFRACTION #208	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242315	35	L2	C9	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242316	36	L2	C9	MF		26	3.8	0.22	17.27272727	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242317	37	L2	C9	F	27	27	2.6	0.18	14.44444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10084	1511862-002	242318	38	L2	C9	F	28	28	4.5	0.3	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242319	1	M4	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242320	2	M4	J3	F	1	1	2.8	0.23	12.17391304	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242321	3	M4	J3	F	2	2	3.6	1	3.6	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242322	4	M4	J3	F	3	3	2.5	0.12	20.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242323	5	M4	J5	F	4	4	6.9	0.6	11.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242324	6	M4	J5	F	5	5	3.75	0.4	9.375	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242325	7	M4	I2	F	6	6	1.35	0.38	3.552631579	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242326	8	M4	I2	MD10	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242327	9	M4	I2	MF		7	4	0.25	16	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242328	10	M4	I6	F	8	8	2.75	0.2	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242329	11	M4	I6	F	9	9	3.6	0.35	10.28571429	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242330	12	M4	H1	F	10	10	1.5	0.2	7.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-002	242331	13	M4	H3	F	11

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10085	1511862-00	242337	19	M5	H1	F	15	15	1.1	0.12	9.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242338	20	M5	H3	F	16	16	3.6	0.5	7.2	LA		ADX	1				NaK, WRTA; Additional analysis 7/8/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242339	21	M5	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242340	22	M5	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242341	23	M5	F3	F	17	17	2.6	0.3	8.666666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242342	24	M5	F3	F	0	0	2.5	0.5	5	NAM		NAM			1		NaK, UN; HIGH AI	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242343	25	M5	F3	F	18	18	2.7	0.38	7.105263158	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242344	26	M5	F3	B	0	0	3.2	0.25	12.8	NAM		NAM			1		XX, UN; > 5.3um d-spacing	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242345	27	M5	E2	F	19	19	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242346	28	M5	E2	F	20	20	2.6	0.15	17.33333333	LA		ADX					NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242347	29	M5	E2	F	21	21	3.7	0.48	7.708333333	LA		ADX	1	1			NaK, WRTA; DIFFRACTION #210	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242348	30	M5	E4	F	22	22	2.3	0.25	9.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242349	31	M5	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242350	32	M5	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242351	33	M6	G4	F	23	23	4.1	0.4	10.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242352	34	M6	G4	MD10	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242353	35	M6	G4	MF		24	2.5	0.3	8.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10085	1511862-00	242354	36	M6	G2	F	25	25	2.6	0.15	17.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241618	1	K1	E10	MD11	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241619	2	K1	E10	MFO		1	5.7	0.48	11.875	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241620	3	K1	E10	MD20	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241621	4	K1	E10	MF		2	5	0.24	20.83333333	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241622	5	K1	E10	MF		3	2.7	0.48	5.625	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241623	6	K1	E10	F	3	4	1.2	0.18	6.666666667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241624	7	K1	E10	F	4	5	26.9	0.84	32.02380952	LA		ADX	1	1			NaK, WRTA; 0107630	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241625	8	K1	E10	F	5	6	4.4	0.12	36.66666667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241626	9	K1	E10	F	6	7	1.4	0.12	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241627	10	K1	C9	F	7	8	1.9	0.24	7.916666667	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241628	11	K1	C9	F	8	9	4.6	0.48	9.583333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241629	12	K1	C9	F	9	10	2.7	0.72	3.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241630	13	K1	C9	F	10	11	9.9	0.72	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241631	14	K1	C9	F	11	12	7.8	0.36	21.66666667	LA		ADX	1				NaK, WRTA; Additional analysis 6/30/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241632	15	K1	C9	F	12	13	12.2	0.48	25.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241633	16	K1	C9	F	13	14	1.2	0.36	3.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241634	17	K1	C9	F	14	15	1.2	0.12	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241635	18	K2	F3	F	15	16	3.8	0.12	31.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241636	19	K2	F3	F	16	17	4.5	0.72	6.25	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241637	20	K2	F3	F	17	18	4.8	0.36	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241638	21	K2	F3	F	18	19	4.8	0.36	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241639	22	K2	F3	F	19	20	5.2	0.18	28.88888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241640	23	K2	F3	F	20	21	3.8	0.36	10.55555556	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241641	24	K2	F3	F	21	22	1.6	0.24	6.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241642	25	K2	F3	F	22	23	12.4	0.24	51.66666667	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241643	26	K2	I2	F	23	24	6.6	0.96	6.875	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241644	27	K2	I2	F	24	25	6.9	1.68	4.107142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10086	1512830-00	241645	28	K2	I2	F	25	26	7.1	0.36	19.72222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262219	1	D1	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262220	2	D1	H5	F	1	1	9	0.36	25	LA		ADX	1	1	1		NaK, WRTA; 0104090	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262221	3	D1	F6	MD10	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262222	4	D1	F6	MF		2	4.1	0.36	11.38888889	LA		ADX	1	1	1		NaK, WRTA; 0105010	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262223	5	D1	F6	MD11	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262224	6	D1	F6	MF		3	10.5	0.15	70	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262225	7	D1	G2	F	4	4	16.9	0.48	35.20833333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262226	8	D1	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262227	9	D1	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262228	10	D1	B5	F	5	5	1.4	0.24	5.833333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262229	11	D1	B5	F	6	6	6.3	0.72	8.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262230	12	D2	A4	MD10	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262231	13	D2	A4	MFO		7	3.1	0.48	6.458333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262232	14	D2	A4	F	8	8	9.7	0.72	13.47222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262233	15	D2	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262234	16	D2	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262236	18	D2	G7	MD10	10													Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262237	19	D2	G7	MF		10	2.4	0.12	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262238	20	D2	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262239	21	D2	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262240	22	D3	B8	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262241	23	D3	B8	MF		11	4.1	0.48	8.541666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262242	24	D3	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262243	25	D3	G10	F	12	12	2.6	0.12	21.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262244	26	D3	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262245	27	D3	E5	MD11	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262246	28	D3	E5	MF		13	11.4	0.48	23.75	LA		ADX	1				XX, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262247	29	D3	E5	F	14	14	2.4	0.15	16	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262248	30	D3	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262249	31	D3	A10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262250	32	D1	J7	MD11	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10087	1512830-00	262251	33	D1	J7	MF		15	10	0.12	83.33333333	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247979	1	L1	C9	F	1	1	3.6	0.24	15	LA		ADX	1	1			NaK, WRTA; 0107850	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247980	2	L1	C9	F	2	2	3.3	0.18	18.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247981	3	L1	C9	MD20	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247982	4	L1	C9	MFO		3	2.4	0.12	20	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247983	5	L1	C9	MF		4	1.6	0.24	6.666666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247984	6	L1	C9	F	4	5	3.6	0.12	30	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247985	7	L1	C9	F	5	6	9.8	0.6	16.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247986	8	L1	C9	MD11	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247987	9	L1	C9	MFO	7	7	6.8	0.6	11.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247988	10	L1	C9	F	7	8	30.9	2.04	15.14705882	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247989	11	L1	C9	MD10	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247990	12	L1	C9	MFO		9	4.7	0.48	9.791666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247991	13	L1	C9	F	9	10	12.4	0.24	51.66666667	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247992	14	L1	C9	F	10	11	2.1	0.18	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247993	15	L1	C9	F	11	12	9.9	0.24	41.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247994	16	L1	C9	F	12	13	2.7	0.48	5.625	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247995	17	L1	G6	F	13	14	21.2	0.24	88.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247996	18	L1	G6	F	14	15	3.8	0.48	7.916666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247997	19	L1	G6	MD10	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247998	20	L1	G6	MFO		16	3.3	0.36	9.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	247999	21	L1	G6	F	16	17	8.3	0.48	17.29166667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248000	22	L1	G6	CD22	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248001	23	L1	G6	CF		18	10.9	0.24	45.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248002	24	L1	G6	CF		19	6.8	0.48	14.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248003	25	L1	G6	F	18	20	3.1	0.36	8.611111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248004	26	L1	G6	F	19	21	12.3	0.6	20.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248005	27	L1	G6	F	20	22	8.5	0.24	35.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248006	28	L1	G6	F	21	23	3.8	0.18	21.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248007	29	L2	F3	B	22	24	15.7	0.72	21.80555556	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248008	30	L2	F3	F	23	25	19.1	0.48	39.79166667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248009	31	L2	F3	F	24	26	2.2	0.24	9.166666667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248010	32	L2	B5	F	0	0	11.8	0.72	16.38888889	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248011	33	L2	B5	F	25	27	1.4	0.36	3.888888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248012	34	L2	B5	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248013	35	L2	B5	MFO		28	2.8	0.18	15.55555556	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248014	36	L2	B5	F	27	29	1.7	0.36	4.722222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248015	37	L2	B5	MD43	28													Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248016	38	L2	B5	MBO		30	23.6	1.32	17.87878788	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248017	39	L2	B5	MBO		31	9.9	0.48	20.625	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248018	40	L2	B5	MFO		32	9.2	0.24	38.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248019	41	L2	B5	MFO		33	3.6	0.12	30	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248020	42	L2	B5	F	29	34	1.9	0.48	3.958333333	LA		AX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248021	43	L2	B5	F	30	35	8.3	0.72	11.52777778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248022	44	L2	B5	F	31	36	14.9	0.72	20.69444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10088	1512830-00	248023	45	L2	B5	F	0	0	2.4	0.36	6.666666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241646	1	M1	J2	F	1	1	3.4	0.15	22.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241647	2	M1	J2	F	2	2	5.8	0.25	23.2	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241648	3	M1	J2	B	3	3	4.5	0.45	10	LA		ADX	1	1	1		NaK, WRTA; Asbestos_453	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241649	4	M1	J2	F	4	4	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241650	5	M1	J2	F	5	5	4.2	0.05	84	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241651	6	M1	J2	F	6	6	3.8	0.7	5.428571429	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241652	7	M1	J2	F	7	7	2.2	0.2	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241653	8	M1	J2	F	8	8	5.5	0.35	15.71428571	LA		ADX	1	1	1		NaK, WRTA; Asbestos_454	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241654	9	M1	J2	F	9	9	1.2	0.15	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241655	10	M1	J2	F	10	10	2.5	0.15	16.66666667	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241656	11	M1	C6	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241657	12	M1	C6	MFO		11	2.9	0.3	9.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241658	13	M1	C6	F	12	12	2.8	0.2	14	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241659	14	M1	C6	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241660	15	M1	C6	MFO		13	3.7	0.15	24.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241661	16	M1	C6	MD10	14													Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241662	17	M1	C6	MF		14	1.4	0.15	9.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241663	18	M1	C6	F	15	15	5.8	0.35	16.57142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241664	19	M1	C6	F	16	16	7.5	0.2	37.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241665	20	M1	C6	F	17	17	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241666	21	M1	C6	MD11	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241667	22	M1	C6	MBO		18	5.7	1.25	4.56	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241668	23	M1	C6	F	19	19	2.7	0.15	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241669	24	M1	C6	F	20	20	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241670	25	M1	C6	MD11	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10089	1512830-00	241671	26	M1	C6	MF		21	9.1	0.2	45.5	LA		ADX	1

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10090	1512830-00(	262254	3	G1	C9	MD10	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262256	5	G1	C9	F	3	3	2.9	0.84	3.452380952	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262257	6	G1	C9	MD11	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262258	7	G1	C9	MF		4	6.8	0.12	56.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262259	8	G1	C9	MD11	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262260	9	G1	C9	MF		5	15.4	0.48	32.08333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262261	10	G1	G6	F	6	6	5	0.1	50	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262262	11	G1	G6	MD10	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262263	12	G1	G6	MF		7	2.7	0.12	22.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262264	13	G1	G6	F	8	8	6	0.36	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262265	14	G1	G6	MD10	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262266	15	G1	G6	MF		9	4.6	0.48	9.583333333	LA		ADX	1	1			XX, WRTA; 010515D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262267	16	G1	G6	MD11	10													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262268	17	G1	G6	MF		10	9.7	0.72	13.47222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262269	18	G1	G6	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262270	19	G1	G6	MF		11	3.7	0.24	15.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262271	20	G1	G6	MD11	12													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262272	21	G1	G6	MF		12	14.7	0.2	73.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262273	22	G1	G6	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262274	23	G1	G6	MF		13	2.6	0.36	7.222222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262275	24	G1	G6	F	14	14	4.6	0.24	19.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262276	25	G2	G7	F	15	15	2.7	0.48	5.625	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262277	26	G2	G7	F	16	16	9.3	0.24	38.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262278	27	G2	G7	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262279	28	G2	G7	MFO		17	4.3	0.48	8.958333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262280	29	G2	G7	MD10	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262281	30	G2	G7	MF		18	3.8	0.24	15.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262282	31	G2	G7	MD11	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262283	32	G2	G7	MF		19	9.5	0.48	19.79166667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262284	33	G2	B8	F	0	0	9	0.96	9.375	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262285	34	G2	B8	MD11	20													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262286	35	G2	B8	MF		20	7.5	0.48	15.625	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262287	36	G2	B8	MD10	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262288	37	G2	B8	MFO		21	3.1	0.25	12.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262289	38	G2	B8	MFO		22	4.8	0.24	20	LA		AX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262290	39	G2	B8	MFO		23	3.8	0.48	7.916666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262291	40	G2	B8	MD10	22													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262292	41	G2	B8	MF		24	2.4	0.48	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262293	42	G2	B8	F	23	25	4.1	0.96	4.270833333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262294	43	G2	B8	MD11	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262295	44	G2	B8	MF		26	13.8	0.72	19.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10090	1512830-00(	262296	45	G2	B8	F	25	27	5.5	0.6	9.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262297	1	H1	C9	MD22	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262298	2	H1	C9	MF		1	18.8	0.6	31.33333333	LA		ADX	1	1	1		NaK, WRTA; 010520D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262299	3	H1	C9	MF		2	12.1	0.72	16.80555556	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262300	4	H1	C9	MD11	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262301	5	H1	C9	MFO		3	7.7	0.24	32.08333333	LA		ADX	1	1	1		NaK, WRTA; 010522D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262302	6	H1	C9	F	3	4	4.6	0.1	46	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262303	7	H1	C9	F	4	5	4.2	0.36	11.66666667	LA		ADX	1	1	1		NaK, WRTA; 010524D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262304	8	H1	C9	F	5	6	5	0.84	5.952380952	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262305	9	H1	C9	F	6	7	3.6	0.24	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262306	10	H1	C9	F	7	8	5.7	0.24	23.75	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262307	11	H1	C9	F	8	9	6.2	0.24	25.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262308	12	H1	C9	F	9	10	5.7	0.2	28.5	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262309	13	H1	C9	F	10	11	1.2	0.24	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262310	14	H1	F6	F	11	12	1.7	0.24	7.083333333	LA		ADX	1				NaK, WRTA; Additional analysis 6/5/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262311	15	H1	F6	F	12	13	10	0.24	41.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262312	16	H1	F6	B	13	14	2.4	0.96	2.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262313	17	H1	F6	F	14	15	4.5	0.12	37.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262314	18	H1	F6	F	15	16	1.1	0.24	4.583333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262315	19	H1	F6	F	16	17	7.6	0.24	31.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262316	20	H1	F6	F	17	18	2.1	0.48	4.375	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262317	21	H2	G8	F	0	0	11.9	0.1	119	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262318	22	H2	G8	F	18	19	2.9	0.48	6.041666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262319	23	H2	G8	F	19	20	2.1	0.12	17.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262320	24	H2	G8	F	20	21	10.5	0.24	43.75	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262321	25	H2	G8	F	21	22	7.6	0.96	7.916666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262322	26	H2	G8	F	22	23	2.6	0.36	7.222222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262323	27	H2	G8	MD10	23													Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262324	28	H2	G8	MFO		24	2.6	0.72	3.611111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262325	29	H2	G8	F	24	25	5.7	0.6	9.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262326	30	H2	G8	F	25	26	5	0.24	20.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262327	31	H2	G8	F	26	27	5.2	0.24	21.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262328	32	H2	G8	F	27	28	5.5	0.48	11.45833333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262329	33	H2	G8	F	28	29	1.2	0.12	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262330	34	H2	G8	F	29	30	7.2	0.96	7.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262331	35	H2	G8	F	30	31	6.8	0.24	28.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262332	36	H2	G8	F	31	32	3.6	0.24	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262333	37	H2	G8	MD10	32													Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262334	38	H2	G8	MFO		33	2.6	0.24	10.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262335	39	H2	D7	F	33	34	2.4	0.24	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262336	40	H2	D7	F	34	35	12.6	1.2	10.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262337	41	H2	D7	F	35	36	9.3	0.24	38.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262338	42	H2	D7	F	36	37	5	0.6	8.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262339	43	H2	D7	F	37	38	10	0.24	41.66666667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262340	44	H2	D7	F	0	0	3.4	0.24	14.16666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262341	45	H2	D7	F	38	39	16.2	0.72	22.5	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262342	46	H2	D7	F	39	40	2.1	0.24	8.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10091	1512830-00(	262343	47	H2	D7	F	40	41	4.8	0.24	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241738	1	I1	B7	F	1	1	4.7	1.2	3.916666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241739	2	I1	B7	F	2	2	10.9	0.36	30.27777778	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241740	3	I1	B7	F	3	3	3.1	0.1	31	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241741	4	I1	B7	F	4	4	8.3	0.72	11.52777778	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241742	5	I1	B7	F	5	5	4	0.1	40	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241743	6	I1	B7	F	6	6	4.7	0.48	9.791666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241744	7	I1	F9	MD10	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241745	8	I1	F9	MFO		7	3.6	0.48	7.5	LA		ADX	1	1	1		NaK, WRTA; 010798D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241746	9	I1	F9	F	8	8	4.7	0.36	13.05555556	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241747	10	I1	F9	B	9	9	1.7	0.48	3.541666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241748	11	I1	F9	F	10	10	5	0.18	27.77777778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241749	12	I1	I7	F	0	0	12.8	0.48	26.66666667	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241750	13	I1	I7	F	11	11	2.8	0.24	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241751	14	I1	I7	F	12	12	1.6	0.24	6.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241752	15	I1	I7	F	13	13	5.7	0.24	23.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241753	16	I1	I7	F	14	14	1.3	0.24	5.416666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241754	17	I1	I7	F	15	15	3.9	0.48	8.125	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241755	18	I1	I7	F	16	16	9.7	1.44	6.736111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241756	19	I2	D1	F	17	17	6.4	0.24	26.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241757	20	I2	D1	F	18	18	3.6	0.24	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241758	21	I2	D1	F	19	19	10.6	0.6	17.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241759	22	I2	D1	F	20	20	4	0.36	11.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241760	23	I2	F2	F	21	21	4.2	0.84	5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241761	24	I2	F2	F	22	22	2.4	0.48	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241762	25	I2	F2	F	23	23	4.2	0.6	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241763	26	I2	I4	F	24	24	2.4	0.48	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241764	27	I2	I4	F	25	25	5.2	0.36	14.44444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241765	28	I2	I4	F	26	26	6.3	1	6.3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10092	1512830-00(	241766	29	I2	I4	F	27	27	0.72	0.1	7.2	LA		AX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248024	1	J1	A9	F	1	1	2.8	0.24	11.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248025	2	J1	A9	F	2	2	2.1	0.36	5.833333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248026	3	J1	A9	B	3	3	4	0.36	11.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248027	4	J1	C6	F	4	4	12.7	0.36	35.27777778	LA		ADX	1		1		NaK, WRTA; Additional analysis 7/25/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248028	5	J1	D8	F	5	5	4.5	0.72	6.25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248029	6	J1	D8	F	6	6	2.1	0.12	17.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248030	7	J1	D8	F	7	7	1.7	0.12	14.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248031	8	J1	D8	F	8	8	5	0.96	5.208333333	LA		ADX	1	1	1		NaK, WRTA; 010B77D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248032	9	J1	E5	F	9	9	2.8	0.18	15.55555556	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248033	10	J1	E5	F	10	10	2.1	0.189	11.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248034	11	J1	E5	F	11	11	1.6	0.36	4.444444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248035	12	J1	C9	F	12	12	0.8	0.12	6.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248036	13	J1	C9	F	13	13	3.6	0.72	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248037	14	J1	C9	F	14	14	1.5	0.1	15	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248038	15	J1	C9	F	15	15	6.4	0.24	26.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248039	16	J1	C9	F	16	16	5.7	0.36	15.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248040	17	J2	B6	F	17	17	1.7	0.25	6.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248041	18	J2	B6	F	18	18	3.8	0.12	31.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248042	19	J2	B6	F	19	19	4.7	0.6	7.833333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248043	20	J2	B6	F	20	20	4.5	0.12	37.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248044	21	J2	B6	F	21	21	2.1	0.24	8.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248045	22	J2	E2	F	22	22	7.4	0.48	15.41666667	LA		ADX	1				NaK, WRTA; Additional analysis 7/26/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248046	23	J2	H6	F	23	23	7.6	0.24	31.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248047	24	J2	H6	MD10	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248048	25	J2	H6	MFO		24	3.1	0.48	6.458333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10093	1512830-00(	248049	26	J2	H6	F	25	25	1.2	0.24	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10094	1512830-00(	248050	1	K1	E3	F	1	1	6.1	0.48	12.70

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10094	1512830-00	248074	25	K2	B6	F	22	23	4	0.96	4.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10094	1512830-00	248075	26	K2	B6	F	23	24	9.2	0.72	12.77777778	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10094	1512830-00	248076	27	K2	B6	F	24	25	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10094	1512830-00	248077	28	K2	B6	F	25	26	2.5	0.24	10.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248078	1	L1	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248079	2	L1	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248080	3	L1	B4	F	1	1	14.6	0.6	24.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248081	4	L1	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248082	5	L1	C3	F	2	2	3.6	0.25	14.4	LA		ADX	1	1	1		NaK, WRTA; 010910D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248083	6	L1	C3	F	3	3	2.6	0.24	10.83333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248084	7	L1	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248085	8	L1	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248086	9	L1	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248087	10	L1	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248088	11	L1	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248089	12	L1	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248090	13	L1	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248091	14	L1	E1	F	4	4	3.6	0.12	30	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248092	15	L1	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248093	16	L1	E5	F	5	5	1.9	0.48	3.958333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248094	17	L1	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248095	18	L1	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248096	19	L1	F8	F	6	6	2.1	0.6	3.5	OA		ADX	1	1	1		NaX, NR; 010920D; Additional analysis 7/29/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248097	20	L1	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248098	21	L1	F4	F	7	7	2.9	0.72	4.027777778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248099	22	L1	F2	F	8	8	8.3	0.48	17.29166667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248100	23	L1	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248101	24	L1	G3	F	9	9	3.6	0.24	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248102	25	L1	G3	F	10	10	3.8	1.08	3.518518519	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248103	26	L1	G5	F	11	11	2.1	0.24	8.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248104	27	L1	G5	F	12	12	3.3	0.24	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248105	28	L1	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248106	29	L1	G9	F	13	13	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248107	30	L1	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248108	31	L1	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248109	32	L1	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248110	33	L1	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248111	34	L1	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248112	35	L1	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248113	36	L1	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248114	37	L1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248115	38	L1	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248116	39	L2	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248117	40	L2	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248118	41	L2	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248119	42	L2	B8	F	14	14	3.1	0.24	12.91666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248120	43	L2	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248121	44	L2	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248122	45	L2	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248123	46	L2	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248124	47	L2	D2	F	15	15	1.7	0.24	7.083333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248125	48	L2	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248126	49	L2	D6	F	16	16	10.6	0.36	29.44444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248127	50	L2	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248128	51	L2	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248129	52	L2	E9	F	17	17	2.4	0.12	20	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248130	53	L2	E9	F	18	18	3.3	0.24	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248131	54	L2	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248132	55	L2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248133	56	L2	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248134	57	L2	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248135	58	L2	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248136	59	L2	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248137	60	L2	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248138	61	L2	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248139	62	L2	G9	F	19	19	1.6	0.24	6.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248140	63	L2	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248141	64	L2	G5	F	20	20	2	0.36	5.555555556	OA		ADX	1	1	1		XX, NR; 010930D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248142	65	L2	G3	F	21	21	1.9	0.12	15.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248143	66	L2	G3	F	22	22	2.7	0.12	22.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248144	67	L2	H2	F	23	23	2.8	0.25	11.2	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248145	68	L2	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248146	69	L2	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248147	70	L2	H8	F	24	24	1.7	0.24	7.083333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248148	71	L2	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10095	1512830-00	248149	72	L2	I9	F	25	25	2.6	0.12	21.66666667	OA		ADX	1				XX, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248150	1	M5	A3	F	1	1	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248151	2	M5	A3	F	2	2	1.3	0.4	3.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248152	3	M5	A3	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248153	4	M5	A3	MF		3	3.2	0.5	6.4	LA		ADX	1	1			NaK, WRTA; Asbestos_587	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248154	5	M5	B5	MD10	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248155	6	M5	B5	MF		4	4	0.25	16	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248156	7	M5	B5	F	5	5	1.2	0.15	8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248157	8	M5	B5	F	6	6	2.7	0.1	27	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248158	9	M5	C3	F	7	7	5	0.2	25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248159	10	M5	C3	F	8	8	5	0.5	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248160	11	M5	D7	F	9	9	2.4	0.25	9.6	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248161	12	M5	D7	F	10	10	2.6	0.3	8.666666667	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248162	13	M5	E5	F	11	11	2.7	0.15	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248163	14	M5	E5	F	12	12	2	0.15	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248164	15	M5	E5	F	13	13	2.3	0.15	15.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248165	16	M5	E5	F	14	14	15.2	0.2	76	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248166	17	M6	A7	F	15	15	1	0.3	3.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248167	18	M6	A7	F	16	16	2.2	0.15	14.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248168	19	M6	A7	MD11	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248169	20	M6	A7	MF		17	5.3	0.3	17.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248170	21	M6	C6	F	18	18	3	0.3	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248171	22	M6	D8	F	19	19	1.1	0.25	4.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248172	23	M6	D8	F	20	20	3.3	0.7	4.714285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248173	24	M6	E3	F	21	21	3.7	0.35	10.57142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248174	25	M6	E3	F	22	22	6.1	0.75	8.133333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248175	26	M6	E3	F	23	23	6.5	0.25	26	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248176	27	M6	F7	F	24	24	1.3	0.3	4.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248177	28	M6	G4	F	25	25	5.4	0.25	21.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10096	1512830-00	248178	29	M6	G4	F	26	26	11	0.8	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248179	1	N1	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248180	2	N1	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248181	3	N1	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248182	4	N1	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248183	5	N1	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248184	6	N1	E10	F	1	1	2.6	0.8	3.25	LA		ADX	1	1	1		NaK, WRTA; Asbestos_589	Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248185	7	N1	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248186	8	N1	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248187	9	N1	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248188	10	N1	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248189	11	N1	A10	F	2	2	4.9	0.6	8.166666667	LA		ADX	1	1	1		NaK, WRTA; Asbestos_591	Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248190	12	N2	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248191	13	N2	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248192	14	N2	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248193	15	N2	G7	F	3	3	23.5	0.5	47	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248194	16	N2	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248195	17	N2	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248196	18	N3	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248197	19	N3	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248198	20	N3	E8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10097	1512830-00	248199	21	N3	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248200	1	T1	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248201	2	T1	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248202	3	T1	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248203	4	T1	G2	F	1	1	2.9	0.3	9.666666667	LA		ADX	1	1	1		NaK, WRTA; Asbestos_602	Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248204	5	T1	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248205	6	T1	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248206	7	T1	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248207	8	T1	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248208	9	T1	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248209	10	T1	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248210	11	T2	J2	F	2	2	1.8	0.25	7.2	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248211	12	T2	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248212	13	T2	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248213	14	T2	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248214	15	T2	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248215	16	T2	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248216	17	T2	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248217	18	T2	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248218	19	T2	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248219	20	T2	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10098	1512830-00	248220	21	T3	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10099	1512830-00	248221	1	P1	B9	F	1	1	14.3	0.25	57.2	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248222	2	P1	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248223	3	P1	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248224	4	P1	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248225	5	P1	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248226	6	P1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248227	7	P1	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248228	8	P1	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248229	9	P1	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248230	10	P1	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248231	11	P1	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248232	12	P2	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248233	13	P2	G6	F	2	2	17.1	0.24	71.25	LA		ADX	1	1	1		NaK, WRTA; 010938D	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248234	14	P2	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248235	15	P2	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248236	16	P2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248237	17	P2	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248238	18	P2	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248239	19	P2	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248240	20	P2	A1	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10099	1512830-00	248241	21	P2	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10100	1512830-00	248242	1	Q2	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248243	2	Q2	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10100	1512830-00	248244	3	Q2	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248245	4	Q2	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248246	5	Q2	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248247	6	Q2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248248	7	Q2	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248249	8	Q2	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248250	9	Q2	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248251	10	Q2	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248252	11	Q3	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248253	12	Q3	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248254	13	Q3	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248255	14	Q3	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248256	15	Q3	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248257	16	Q3	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248258	17	Q3	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248259	18	Q3	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248260	19	Q3	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248261	20	Q3	F7	F	1	1	23.3	0.84	27.73809524	LA		ADX	1	1	1		NaK, WRTA; 010940D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10100	1512830-00	248262	21	Q3	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10101	1512830-00	248263	1	R1	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248264	2	R1	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248265	3	R1	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248266	4	R1	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248267	5	R1	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248268	6	R1	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248269	7	R1	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248270	8	R1	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248271	9	R1	I10	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248272	10	R1	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248273	11	R2	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248274	12	R2	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248275	13	R2	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248276	14	R2	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248277	15	R2	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248278	16	R2	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248279	17	R2	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248280	18	R2	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248281	19	R2	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248282	20	R2	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10101	1512830-00	248283	21	R3	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10102	1512830-00	248284	1	S1	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248285	2	S1	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248286	3	S1	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248287	4	S1	D6	F	1	1	1.7	0.3	5.666666667	LA		ADX	1	1	1		NaK, WRTA; Asbestos_600	Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248288	5	S1	E2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248289	6	S1	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248290	7	S1	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248291	8	S1	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248292	9	S1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248293	10	S1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248294	11	S2	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248295	12	S2	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248296	13	S2	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248297	14	S2	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248298	15	S2	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248299	16	S2	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248300	17	S2	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248301	18	S2	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248302	19	S2	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248303	20	S2	A1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10102	1512830-00	248304	21	S3	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248305	1	T1	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248306	2	T1	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248307	3	T1	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248308	4	T1	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248309	5	T1	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248310	6	T1	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248311	7	T1	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248312	8	T1	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248313	9	T1	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248314	10	T1	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248315	11	T2	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248316	12	T2	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248317	13	T2	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248318	14	T2	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248319	15	T2	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248320	16	T2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248321	17	T2	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248322	18	T2	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248323	19	T2	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248324	20	T2	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10103	1512830-00	248325	21	T3	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248326	1	U1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248327	2	U1	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248328	3	U1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248329	4	U1	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248330	5	U1	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248331	6	U1	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248332	7	U1	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248333	8	U1	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248334	9	U1	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248335	10	U1	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248336	11	U1	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248337	12	U2	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248338	13	U2	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248339	14	U2	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248340	15	U2	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248341	16	U2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248342	17	U2	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248343	18	U2	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248344	19	U2	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248345	20	U2	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10104	1512830-00	248346	21	U2	J6	F	1	1	3.9	0.35	11.14285714	LA		ADX	1	1	1		NaK, WRTA; Asbestos_514	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239126	1	I1	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239127	2	I1	B6	F	1	1	2.3	0.25	9.2	LA		ADX	1	1	1		NaK, WRTA; Asbestos_377	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239128	3	I1	B4	F	2	2	4.9	0.4	12.25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239129	4	I1	C2	F	3	3	2.4	0.5	4.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239130	5	I1	C2	F	4	4	4.6	0.3	15.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239131	6	I1	C2	F	5	5	3.8	0.15	25.33333333	LA		ADX	1	1	1		NaK, WRTA; Asbestos_389	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239132	7	I1	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239133	8	I1	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239134	9	I1	F9	F	6	6	2.6	0.1	26	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239135	10	I1	F9	F	7	7	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239136	11	I1	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239137	12	I1	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239138	13	I1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239139	14	I1	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239140	15	I2	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239141	16	I2	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239142	17	I2	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239143	18	I2	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239144	19	I2	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239145	20	I2	F7	F	8	8	6.4	0.5	12.8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239146	21	I2	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239147	22	I2	D1	F	9	9	3.4	0.15	22.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239148	23	I2	C3	F	0	0	15.6	0.5	31.2	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239149	24	I2	C3	F	10	10	4.4	0.3	14.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10105	1512830-00	239150	25	I2	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239151	1	J1	J5	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239152	2	J1	J5	MFO		1	2.6	0.3	8.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239153	3	J1	J5	F	2	2	1.8	0.3	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239154	4	J1	J5	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239155	5	J1	J5	MFO		3	1.9	0.3	6.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239156	6	J1	J5	F	4	4	2.1	0.7	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239157	7	J1	J5	F	5	5	2.6	0.2	13	LA		ADX	1	1	1		NaK, WRTA; Asbestos_383, Asbestos_384	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239158	8	J1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239159	9	J1	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239160	10	J1	H5	F	6	6	5.3	0.7	7.571428571	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239161	11	J1	H5	F	7	7	2.6	0.25	10.4	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239162	12	J1	G3	F	8	8	1.8	0.35	5.142857143	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239163	13	J1	G3	F	9	9	10.4	0.25	41.6	LA		ADX	1	1	1		XK, TR; Asbestos_385	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239164	14	J1	F8	F	10	10	40.4	0.35	115.4285714	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239165	15	J1	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239166	16	J1	D6	F	0	0	12.4	0.75	16.53333333	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239167	17	J1	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239168	18	J1	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239169	19	J1	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239170	20	J2	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239171	21	J2	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239172	22	J2	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239173	23	J2	G5	F	11	11	10.4	0.95	10.94736842	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239174	24	J2	G5	F	12	12	6.2	0.7	8.857142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239175	25	J2	G5	F	13	13	2	0.2	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239176	26	J2	F2	F	14	14	4.9	0.45	10.88888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239177	27	J2	E7	F	15	15	7.7	0.35	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239178	28	J2	E7	F	16	16	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239179	29	J2	D4	F	17	17	1.3	0.25	5.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239180	30	J2	D4	F	18	18	1.8	0.3	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239181	31	J2	D4	F	19	19	3.3	0.25	13.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239182	32	J2	D4	F	20	20	15	0.25	60	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239183	33	J2	D4	F	21	21	6.2	0.9	6.888888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239184	34	J2	C6	F	22	22	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239185	35	J2	B4	F	23	23	2.1	0.7	3	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239186	36	J2	B4	F	24	24	2.1	0.3	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10106	1512830-00	239187	37	J2	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248347	1	Q1	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248348	2	Q1	B5	F	1	1	2.6	0.15	17.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248349	3	Q1	B5	F	2	2	3.6	0.75	4.8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248350	4	Q1	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248351	5	Q1	D8	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10107	1512830-00	248352	6	Q1	D8	MFO		3	2.4	0.4	6	LA		ADX	1	1	1		NaK, WRTA; Asbestos_572	Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248353	7	Q1	E10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248354	8	Q1	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248355	9	Q1	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248356	10	Q1	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248357	11	Q1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248358	12	Q1	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248359	13	Q2	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248360	14	Q2	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248361	15	Q2	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248362	16	Q2	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248363	17	Q2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248364	18	Q2	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248365	19	Q2	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248366	20	Q2	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248367	21	Q2	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248368	22	Q2	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10107	1512830-00	248369	23	Q3	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262344	1	L1	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262345	2	L1	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262346	3	L1	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262347	4	L1	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262348	5	L1	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262349	6	L1	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262350	7	L1	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262351	8	L1	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262352	9	L1	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262353	10	L1	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262354	11	L2	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262355	12	L2	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262356	13	L2	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262357	14	L2	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262358	15	L2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262359	16	L2	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262360	17	L2	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262361	18	L2	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262362	19	L2	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262363	20	L2	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10108	1512830-00	262364	21	L3	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241788	1	M1	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241789	2	M1	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241790	3	M1	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241791	4	M1	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241792	5	M1	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241793	6	M1	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241794	7	M1	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241795	8	M1	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241796	9	M1	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241797	10	M1	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241798	11	M2	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241799	12	M2	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241800	13	M2	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241801	14	M2	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241802	15	M2	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241803	16	M2	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241804	17	M2	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241805	18	M2	C6	F	1	1	3.1	0.25	12.4	LA		ADX	1	1	1		NaK, WRTA; Asbestos_483	Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241806	19	M2	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241807	20	M2	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10109	1512830-00	241808	21	M2	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241809	1	N1	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241810	2	N1	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241811	3	N1	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241812	4	N1	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241813	5	N1	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241814	6	N1	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241815	7	N1	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241816	8	N1	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241817	9	N1	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241818	10	N1	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241819	11	N1	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241820	12	N2	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241821	13	N2	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241822	14	N2	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241823	15	N2	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241824	16	N2	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241825	17	N2	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241826	18	N2	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241827	19	N2	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241828	20	N2	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10110	1512830-00	241829	21	N2	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241830	1	O4	C7	F	1	1	2.5	0.25	10	LA		ADX	1	1	1		NaK, WRTA; Asbestos_497	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241831	2	O4	C7	MD10	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241832	3	O4	C7	MFO		2	2.5	0.3	8.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241833	4	O4	C7	F	3	3	9.1	0.5	18.2	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241834	5	O4	C7	F	4	4	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241835	6	O4	C7	F	5	5	3.3	0.15	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241836	7	O4	D4	F	6	6	7.8	0.25	31.2	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241837	8	O4	D4	F	7	7	2.9	0.1	29	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241838	9	O4	D4	MD10	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241839	10	O4	D4	MF		8	3.5	0.3	11.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241840	11	O4	D4	B	9	9	7.7	0.5	15.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241841	12	O4	D4	MD11	10													Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241842	13	O4	D4	MFO		10	7.3	0.2	36.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241843	14	O4	D4	F	11	11	2.9	0.35	8.285714286	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241844	15	O4	D4	F	12	12	21.3	0.15	142	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241845	16	O4	D4	F	13	13	4.8	0.25	19.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241846	17	O5	H6	F	14	14	2.9	0.3	9.666666667	LA		ADX	1				NaK, WRTA; Analysis continued on 7/2/2015	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241847	18	O5	H6	F	15	15	4.3	0.2	21.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241848	19	O5	H6	F	16	16	1	0.2	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241849	20	O5	H6	F	17	17	0.7	0.15	4.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241850	21	O5	H6	F	18	18	3.3	0.25	13.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241851	22	O5	H6	F	19	19	10.7	0.2	53.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241852	23	O5	H6	MD10	20													Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241853	24	O5	H6	MF		20	3	0.2	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241854	25	O5	C5	F	21	21	3.7	0.2	18.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241855	26	O5	C5	F	22	22	2.2	0.2	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241856	27	O5	C5	F	23	23	5.7	0.25	22.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241857	28	O5	C5	F	24	24	4.4	0.25	17.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241858	29	O5	C5	F	25	25	9.8	0.65	15.07692308	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241859	30	O5	C5	F	26	26	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241860	31	O5	C5	F	27	27	1.9	0.2	9.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241861	32	O5	C5	F	28	28	3	0.2	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241862	33	O5	C5	F	29	29	6.1	0.3	20.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241863	34	O5	C5	F	30	30	7.2	0.2	36	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10111	1512830-00	241864	35	O5	C5	F	31	31	11	0.3	36.66666667	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262365	1	P4	J5	F	1	1	2.5	0.05	50	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262366	2	P4	J5	F	2	2	1	0.05	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262367	3	P4	J5	F	3	3	16	2.2	7.272727273	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262368	4	P4	J5	F	4	4	2.8	0.4	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262369	5	P4	J5	F	5	5	1.1	0.2	5.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262370	6	P4	J5	F	6	6	10.2	0.8	12.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262371	7	P4	J5	F	7	7	2.7	0.15	18	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262372	8	P4	E4	F	8	8	13.7	0.75	18.26666667	LA		ADX	1	1	1		NaK, WRTA; Asbestos_507,Add'l analysis 7/6/2015	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262373	9	P4	E4	F	9	9	1.4	0.3	4.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262374	10	P4	E4	F	10	10	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262375	11	P4	E4	MD10	11													Surface Water	CDM Smith	N. Ross/DDE	Structure type for primary structure #11 should likely be MD10, not MD11, since the secondary structure is less than 5 µm (4.6 µm).	12/2/2015	
WT-10112	1512830-00	262376	12	P4	E4	MFO		11	4.6	0.35	13.14285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262377	13	P4	E4	F	12	12	2.4	0.2	12	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262378	14	P4	E4	F	13	13	2	0.1	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262379	15	P4	E4	F	14	14	3.6	0.25	14.4	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262380	16	P4	E4	F	15	15	2.1	0.1	21	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262381	17	P4	E4	F	16	16	18.5	1.3	14.23076923	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262382	18	P4	E4	F	17	17	4.9	0.25	19.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262383	19	P4	E4	F	18	18	5.3	0.25	21.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262384	20	P4	E4	F	19	19	7	0.2	35	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262385	21	P5	J6	MD11	20													Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262386	22	P5	J6	MF		20	5.2	0.3	17.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262387	23	P5	J6	F	21	21	2.6	0.55	4.727272727	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262388	24	P5	J6	F	22	22	18.9	1.3	14.53846154	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262389	25	P5	J6	MD10	23													Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262390	26	P5	J6	MFO		23	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262391	27	P5	J6	F	24	24	1.3	0.3	4.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262392	28	P5	B3	MD10	25													Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262393	29	P5	B3	MF		25	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262394	30	P5	B3	F	26	26	3.3	0.3	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262395	31	P5	B3	MD10	27													Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262396	32	P5	B3	MFO		27	3.5	0.4	8.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262397	33	P5	B3	F	28	28	2.6	0.2	13	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262398	34	P5	B3	F	29	29	1.9	0.25	7.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262399	35	P5	B3	F	30	30	4.4	0.2	22	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262400	36	P5	B3	F	31	31	1.4	0.15	9.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262401	37	P5	B3	F	32	32	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262402	38	P5	B3	F	33	33	2.9	0.3	9.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262403	39	P5	B3	F	34	34	9.8	0.4	24.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10112	1512830-00	262404	40	P5	B3	F	35	35	3.3	0.45	7.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248370	1	Q4	J3	F	1	1	18.6	1.1	16.90909091	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248371	2	Q4	J3	F	2	2	1.3	0.3	4.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248372	3	Q4	J3	F	3	3	2	0.1	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248373	4	Q4	J3	MD11	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248374	5	Q4	J3	MFO		4	7.3	0.15	48.66666667	LA		ADX	1	1			NaK, WRTA; Asbestos_509	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248375	6	Q4	J3	MD10	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248376	7	Q4	J3	MFO		5	2.9	0.2	14.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248377	8	Q4	J3	F	6	6	5.4	0.15	36	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248378	9	Q4	D1	F	7	7	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248379	10	Q4	D1	F	8	8	8	0.25	32	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248380	11	Q4	A3	F	9	9	2.4	0.25	9.6	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10113	1512830-00	248381	12	Q4	A3	F	10	10	6.3	0.25	25.2	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248382	13	Q5	A6	MD21	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248383	14	Q5	A6	MF		11	25.7	0.25	102.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248384	15	Q5	A6	MF		12	1.2	0.15	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248385	16	Q5	A6	F	12	13	4.4	0.2	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248386	17	Q5	A6	F	13	14	1.9	0.15	12.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248387	18	Q5	C7	F	14	15	10.7	0.3	35.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248388	19	Q5	C7	MD11	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248389	20	Q5	C7	MF		16	10.3	0.4	25.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248390	21	Q5	C7	F	16	17	5.5	0.5	11	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248391	22	Q5	C7	F	17	18	12.3	0.3	41	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248392	23	Q5	C7	MD10	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248393	24	Q5	C7	MF		19	4.9	0.2	24.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248394	25	Q5	E8	MD10	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248395	26	Q5	E8	MFO		20	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248396	27	Q5	F4	F	20	21	4.2	0.2	21	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248397	28	Q5	F4	F	0	0	11.2	0.25	44.8	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248398	29	Q5	F4	F	21	22	4.2	0.4	10.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248399	30	Q5	F4	F	22	23	27.6	0.7	39.42857143	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248400	31	Q5	H6	F	23	24	5.2	0.25	20.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248401	32	Q5	H6	F	24	25	40.2	0.5	80.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10113	1512830-00	248402	33	Q5	H6	F	25	26	3.3	0.4	8.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241905	1	R1	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241906	2	R1	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241907	3	R1	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241908	4	R1	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241909	5	R1	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241910	6	R1	E8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241911	7	R1	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241912	8	R1	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241913	9	R1	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241914	10	R1	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241915	11	R1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241916	12	R2	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241917	13	R2	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241918	14	R2	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241919	15	R2	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241920	16	R2	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241921	17	R2	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241922	18	R2	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241923	19	R2	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241924	20	R2	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10114	1512830-00	241925	21	R2	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248403	1	S1	A8	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248404	2	S1	A8	MF		1	1.8	0.2	9	LA		ADX	1	1			NaK, WRTA; Asbestos_511	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248405	3	S1	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248406	4	S1	C9	MD10	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248407	5	S1	C9	MFO		2	3.7	0.9	4.111111111	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248408	6	S1	C9	F	3	3	3.8	0.2	19	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248409	7	S1	C9	F	4	4	6.6	0.8	8.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248410	8	S1	D7	MD10	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248411	9	S1	D7	MF		5	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248412	10	S1	D7	F	6	6	4.6	0.4	11.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248413	11	S1	D7	F	7	7	7.9	0.2	39.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248414	12	S1	E10	MD10	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248415	13	S1	E10	MFO		8	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248416	14	S1	F2	F	9	9	2.4	0.3	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248417	15	S1	F2	F	10	10	2.2	0.55	4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248418	16	S1	F2	F	11	11	1.3	0.4	3.25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248419	17	S1	F2	F	12	12	5.8	0.55	10.54545455	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248420	18	S1	F2	F	13	13	5.7	0.3	19	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248421	19	S2	J8	F	14	14	3.5	0.35	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248422	20	S2	J8	F	15	15	2.8	0.25	11.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248423	21	S2	J8	F	16	16	1.3	0.3	4.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248424	22	S2	J8	F	17	17	4.6	0.25	18.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248425	23	S2	I4	MD10	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248426	24	S2	I4	MFO		18	2	0.55	3.636363636	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248427	25	S2	H6	MD10	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248428	26	S2	H6	MFO		0	4.6	0.4	11.5			ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248429	27	S2	H6	F	19	19	5.8	0.35	16.57142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248430	28	S2	H6	F	20	20	8	0.55	14.54545455	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248431	29	S2	F3	MD11	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248432	30	S2	F3	MF		21	5.4	0.3	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248433	31	S2	F3	F	22	22	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248434	32	S2	F3	F	23	23	4.6	0.55	8.363636364	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248435	33	S2	F3	F	0	0	19	0.45	42.22222222	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248436	34	S2	F3	F	24	24	3.6	0.15	24	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248437	35	S2	E8	F	25	25	4.6	0.4	11.5	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248438	36	S2	E8	F	26	26	1.4	0.4	3.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10115	1512830-00	248439	37	S2	E8	F	0	0	6	0.7	8.571428571	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240178	1	A1	I7	F	1	1	3.58	0.56	6.392857143	LA		ADX	1	1	1		NaK, WRTA; 1405-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240179	2	A1	I7	F	2	2	10.05	0.27	37.22222222	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240180	3	A1	I7	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240181	4	A1	I7	MF		3	0.76	0.03	25.33333333	LA		AX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240182	5	A1	J4	F	4	4	1.12	0.28	4	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240183	6	A1	J4	F	5	5	1.64	0.26	6.307692308	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240184	7	A1	J4	F	6	6	5.6	0.52	10.76923077	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240185	8	A1	I3	F	7	7	17.36	0.61	28.45901639	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240186	9	A1	I3	F	8	8	3.1	0.22	14.09090909	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240187	10	A1	I3	F	9	9	1.22	0.28	4.357142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240188	11	A1	H4	F	10	10	3.75	0.65	5.769230769	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240189	12	A1	H4	F	11	11	8.3	0.56	14.82142857	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240190	13	A2	C3	F	12	12	11.5	0.21	54.76190476	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240191	14	A2	C3	F	13	13	3.34	0.49	6.816326531	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240192	15	A2	C3	F	14	14	3.3	0.46	7.173913044	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240193	16	A2	C5	F	15	15	3.62	0.21	17.23809524	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240194	17	A2	B10	F	16	16	5.2	0.25	20.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240195	18	A2	B10	F	17	17	5.3	0.55	9.636363636	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240196	19	A2	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240197	20	A2	J3	F	18	18	9	0.58	15.51724138	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240198	21	A2	H3	F	19	19	7.22	0.54	13.37037037	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240199	22	A2	H3	F	20	20	3.64	0.29	12.55172414	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240200	23	A2	H3	F	21	21	3	0.16	18.75	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240201	24	A2	F3	F	22	22	5	0.1	50	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240202	25	A2	F3	F	23	23	1.65	0.27	6.111111111	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240203	26	A2	F3	F	24	24	3.74	0.28	13.35714286	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10116	1513445-00	240204	27	A2	E4	F	25	25	2.8	0.12	23.33333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240205	1	A10	H6	F	1	1	3.2	0.27	11.85185185	LA		ADX	1	1	1		NaK, WRTA; 1415-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240206	2	A10	H6	F	2	2	1.2	0.03	40	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240207	3	A10	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240208	4	A10	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240209	5	B1	I8	F	3	3	1.7	0.51	3.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240210	6	B1	I8	F	4	4	1.23	0.04	30.75	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240211	7	B1	I8	F	0	0	1.3	0.03	43.33333333	NAM		UN	1	1	1		XX, UN; 1423-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240212	8	B1	I6	F	5	5	7	0.06	116.6666667	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240213	9	B1	I4	F	6	6	3.8	0.42	9.047619048	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240214	10	B1	I4	F	7	7	3.3	0.29	11.37931035	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240215	11	B1	I4	F	8	8	0.9	0.12	7.5	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240216	12	B1	H5	F	9	9	1.9	0.28	6.785714286	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240217	13	B1	H5	F	10	10	5.7	0.62	9.193548387	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240218	14	B1	H5	F	11	11	4.9	0.28	17.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240219	15	B1	H7	F	12	12	2.8	0.56	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240220	16	B1	H7	F	13	13	3.1	0.21	14.76190476	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240221	17	B1	H7	F	14	14	3.2	0.18	17.77777778	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240222	18	B1	H7	F	15	15	3.5	0.72	4.861111111	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240223	19	B2	I5	F	16	16	4.9	0.29	16.89655172	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240224	20	B2	I7	F	17	17	1.7	0.3	5.666666667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240225	21	B2	G5	F	18	18	2.5	0.14	17.85714286	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240226	22	B2	G5	F	19	19	1.7	0.5	3.4	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240227	23	B2	G5	F	20	20	3.4	0.62	5.483870968	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240228	24	B2	G7	F	21	21	1.65	0.55	3	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240229	25	B2	H2	F	22	22	2.5	0.15	16.66666667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240230	26	B2	H2	F	23	23	3.1	0.31	10	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240231	27	B2	H2	F	24	24	2.8	0.28	10	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10117	1513445-00	240232	28	B2	H2	F	25	25	4.1	0.55	7.454545455	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240233	1	B3	C1	F	1	1	14.3	0.58	24.65517241	LA		ADX	1	1	1		NaK, WRTA; 1427-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240234	2	B3	C1	F	2	2	1.81	0.56	3.232142857	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240235	3	B3	C1	F	3	3	5.3	0.11	48.18181818	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240236	4	B3	C3	F	4	4	1.5	0.31	4.838709677	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240237	5	B3	C3	F	5	5	3.4	0.32	10.625	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240238	6	B3	C3	F	6	6	5.75	0.29	19.82758621	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240239	7	B3	C6	F	7	7	1.35	0.29	4.655172414	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240240	8	B3	C6	F	8	8	5.61	0.53	10.58490566	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240241	9	B3	C6	F	9	9	3.4	0.65	5.230769231	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240242	10	B3	C6	F	10	10	2.9	0.27	10.74074074	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240243	11	B3	C6	F	11	11	6.9	0.58	11.89655172	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240244	12	B3	C6	F	12	12	4.7	0.21	22.38095238	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240245	13	B3	C6	F	13	13	1.32	0.21	6.285714286	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240246	14	B3	C6	F	14	14	5	0.37	13.51351351	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10118	1513445-00	240247	15	B3	C8	F	15	15	1.2	0.28	4.285714286	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10119	1513445-00(	261683	12	B10	C2	F	11	11	5	0.76	6.578947368	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261684	13	B10	C2	F	12	12	1.72	0.51	3.37254902	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261685	14	B10	C2	F	13	13	2.5	0.31	8.064516129	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261686	15	B10	C2	F	14	14	4.7	0.72	6.527777778	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261687	16	B10	C2	F	15	15	6.5	0.62	10.48387097	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261688	17	B10	C5	F	16	16	5	0.73	6.849315069	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261689	18	B10	C5	F	17	17	2.5	0.26	9.615384615	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261690	19	B10	C5	F	18	18	14.3	1.2	11.91666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261691	20	B10	C5	F	19	19	10	0.61	16.39344262	LA		ADX	1				NaX, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261692	21	B10	C5	F	20	20	4.3	1.42	3.028169014	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261693	22	B10	C5	F	21	21	3.65	0.31	11.77419355	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261694	23	C1	G6	F	22	22	1.3	0.29	4.482758621	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261695	24	C1	G6	F	23	23	7.1	0.21	33.80952381	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261696	25	C1	G6	F	24	24	5.6	0.31	18.06451613	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10119	1513445-00(	261697	26	C1	G6	F	25	25	4.3	0.71	6.056338028	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240284	1	C8	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240285	2	C8	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240286	3	C8	J5	F	1	1	3.98	0.28	14.21428571	LA		ADX	1	1	1		NaX, WRTA; 1448-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240287	4	C8	J3	F	2	2	15.1	0.57	26.49122807	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240288	5	C8	J3	F	3	3	1.7	0.28	6.071428571	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240289	6	C8	I8	MD20	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240290	7	C8	I8	MFO		4	1.1	0.28	3.928571429	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240291	8	C8	I8	MFO		5	1.6	0.13	12.30769231	LA		ADX	1		1		NaX, WRTA; Al peak from matrix	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240292	9	C8	I6	F	5	6	3.84	0.32	12	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240293	10	C8	I4	F	6	7	3.08	0.29	10.62068966	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240294	11	C8	I2	F	7	8	1.13	0.05	22.6	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240295	12	C8	D9	F	8	9	8.4	1.8	4.666666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240296	13	C8	D9	F	9	10	5.5	0.31	17.74193548	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240297	14	C8	D7	F	10	11	2.5	0.06	41.66666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240298	15	C8	D7	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240299	16	C8	D7	MF		12	1.5	0.3	5	LA		ADX	1				NaX, WRTA; Al from matrix	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240300	17	C9	C3	F	12	13	7.4	0.51	14.50980392	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240301	18	C9	C7	F	13	14	1.2	0.28	4.285714286	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240302	19	C9	C7	F	14	15	1.15	0.2	5.75	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240303	20	C9	C9	F	15	16	0.88	0.27	3.259259259	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240304	21	C9	C9	F	16	17	1.16	0.03	38.66666667	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240305	22	C9	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240306	23	C9	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240307	24	C9	G6	F	17	18	5	0.52	9.615384615	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240308	25	C9	G8	F	18	19	1.5	0.05	30	LA		ADX	1				XX, WRTA; Al from matrix in middle	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240309	26	C9	G8	F	19	20	3	0.55	5.454545455	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240310	27	C10	D8	F	20	21	2.1	0.25	8.4	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240311	28	C10	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240312	29	C10	C7	ND														Surface Water	CDM Smith	N. K			
WT-10120	1513445-00(	240313	30	C10	B8	F	21	22	8.4	0.29	28.96551724	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240314	31	C10	A7	F	22	23	5.2	0.26	20	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240315	32	C10	A7	F	23	24	3.5	0.55	6.363636364	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10120	1513445-00(	240316	33	C10	A7	F	24	25	3.5	0.23	15.21739131	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240317	1	D1	H1	F	1	1	1.82	0.38	4.789473684	LA		ADX	1	1	1		NaX, WRTA; 1459-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240318	2	D1	H1	F	2	2	0.86	0.14	6.142857143	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240319	3	D1	H3	F	3	3	3.3	0.28	11.78571429	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240320	4	D1	H3	F	4	4	0.65	0.2	3.25	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240321	5	D1	H3	F	5	5	5	0.54	9.259259259	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240322	6	D1	H3	F	6	6	0.58	0.1	5.8	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240323	7	D1	H3	F	7	7	1.5	0.2	7.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240324	8	D1	H3	F	8	8	3.4	0.19	17.89473684	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240325	9	D1	H3	F	9	9	5.8	0.55	10.54545455	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240326	10	D1	H5	F	10	10	6.72	0.71	9.464788732	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240327	11	D1	H5	F	11	11	25.2	0.3	84	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240328	12	D1	H5	F	12	12	9.88	0.27	36.59259259	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240329	13	D2	C8	F	13	13	1.3	0.09	14.44444444	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240330	14	D2	C8	F	14	14	8.1	0.2	40.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240331	15	D2	C8	F	15	15	5.2	0.2	26	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240332	16	D2	C8	F	16	16	1.3	0.2	6.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240333	17	D2	C8	F	17	17	3.5	0.29	12.06896552	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240334	18	D2	C8	F	18	18	5.9	0.33	17.87878788	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240335	19	D3	H5	F	19	19	1.9	0.28	6.785714286	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240336	20	D3	H5	F	20	20	5.6	1.3	4.307692308	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240337	21	D3	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240338	22	D3	G6	F	21	21	6.2	0.29	21.37931034	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240339	23	D2	D6	F	22	22	18	0.53	33.96226415	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240340	24	D2	D6	F	23	23	6.66	0.28	23.78571429	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240341	25	D2	D6	F	24	24	3.8	0.26	14.61538462	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10121	1513445-00(	240342	26	D2	D6	F	25	25	2.8	0.29	9.655172414	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10122	1513445-00(	240343	1	D10	I8	F	1	1	6.5	0.41	15.85365854	LA		ADX	1	1	1		XX, WRTA; 1469-Diff	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240344	2	D10	I8	F	2	2	1.2	0.09	13.33333333	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240345	3	D10	I8	F	3	3	3.6	0.11	32.72727273	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240346	4	D10	I8	F	4	4	1.24	0.29	4.275862069	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240347	5	D10	I8	F	5	5	1.32	0.19	6.947368421	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240348	6	D10	I8	F	6	6	2.8	0.53	5.283018868	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240349	7	D10	D7	F	7	7	12.3	0.63	19.52380952	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240350	8	D10	D7	F	8	8	1.7	0.13	13.07692308	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240351	9	D10	D4	F	9	9	3.2	0.41	7.804878049	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240352	10	D10	D4	F	10	10	3.08	0.25	12.32	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240353	11	D10	B7	F	11	11	2.5	0.03	83.33333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240354	12	D10	B7	F	12	12	2	0.05	40	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240355	13	D10	B7	F	13	13	3.68	0.31	11.87096774	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240356	14	E1	G8	F	14	14	1.4	0.06	23.33333333	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240357	15	E1	G8	F	15	15	1.3	0.08	16.25	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240358	16	E1	G8	F	16	16	1.4	0.28	5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240359	17	E1	G8	F	17	17	1.4	0.06	23.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240360	18	E1	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240361	19	E1	G3	F	18	18	3.7	0.72	5.138888889	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240362	20	E1	G3	F	19	19	1.85	0.14	13.21428571	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240363	21	E1	G3	F	20	20	5.6	0.56	10	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240364	22	E1	G3	F	21	21	6.3	0.2	31.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240365	23	E1	G3	F	22	22	2.5	0.28	8.928571429	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240366	24	E1	G3	F	23	23	3.4	0.56	6.071428571	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240367	25	E1	G3	F	24	24	5.5	0.25	22	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10122	1513445-00(	240368	26	E1	G3	F	25	25	6.06	1.37	4.423357664	LA		ADX	1				XX, WRTA; XGBLD; Al from Matrix	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10123	1513445-00(	261698	1	E6	I8	F	1	1	3.2	0.16	20	LA		ADX	1	1	1		XX, WRTA; 1479- Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261699	2	E6	I8	F	2	2	30	0.73	41.09589041	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261700	3	E6	I8	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261701	4	E6	I8	MF		3	0.78	0.2	3.9	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261702	5	E6	I8	F	4	4	2.5	0.3	8.333333333	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261703	6	E6	I6	F	5	5	3.1	0.28	11.07142857	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261704	7	E6	I6	F	6	6	3.7	0.31	11.93548387	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261705	8	E6	I6	MD10	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261706	9	E6	I6	MFO		7	1.1	0.04	27.5	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261707	10	E6	I6	MD10	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261708	11	E6	I6	MFO		8	1.3	0.2	6.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261709	12	E6	I6	F	9	9	1.4	0.28	5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261710	13	E6	I4	F	10	10	6.5	0.29	22.4137931	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261711	14	E6	I4	MD11	11													Surface Water	CDM Smith	N. Ross/DDE	Structure type for primary structure #11 should likely be MD11, not MD10, since the secondary structure is greater than 5 µm (6.6 µm).	12/2/2015	
WT-10123	1513445-00(	261712	15	E6	I4	MFO		11	6.6	0.78	8.461538462	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261713	16	E6	I4	F	12	12	5.7	0.68	8.382352941	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261714	17	E6	I4	F	13	13	12.9	0.05	258	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261715	18	E6	I4	F	14	14	3.2	0.03	106.6666667	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261716	19	E6	I4	F	15	15	6.4	0.2	32	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261717	20	E7	B2	F	16	16	6.8	0.15	45.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261718	21	E7	B4	F	17	17	5.8	0.95	6.105263158	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261719	22	E7	B4	F	18	18	22.4	0.85	26.35294118	LA		ADX	1				NaX, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261720	23	E7	B6	F	19	19	1.4	0.16	8.75	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261721	24	E7	B6	F	20	20	2.8	0.43	6.511627907	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261722	25	E7	B6	F	21	21	11	0.22	50	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261723	26	E7	B6	F	22	22	13.2	0.75	17.6	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261724	27	E8	E8	MD10	23													Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261725	28	E8	E8	MFO		23	0.56	0.05	11.2	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261726	29	E8	E8	F	24	24	16.2	0.55	29.45454546	LA		ADX	1				NaX, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10123	1513445-00(	261727	30	E8	E8	F	25	25	5	0.32	15.625	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243255	1	E9	I9	F	1	1	11.7	0.27	43.33333333	LA		ADX	1	1			XX, WRTA; 1490-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243256	2	E9	I9	F	2	2	4.4	0.25	17.6	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243257	3	E9	I9	F	3	3	5.1	0.28	18.21428571	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243258	4	E9	I7	F	4	4	16.1	0.63	25.87301587	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243259	5	E9	I7	F	5	5	3.1	0.19	16.31578947	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243260	6	E9	I7	F	6	6	1.82	0.52	3.5	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243261	7	E9	I4	F	7	7	3.4	0.51	6.666666667	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243262	8	E9	I4	F	8	8	4.1	0.51	8.039215686	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243263	9	E9	G8	F	9	9	3.2	0.23	13.91304348	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243264	10	E9	G8	F	10	10	1.9	0.21	9.047619048	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243265	11	E9	D6	F	11	11	3.1	0.14	22.14285714	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10124	1513445-00(	243266	12	E9	D6	F	12	12	5.6	0.48	11.66666667	LA		ADX	1				Na

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10125	1513445-00	261740	13	F6	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261741	14	F6	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261742	15	F6	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261743	16	F6	H6	MD21	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261744	17	F6	H6	MF		2	5.1	0.05	102	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261745	18	F6	H6	MF		3	3.1	0.09	34.44444444	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261746	19	F6	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261747	20	F6	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261748	21	F6	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261749	22	F6	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261750	23	F6	G9	F	3	4	6.7	0.28	23.92857143	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261751	24	F6	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261752	25	F6	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261753	26	F6	F2	F	4	5	12	0.42	28.57142857	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261754	27	F6	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261755	28	F6	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261756	29	F6	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261757	30	F6	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261758	31	F6	A10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261759	32	F6	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261760	33	F5	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261761	34	F5	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261762	35	F5	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261763	36	F5	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261764	37	F5	A10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261765	38	F5	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261766	39	F5	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261767	40	F5	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261768	41	F5	B9	F	5	6	3.2	0.09	35.55555556	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261769	42	F5	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261770	43	F5	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261771	44	F5	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261772	45	F5	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261773	46	F5	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261774	47	F5	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261775	48	F5	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261776	49	F5	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261777	50	F5	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261778	51	F5	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261779	52	F5	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261780	53	F5	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261781	54	F7	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261782	55	F7	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261783	56	F7	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261784	57	F7	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261785	58	F7	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261786	59	F7	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261787	60	F7	B6	F	6	7	1.9	0.03	63.33333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261788	61	F7	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261789	62	F7	B10	F	7	8	1.6	0.05	32	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261790	63	F7	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261791	64	F7	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261792	65	F7	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261793	66	F7	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261794	67	F7	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261795	68	F7	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261796	69	F7	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261797	70	F7	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261798	71	F7	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261799	72	F7	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261800	73	F7	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261801	74	F7	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261802	75	F7	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261803	76	F7	I10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261804	77	F7	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261805	78	F7	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10125	1513445-00	261806	79	F7	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243361	1	G1	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243362	2	G1	J8	F	1	1	3.5	0.05	70	LA		ADX	1	1	1		XX, WRTA; 1528-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243363	3	G1	J8	F	2	2	11.8	0.58	20.34482759	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243364	4	G1	J6	F	3	3	1.3	0.04	32.5	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243365	5	G1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243366	6	G1	J2	F	4	4	8.4	0.62	13.5483871	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243367	7	G1	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243368	8	G1	I7	F	5	5	4.7	0.12	39.16666667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243369	9	G1	I7	F	6	6	9.4	0.63	14.92063492	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243370	10	G1	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243371	11	G1	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243372	12	G1	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243373	13	G1	B9	F	7	7	8.4	0.12	70	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243374	14	G1	B7	F	8	8	1.8	0.05	36	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243375	15	G1	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243376	16	G1	B1	F	9	9	1.8	0.08	22.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243377	17	G1	B1	F	10	10	3.1	0.08	38.75	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243378	18	G1	B1	F	11	11	2.2	0.05	44	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243379	19	G2	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243380	20	G2	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243381	21	G2	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243382	22	G2	J3	F	12	12	12.8	0.3	42.66666667	LA		ADX	1				NaX, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243383	23	G2	J3	F	13	13	11.4	0.62	18.38709677	LA		ADX	1				NaX, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243384	24	G2	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243385	25	G2	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243386	26	G2	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243387	27	G2	I4	F	14	14	7.8	0.72	10.83333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243388	28	G2	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243389	29	G2	C9	F	15	15	3.1	0.52	5.961538462	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243390	30	G2	C9	F	16	16	9.16	2.4	3.816666667	LA		ADX	1	1	1		NaX, WRTA; 1529-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243391	31	G2	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243392	32	G2	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243393	33	G2	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243394	34	G2	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243395	35	G3	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243396	36	G3	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243397	37	G3	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243398	38	G3	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243399	39	G3	A1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243400	40	G3	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243401	41	G3	B6	F	17	17	4.9	0.28	17.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243402	42	G3	B6	F	18	18	5	0.11	45.45454546	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243403	43	G3	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243404	44	G3	B2	F	19	19	4	0.09	44.44444444	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243405	45	G3	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243406	46	G3	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243407	47	G3	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243408	48	G3	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10126	1513445-00	243409	49	G3	C1	F	20	20	3.1	0.05	62	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243410	1	G5	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243411	2	G5	J4	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243412	3	G5	J4	MF		1	2.5	0.02	125	LA		ADX	1	1	1		XX, WRTA; 1531-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243413	4	G5	J6	F	2	2	1.7	0.2	8.5	LA		ADX	1	1	1		NaX, WRTA; 1532-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243414	5	G5	J8	F	3	3	1.3	0.05	26	LA		AX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243415	6	G5	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243416	7	G5	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243417	8	G5	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243418	9	G5	B8	F	4	4	6.7	0.56	11.96428571	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243419	10	G5	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243420	11	G5	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243421	12	G5	D9	F	0	0	6.2	0.58	10.68965517	NAM		AX	1	1	1		XX, UN; High Al; 1533-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243422	13	G6	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243423	14	G6	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243424	15	G6	B7	F	5	5	2.5	0.2	12.5	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243425	16	G6	B7	F	6	6	5.8	0.08	72.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243426	17	G6	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243427	18	G6	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243428	19	G6	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243429	20	G6	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243430	21	G6	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243431	22	G6	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10127	1513445-00	243432	23	G6	I8	F	7	7	11.2	0.73	15.34246575	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243433	1	H6	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243434	2	H6	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243435	3	H6	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243436	4	H6	A10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243437	5	H6	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243438	6	H6	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243439	7	H6	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243440	8	H6	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243441	9	H6	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243442	10	H6	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243443	11	H6	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243444	12	H6	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243445	13	H6	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243446	14	H6	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243447	15	H7	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243448	16	H7	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243449	17	H7	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243450	18	H7	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243451	19	H7	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243452	20	H7	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243453	21	H7	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243454	22	H7	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243455	23	H7	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243456	24	H7	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243457	25	H7	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243458	26	H7	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243459	27	H7	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243460	28	H7	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243461	29	H8	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243462	30	H8	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243463	31	H8	I3	F	1	1	1.8	0.06	30	LA		ADX	1	1	1		XX, WRTA; 1534-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243464	32	H8	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10128	1513445-00	243465	33	H8	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243466	34	H8	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243467	35	H8	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243468	36	H8	F5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243469	37	H8	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243470	38	H8	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243471	39	H8	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243472	40	H8	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243473	41	H8	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10128	1513445-00	243474	42	H8	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243475	1	H9	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243476	2	H9	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243477	3	H9	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243478	4	H9	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243479	5	H9	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243480	6	H9	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243481	7	H9	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243482	8	H10	J9	F	0	0	6.2	0.04	155	LA		ADX	1	1	1		XX, WRTA; XNCGBLD, 1535-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243483	9	H10	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243484	10	H10	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243485	11	H10	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243486	12	H10	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243487	13	H10	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243488	14	H10	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243489	15	I1	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243490	16	I1	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243491	17	I1	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243492	18	I1	A1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243493	19	I1	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243494	20	I1	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10129	1513445-00	243495	21	I1	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243496	1	I8	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243497	2	I8	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243498	3	I8	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243499	4	I8	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243500	5	I8	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243501	6	I8	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243502	7	I8	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243503	8	I8	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243504	9	I8	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243505	10	I8	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243506	11	I9	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243507	12	I9	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243508	13	I9	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243509	14	I9	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243510	15	I9	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243511	16	I9	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243512	17	I10	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243513	18	I10	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243514	19	I10	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243515	20	I10	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10130	1513445-00	243516	21	I10	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243517	1	J4	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243518	2	J4	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243519	3	J4	I4	F	1	1	1.14	0.04	28.5	LA		ADX	1	1	1		XX, WRTA; 1538-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243520	4	J4	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243521	5	J4	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243522	6	J4	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243523	7	J4	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243524	8	J4	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243525	9	J4	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243526	10	J4	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243527	11	J4	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243528	12	J4	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243529	13	J4	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243530	14	J4	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243531	15	J5	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243532	16	J5	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243533	17	J5	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243534	18	J5	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243535	19	J5	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243536	20	J5	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243537	21	J5	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243538	22	J5	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243539	23	J5	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243540	24	J5	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243541	25	J5	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243542	26	J5	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243543	27	J5	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243544	28	J5	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243545	29	J6	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243546	30	J6	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243547	31	J6	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243548	32	J6	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243549	33	J6	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243550	34	J6	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243551	35	J6	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243552	36	J6	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243553	37	J6	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243554	38	J6	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243555	39	J6	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243556	40	J6	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243557	41	J6	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10131	1513445-00	243558	42	J6	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243559	1	J7	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243560	2	J7	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243561	3	J7	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243562	4	J7	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243563	5	J7	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243564	6	J7	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243565	7	J7	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243566	8	J8	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243567	9	J8	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243568	10	J8	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243569	11	J8	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243570	12	J8	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243571	13	J8	I6	F	1	1	12	0.58	20.68965517	LA		ADX	1	1	1		NaX, WRTA; 1537-Diff	Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243572	14	J8	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243573	15	J9	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243574	16	J9	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243575	17	J9	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243576	18	J9	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243577	19	J9	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243578	20	J9	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10132	1513445-00	243579	21	J9	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247290	1	K3	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247291	2	K3	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247292	3	K3	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247293	4	K3	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247294	5	K3	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247295	6	K3	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247296	7	K3	B3	F	1	1	1.9	0.56	3.392857143	LA		ADX	1	1	1		XX, WRTA; 1540-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247297	8	K4	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247298	9	K4	I5	F	2	2	14	0.31	45.16129032	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247299	10	K4	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247300	11	K4	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247301	12	K4	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247302	13	K4	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247303	14	K4	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247304	15	K5	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247305	16	K5	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247306	17	K5	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247307	18	K5	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247308	19	K5	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247309	20	K5	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10133	1513445-00	247310	21	K5	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247311	1	K9	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247312	2	K9	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247313	3	K9	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247314	4	K9	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247315	5	K9	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247316	6	K9	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247317	7	K9	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247318	8	K10	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247319	9	K10	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247320	10	K10	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247321	11	K10	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247322	12	K10	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247323	13	K10	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247324	14	K10	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247325	15	L1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247326	16	L1	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247327	17	L1	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247328	18	L1	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247329	19	L1	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247330	20	L1	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10134	1513445-00	247331	21	L1	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247332	1	L5	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247333	2	L5	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247334	3	L5	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247335	4	L5	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247336	5	L5	E2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247337	6	L5	E4	F	1	1	1.12	0.42	3.142857143	LA		ADX	1	1	1		NaX, WRTA; 1541-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247338	7	L5	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247339	8	L6	I7	F	2	2	3.1	0.31	10	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247340	9	L6	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247341	10	L6	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247342	11	L6	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247343	12	L6	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247344	13	L6	C3	F	3	3	1.8	0.56	3.214285714	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-00	247345	14	L6	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10135	1513445-001	247346	15	L7	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-001	247347	16	L7	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-001	247348	17	L7	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-001	247349	18	L7	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-001	247350	19	L7	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-001	247351	20	L7	A4	F	4	4	2	0.15	13.33333333	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10135	1513445-001	247352	21	L7	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247353	1	M1	B10	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247354	2	M1	B10	MFO		1	1.6	0.28	5.714285714	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247355	3	M1	B10	F	2	2	3.9	0.55	7.090909091	LA		ADX	1	1	1		NaX, WRTA; 1542-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247356	4	M1	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247357	5	M1	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247358	6	M1	A9	F	3	3	2.5	0.1	25	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247359	7	M1	C7	F	4	4	29.4	0.1	294	LA		ADX	1		1		NaX, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247360	8	M1	H10	F	5	5	3.2	0.56	5.714285714	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247361	9	M1	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247362	10	M2	D10	MD10	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247363	11	M2	D10	MFO		6	1.2	0.03	40	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247364	12	M2	D8	F	7	7	2.2	0.28	7.857142857	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247365	13	M2	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247366	14	M2	D4	F	8	8	56	0.11	509.0909091	LA		ADX	1				XX, WRTA; Observed length recorded (Lab mod 16h - SG)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247367	15	M2	D2	F	9	9	5	0.28	17.85714286	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247368	16	M2	H10	F	10	10	6	0.72	8.333333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247369	17	M2	H10	MD10	11	11	1.15	0.08	14.375	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247370	18	M2	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247371	19	M2	H6	F	12	12	2.6	0.11	23.63636364	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247372	20	M3	H7	F	13	13	3.1	0.1	31	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247373	21	M3	H5	F	14	14	3.6	0.4	9	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247374	22	M3	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247375	23	M3	H1	F	15	15	5	0.35	14.28571429	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247376	24	M3	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10136	1513445-001	247377	25	M3	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10137	1513445-001	247378	1	M7	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247379	2	M7	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247380	3	M7	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247381	4	M7	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247382	5	M7	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247383	6	M7	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247384	7	M7	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247385	8	M7	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247386	9	M8	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247387	10	M8	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247388	11	M8	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247389	12	M8	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247390	13	M8	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247391	14	M8	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247392	15	M8	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247393	16	M9	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247394	17	M9	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247395	18	M9	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247396	19	M9	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247397	20	M9	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10137	1513445-001	247398	21	M9	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10138	1513445-001	247399	1	N3	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247400	2	N3	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247401	3	N3	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247402	4	N3	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247403	5	N3	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247404	6	N3	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247405	7	N3	G3	F	1	1	14.3	0.55	26	LA		ADX	1	1	1		XX, WRTA; 1543-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247406	8	N3	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247407	9	N3	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247408	10	N3	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247409	11	N3	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247410	12	N5	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247411	13	N5	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247412	14	N5	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247413	15	N5	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247414	16	N5	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247415	17	N5	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247416	18	N5	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247417	19	N5	A3	F	2	2	1.3	0.22	5.909090909	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247418	20	N5	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10138	1513445-001	247419	21	N5	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247420	1	N9	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247421	2	N9	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247422	3	N9	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247423	4	N9	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247424	5	N9	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247425	6	N9	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247426	7	N9	E8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247427	8	N10	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247428	9	N10	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247429	10	N10	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247430	11	N10	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247431	12	N10	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247432	13	N10	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247433	14	N10	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247434	15	O1	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247435	16	O1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247436	17	O1	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247437	18	O1	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247438	19	O1	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247439	20	O1	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10139	1513445-001	247440	21	O1	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247441	1	O5	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247442	2	O5	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247443	3	O5	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247444	4	O5	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247445	5	O5	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247446	6	O5	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247447	7	O5	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247448	8	O6	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247449	9	O6	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247450	10	O6	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247451	11	O6	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247452	12	O6	A1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247453	13	O6	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247454	14	O6	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247455	15	O7	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247456	16	O7	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247457	17	O7	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247458	18	O7	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247459	19	O7	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247460	20	O7	C2	F	1	1	9.3	0.23	40.43478261	LA		ADX	1	1	1		NaX, WRTA; 1544-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10140	1513445-001	247461	21	O7	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247479	1	P4	I4	F	1	1	1.2	0.28	4.285714286	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247480	2	P4	I4	F	2	2	5	0.7	7.142857143	LA		ADX	1	1	1		XX, WRTA; 1546-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247481	3	P4	I4	F	3	3	16.2	0.5	32.4	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247482	4	P4	I4	F	4	4	5.6	0.62	9.032258065	LA		ADX	1		1		XX, WRTA; XCGLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247483	5	P4	I2	F	5	5	3.7	0.12	30.83333333	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247484	6	P4	I2	F	6	6	2.2	0.23	9.565217391	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247485	7	P4	I2	F	7	7	2.5	0.05	50	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247486	8	P4	I2	F	8	8	2.5	0.06	41.66666667	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247487	9	P4	I2	F	9	9	1.7	0.1	17	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247488	10	P4	I2	MD11	10													Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247489	11	P4	I2	MF		10	5.2	0.28	18.57142857	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247490	12	P4	I2	F	11	11	11.1	0.86	12.90697674	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247491	13	P5	G9	F	12	12	6.7	0.52	12.88461538	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247492	14	P5	G9	F	13	13	1.3	0.05	26	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247493	15	P5	G9	F	14	14	1.8	0.08	22.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247462	16	P5	G9	F	15	15	1.2	0.05	24	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247463	17	P5	A9	F	16	16	13.2	0.56	23.57142857	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247464	18	P5	A9	F	17	17	2.8	0.28	10	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247465	19	P5	A9	F	18	18	4	0.52	7.692307692	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247466	20	P5	A9	MD10	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247467	21	P5	A9	MF		19	1.4	0.1	14	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247468	22	P5	A9	F	20	20	3.6	0.56	6.428571429	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247469	23	P6	B5	F	21	21	19	2.2	8.636363636	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247470	24	P6	B5	F	22	22	3.2	0.2	16	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247471	25	P6	B5	F	23	23	1.6	0.45	3.555555556	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247472	26	P6	B5	F	0	0	5	0.7	7.142857143	NAM		AX	1	1	1		XX, UN; 1547-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247473	27	P6	B5	F	24	24	2.2	0.12	18.33333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247474	28	P6	B3	F	25	25	5.2	0.21	24.76190476	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247475	29	P6	B3	F	26	26	5.6	0.55	10.18181818	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247476	30	P6	B3	F	27	27	1.3	0.11	11.81818182	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247477	31	P6	B3	F	28	28	7.1	0.21	33.80952381	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10141	1513445-001	247478	32	P6	B3	F	29	29	13.7	0.51	26.8627451	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247494	1	P7	B6	F	1	1	3.64	0.13	28	LA		ADX	1	1	1		XX, WRTA; 1548-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247495	2	P7	B6	MD10	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247496	3	P7	B6	MFO		2	1.6	0.5	3.2	LA		ADX	1		1		XX, WRTA; Al from matrices; fiber embedded in matrix	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247497	4	P7	B6	F	3	3	4.2	0.1	42	LA		ADX	1		1		XX, WRTA; Almost no Fe	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247498	5	P7	B6	MD10	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247499	6	P7	B6	MF		4	1.3	0.15	8.666666667	LA		ADX	1		1		XX, WRTA; Al from matrix	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247500	7	P7	B6	F	0	0	10	0.56	17.85714286	LA		ADX	1	1	1		NaX, WRTA; XNCGBLD; 1549 Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247501	8	P7	B6	F	0	0	10.6	0.61	17.37704918	NAM		ADX	1		1		NA, UN; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247502	9	P7	B4	F	5	5	3.7	0.53	6.981132076	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247503	10	P7	B4	F	6	6	16.8	0.91	18.46153846	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247504	11	P7	B4	F	7	7	6.3	0.8	7.875	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247505	12	P7	B4	F	8	8	1.3	0.05	26	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247506	13	P7	B4	F	9	9	3.7	0.1	37	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247507	14	P8	B4	F	10	10	3	0.8	3.75	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247508	15	P8	B4	F	11	11	6	1.1	5.454545455	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247509	16	P8	B4	F	12	12	1.7	0.5	3.4	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247510	17	P8	B4	F	13	13	1.6	0.2	8	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247511	18	P8	B4	F	14	14	9.3	0.28	33.21428571	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247512	19	P8	B4	F	15	15	30.7	0.31	99.03225807	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247513	20	P8	B4	F	16	16	5.2	0.4	13	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247514	21	P8	B4	F	17	17	2.8	0.51	5.490196078	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10142	1513445-001	247515	22	P8	B8	MD32	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247516	23	P8	B8	MF		18	21.2	0.1	212	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247517	24	P8	B8	MF		19	6.7	0.48	13.95833333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247518	25	P8	B8	MFO		20	2.7	0.12	22.5	LA		ADX	1				XX, WRTA; AI from matrix	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247519	26	P8	B8	F	19	21	2.8	0.2	14	LA		ADX	1				XX, WRTA; AI from matrix	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247520	27	P8	B8	F	20	22	2.2	0.46	4.782608696	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247521	28	P8	B8	MD10	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247522	29	P8	B8	MF		23	2.5	0.11	22.72727273	LA		ADX	1				XX, WRTA; AI from matrix	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247523	30	P9	F9	F	0	0	30.2	0.46	65.65217391	NAM		ADX	1		1		NA, UN; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247524	31	P9	F9	F	22	24	7.7	0.56	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247525	32	P9	F9	F	23	25	2.5	0.29	8.620689655	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247526	33	P9	F9	F	24	26	3.1	0.53	5.849056604	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247527	34	P9	F9	F	25	27	3.3	0.3	11	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10142	1513445-001	247528	35	P9	F9	F	26	28	2	0.09	22.22222222	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247529	1	S7	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247530	2	S7	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247531	3	S7	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247532	4	S7	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247533	5	S7	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247534	6	S7	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247535	7	S7	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247536	8	S8	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247537	9	S8	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247538	10	S8	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247539	11	S8	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247540	12	S8	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247541	13	S8	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247542	14	S8	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247543	15	S9	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247544	16	S9	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247545	17	S9	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247546	18	S9	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247547	19	S9	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247548	20	S9	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10143	1513445-001	247549	21	S9	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247550	1	Q9	A7	F	1	1	2.24	0.5	4.48	LA		ADX	1	1	1		XX, WRTA; XCGBLD; 1550-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247551	2	Q9	A5	F	2	2	4	0.14	28.57142857	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247552	3	Q9	A5	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247553	4	Q9	A5	MF		3	3	0.1	30	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247554	5	Q9	A5	F	4	4	1.9	0.03	63.33333333	LA		AX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247555	6	Q9	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247556	7	Q9	A1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247557	8	Q9	H10	F	5	5	7	0.31	22.58064516	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247558	9	Q9	H10	MD10	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247559	10	Q9	H10	MFO		6	3.2	0.28	11.42857143	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247560	11	Q9	H10	MD10	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247561	12	Q9	H10	MF		7	1.2	0.05	24	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247562	13	Q9	H8	F	8	8	1.5	0.22	6.818181818	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247563	14	Q9	H8	F	9	9	3.7	0.58	6.379310345	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247564	15	Q9	H8	F	10	10	2	0.08	25	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247565	16	Q9	H6	F	11	11	5.6	0.09	62.22222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247566	17	Q9	H6	F	12	12	3.2	0.2	16	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247567	18	Q9	H6	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247568	19	Q9	H6	MFO		13	4	0.11	36.36363636	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247569	20	Q9	H6	F	14	14	3.2	1	3.2	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247570	21	Q10	H8	F	15	15	2.6	0.2	13	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247571	22	Q10	H6	F	16	16	2.5	0.46	5.434782609	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247572	23	Q10	H6	F	17	17	1.5	0.45	3.333333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247573	24	Q10	B5	F	18	18	19.3	0.2	96.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247574	25	Q10	B5	F	19	19	3.2	0.22	14.54545455	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247575	26	Q10	B5	F	20	20	2.8	0.14	20	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247576	27	R1	J5	F	21	21	3.1	0.12	25.83333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247577	28	R1	J5	F	22	22	3.3	0.15	22	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247578	29	R1	J5	F	23	23	3.7	0.03	123.3333333	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247579	30	R1	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247580	31	R1	H4	MD10	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247581	32	R1	H4	MFO		24	0.59	0.13	4.538461539	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10144	1513445-001	247582	33	R1	H4	F	25	25	0.62	0.11	5.636363636	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247583	1	R5	A8	F	1	1	4.2	0.56	7.5	LA		ADX	1	1	1		NaK, WRTA; 1551-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247584	2	R5	C5	F	2	2	8.6	0.35	24.57142857	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247585	3	R5	C5	F	3	3	19.9	0.72	27.63888889	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247586	4	R5	C3	F	0	0	38.6	0.76	50.78947368	NAM		ADX	1	1	1		NA, UN; XNCGBLD; 1552-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247587	5	R5	C3	F	4	4	5	0.04	125	LA		AX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247588	6	R5	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247589	7	R5	F4	MD10	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247590	8	R5	F4	MFO		5	4	0.56	7.142857143	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247591	9	R5	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247592	10	R5	G9	F	6	6	1.12	0.03	37.33333333	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247593	11	R5	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247594	12	R5	G5	F	7	7	0.89	0.1	8.9	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247595	13	R5	G5	F	8	8	9.1	0.57	15.96491228	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247596	14	R5	G5	F	9	9	5	0.1	50	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247597	15	R5	G3	F	10	10	1.8	0.2	9	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247598	16	R5	G1	F	11	11	8.4	0.27	31.11111111	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247599	17	R6	B9	F	12	12	5	0.11	45.45454546	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247600	18	R6	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247601	19	R6	B5	F	13	13	2.8	0.31	9.032258065	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247602	20	R6	B3	F	14	14	3	0.2	15	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247603	21	R6	B1	F	15	15	2.6	0.56	4.642857143	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247604	22	R6	B1	F	16	16	4.9	0.5	9.8	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247605	23	R6	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247606	24	R6	G7	F	17	17	2.8	0.05	56	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247607	25	R6	G7	F	18	18	5.7	0.1	57	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247608	26	R6	G7	F	19	19	2	0.25	8	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247609	27	R6	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247610	28	R6	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247611	29	R6	G1	F	20	20	1.4	0.1	14	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247612	30	R7	B4	F	21	21	14	0.53	26.41509434	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247613	31	R7	B4	MD10	22													Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247614	32	R7	B4	MFO		22	3.9	0.2	19.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247615	33	R7	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247616	34	R7	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247617	35	R7	G6	F	23	23	2.5	0.22	11.36363636	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247618	36	R7	G8	F	24	24	5.6	0.12	46.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10145	1513445-001	247619	37	R7	G8	F	25	25	8.5	1.2	7.083333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247620	1	S1	I7	F	1	1	3.1	0.56	5.535714286	LA		ADX	1	1	1		XX, WRTA; 1553-Diffraction	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247621	2	S1	I5	F	2	2	20.44	2.5	8.176	LA		ADX	1	1	1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247622	3	S1	I5	F	3	3	6.5	0.32	20.3125	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247623	4	S1	I3	F	4	4	9.34	0.31	30.12903226	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247624	5	S1	I3	MD10	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247625	6	S1	I3	MFO		0	2.2	0.12	18.33333333	NAM		ADX	1	1	1		NA, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247626	7	S1	I3	F	5	5	5	0.58	8.620689655	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247627	8	S1	I1	F	6	6	5.7	0.28	20.35714286	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247628	9	S1	H8	F	7	7	19.9	0.28	71.07142857	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247629	10	S1	H6	F	8	8	6.3	0.14	45	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247630	11	S1	H4	MD10	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247631	12	S1	H4	MFO		9	2.9	0.2	14.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247632	13	S1	H4	F	10	10	2.6	0.12	21.66666667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247633	14	S1	H4	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247634	15	S1	H4	MFO		11	2.5	0.1	25	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247635	16	S2	B5	F	12	12	4.2	0.72	5.833333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247636	17	S2	B5	F	13	13	5.5	0.83	6.626506024	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247637	18	S2	B7	F	14	14	3.1	0.22	14.09090909	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247638	19	S2	B9	F	0	0	3.4	0.26	13.07692308	NAM		ADX	1		1		NaK, UN; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247639	20	S2	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247640	21	S2	J6	F	15	15	6.3	0.3	21	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247641	22	S2	J6	F	16	16	1.22	0.12	10.16666667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247642	23	S2	J8	F	17	17	2.6	0.56	4.642857143	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247643	24	S2	J8	MD10	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247644	25	S2	J8	MFO		18	1.3	0.32	4.0625	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247645	26	S3	A7	F	19	19	3	0.16	18.75	LA		ADX	1				XX, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247646	27	S3	A7	F	20	20	1.5	0.2	7.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247647	28	S3	B6	F	21	21	3.6	0.72	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247648	29	S3	B6	MD10	22													Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247649	30	S3	B6	MFO		22	2.8	0.21	13.33333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247650	31	S3	B6	F	23	23	10	0.12	83.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247651	32	S3	B6	F	24	24	5.5	0.14	39.28571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247652	33	S3	B6	F	25	25	3.1	0.2	15.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10146	1513445-001	247653	34	S3	B6	F	26	26	5.3	0.23	23.04347826	LA		ADX	1				XX, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264652	1	D4	B4	F	0	0	7.2	0.45	16	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE	There is a space after the grid D4 which incorrectly calculates the total number of grid openings examined.	1/5/2016	
WT-10147	1514338-004	264653	2	D4	B4	CD22	1													Surface Water	CDM Smith	N. Ross/DDE	There is a space after the grid D4 which incorrectly calculates the total number of grid openings examined.	1/5/2016	
WT-10147	1514338-004	264654	3	D4	B4	CF		1	20.9	0.5	41.8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264655	4	D4	B4	CF		2	12.5	0.35	35.71428571	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264656	5	D4	B4	CD20	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264657	6	D4	B4	CF		3	2.9	0.15	19.33333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264658	7	D4	B4	CF		4	1.7	0.1	17	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264659	8	D4	B4	F	3	5	2	0.1	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264660	9	D4	B4	F	4	6	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264661	10	D4	B4	MD21	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264662	11	D4	B4	MF		7	12.5	1.6	7.8125	LA		ADX	1	1	1		NaK, WRTA; 27914	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264663	12	D4	B4	MF		8	2.25	0.1	22.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264664	13	D4	B4	F	6	9	2.3	0.1	23	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264665	14	D4	B4	F	7	10	1.1	0.15	7.333333333	LA		ADX	1				NaK, WRTA; Fiber embedded in cellulose material	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-004	264666	15	D4	B4	F	8	11	1.8	0.15	12	LA		ADX	1				NaK, WRTA	Surface Water	CD

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10147	1514338-00(	264679	28	D4	B6	MD10	18													Surface Water	CDM Smith	N. Ross/DDE	Structure type for primary structure #18 is MD10, however, no total structure follows.	1/5/2016	
WT-10147	1514338-00(	264680	29	D4	B6	MF		21	2.2	0.3	7.333333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE		1/5/2016	
WT-10147	1514338-00(	264681	30	D4	B6	F	19	22	1.1	0.05	22	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264682	31	D5	H6	F	20	23	5.1	0.3	17	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264683	32	D5	H6	F	21	24	3.9	0.1	39	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264684	33	D5	H6	F	22	25	4	0.75	5.333333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264685	34	D5	H6	F	23	26	10	0.9	11.11111111	LA		ADX	1				NaX, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264686	35	D5	H6	MD11	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264687	36	D5	H6	MF		27	7.5	0.85	8.823529412	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264688	37	D5	H6	F	25	28	9.5	0.2	47.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264689	38	D5	H6	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264690	39	D5	H6	MF		29	5	0.1	50	LA		ADX	1				NaX, WRTA; Embedded in cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264691	40	D5	H6	F	27	30	5.05	0.15	33.66666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264692	41	D5	H6	F	28	31	2.9	0.1	29	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264693	42	D5	H6	F	29	32	4	0.15	26.66666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264694	43	D5	H6	F	30	33	2	0.1	20	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264695	44	D5	H6	MD10	31													Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264696	45	D5	H6	MF		34	1.9	0.1	19	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264697	46	D5	H6	F	32	35	5.1	0.15	34	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264698	47	D5	H6	F	33	36	1.5	0.1	15	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264699	48	D5	H4	F	34	37	1	0.1	10	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264700	49	D5	H4	F	35	38	4.7	0.3	15.66666667	LA		ADX	1				NaX, WRTA; Embedded in cellulose	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264701	50	D5	H4	F	36	39	18	0.4	45	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264702	51	D5	H4	F	37	40	3.5	0.25	14	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264703	52	D5	H4	MD42	38													Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264704	53	D5	H4	MF		41	17.5	0.1	175	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264705	54	D5	H4	MF		42	5.1	0.5	10.2	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264706	55	D5	H4	MF		43	2.5	0.4	6.25	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264707	56	D5	H4	MF		44	1.8	0.1	18	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10147	1514338-00(	264708	57	D5	H4	F	39	45	18	1.5	12	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259914	1	E1	E10	F	1	1	7	0.25	28	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259915	2	E1	E8	F	2	2	3	0.25	12	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259916	3	E1	E8	F	3	3	3.8	0.22	17.27272727	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259917	4	E1	E8	F	4	4	1.6	0.2	8	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259918	5	E1	E8	F	5	5	6.5	0.85	7.647058824	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259919	6	E1	D6	F	6	6	1.8	0.25	7.2	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259920	7	E1	D6	MD11	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259921	8	E1	D6	MF		0	11	2.1	5.238095238	NAM		NAM	1		1		NaX, UN	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259922	9	E1	D6	B	7	7	7.6	0.27	28.14814815	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259923	10	E1	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259924	11	E1	D1	F	8	8	2.75	0.22	12.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259925	12	E1	A1	F	9	9	4	0.3	13.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259926	13	E2	D5	F	10	10	1.5	0.25	6	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259927	14	E2	D5	F	11	11	2	0.2	10	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259928	15	E2	D5	F	12	12	4.2	0.23	18.26086957	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259929	16	E2	C6	F	13	13	3.7	0.49	7.551020408	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259930	17	E2	C6	F	14	14	3.6	0.25	14.4	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259931	18	E2	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259932	19	E2	G2	F	15	15	6.5	0.28	23.21428571	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259933	20	E2	G2	F	16	16	5.7	0.6	9.5	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259934	21	E2	G2	F	17	17	1.6	0.23	6.956521739	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259935	22	E2	H1	F	18	18	3.6	0.4	9	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259936	23	E2	H1	F	19	19	3	0.25	12	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259937	24	E2	H1	F	20	20	3.5	0.3	11.66666667	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259938	25	E2	H1	F	21	21	2.25	0.22	10.22727273	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259939	26	E3	B3	F	22	22	3.9	0.22	17.72727273	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259940	27	E3	D8	F	23	23	2.3	0.2	11.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259941	28	E3	D8	F	24	24	2.4	0.2	12	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10148	1514338-00(	259942	29	E3	D8	F	25	25	4.9	0.55	8.909090909	LA		ADX	1	1	1		NaX, WRTA; DIFFRACTION-#231	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259943	1	F4	D6	MD10	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259944	2	F4	D6	MF		1	5	0.9	5.555555556	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259945	3	F4	D6	F	2	2	3	0.25	12	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259946	4	F4	D4	F	3	3	5.1	0.2	25.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259947	5	F4	D2	MD31	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259948	6	F4	D2	MF		0	70	0.5	140	LA		ADX	1		1		NaX, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259949	7	F4	D2	MB		4	3	0.75	4	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259950	8	F4	D2	MF		5	2	0.4	5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259951	9	F4	D2	F	0	0	7	0.15	46.66666667	LA		ADX	1				NaX, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259952	10	F4	D2	F	5	6	2.1	0.15	14	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259953	11	F4	D2	B	6	7	8	1.5	5.333333333	LA		ADX	1	1	1		NaX, WRTA; 27922	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259954	12	F4	B10	F	7	8	2.5	0.1	25	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259955	13	F4	B10	F	8	9	1.75	0.25	7	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259956	14	F4	B8	F	9	10	1.9	0.2	9.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259957	15	F4	B8	F	10	11	2	0.15	13.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259958	16	F4	B8	F	11	12	5.1	0.4	12.75	LA		ADX					NaX, WRTA; Fiber embedded in cellulose1	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259959	17	F4	B6	F	12	13	4.25	0.35	12.14285714	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259960	18	F4	B6	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259961	19	F4	B6	MF		14	0.6	0.1	6	LA		ADX					NaX, WRTA; Fiber embedded in cellulose1	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259962	20	F4	B6	F	14	15	1.95	0.1	19.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259963	21	F4	B6	F	15	16	3	0.1	30	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259964	22	F4	B6	F	16	17	2	0.1	20	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259965	23	F4	B6	F	17	18	7.5	0.35	21.42857143	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259966	24	F5	C2	MD10	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259967	25	F5	C2	MF		19	2.5	0.2	12.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259968	26	F5	C4	F	19	20	0.9	0.15	6	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259969	27	F5	C6	F	20	21	5.5	0.75	7.333333333	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259970	28	F5	C6	MD10	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259971	29	F5	C6	MF		22	1.9	0.1	19	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259972	30	F5	C6	F	22	23	3.75	0.4	9.375	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259973	31	F5	C6	F	23	24	2	0.3	6.666666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259974	32	F5	C6	F	24	25	2.4	0.2	12	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259975	33	F5	C6	MD10	25													Surface Water	CDM Smith	N. Ross/DDE			
WT-10149	1514338-00(	259976	34	F5	C6	MF		26	1.8	0.1	18	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259977	1	G4	B8	F	1	1	8.3	0.24	34.58333333	OA		ADX	1		1		NaX, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259978	2	G4	B8	F	2	2	8.7	0.48	18.125	LA		ADX	1	1	1		NaX, WRTA; 011375D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259979	3	G4	B8	F	3	3	3.8	0.48	7.916666667	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259980	4	G4	B8	F	4	4	12.6	0.24	52.5	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259981	5	G4	B8	F	5	5	7.1	0.48	14.79166667	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259982	6	G4	B8	F	6	6	10.7	0.36	29.72222222	LA		ADX	1		1		NaX, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259983	7	G4	E7	F	7	7	5.2	0.24	21.66666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259984	8	G4	E7	F	8	8	3.1	0.48	6.458333333	OA		ADX	1				NaX, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259985	9	G4	E7	F	9	9	4.5	0.24	18.75	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259986	10	G4	E7	F	10	10	4.8	0.36	13.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259987	11	G4	E7	F	11	11	10.5	0.84	12.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259988	12	G4	E7	F	12	12	3.6	0.6	6	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259989	13	G4	E7	F	13	13	2.6	0.72	3.611111111	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259990	14	G4	E7	F	14	14	4.9	0.6	8.166666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259991	15	G4	E7	F	15	15	5	0.48	10.41666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259992	16	G4	E7	F	16	16	4.5	0.36	12.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259993	17	G4	E7	F	17	17	7.6	0.48	15.83333333	OA		ADX	1				NaX, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259994	18	G4	E7	F	18	18	5	0.36	13.88888889	OA		ADX	1				NaX, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259995	19	G5	F8	F	19	19	5.1	0.36	14.16666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259996	20	G5	F8	F	0	0	13.8	0.24	57.5	LA		ADX	1				XX, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259997	21	G5	F8	F	0	0	5.7	0.6	9.5	OA		ADX	1				NaX, NR; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259998	22	G5	F8	F	0	0	3.6	0.48	7.5	LA		ADX	1				NaX, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	259999	23	G5	F8	F	20	20	3.6	0.1	36	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260000	24	G5	F8	F	21	21	4.3	0.48	8.958333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260001	25	G5	F8	F	22	22	22.6	0.25	90.4	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260002	26	G5	F8	F	23	23	7.4	0.18	41.11111111	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260003	27	G5	F8	F	24	24	4.1	0.48	8.541666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260004	28	G5	B7	F	25	25	1.4	0.36	3.888888889	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260005	29	G5	B7	F	26	26	3.6	0.48	7.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260006	30	G5	B7	F	27	27	8.6	0.36	23.88888889	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260007	31	G5	B7	F	28	28	3.3	0.25	13.2	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260008	32	G5	B7	F	29	29	9.7	0.36	26.94444444	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260009	33	G5	B7	F	30	30	11.9	0.48	24.79166667	LA		ADX	1				NaX, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260010	34	G5	B7	MD10	31													Surface Water	CDM Smith	N. Ross/DDE			
WT-10150	1514338-00(	260011	35	G5	B7	MFO		31	4.5	0.18	25	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260012	1	U1	C9	F	1	1	3.6	0.12	30	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260013	2	U1	C9	F	2	2	3.3	0.24	13.75	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260014	3	U1	C9	MD11	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260015	4	U1	C9	MFO		3	5.3	0.18	29.44444444	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260016	5	U1	C9	F	4	4	3.6	0.24	15	LA		ADX	1	1	1		NaX, WRTA; 011401D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260017	6	U1	C9	F	5	5	1.7	0.24	7.083333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260018	7	U1	C9	MD10	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260019	8	U1	C9	MFO		6	1.9	0.18	10.55555556	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260020	9	U1	C9	F	7	7	3.8	0.36	10.55555556	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260021	10	U1	C9	F	8	8	7.8	0.1	78	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260022	11	U1	C9	F	9	9	6.2	0.6	10.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260023	12	U1	C9	F	10	10	4.3	0.24	17.91666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260024	13	U1	C9	B	11	11	5.7	0.48	11.875	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260025	14	U1	C9	F	12	12	2.4	0.12	20	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260026	15	U1	G7	F	13	13	7.8	0.24	32.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10151	1514338-00(	260027	16	U1	G7	MD11	14													Surface Water	CDM

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10151	1514338-00(	260052	41	U2	C9	F	33	34	2.4	0.24	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260053	1	I4	C6	MD20	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260054	2	I4	C6	MF		1	3.3	0.24	13.75	OA		ADX	1		1		NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260055	3	I4	C6	MF		2	1.5	0.36	4.166666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260056	4	I4	C6	F	0	0	4.2	0.24	17.5	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260057	5	I4	C6	F	2	3	14.7	0.96	15.3125	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260058	6	I4	C6	F	3	4	13.1	0.12	109.1666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260059	7	I4	C6	F	4	5	11.9	0.48	24.79166667	LA		ADX	1	1	1		NaK, WRTA; 011391D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260060	8	I4	C6	MD11	5													Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260061	9	I4	C6	MFO		6	6.7	0.6	11.16666667	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260062	10	I4	C6	F	6	7	5.3	0.24	22.08333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260063	11	I4	H8	F	7	8	2.2	0.36	6.111111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260064	12	I4	H8	F	8	9	8.3	0.25	33.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260065	13	I4	H8	F	9	10	9	0.6	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260066	14	I4	H8	MD32	10													Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260067	15	I4	H8	MF		11	11.9	0.18	66.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260068	16	I4	H8	MF		12	6.8	0.24	28.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260069	17	I4	H8	MFO		13	2.6	0.12	21.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260070	18	I4	H8	F	11	14	5.5	0.72	7.638888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260071	19	I5	I8	F	12	15	1.9	0.24	7.916666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260072	20	I5	I8	F	0	0	12.9	0.36	35.83333333	OA		ADX	1				NaK, NR; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260073	21	I5	I8	F	13	16	2.6	0.18	14.44444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260074	22	I5	I8	F	14	17	3.1	0.24	12.91666667	OA		ADX	1				NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260075	23	I5	I8	F	15	18	2.8	0.36	7.777777778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260076	24	I5	I8	F	16	19	8.3	0.24	34.58333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260077	25	I5	I8	F	17	20	31.4	1.2	26.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260078	26	I5	I8	F	18	21	5.5	0.25	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260079	27	I5	I8	F	19	22	2.4	0.48	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260080	28	I5	E5	F	20	23	5	0.24	20.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260081	29	I5	E5	F	21	24	3.3	0.24	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260082	30	I5	E5	F	22	25	6.4	0.72	8.888888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260083	31	I5	E5	F	23	26	7.6	0.48	15.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260084	32	I5	E5	F	24	27	2.9	0.24	12.08333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260085	33	I5	E5	F	25	28	4.5	0.24	18.75	OA		ADX	1				NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260086	34	I5	E5	F	26	29	18	0.48	37.5	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260087	35	I5	E5	F	27	30	1.2	0.12	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260088	36	I5	E5	F	28	31	7.6	1.68	4.523809524	OA		ADX	1				NaK, NR; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260089	37	I5	E5	MD30	29													Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260090	38	I5	E5	MF		32	2.1	0.12	17.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260091	39	I5	E5	MFO		33	3.8	0.24	15.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10152	1514338-00(	260092	40	I5	E5	MFO		34	3	0.18	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10153	1514338-00(	259326	1	J7	J5	F	1	1	3.2	0.1	32	LA		ADX	1	1			NaK, WRTA; Asbestos_887	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259327	2	J7	J5	F	2	2	2.8	0.3	9.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259328	3	J7	J5	F	3	3	4.9	0.3	16.33333333	LA		ADX	1	1			NaK, WRTA; Asbestos_888	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259329	4	J7	J5	F	4	4	5	0.25	20	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259330	5	J7	J5	F	5	5	5.8	0.3	19.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259331	6	J7	G2	F	6	6	1.2	0.35	3.428571429	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259332	7	J7	G2	F	7	7	5.4	0.25	21.6	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259333	8	J7	G2	F	8	8	2.5	0.4	6.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259334	9	J7	G2	F	9	9	8.7	0.4	21.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259335	10	J7	G2	F	10	10	2.6	0.4	6.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259336	11	J8	C8	F	11	11	15.8	0.3	52.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259337	12	J8	C8	F	12	12	5.2	0.8	6.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259338	13	J8	C8	MD10	13													Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259339	14	J8	C8	MFO		13	2.8	0.25	11.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259340	15	J8	C8	F	14	14	4.2	0.3	14	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259341	16	J8	E3	MD10	15													Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259342	17	J8	E3	MFO		15	4.6	0.3	15.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259343	18	J8	E3	F	16	16	4.3	0.6	7.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259344	19	J8	E3	F	17	17	10	0.25	40	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259345	20	J8	E3	F	18	18	3.5	0.1	35	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259346	21	J8	E3	F	19	19	2.4	0.1	24	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259347	22	J8	E3	F	20	20	1.5	0.05	30	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259348	23	J8	E3	F	21	21	6.5	0.1	65	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259349	24	J8	I5	F	0	0	8.4	0.3	28	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259350	25	J8	I5	F	22	22	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259351	26	J8	I5	F	23	23	4.3	0.7	6.142857143	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259352	27	J8	I5	F	24	24	4.2	1	4.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259353	28	J8	J8	F	25	25	7.7	0.25	30.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259354	29	J8	J8	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259355	30	J8	J8	MFO		26	4.3	0.2	21.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259356	31	J8	J8	F	27													Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10153	1514338-00(	259357	32	J8	J8	F		27	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			#NAME?
WT-10154	1514338-00(	264709	1	K1	D8	B	1	1	11.8	1	11.8	LA		ADX	1	1	1		KK, WRTA; 011413D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264710	2	K1	D8	F	2	2	4.5	0.24	18.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264711	3	K1	D8	F	3	3	10	0.72	13.88888889	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264712	4	K1	D8	CD22	4													Surface Water	CDM Smith	N. Ross/DDE	Structure type for primary structure #4 should likely be CD22, not CD11, since two secondary structures longer than 5 µm follow.	1/5/2016	
WT-10154	1514338-00(	264713	5	K1	D8	CF		4	10.5	1.2	8.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264714	6	K1	D8	CF		5	9.5	0.24	39.58333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264715	7	K1	D8	F	5	6	3.6	0.24	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264716	8	K1	D8	F	6	7	6.8	0.24	28.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264717	9	K1	D8	F	7	8	3.6	0.96	3.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264718	10	K1	B5	F	8	9	3.3	1	3.3	OA		ADX	1				NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264719	11	K1	B5	F	9	10	2.9	0.25	11.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264720	12	K1	B5	F	10	11	2.6	0.48	5.416666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264721	13	K1	B5	F	11	12	2.4	0.24	10	OA		ADX	1				NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264722	14	K1	B5	F	12	13	2.8	0.24	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264723	15	K1	B5	F	13	14	4.1	0.24	17.08333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264724	16	K1	B5	F	14	15	7.7	0.6	12.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264725	17	K1	B5	MD11	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264726	18	K1	B5	MFO		16	8.3	0.24	34.58333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264727	19	K1	B5	F	16	17	1.9	0.24	7.916666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264728	20	K1	B5	F	17	18	2	0.18	11.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264729	21	K1	B5	F	18	19	2.9	0.72	4.027777778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264730	22	K1	B5	MD10	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264731	23	K1	B5	MFO		20	2.9	0.24	12.08333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264732	24	K2	G8	F	20	21	20	0.24	83.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264733	25	K2	G8	F	21	22	7.1	0.24	29.58333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264734	26	K2	G8	F	22	23	2.4	0.24	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264735	27	K2	G8	F	23	24	3.3	0.72	4.583333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264736	28	K2	G8	F	24	25	10.2	0.48	21.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264737	29	K2	G8	F	25	26	4.2	0.48	8.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264738	30	K2	G8	F	26	27	2.6	0.24	10.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264739	31	K2	G8	F	27	28	1.2	0.12	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264740	32	K2	G8	F	28	29	6	0.18	33.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264741	33	K2	G8	F	29	30	3.7	0.24	15.41666667	LA		ADX	1				NaK, WRTA; 10/29/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264742	34	K2	D7	F	30	31	3.9	0.12	32.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264743	35	K2	D7	F	31	32	1.2	0.18	6.666666667	OA		ADX	1				NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10154	1514338-00(	264744	36	K2	D7	F	32	33	2.4	0.36	6.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260129	1	L1	I2	F	1	1	4.4	0.1	44	LA		ADX	1	1			NaK, WRTA; Asbestos_889	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260130	2	L1	I2	F	2	2	9.2	0.7	13.14285714	LA		ADX	1	1	1		KK, TR; Asbestos_890, Asbestos_892	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260131	3	L1	H4	B	3	3	10.7	0.9	11.88888889	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260132	4	L1	H4	F	4	4	2.2	0.25	8.8	LA		ADX	1	1			NaK, WRTA; Asbestos_893	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260133	5	L1	H4	F	5	5	2.2	0.4	5.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260134	6	L1	G7	F	6	6	1.8	0.2	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260135	7	L1	G7	MD20	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260136	8	L1	G7	MF		7	4.7	0.1	47	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260137	9	L1	G7	MF		8	2.4	0.1	24	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260138	10	L1	F3	F	8	9	2.7	0.25	10.8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260139	11	L1	F3	F	9	10	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260140	12	L1	F3	MD10	10													Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260141	13	L1	F3	MF		11	2.8	0.2	14	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260142	14	L1	D2	F	0	0	8.8	1.2	7.333333333	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260143	15	L1	D2	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260144	16	L1	D2	MF		12	2.5	0.15	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260145	17	L1	D2	F	12	13	1.9	0.6	3.166666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260146	18	L1	D2	F	13	14	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260147	19	L1	D2	F	14	15	3.2	0.2	16	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260148	20	L3	A9	F	15	16	3.6	0.4	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260149	21	L3	A9	F	16	17	6.1	1.3	4.692307692	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260150	22	L3	A9	F	17	18	11.8	0.4	29.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260151	23	L3	A9	F	18	19	3	0.25	12	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260152	24	L3	A9	F	19	20	9.1	0.1	91	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260153	25	L3	A9	F	20	21	14.9	0.2	74.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260154	26	L3	E8	F	21	22	25.8	0.4	64.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260155	27	L3	E8	F	22	23	4.9	0.3	16.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260156	28	L3	E8	MD10	23													Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260157	29	L3	E8	MFO		24	1.9	0.3	6.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260158	30	L3	E8	F	24	25	3	0.3	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260159	31	L3	E8	MD10	25													Surface Water	CDM Smith	N. Ross/DDE			
WT-10155	1514338-00(	260160	32	L3	E8	MFO		26	0.8	0.05	16	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10156	1514338-00(	260161	1	Q1	J4	MD

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10156	1514338-00	260188	28	Q2	E2	F	24	24	7.3	0.25	29.2	LA		ADX	1					Surface Water	CDM Smith	N. Ross/DDE			
WT-10156	1514338-00	260189	29	Q2	D4	F	25	25	2.7	0.5	5.4	LA		ADX	1					Surface Water	CDM Smith	N. Ross/DDE			
WT-10156	1514338-00	260190	30	Q2	D4	F	26	26	7.5	0.9	8.333333333	LA		ADX	1					Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260191	1	A7	A6	F	1	1	2.5	0.2	12.5	LA		ADX	1	1	1		NaK, WRTA; Asbestos_896	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260192	2	A7	A6	F	2	2	1.1	0.2	5.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260193	3	A7	A6	CD22	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260194	4	A7	A6	CF		3	30.2	0.2	151	LA		ADX	1	1			NaK, WRTA; Asbestos_897, XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260195	5	A7	A6	CF		4	9.4	1.4	6.714285714	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260196	6	A7	A6	F	4	5	38.4	1.7	22.58823529	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260197	7	A7	B8	F	5	6	2.5	0.15	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260198	8	A7	B8	F	6	7	3.4	0.2	17	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260199	9	A7	B8	F	7	8	4.8	0.2	24	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260200	10	A7	B8	F	8	9	2.7	0.35	7.714285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260201	11	A7	B8	F	9	10	2.4	0.6	4	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260202	12	A7	B8	F	10	11	2.7	0.5	5.4	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260203	13	A7	B8	F	11	12	3.7	0.3	12.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260204	14	A7	B8	F	12	13	5.7	0.8	7.125	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260205	15	A8	B6	F	13	14	2.8	0.4	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260206	16	A8	B6	F	14	15	6.4	0.25	25.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260207	17	A8	B6	F	15	16	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260208	18	A8	B6	F	16	17	3.7	0.5	7.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260209	19	A8	B6	F	17	18	1.8	0.25	7.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260210	20	A8	B6	F	18	19	6.2	0.4	15.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260211	21	A8	D8	CD21	19													Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260212	22	A8	D8	CF		20	8	0.35	22.85714286	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260213	23	A8	D8	CF		21	3.6	0.3	12	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260214	24	A8	D8	F	20	22	6.2	0.35	17.71428571	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260215	25	A8	D8	F	21	23	1.8	0.05	36	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260216	26	A8	E5	F	22	24	5.5	0.3	18.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260217	27	A8	E5	F	23	25	1.9	0.35	5.428571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260218	28	A8	E5	F	24	26	3.9	0.3	13	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260219	29	A8	E5	F	25	27	9.8	0.8	12.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10157	1514338-00	260220	30	A8	E5	F	26	28	5.1	0.15	34	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260221	1	B4	J7	F	1	1	9.6	0.4	24	LA		ADX	1	1	1		NaK, WRTA; Asbestos_898, Asbestos_900	Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260222	2	B4	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260223	3	B4	I10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260224	4	B4	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260225	5	B4	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260226	6	B4	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260227	7	B4	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260228	8	B4	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260229	9	B4	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260230	10	B4	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260231	11	B4	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260232	12	B4	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260233	13	B4	A9	F	2	2	15.8	0.65	24.30769231	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260234	14	B6	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260235	15	B6	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260236	16	B6	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260237	17	B6	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260238	18	B6	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260239	19	B6	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260240	20	B6	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10158	1514338-00	260241	21	B6	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260242	1	C1	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260243	2	C1	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260244	3	C1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260245	4	C1	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260246	5	C1	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260247	6	C1	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260248	7	C1	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260249	8	C1	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260250	9	C1	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260251	10	C1	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260252	11	C1	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260253	12	Q7	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260254	13	Q7	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260255	14	Q7	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260256	15	Q7	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260257	16	Q7	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260258	17	Q7	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260259	18	Q7	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260260	19	Q7	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260261	20	Q7	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260262	21	Q7	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10159	1514338-00	260263	22	Q7	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260264	1	C7	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260265	2	C7	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260266	3	C7	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260267	4	C7	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260268	5	C7	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260269	6	C7	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260270	7	C7	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260271	8	C7	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260272	9	C7	G4	MD20	1													Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260273	10	C7	G4	MF		1	3.1	0.1	31	LA		ADX	1	1	1		NaK, WRTA; Asbestos_901, Asbestos_902	Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260274	11	C7	G4	MFO		2	1	0.1	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260275	12	C7	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260276	13	C7	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260277	14	C7	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260278	15	C7	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260279	16	C8	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260280	17	C8	I10	F	2	3	2.4	0.25	9.6	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260281	18	C8	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260282	19	C8	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260283	20	C8	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260284	21	C8	F5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260285	22	C8	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10160	1514338-00	260286	23	C8	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260287	1	R1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260288	2	R1	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260289	3	R1	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260290	4	R1	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260291	5	R1	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260292	6	R1	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260293	7	R1	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260294	8	R1	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260295	9	R1	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260296	10	R1	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260297	11	R1	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260298	12	R2	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260299	13	R2	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260300	14	R2	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260301	15	R2	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260302	16	R2	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260303	17	R2	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260304	18	R2	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260305	19	R2	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260306	20	R2	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260307	21	R2	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10161	1514338-00	260308	22	R2	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260309	1	R4	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260310	2	R4	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260311	3	R4	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260312	4	R4	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260313	5	R4	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260314	6	R4	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260315	7	R4	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260316	8	R4	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260317	9	R4	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260318	10	R4	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260319	11	R4	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260320	12	R5	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260321	13	R5	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260322	14	R5	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260323	15	R5	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260324	16	R5	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260325	17	R5	E5	F	1	1	2.6	0.25	10.4	LA		ADX	1	1	1		NaK, WRTA; Asbestos_906, Asbestos_905	Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260326	18	R5	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260327	19	R5	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260328	20	R5	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260329	21	R5	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10162	1514338-00	260330	22	R5	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260331	1	R7	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260332	2	R7	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260333	3	R7	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260334	4	R7	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260335	5	R7	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260336	6	R7	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260337	7	R7	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260338	8	R7	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260339	9	R7	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260340	10	R7	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260341	11	R7	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260342	12	R8	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260343	13	R8	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260344	14	R8	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260345	15	R8	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260346	16	R8	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260347	17	R8	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260348	18	R8	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260349	19	R8	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260350	20	R8	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260351	21	R8	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10163	1514338-00	260352	22	R8	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-00	260353	1	S1	A7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-00	260354	2	S1	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-00	260355	3	S1	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10164	1514338-001	260356	4	S1	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260357	5	S1	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260358	6	S1	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260359	7	S1	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260360	8	S1	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260361	9	S1	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260362	10	S1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260363	11	S1	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260364	12	S2	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260365	13	S2	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260366	14	S2	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260367	15	S2	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260368	16	S2	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260369	17	S2	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260370	18	S2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260371	19	S2	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260372	20	S2	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260373	21	S2	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10164	1514338-001	260374	22	S2	A1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260375	1	S4	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260376	2	S4	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260377	3	S4	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260378	4	S4	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260379	5	S4	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260380	6	S4	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260381	7	S4	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260382	8	S5	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260383	9	S5	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260384	10	S5	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260385	11	S5	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260386	12	S5	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260387	13	S5	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260388	14	S5	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260389	15	S5	E2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260390	16	S5	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260391	17	S5	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260392	18	S5	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260393	19	S5	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260394	20	S6	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260395	21	S6	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10165	1514338-001	260396	22	S6	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260397	1	S7	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260398	2	S7	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260399	3	S7	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260400	4	S7	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260401	5	S7	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260402	6	S7	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260403	7	S7	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260404	8	S7	G5	F	1	1	2.5	0.1	25	LA		ADX	1	1	1		NaK, WRTA; Asbestos_918, Asbestos_919	Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260405	9	S7	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260406	10	S7	I5	F	2	2	2.4	0.2	12	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260407	11	S7	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260408	12	S8	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260409	13	S8	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260410	14	S8	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260411	15	S8	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260412	16	S8	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260413	17	S8	E2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260414	18	S8	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260415	19	S8	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260416	20	S8	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260417	21	S8	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10166	1514338-001	260418	22	S8	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260419	1	T1	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260420	2	T1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260421	3	T1	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260422	4	T1	G3	F	1	1	4	0.35	11.42857143	LA		ADX	1	1	1		NaK, WRTA; Asbestos_920, Asbestos_921	Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260423	5	T1	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260424	6	T1	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260425	7	T1	D6	F	0	0	30.5	0.2	152.5	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260426	8	T1	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260427	9	T1	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260428	10	T1	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260429	11	T2	J2	F	0	0	4.6	0.4	11.5	LA		ADX	1		1		XK, TR; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260430	12	T2	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260431	13	T2	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260432	14	T2	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260433	15	T2	G6	F	2	2	1.3	0.35	3.714285714	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260434	16	T2	F2	F	3	3	2.9	0.2	14.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260435	17	T2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260436	18	T2	D7	F	4	4	16.2	0.8	20.25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260437	19	T2	C3	F	0	0	36.8	1	36.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260438	20	T2	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260439	21	T2	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260440	22	T2	A2	F	5	5	1.4	0.2	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10167	1514338-001	260441	23	T2	A2	F	6	6	9.6	0.1	96	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260442	1	T4	J1	F	1	1	4.7	0.6	7.833333333	LA		ADX	1	1	1		NaK, WRTA; Asbestos_922, Asbestos_923	Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260443	2	T4	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260444	3	T4	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260445	4	T4	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260446	5	T4	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260447	6	T4	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260448	7	T4	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260449	8	T4	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260450	9	T4	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260451	10	T4	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260452	11	T4	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260453	12	T4	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260454	13	T5	A10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260455	14	T5	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260456	15	T5	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260457	16	T5	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260458	17	T5	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260459	18	T5	E10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260460	19	T5	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260461	20	T5	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260462	21	T5	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10168	1514338-001	260463	22	T5	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10169	1514338-001	260464	1	T8	A9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260465	2	T8	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260466	3	T8	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260467	4	T8	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260468	5	T8	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260469	6	T8	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260470	7	T8	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260471	8	T8	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260472	9	T8	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260473	10	T8	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260474	11	T8	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260475	12	T8	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260476	13	T8	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260477	14	T9	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260478	15	T9	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260479	16	T9	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260480	17	T9	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260481	18	T9	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260482	19	T9	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260483	20	T9	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260484	21	T9	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10169	1514338-001	260485	22	T9	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10170	1514338-001	260486	1	J4	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260487	2	J4	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260488	3	J4	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260489	4	J4	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260490	5	J4	E2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260491	6	J4	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260492	7	J4	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260493	8	J4	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260494	9	J4	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260495	10	J4	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260496	11	J4	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260497	12	J5	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260498	13	J5	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260499	14	J5	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260500	15	J5	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260501	16	J5	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260502	17	J5	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260503	18	J5	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260504	19	J5	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260505	20	J5	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10170	1514338-001	260506	21	J5	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261279	1	T1	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261280	2	T1	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261281	3	T1	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261282	4	T1	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261283	5	T1	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261284	6	T1	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261285	7	T1	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261286	8	T1	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261287	9	T1	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261288	10	T1	I10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261289	11	T1	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261290	12	T2	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261291	13	T2	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261292	14	T2	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261293	15	T2	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261294	16	T2	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-001	261295	17	T2	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10171	1514338-00	261296	18	T2	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-00	261297	19	T2	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-00	261298	20	T2	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10171	1514338-00	261299	21	T2	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261300	1	T7	A9	F	1	1	4.8	0.25	19.2	LA		ADX	1	1	1		NaX, WRTA; Asbestos_935, Asbestos_936	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261301	2	T7	A5	F	2	2	3.6	0.4	9	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261302	3	T7	A5	F	3	3	0.9	0.1	9	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261303	4	T7	A5	F	4	4	9.9	0.1	99	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261304	5	T7	A5	F	5	5	8.7	0.15	58	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261305	6	T7	A5	F	6	6	3.1	0.6	5.166666667	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261306	7	T7	E8	F	7	7	2.1	0.15	14	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261307	8	T7	E8	F	8	8	0.9	0.2	4.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261308	9	T7	E8	F	9	9	1.4	0.35	4	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261309	10	T7	E8	F	10	10	2.4	0.1	24	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261310	11	T8	F2	F	11	11	2.6	0.25	10.4	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261311	12	T8	F2	F	12	12	1.3	0.1	13	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261312	13	T8	F2	F	13	13	3.2	0.1	32	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261313	14	T8	F2	F	14	14	1.2	0.2	6	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261314	15	T8	F2	F	15	15	3.5	0.4	8.75	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261315	16	T8	F2	F	16	16	1.6	0.5	3.2	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261316	17	T8	F2	F	17	17	5.3	0.15	35.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261317	18	T8	F2	F	0	0	11.4	0.45	25.33333333	LA		ADX	1				NaX, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261318	19	T8	D5	F	18	18	1.3	0.1	13	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261319	20	T8	D5	F	19	19	0.8	0.25	3.2	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261320	21	T8	D5	F	20	20	2.9	0.2	14.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261321	22	T8	C2	F	21	21	15.8	0.45	35.11111111	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261322	23	T8	C2	F	22	22	4	0.6	6.666666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261323	24	T8	C2	F	23	23	1.1	0.1	11	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261324	25	T8	C2	MD10		24												Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261325	26	T8	C2	MF		24	5.2	0.25	20.8	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10172	1514338-00	261326	27	T8	C2	F	25	25	1.25	0.15	8.333333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251601	1	L1	B8	F	1	1	4.2	0.24	17.5	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251602	2	L1	B8	MD42	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251603	3	L1	B8	MF		2	30.6	0.72	42.5	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251604	4	L1	B8	MF		3	6	0.48	12.5	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251605	5	L1	B8	MFO		4	4.8	0.24	20	OA		ADX	1		1		NaX, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251606	6	L1	B8	MFO		5	3.1	0.12	25.83333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251607	7	L1	B8	F	3	6	1.8	0.12	15	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251608	8	L1	B8	MD10	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251609	9	L1	B8	MFO		7	3.8	0.6	6.333333333	LA		ADX	1	1	1		NaX, WRTA; 011297D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251610	10	L1	B8	F	5	8	2	0.48	4.166666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251611	11	L1	B8	F	6	9	2.9	0.12	24.16666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251612	12	L1	B8	F	7	10	12.9	0.24	53.75	LA		ADX	1				NaX, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251613	13	L1	F6	F	8	11	6	0.24	25	LA		ADX	1				NaX, WRTA; Additional analysis 10/9/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251614	14	L1	F6	F	9	12	1.3	0.18	7.222222222	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251615	15	L1	F6	F	10	13	3.6	0.36	10	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251616	16	L1	F6	F	11	14	9.7	1.2	8.083333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251617	17	L1	F6	F	12	15	3.3	0.18	18.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251618	18	L1	F6	F	13	16	5.7	0.24	23.75	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251619	19	L1	F6	F	14	17	5.5	0.24	22.91666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251620	20	L1	F6	MD10	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251621	21	L1	F6	MFO		18	2.7	0.12	22.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251622	22	L1	F6	F	16	19	3.1	0.72	4.305555556	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251623	23	L1	F6	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251624	24	L1	F6	MF		20	2.3	0.12	19.16666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251625	25	L2	E3	F	18	21	5	0.48	10.41666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251626	26	L2	E3	F	19	22	2.9	0.36	8.055555556	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251627	27	L2	E3	F	20	23	1.2	0.12	10	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251628	28	L2	E3	F	21	24	6.6	0.36	18.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251629	29	L2	E3	F	22	25	3.3	0.48	6.875	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251630	30	L2	E3	F	23	26	2.7	0.24	11.25	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251631	31	L2	I2	F	24	27	2	0.24	8.333333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251632	32	L2	I2	F	25	28	2.6	0.24	10.83333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251633	33	L2	I2	MD11	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251634	34	L2	I2	MFO		29	6.9	1.32	5.227272727	OA		ADX	1				NaX, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251635	35	L2	I2	F	27	30	4.2	0.72	5.833333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251636	36	L2	I2	F	28	31	1	0.12	8.333333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251637	37	L2	I2	F	29	32	5	0.24	20.83333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251638	38	L2	I2	F	30	33	9.4	0.24	39.16666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251639	39	L2	I2	F	31	34	5.7	0.48	11.875	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251640	40	L2	I2	F	32	35	10.7	0.72	14.86111111	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251641	41	L2	I2	MD21	33													Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251642	42	L2	I2	MFO		36	6.2	0.96	6.458333333	OA		AX	1				NaX, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10176	1514496-00	251643	43	L2	I2	MFO		37	2.8	0.48	5.833333333	LA		AX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248985	1	C1	F4	F	1	1	6	0.36	16.66666667	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248986	2	C1	F4	MD11	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248987	3	C1	F4	MFO		2	14.7	0.6	24.5	LA		ADX	1	1	1		NaX, WRTA; 011026D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248988	4	C1	F4	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248989	5	C1	F4	MFO		3	1.4	0.12	11.66666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248990	6	C1	F4	F	4	4	5.7	0.24	23.75	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248991	7	C1	F4	F	5	5	19.5	0.6	32.5	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248992	8	C1	F4	F	6	6	4.8	0.5	9.6	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248993	9	C1	F4	F	7	7	1.7	0.18	9.444444444	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248994	10	C1	B3	F	8	8	2.7	0.24	11.25	LA		ADX	1				NaX, WRTA; Additional analysis 8/18/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248995	11	C1	B3	F	9	9	4.6	0.72	6.388888889	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248996	12	C1	B3	F	10	10	12.6	0.25	50.4	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248997	13	C1	B3	F	11	11	7.6	0.36	21.11111111	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248998	14	C1	B3	F	12	12	2.7	0.24	11.25	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248999	15	C1	B3	F	13	13	4.1	0.48	8.541666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248963	16	C1	B3	F	14	14	13.8	0.72	19.16666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248964	17	C1	B3	F	15	15	2.7	0.48	5.625	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248965	18	C1	B3	F	16	16	4.3	0.48	8.958333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248966	19	C2	G6	F	17	17	8.5	0.6	14.16666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248967	20	C2	G6	F	18	18	1.8	0.12	15	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248968	21	C2	G6	F	19	19	1.8	0.24	7.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248969	22	C2	G6	F	20	20	1.2	0.1	12	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248970	23	C2	G6	F	21	21	1.9	0.18	10.55555556	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248971	24	C2	G6	F	22	22	1	0.24	4.166666667	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248972	25	C2	G6	F	23	23	27.6	0.48	57.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248973	26	C2	G6	F	24	24	4.5	0.24	18.75	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248974	27	C2	G6	F	0	0	1.7	0.18	9.444444444	NAM		NAM	1	1	1		XX, PY; 011039D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248975	28	C2	G6	F	25	25	9.3	0.48	19.375	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248976	29	C2	G6	F	26	26	17.1	0.72	23.75	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248977	30	C2	G6	F	27	27	4.9	0.6	8.166666667	LA		ADX	1	1			NaX, WRTA; 011041D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248978	31	C2	I7	F	28	28	1.7	0.1	17	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248979	32	C2	I7	F	29	29	1.4	0.25	5.6	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248980	33	C2	I7	F	30	30	8.6	0.72	11.94444444	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248981	34	C2	I7	F	31	31	1.4	0.18	7.777777778	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248982	35	C2	I7	F	32	32	6.5	0.24	27.08333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248983	36	C2	I7	F	33	33	2.4	0.24	10	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10177	1514496-00	248984	37	C2	I7	F	34	34	2.6	0.36	7.222222222	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251644	1	M1	A3	F	1	1	17.8	0.8	22.25	LA		ADX	1	1			NaX, WRTA; Asbestos_775	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251645	2	M1	A3	F	0	0	10	0.8	12.5	LA		ADX	1				NaX, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251646	3	M1	A3	MD11	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251647	4	M1	A3	MF		2	5.9	0.25	23.6	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251648	5	M1	A3	F	3	3	3.5	0.35	10	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251649	6	M1	A3	F	4	4	8.5	0.2	42.5	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251650	7	M1	C6	F	5	5	3	0.2	15	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251651	8	M1	C6	F	6	6	2.9	0.1	29	LA		ADX	1	1	1		NaX, WRTA; Asbestos_778	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251652	9	M1	C6	F	7	7	3.7	0.3	12.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251653	10	M1	C6	F	8	8	4.6	0.3	15.33333333	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251654	11	M1	C6	F	9	9	8	0.3	26.66666667	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251655	12	M1	C6	F	10	10	2.2	0.25	8.8	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251656	13	M1	C6	F	11	11	4.3	0.5	8.6	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251657	14	M1	C6	F	12	12	1.7	0.4	4.25	LA		ADX	1				NaX, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251658	15	M2	J4	F	13	13	5.2	0.1	52	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251659	16	M2	J4	F	14	14	2.5	0.2	12.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251660	17	M2	J4	F	15	15	3.7	0.2	18.5	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251661	18	M2	J4	F	16	16	2.6	0.15	17.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251662	19	M2	J4	F	17	17	1.1	0.05	22	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251663	20	M2	E4	F	18	18	9.6	0.5	19.2	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251664	21	M2	E4	F	19	19	13.2	0.2	66	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251665	22	M2	E4	F	20	20	0.9	0.05	18	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251666	23	M2	E4	F	21	21	1.3	0.25	5.2	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251667	24	M2	E4	F	22	22	3.2	0.15	21.33333333	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251668	25	M2	E4	F	23	23	1	0.25	4	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251669	26	M2	E4	F	24	24	1.4	0.1	14	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10178	1514496-00	251670	27	M2	E4	F	25	25	1.1	0.1	11	LA		ADX	1				NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10179	1514496-00	249000	1	EB	H3	F	1	1	16.1	1.44	11.18055556	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10179	1514496-00	249001	2	EB	H3	F	2	2	7.9	0.24	32.91666667	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10179	1514496-00	249002	3	EB	H3	MD11	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10179	1514496-00	249003	4	EB	H3	MFO		3	5.2	0.6	8.666666667	LA		ADX	1	1	1		NaX, WRTA; 011091D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10179	1514496-00	249004	5	EB	H3	F	4	4	6.3	0.72	8.75	LA		ADX	1		1		NaX, WRTA	Surface Water	CDM Smith	N.

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10180	1514996-00(	249030	1	F4	B7	F	1	1	2.6	0.18	14.44444444	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249031	2	F4	B7	MD10	2													Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249032	3	F4	B7	MFO		2	1.5	0.24	6.25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249033	4	F4	B7	F	3	3	2.6	0.36	7.222222222	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249034	5	F4	B7	F	4	4	43.2	0.72	60	LA		ADX	1	1	1		NaK, WRTA; 011109D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249035	6	F4	B7	F	5	5	13.6	0.48	28.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249036	7	F4	B7	F	6	6	6.9	0.24	28.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249037	8	F4	B7	F	7	7	16.6	0.84	19.76190476	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249038	9	F4	B7	F	8	8	3.1	0.48	6.458333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249039	10	F4	B7	F	9	9	1.4	0.36	3.888888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249040	11	F4	B7	F	10	10	2.4	0.24	10	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249041	12	F4	F6	F	11	11	3.1	0.36	8.611111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249042	13	F4	F6	MD10	12													Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249043	14	F4	F6	MFO		12	5	0.18	27.77777778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249044	15	F4	F6	F	13	13	6.3	0.48	13.125	LA		AX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249045	16	F4	F6	F	14	14	4.3	0.18	23.88888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249046	17	F4	F6	F	15	15	4	0.18	22.22222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249047	18	F5	E5	F	16	16	9.5	0.24	39.58333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249048	19	F5	E5	F	17	17	12.8	0.25	51.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249049	20	F5	E5	F	18	18	8.6	0.6	14.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249050	21	F5	E5	F	19	19	5	0.24	20.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249051	22	F5	E5	F	20	20	8.6	0.48	17.91666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249052	23	F5	E5	F	21	21	4.3	0.48	8.958333333	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249053	24	F5	B8	F	22	22	9.6	0.36	26.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249054	25	F5	B8	F	23	23	8.3	0.24	34.58333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249055	26	F5	B8	F	24	24	1.9	0.6	3.166666667	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249056	27	F5	B8	F	25	25	2.7	0.6	4.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249057	28	F5	B8	F	26	26	10.2	0.72	14.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249058	29	F5	B8	F	27	27	3.3	0.24	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249059	30	F5	B8	F	28	28	2.7	0.48	5.625	LA		ADX	1	1	1		XX, WRTA; 011123D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249060	31	F5	B8	F	29	29	11.9	0.48	24.79166667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249061	32	F5	B8	F	30	30	9.7	1.44	6.736111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249062	33	F5	B8	F	31	31	10.7	0.24	44.58333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249063	34	F5	B8	F	32	32	13.8	0.18	76.66666667	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10180	1514996-00(	249064	35	F5	B8	F	33	33	4.3	0.48	8.958333333	LA		AX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261327	1	U1	E8	F	1	1	2.4	0.48	5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261328	2	U1	E8	F	2	2	5.7	0.72	7.916666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261329	3	U1	G6	F	3	3	3.9	0.24	16.25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261330	4	U1	G6	F	4	4	22.9	0.48	47.70833333	LA		ADX	1	1	1		NaK, WRTA; 011437D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261331	5	U1	I8	F	5	5	1.5	0.36	4.166666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261332	6	U1	I8	F	6	6	5.1	0.48	10.625	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261333	7	U1	I8	F	7	7	28.8	0.48	60	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261334	8	U1	I8	MD22	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261335	9	U1	I8	MFO		8	23.2	0.72	32.22222222	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261336	10	U1	I8	MFO		9	11.4	0.48	23.75	LA		ADX	1				NaK, WRTA; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261337	11	U1	J6	F	9	10	8.1	0.84	9.642857143	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261338	12	U1	J6	F	10	11	7.4	0.72	10.27777778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261339	13	U1	J6	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261340	14	U1	J6	MFO		12	4.5	0.18	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261341	15	U2	G2	F	12	13	5.7	0.48	11.875	LA		ADX	1				NaK, WRTA; Additional analysis 11/8/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261342	16	U2	G2	F	13	14	0.7	0.12	5.833333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261343	17	U2	G2	F	14	15	2.1	0.12	17.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261344	18	U2	G2	F	15	16	6.9	0.48	14.375	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261345	19	U2	G2	MD20	16													Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261346	20	U2	G2	MF		17	4.1	0.24	17.08333333	LA		ADX	1				NaK, WRTA; Additional analysis 11/9/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261347	21	U2	G2	MFO		18	4.3	0.36	11.94444444	OA		ADX	1				NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261348	22	U2	G2	MD11	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261349	23	U2	G2	MFO		19	17.6	0.84	20.95238095	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261350	24	U2	C3	F	18	20	32.1	1.2	26.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261351	25	U2	C3	F	19	21	2.6	0.48	5.416666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261352	26	U2	C3	F	20	22	6.2	0.6	10.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261353	27	U2	C3	F	21	23	12.6	0.72	17.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261354	28	U2	C3	F	22	24	2.7	0.18	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261355	29	U2	C3	MD10	23													Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261356	30	U2	C3	MFO		25	4.1	0.25	16.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261357	31	U2	C3	MD10	24													Surface Water	CDM Smith	N. Ross/DDE			
WT-10181	1514338-00(	261358	32	U2	C3	MFO		26	1.7	0.18	9.444444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261359	1	M2	A9	F	1	1	4.9	0.3	16.33333333	LA		ADX	1	1	1		NaK, WRTA; Asbestos_924	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261360	2	M2	A9	F	2	2	3.6	0.2	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261361	3	M2	A9	F	3	3	7.7	0.25	30.8	LA		ADX	1	1	1		NaK, WRTA; Asbestos_925	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261362	4	M2	A9	F	4	4	6.1	0.05	122	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261363	5	M2	A9	F	5	5	5.1	0.2	25.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261364	6	M2	D7	F	6	6	3.8	0.2	19	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261365	7	M2	F8	F	7	7	1.3	0.25	5.2	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261366	8	M2	F8	F	8	8	8.1	0.2	40.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261367	9	M2	F8	F	0	0	1.6	0.2	8	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261368	10	M2	G6	F	9	9	1.6	0.5	3.2	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261369	11	M2	G6	F	10	10	4.4	0.2	22	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261370	12	M2	H9	F	11	11	10.1	1.3	7.769230769	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261371	13	M2	H9	F	12	12	5.8	0.3	19.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261372	14	M2	H9	F	13	13	18	0.15	120	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261373	15	M2	H9	MD10	14													Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261374	16	M2	H9	MF		14	2.9	0.3	9.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261375	17	M3	A8	F	15	15	3.6	0.45	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261376	18	M3	B6	F	16	16	7.3	0.35	20.85714286	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261377	19	M3	B6	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261378	20	M3	B6	MFO		17	1.5	0.25	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261379	21	M3	B6	MD11	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261380	22	M3	B6	MF		18	10.4	0.4	26	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261381	23	M3	B6	F	19	19	5	0.15	33.33333333	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261382	24	M3	F7	MD11	20													Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261383	25	M3	F7	MFO		20	5.5	0.4	13.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261384	26	M3	F7	F	21	21	8.9	0.1	89	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261385	27	M3	F7	F	22	22	17.8	0.55	32.36363636	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261386	28	M3	H8	F	23	23	10.8	0.6	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261387	29	M3	H8	F	24	24	2.4	0.25	9.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261388	30	M3	H8	F	25	25	1.8	0.1	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261389	31	M3	H8	F	26	26	1.5	0.2	7.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261390	32	M3	H8	CC20	27													Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261391	33	M3	H8	CF		27	3.4	0.55	6.181818182	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10182	1514338-00(	261392	34	M3	H8	CF		28	2.4	0.25	9.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261430	1	M7	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261431	2	M7	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261432	3	M7	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261433	4	M7	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261434	5	M7	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261435	6	M7	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261436	7	M7	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261437	8	M7	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261438	9	M7	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261439	10	M7	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261440	11	M7	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261441	12	M8	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261442	13	M8	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261443	14	M8	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261444	15	M8	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261445	16	M8	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261446	17	M8	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261447	18	M8	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261448	19	M8	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261449	20	M8	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10183	1514338-00(	261450	21	M8	B9	ND													_Additional analysis 11/16/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261451	1	8-U1	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261452	2	8-U1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261453	3	8-U1	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261454	4	8-U1	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261455	5	8-U1	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261456	6	8-U1	H3	B	1	1	17.2	0.8	21.5	LA		ADX	1	1	1		NaK, WRTA; Asbestos_932, Asbestos_933	Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261457	7	8-U1	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261458	8	8-U1	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261459	9	8-U1	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261460	10	8-U1	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261461	11	8-U1	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261462	12	8-U1	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261463	13	8-U1	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261464	14	8-U1	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261465	15	8-U1	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261466	16	8-U2	J6	F	2	2	1.6	0.35	4.571428571	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261467	17	8-U2	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261468	18	8-U2	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261469	19	8-U2	H1	F	3	3	5.3	0.5	10.6	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261470	20	8-U2	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261471	21	8-U2	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261472	22	8-U2	F5	F	4	4	4.6	0.1	46	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261473	23	8-U2	F1	F	5	5	3.2	0.25	12.8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261474	24	8-U2	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261475	25	8-U2	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261476	26	8-U2	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261477	27	8-U2	D9	MD10	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261478	28	8-U2	D9	MF		6	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261479	29	8-U2	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261480	30	8-U2	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261481	31	8-U2	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261482	32	8-U2	B2	F	7	7	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261483	33	8-U2	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261484	34	8-U3	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00(	261485	35	8

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10184	1514338-00	261497	47	8-U3	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261498	48	15-U1	J1	ND													Additional analysis 11/10/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261499	49	15-U1	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261500	50	15-U1	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261501	51	15-U1	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261502	52	15-U1	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261503	53	15-U1	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261504	54	15-U1	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261505	55	15-U1	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261506	56	15-U1	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261507	57	15-U1	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261508	58	15-U1	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261509	59	15-U1	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261510	60	15-U1	F5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261511	61	15-U1	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261512	62	15-U1	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261513	63	15-U1	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261514	64	15-U1	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261515	65	15-U1	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261516	66	15-U1	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261517	67	15-U1	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261518	68	15-U1	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261519	69	15-U1	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261520	70	15-U1	B7	F	9	9	2.4	0.25	9.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261521	71	15-U1	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261522	72	15-U2	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261523	73	15-U2	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261524	74	15-U2	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261525	75	15-U2	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261526	76	15-U2	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10184	1514338-00	261527	77	15-U2	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261528	1	O1	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261529	2	O1	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261530	3	O1	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261531	4	O1	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261532	5	O1	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261533	6	O1	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261534	7	O1	F1	F	1	1	3.4	0.15	22.66666667	LA		ADX	1	1	1		NaK, WRTA; Asbestos_926, Asbestos_927	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261535	8	O1	F8	F	2	2	2.5	0.6	4.166666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261536	9	O1	E10	F	3	3	15	0.5	30	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261537	10	O1	E3	MD10	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261538	11	O1	E3	MFO		4	3.2	0.2	16	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261539	12	O1	E3	B	5	5	24.6	1.1	22.36363636	LA		ADX	1		1		NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261540	13	O1	D1	F	6	6	1.9	0.2	9.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261541	14	O1	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261542	15	O1	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261543	16	O1	C3	F	7	7	12.4	0.35	35.42857143	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261544	17	O1	B1	F	8	8	5.9	0.3	19.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261545	18	O1	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261546	19	O1	B7	MD11	9													Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261547	20	O1	B7	MF		9	7.9	0.9	8.777777778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261548	21	O1	B7	F	10	10	11.8	0.3	39.33333333	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261549	22	O1	B9	F	11	11	7.1	0.7	10.14285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261550	23	O2	J9	F	12	12	15.2	1.2	12.66666667	LA		ADX	1				NaK, WRTA; Additional analysis 11/6/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261551	24	O2	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261552	25	O2	I1	F	13	13	1.9	0.4	4.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261553	26	O2	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261554	27	O2	H10	F	14	14	10.9	0.8	13.625	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261555	28	O2	G8	F	15	15	2.4	0.3	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261556	29	O2	G4	F	16	16	3.2	0.25	12.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261557	30	O2	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261558	31	O2	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261559	32	O2	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261560	33	O2	E8	MD10	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261561	34	O2	E8	MF		17	2.8	0.2	14	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261562	35	O2	E4	F	18	18	9.9	0.25	39.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261563	36	O2	E4	F	19	19	2.6	0.5	5.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261564	37	O2	E2	F	20	20	5.6	0.7	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261565	38	O2	D6	F	21	21	1.6	0.25	6.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261566	39	O2	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261567	40	O2	B3	F	22	22	7.3	0.45	16.22222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261568	41	O2	B3	F	23	23	2.4	0.2	12	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261569	42	O2	A5	F	24	24	8.7	0.65	13.38461539	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10185	1514338-00	261570	43	O2	A5	F	25	25	2	0.35	5.714285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251671	1	M4	H4	F	1	1	2.5	0.24	10.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251672	2	M4	H4	F	2	2	7.9	0.48	16.45833333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251673	3	M4	H4	MD10	3													Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251674	4	M4	H4	MFO		3	3.6	0.48	7.5	OA		ADX	1		1		NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251675	5	M4	H4	F	4	4	4.1	1.2	3.416666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251676	6	M4	H4	F	5	5	8.6	0.6	14.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251677	7	M4	H4	F	6	6	9	0.48	18.75	LA		ADX	1	1	1		NaK, WRTA; 011313D | XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251678	8	M4	H4	F	7	7	2.9	0.48	6.041666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251679	9	M4	H4	F	8	8	3.8	0.48	7.916666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251680	10	M4	E1	F	9	9	8.8	0.48	18.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251681	11	M4	E1	F	10	10	5	0.12	41.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251682	12	M4	E1	F	11	11	2.5	0.18	13.88888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251683	13	M4	E1	F	12	12	3	0.18	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251684	14	M4	E1	F	13	13	2.7	0.24	11.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251685	15	M4	E1	F	14	14	7.4	0.48	15.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251686	16	M4	E1	F	15	15	3.8	0.36	10.55555556	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251687	17	M4	E1	F	16	16	3.8	0.36	10.55555556	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251688	18	M5	G8	F	17	17	9	0.24	37.5	OA		ADX	1				NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251689	19	M5	G8	F	18	18	20.9	1.32	15.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251690	20	M5	G8	F	19	19	1.7	0.48	3.541666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251691	21	M5	G8	F	20	20	5	0.24	20.83333333	OA		ADX	1				NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251692	22	M5	G8	F	21	21	10.2	0.96	10.625	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251693	23	M5	G8	F	22	22	5.6	0.24	23.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251694	24	M5	C8	F	0	0	16.2	0.24	67.5	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251695	25	M5	C8	F	23	23	7.8	0.75	10.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251696	26	M5	C8	F	24	24	2.6	0.12	21.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251697	27	M5	C8	F	25	25	5.5	0.2	27.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251698	28	M5	C8	MD10	26													Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251699	29	M5	C8	MFO		26	2.5	0.12	20.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251700	30	M5	C8	MD21	27													Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251701	31	M5	C8	MF		27	5.2	0.96	5.416666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251702	32	M5	C8	MFO		28	2.9	0.2	14.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251703	33	M5	C8	F	28	29	1.9	0.36	5.277777778	LA		AX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251704	34	M5	C8	MD10	29													Surface Water	CDM Smith	N. Ross/DDE			
WT-10186	1514996-00	251705	35	M5	C8	MFO		30	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249065	1	N1	H4	F	1	1	2.7	0.2	13.5	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249066	2	N1	G1	F	2	2	12.1	1.2	10.08333333	LA		ADX	1	1	1		NaK, WRTA; 011154D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249067	3	N1	G1	F	3	3	5	1.2	4.166666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249068	4	N1	G1	F	0	0	34.2	0.75	45.6	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249069	5	N1	G1	F	4	4	5.5	0.24	22.91666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249070	6	N1	F2	F	5	5	45.4	0.48	94.58333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249071	7	N1	F2	F	6	6	1.8	0.12	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249072	8	N1	E5	F	7	7	3	0.48	6.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249073	9	N1	E5	F	8	8	2.5	0.24	10.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249074	10	N1	E5	F	9	9	7.8	0.18	43.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249075	11	N1	E5	F	10	10	2	0.4	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249076	12	N1	D2	F	11	11	1.7	0.24	7.083333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249077	13	N1	D2	F	12	12	3.1	0.48	6.458333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249078	14	N1	D2	F	13	13	14.7	0.48	30.625	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249079	15	N1	D2	F	14	14	7.1	0.48	14.79166667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249080	16	N1	D2	F	15	15	5	0.24	20.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249081	17	N2	I9	F	16	16	3.6	0.24	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249082	18	N2	I9	F	17	17	1.7	0.12	14.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249083	19	N2	I9	MD10	18													Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249084	20	N2	I9	MFO		18	1.8	0.12	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249085	21	N2	I9	F	19	19	1	0.06	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249086	22	N2	E7	F	20	20	8.8	0.72	12.22222222	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249087	23	N2	E7	F	21	21	1.7	0.48	3.541666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249088	24	N2	B10	F	22	22	4.6	0.24	19.16666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249089	25	N2	B10	F	23	23	4.5	0.36	12.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249090	26	N2	B10	F	24	24	5.2	0.24	21.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249091	27	N2	B10	MD21	25													Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249092	28	N2	B10	MF		25	12	1.2	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10187	1514996-00	249093	29	N2	B10	MFO		26	1.5	0.24	6.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249094	1	I2	G5	F	1	1	6.9	0.48	14.375	LA		ADX	1	1	1		NaK, WRTA; 011137D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249095	2	I2	G3	F	2	2	5.5	0.72	7.638888889	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249096	3	I2	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249097	4	I2	F6	F	3	3	2.1	0.18	11.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249098	5	I2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249099	6	I2	E3	F	4	4	9.7	0.6	16.16666667	LA		ADX	1				XX, WRTA; GB Interference	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249100	7	I2	E3	F	5	5	2.1	0.24	8.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249101	8	I2	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249102	9	I2	D2	MD10	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249103	10	I2	D2	MFO		6	1.5	0.12	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249104	11	I2	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249105	12	I2	D6	MD10	7													Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249106	13	I2	D6	MFO		7	4.8	0.48	10	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249107	14	I2	D6	F	8	8	14.3	0.48	29.79166667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249108	15	I2	C5	MD21	9												Additional analysis 8/29/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249109	16	I2	C5	MF		9	8.1	0.24	33.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249110	17	I2	C5	MFO		10	3.3	0.12	27.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249111	18	I2	C5	F	10	11	3.6	0.25	14.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249112	19	I2	C3	F	11	12	5.8	0.48	12.08333333	LA		ADX	1				NaK, W

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10188	1514996-00	249125	32	I3	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249126	33	I3	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249127	34	I3	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249128	35	I3	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249129	36	I3	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249130	37	I3	F6	MD10	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249131	38	I3	F6	MFO		22	2.3	0.1	23	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249132	39	I3	E5	F	22	23	5	0.36	13.88888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249133	40	I3	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249134	41	I3	E5	MD21	23													Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249135	42	I3	E5	MFO		24	7.4	0.24	30.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10188	1514996-00	249136	43	I3	E5	MFO		25	2.9	0.24	12.08333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250459	1	J2	B7	F	1	1	4.4	0.24	18.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250460	2	J2	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250461	3	J2	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250462	4	J2	D7	F	2	2	13.8	0.1	138	LA		ADX	1	1	1		NaK, WRTA; 011235D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250463	5	J2	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250464	6	J2	E10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250465	7	J2	E8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250466	8	J2	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250467	9	J2	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250468	10	J2	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250469	11	J2	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250470	12	J3	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250471	13	J3	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250472	14	J3	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250473	15	J3	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250474	16	J3	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250475	17	J3	E10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250476	18	J3	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250477	19	J3	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250478	20	J3	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10189	1514996-00	250479	21	J3	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250480	1	K1	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250481	2	K1	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250482	3	K1	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250483	4	K1	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250484	5	K1	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250485	6	K1	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250486	7	K1	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250487	8	K1	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250488	9	K1	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250489	10	K1	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250490	11	K1	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250491	12	K3	B2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250492	13	K3	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250493	14	K3	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250494	15	K3	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250495	16	K3	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250496	17	K3	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250497	18	K3	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250498	19	K3	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250499	20	K3	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10190	1514996-00	250500	21	K3	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250501	1	L1	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250502	2	L1	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250503	3	L1	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250504	4	L1	E10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250505	5	L1	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250506	6	L1	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250507	7	L1	H7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250508	8	L1	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250509	9	L1	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250510	10	L1	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250511	11	L1	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250512	12	L2	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250513	13	L2	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250514	14	L2	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250515	15	L2	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250516	16	L2	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250517	17	L2	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250518	18	L2	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250519	19	L2	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250520	20	L2	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10191	1514996-00	250521	21	L2	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10192	1514996-00	250522	1	M1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250523	2	M1	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250524	3	M1	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250525	4	M1	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250526	5	M1	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250527	6	M1	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250528	7	M1	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250529	8	M1	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250530	9	M1	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250531	10	M1	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250532	11	M1	B4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250533	12	M2	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250534	13	M2	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250535	14	M2	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250536	15	M2	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250537	16	M2	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250538	17	M2	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250539	18	M2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250540	19	M2	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250541	20	M2	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10192	1514996-00	250542	21	M2	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10193	1514996-00	250543	1	N2	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250544	2	N2	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250545	3	N2	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250546	4	N2	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250547	5	N2	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250548	6	N2	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250549	7	N2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250550	8	N2	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250551	9	N2	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250552	10	N2	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250553	11	N2	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250554	12	N3	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250555	13	N3	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250556	14	N3	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250557	15	N3	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250558	16	N3	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250559	17	N3	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250560	18	N3	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250561	19	N3	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250562	20	N3	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10193	1514996-00	250563	21	N3	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251706	1	O5	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251707	2	O5	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251708	3	O5	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251709	4	O5	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251710	5	O5	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251711	6	O5	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251712	7	O5	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251713	8	O5	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251714	9	O5	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251715	10	O5	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251716	11	O5	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251717	12	O5	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251718	13	O5	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251719	14	O5	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251720	15	O5	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251721	16	O5	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251722	17	O5	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251723	18	O5	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251724	19	O5	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251725	20	O5	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251726	21	O5	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251727	22	O6	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251728	23	O6	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251729	24	O6	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251730	25	O6	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251731	26	O6	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251732	27	O6	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251733	28	O6	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251734	29	O6	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251735	30	O6	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251736	31	O6	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251737	32	O6	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251738	33	O6	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251739	34	O6	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251740	35	O6	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251741	36	O6	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251742	37	O6	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251743	38	O6	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251744	39	O6	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251745	40	O6	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251746	41	O6	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10194	1514996-00	251747	42	O6	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251748	1	P5	J2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251749	2	P5	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251750	3	P5	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251751	4	P5	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251752	5	P5	G1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251753	6	P5	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251754	7	P5	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251755	8	P5	D4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251756	9	P5	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251757	10	P5	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251758	11	P5	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251759	12	P6	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)
Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - S%
WT-10195	1514996-00	251760	13	P6	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251761	14	P6	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251762	15	P6	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251763	16	P6	F9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251764	17	P6	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251765	18	P6	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251766	19	P6	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251767	20	P6	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10195	1514996-00	251768	21	P6	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251769	1	Q2	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251770	2	Q2	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251771	3	Q2	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251772	4	Q2	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251773	5	Q2	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251774	6	Q2	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251775	7	Q2	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251776	8	Q2	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251777	9	Q2	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251778	10	Q2	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251779	11	Q2	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251780	12	Q3	I10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251781	13	Q3	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251782	14	Q3	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251783	15	Q3	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251784	16	Q3	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251785	17	Q3	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251786	18	Q3	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251787	19	Q3	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251788	20	Q3	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10196	1514996-00	251789	21	Q3	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251790	1	R2	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251791	2	R2	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251792	3	R2	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251793	4	R2	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251794	5	R2	E1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251795	6	R2	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251796	7	R2	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251797	8	R2	C8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251798	9	R2	C1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251799	10	R2	B3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251800	11	R2	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251801	12	R3	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251802	13	R3	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251803	14	R3	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251804	15	R3	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251805	16	R3	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251806	17	R3	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251807	18	R3	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251808	19	R3	D9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251809	20	R3	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10197	1514996-00	251810	21	R3	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251811	1	S1	A4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251812	2	S1	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251813	3	S1	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251814	4	S1	D7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251815	5	S1	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251816	6	S1	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251817	7	S1	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251818	8	S1	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251819	9	S1	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251820	10	S1	I9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251821	11	S1	J7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251822	12	S2	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251823	13	S2	A10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251824	14	S2	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251825	15	S2	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251826	16	S2	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251827	17	S2	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251828	18	S2	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251829	19	S2	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251830	20	S2	J5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10198	1514996-00	251831	21	S2	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258758	1	T1	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258759	2	T1	I2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258760	3	T1	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258761	4	T1	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258762	5	T1	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258763	6	T1	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258764	7	T1	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258765	8	T1	C1	F	1	1	4.4	0.45	9.777777778	LA		ADX	1	1	1		NaK, WRTA; Asbestos_435 (Morphology), Asbestos_436 (Diffraction)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258766	9	T1	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258767	10	T1	A1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258768	11	T1	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258769	12	T2	J4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258770	13	T2	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258771	14	T2	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258772	15	T2	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258773	16	T2	F3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258774	17	T2	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258775	18	T2	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258776	19	T2	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258777	20	T2	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10199	1514996-00	258778	21	T2	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251832	1	U1	J10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251833	2	U1	J8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251834	3	U1	J6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251835	4	U1	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251836	5	U1	H10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251837	6	U1	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251838	7	U1	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251839	8	U1	F1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251840	9	U1	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251841	10	U1	E2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251842	11	U1	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251843	12	U3	I10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251844	13	U3	I8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251845	14	U3	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251846	15	U3	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251847	16	U3	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251848	17	U3	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251849	18	U3	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251850	19	U3	B1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251851	20	U3	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10200	1514996-00	251852	21	U3	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251853	1	A2	A10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251854	2	A2	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251855	3	A2	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251856	4	A2	C9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251857	5	A2	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251858	6	A2	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251859	7	A2	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251860	8	A2	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251861	9	A2	H8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251862	10	A2	I6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251863	11	A2	J9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251864	12	A3	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251865	13	A3	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251866	14	A3	H1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251867	15	A3	G3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251868	16	A3	F6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251869	17	A3	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251870	18	A3	D1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251871	19	A3	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251872	20	A3	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10201	1514996-00	251873	21	A3	A2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258779	1	B1	J1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258780	2	B1	I4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258781	3	B1	I7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258782	4	B1	H9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258783	5	B1	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258784	6	B1	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258785	7	B1	E8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258786	8	B1	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258787	9	B1	C6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258788	10	B1	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258789	11	B1	A6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258790	12	T1	A5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258791	13	T1	B7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258792	14	T1	C4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258793	15	T1	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258794	16	T1	E4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258795	17	T1	F10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258796	18	T1	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258797	19	T1	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258798	20	T1	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10202	1514996-00	258799	21	T1	G2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258800	1	Q2	J3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258801	2	Q2	I5	F	1	1	3.6	0.45	8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258802	3	Q2	I5	F	2	2	21.3	0.24	88.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258803	4	Q2	I5	F	3	3	4.1	0.12	34.16666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258804	5	Q2	I5	F	4	4	5.7	0.19	30	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258805	6	Q2	H2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258806	7	Q2	G4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258807	8	Q2	F1	F	5	5	2.8	0.09	31.11111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258808	9	Q2	F1	F	6	6	5.5	0.27	20.37037037	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258809	10	Q2	F1	F	7	7	5.1	0.25	20.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258810	11	Q2	F1	F	8	8	9.2	0.45	20.44444444	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258811	12	Q2	F1	F	9	9	4	0.25	16	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-00	258812	13	Q2	E4	B	10	10	21.2	1.2	17.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10203	1514996-002	258813	14	Q2	D2	F	11	11	19	0.5	38	LA		ADX	1				NaK, WRTA; Analysis begun 10/15/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258814	15	Q2	D2	F	12	12	3.2	0.21	15.23809524	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258815	16	Q2	D2	F	13	13	10.9	0.4	27.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258816	17	Q3	C2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258817	18	Q3	A1	F	14	14	3.7	0.3	12.33333333	LA		ADX	1				NaK, WRTA; Analysis begun 10/19/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258818	19	Q3	A4	F	15	15	10.2	0.45	22.66666667	LA		ADX	1				NaK, WRTA; Analysis begun 10/20/15 @ scope 04-03	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258819	20	Q4	B7	F	16	16	3.5	0.3	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258820	21	Q4	B7	F	17	17	5.7	0.1	57	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258821	22	Q4	A5	F	18	18	6.2	0.21	29.52380952	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258822	23	Q4	A5	F	19	19	14.7	0.14	105	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258823	24	Q4	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258824	25	Q4	D7	F	20	20	4.2	0.26	16.15384615	LA		ADX	1	1			NaK, WRTA; Diffraction (041514996-0024-Q4-D7-WRTA)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258825	26	Q4	D7	F	21	21	9.9	0.27	36.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258826	27	Q4	D7	F	22	22	3.2	0.28	11.42857143	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258827	28	Q4	D7	F	23	23	6.1	0.12	50.83333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258828	29	Q4	G6	F	24	24	2.1	0.09	23.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10203	1514996-002	258829	30	Q4	G6	F	25	25	4	0.19	21.05263158	LA		ADX	1	1			NaK, WRTA; Morphology (041514996-0024-Q4-G6-WRTA)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258830	1	D1	H4	F	1	1	20.5	0.55	37.27272727	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258831	2	D1	C6	F	2	2	7.8	0.22	35.45454546	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258832	3	D1	C6	F	3	3	3	0.27	11.11111111	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258833	4	D1	C6	F	4	4	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258834	5	D1	C6	F	5	5	6.9	0.4	17.25	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258835	6	D1	C6	F	6	6	7.7	0.3	25.66666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258836	7	D1	C6	F	7	7	14.7	0.27	54.44444444	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258837	8	D1	E4	MD10	8													Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258838	9	D1	E4	MF		8	3.7	0.25	14.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258839	10	D1	E4	MD20	9												Additional analysis 10/13/15	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258840	11	D1	E4	MFO		9	2.2	0.27	8.148148148	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258841	12	D1	E4	MFO		10	2.1	0.27	7.777777778	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258842	13	D1	E4	F	10	11	3.2	0.5	6.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258843	14	D1	E4	MD21	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258844	15	D1	E4	MF		12	5.1	0.24	21.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258845	16	D1	E4	MFO		13	1.6	0.27	5.925925926	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258846	17	D1	E4	F	12	14	1.6	0.11	14.54545455	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258847	18	D1	E4	F	13	15	3	0.18	16.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258848	19	D1	E4	F	14	16	5.7	0.2	28.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258849	20	D1	E4	MD10	15													Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258850	21	D1	E4	MFO		17	4	0.5	8	LA		ADX	1	1			NaK, WRTA; Asbestos_440(Diffraction)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258851	22	D2	I3	F	16	18	4	0.24	16.66666667	LA		ADX	1	1			NaK, WRTA; Asbestos_438(Morphology)	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258852	23	D2	I3	F	17	19	4.6	0.23	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258853	24	D2	G2	F	18	20	2.7	0.19	14.21052632	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258854	25	D2	G2	F	19	21	3.1	0.23	13.47826087	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258855	26	D2	G2	F	20	22	1.2	0.21	5.714285714	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258856	27	D2	G2	F	21	23	3.7	0.25	14.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258857	28	D2	B4	F	22	24	2.2	0.17	12.94117647	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258858	29	D2	B4	F	23	25	5	0.5	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258859	30	D2	B4	F	24	26	7.5	0.2	37.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10204	1514996-002	258860	31	D2	B4	F	25	27	13	0.5	26	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251874	1	E4	A7	F	1	1	1.3	0.15	8.666666667	LA		ADX	1	1			NaK, WRTA; Asbestos_782	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251875	2	E4	A7	F	2	2	7	0.5	14	LA		ADX	1	1	1		NaK, WRTA; Asbestos_783	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251876	3	E4	A7	F	3	3	4	0.2	20	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251877	4	E4	B10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251878	5	E4	B5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251879	6	E4	A3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251880	7	E4	C3	F	4	4	3.1	0.1	31	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251881	8	E4	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251882	9	E4	D10	F	5	5	2.5	0.25	10	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251883	10	E4	D5	F	6	6	4.6	0.8	5.75	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251884	11	E4	D5	F	7	7	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251885	12	E4	E3	F	8	8	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251886	13	E4	E7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251887	14	E4	F9	F	9	9	47	0.25	188	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251888	15	E4	F6	F	10	10	5.2	0.9	5.777777778	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251889	16	E4	G10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251890	17	E4	G7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251891	18	E4	H5	F	11	11	4.5	0.3	15	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251892	19	E4	H3	F	12	12	3.2	0.5	6.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251893	20	E4	H3	F	13	13	2.9	0.25	11.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251894	21	E6	A3	F	14	14	8.7	1.2	7.25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251895	22	E6	A8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251896	23	E6	B10	F	15	15	2.3	0.46	5.111111111	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251897	24	E6	B6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251898	25	E6	C4	F	16	16	10.1	0.5	20.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251899	26	E6	C2	F	17	17	3.1	0.55	5.636363636	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251900	27	E6	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251901	28	E6	D10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251902	29	E6	E8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251903	30	E6	E4	F	18	18	12.6	0.6	21	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251904	31	E6	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251905	32	E6	F6	F	19	19	9.8	0.7	14	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251906	33	E6	G8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251907	34	E6	G10	F	20	20	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251908	35	E6	G10	F	21	21	2.3	0.4	5.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251909	36	E6	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251910	37	E6	H3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251911	38	E6	I1	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251912	39	E6	J6	F	22	22	3.1	0.25	12.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251913	40	E6	J6	F	23	23	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251914	41	E6	I4	F	24	24	11.3	0.25	45.2	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251915	42	E6	J8	F	25	25	15.6	1.2	13	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10205	1514996-002	251916	43	E6	J8	F	26	26	12.6	1.7	7.411764706	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258873	1	F1	J6	F	1	1	4.7	0.45	10.44444444	LA		ADX	1	1	1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258874	2	F1	I3	F	2	2	9.6	0.15	64	LA		ADX	1	1	1		NaK, WRTA; Asbestos_784	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258875	3	F1	H7	F	3	3	7.2	1.3	5.538461538	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258876	4	F1	H7	F	4	4	7.4	0.4	18.5	LA		ADX	1	1	1		NaK, WRTA; Asbestos_785	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258877	5	F1	H7	F	5	5	5.2	0.6	8.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258878	6	F1	H7	F	6	6	3.1	0.25	12.4	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258879	7	F1	G4	F	7	7	2.4	0.1	24	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258880	8	F1	G4	F	8	8	2.7	0.4	6.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258881	9	F1	G4	F	9	9	3.4	0.2	17	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258882	10	F1	F2	F	10	10	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258883	11	F1	F2	MD10	11													Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258884	12	F1	F2	MFO		11	2.9	0.1	29	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258885	13	F1	F2	F	12	12	13.6	0.7	19.42857143	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258886	14	F1	F2	F	13	13	4.7	0.4	11.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258887	15	F1	E5	F	14	14	1.5	0.15	10	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258861	16	F1	E5	F	15	15	2.7	0.15	18	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258862	17	F1	E5	F	16	16	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258863	18	F2	A4	MD11	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258864	19	F2	A4	MF		17	9.7	0.3	32.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258865	20	F2	B10	F	18	18	2.1	0.3	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258866	21	F2	B10	F	19	19	2.6	0.3	8.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258867	22	F2	C7	F	20	20	1.9	0.1	19	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258868	23	F2	D5	F	21	21	5.8	0.45	12.88888889	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258869	24	F2	D5	F	22	22	3.2	0.25	12.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258870	25	F2	E3	F	23	23	2.4	0.7	3.428571429	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258871	26	F2	E3	F	24	24	5.1	0.45	11.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10206	1514996-002	258872	27	F2	E3	F	25	25	2.1	0.3	7	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258888	1	G2	B8	F	1	1	13.3	0.24	55.41666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258889	2	G2	B8	B	2	2	8.3	0.48	17.29166667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258890	3	G2	D10	F	3	3	13.8	0.48	28.75	LA		ADX	1	1	1		NaK, WRTA; 011319D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258891	4	G2	C6	F	4	4	5.2	0.36	14.44444444	LA		ADX	1	1	1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258892	5	G2	C6	F	0	0	21.6	0.24	90	LA		ADX	1	1	1		NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258893	6	G2	C6	F	5	5	11.9	0.48	24.79166667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258894	7	G2	C6	MD10	6													Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258895	8	G2	C6	MFO		6	2.2	0.48	4.583333333	LA		ADX	1				XK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258896	9	G2	C6	F	7	7	20.9	2.1	9.952380952	OA		ADX	1	1	1		NaK, NR, XCGBLD | 011325D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258897	10	G2	E8	F	8	8	36.8	1.2	30.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258898	11	G2	E8	F	9	9	6.9	0.24	28.75	OA		ADX	1				NaK, NR	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258899	12	G2	E8	MD10	10													Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258900	13	G2	E8	MFO		10	3.3	0.72	4.583333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258901	14	G2	E8	F	11	11	6.4	0.25	25.6	OA		ADX	1				NaK, NR; XCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258902	15	G2	G7	F	12	12	3.1	0.25	12.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258903	16	G2	I8	F	13	13	10	1.5	6.666666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258904	17	G2	I8	F	14	14	4.1	0.24	17.08333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258905	18	G3	B3	F	15	15	8.1	0.18	45	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258906	19	G3	B3	MD21	16													Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258907	20	G3	B3	MFO		16	8.1	0.24	33.75	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258908	21	G3	B3	MFO		17	2.4	0.18	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258909	22	G3	B3	MD21	17													Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258910	23	G3	B3	MFO		18	12.1	0.24	50.41666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258911	24	G3	B3	MFO		19	2.9	0.24	12.08333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258912	25	G3	B3	F	18	20	4.8	0.96	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258913	26	G3	E4	F	0	0	4.2	0.72	5.833333333	LA		ADX	1				NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258914	27	G3	E4	F	19	21	13.1	1.1	11.90909091	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258915	28	G3	E4	F	20	22	6.2	0.48	12.91666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10207	1514996-002	258916

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SURFACE WATER (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	intID Struc	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CH Not Counted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - SN
WT-10208	1514996-00(	258937	16	H3	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10208	1514996-00(	258938	17	H3	E8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10208	1514996-00(	258939	18	H3	D5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10208	1514996-00(	258940	19	H3	C7	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10208	1514996-00(	258941	20	H3	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10208	1514996-00(	258942	21	H3	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258943	1	I2	I3	F	1	1	3	0.96	3.125	LA		ADX	1		1		XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258944	2	I2	I3	F	2	2	2.1	0.18	11.66666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258945	3	I2	I3	F	3	3	5.2	0.24	21.66666667	LA		ADX	1	1	1		NaK, WRTA; 011341D	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258946	4	I2	H5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258947	5	I2	G3	MD11	0													Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258948	6	I2	G3	MFO		0	8.4	0.24	35	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258949	7	I2	G3	MD10	4													Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258950	8	I2	G3	MFO		4	1.5	0.18	8.333333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258951	9	I2	G3	F	5	5	2.6	0.36	7.222222222	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258952	10	I2	F2	F	6	6	1.9	0.18	10.55555556	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258953	11	I2	F4	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258954	12	I2	E5	F	7	7	2	0.24	8.333333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258955	13	I2	E5	F	8	8	2.2	0.24	9.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258956	14	I2	E5	F	9	9	1.7	0.24	7.083333333	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258957	15	I2	E5	F	10	10	2.1	0.12	17.5	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258958	16	I2	E5	F	11	11	2.5	0.1	25	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258959	17	I2	C3	F	12	12	2.4	0.18	13.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258960	18	I2	B5	F	13	13	9.6	0.48	20	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258961	19	I2	B5	F	14	14	3	0.12	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258962	20	I3	C3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258963	21	I3	D6	F	15	15	4.1	0.25	16.4	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258964	22	I3	D2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258965	23	I3	E3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258966	24	I3	E5	F	16	16	1.2	0.24	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258967	25	I3	F6	F	17	17	3.6	0.6	6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258968	26	I3	F4	F	18	18	1.2	0.24	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258969	27	I3	F2	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258970	28	I3	G5	F	19	19	1.2	0.24	5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258971	29	I3	H2	F	20	20	4.3	0.6	7.166666667	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258972	30	I3	H2	F	21	21	4.1	0.24	17.08333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258973	31	I3	H2	F	22	22	2.4	0.6	4	LA		ADX	1				XX, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258974	32	I3	H6	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258975	33	I3	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10209	1514996-00(	258976	34	I3	I3	ND														Surface Water	CDM Smith	N. Ross/DDE			
WT-10210	1514996-00(	258977	1	K2	B8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258978	2	K2	C10	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258979	3	K2	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258980	4	K2	D6	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258981	5	K2	E9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258982	6	K2	F7	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258983	7	K2	G5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258984	8	K2	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258985	9	K2	H7	MD21	1													Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258986	10	K2	H7	MF		1	6.9	0.18	38.33333333	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258987	11	K2	H7	MF		2	2.1	0.48	4.375	LA		ADX	1	1	1		NaK, WRTA; 011353D	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258988	12	K2	I5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258989	13	K2	I10	F	0	0	9	0.36	25	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258990	14	K3	I7	F	2	3	3.6	0.24	15	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258991	15	K3	H4	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258992	16	K3	G6	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258993	17	K3	G9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258994	18	K3	F8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258995	19	K3	E5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258996	20	K3	D3	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258997	21	K3	D8	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258998	22	K3	B9	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10210	1514996-00(	258999	23	K3	C5	ND														Surface Water	CDM Smith	N. Ross/DDE			EF
WT-10173	1514996-00(	261600	1	T4	A7	F	1	1	4.4	0.25	17.6	LA		ADX	1	1	1		NaK, WRTA; Asbestos_791, Asbestos_792	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261601	2	T4	A7	F	2	2	2.3	0.1	23	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261602	3	T4	A7	F	3	3	1.7	0.3	5.666666667	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261603	4	T4	A7	F	4	4	10.2	0.7	14.57142857	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261604	5	T4	A7	F	5	5	3.2	0.4	8	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261605	6	T4	A7	F	6	6	2.9	0.15	19.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261606	7	T4	A7	F	7	7	8.3	0.05	166	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261607	8	T4	A7	F	8	8	2.3	0.1	23	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261608	9	T4	H6	F	9	9	5.9	0.15	39.33333333	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261609	10	T4	H6	F	10	10	6.5	0.25	26	LA		ADX	1		1		NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261610	11	T4	H6	F	11	11	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261611	12	T4	H6	F	12	12	18.9	0.9	21	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261612	13	T4	H6	F	13	13	7.6	1.3	5.846153846	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261613	14	T4	H6	F	14	14	7.5	0.3	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261614	15	T5	A7	F	15	15	31.2	0.45	69.33333333	LA		ADX	1				NaK, WRTA; XGBLD	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261615	16	T5	A7	MD10	16													Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261616	17	T5	A7	MFO		16	2.7	0.25	10.8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261617	18	T5	A7	F	17	17	3.9	0.55	7.090909091	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261618	19	T5	D8	F	18	18	2.5	0.1	25	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261619	20	T5	D8	F	19	19	11.6	1	11.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261620	21	T5	D8	F	20	20	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261621	22	T5	D8	MD21	21													Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261622	23	T5	D8	MF		21	9.4	0.25	37.6	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261623	24	T5	D8	MF		22	2.7	0.05	54	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261624	25	T5	H9	F	22	23	0.8	0.1	8	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261625	26	T5	H9	F	23	24	9.9	0.3	33	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261626	27	T5	H9	F	24	25	1.8	0.2	9	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261627	28	T5	H9	MD10	25													Surface Water	CDM Smith	N. Ross/DDE			
WT-10173	1514996-00(	261628	29	T5	H9	MF		26	3.5	0.1	35	LA		ADX	1				NaK, WRTA	Surface Water	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING ABS AIR (2012)

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-30050	230478	1	A1	A4	ND												1		CDM Smith	N. Ross			
CL-30050	230479	2	A1	A5	ND												1		CDM Smith	N. Ross			
CL-30050	230480	3	A1	A6	ND												1		CDM Smith	N. Ross			
CL-30050	230481	4	A1	A7	ND												1		CDM Smith	N. Ross			
CL-30050	230482	5	A1	B2	ND												1		CDM Smith	N. Ross			
CL-30050	230483	6	A1	B6	ND												1		CDM Smith	N. Ross			
CL-30050	230484	7	A1	C6	ND												1		CDM Smith	N. Ross			
CL-30050	230485	8	A1	C7	ND												1		CDM Smith	N. Ross			
CL-30050	230486	9	A1	C8	ND												1		CDM Smith	N. Ross			
CL-30050	230487	10	A1	C9	ND												1		CDM Smith	N. Ross			
CL-30050	230488	11	A1	D3	ND												1		CDM Smith	N. Ross			
CL-30050	230489	12	A1	D6	ND												1		CDM Smith	N. Ross			
CL-30050	230490	13	A1	D8	ND												1		CDM Smith	N. Ross			
CL-30050	230491	14	A1	D9	ND												1		CDM Smith	N. Ross			
CL-30050	230492	15	A1	E4	ND												1		CDM Smith	N. Ross			
CL-30050	230493	16	A1	E6	ND												1		CDM Smith	N. Ross			
CL-30050	230494	17	A1	E7	ND												1		CDM Smith	N. Ross			
CL-30050	230495	18	A1	E8	ND												1		CDM Smith	N. Ross			
CL-30050	230496	19	A1	E9	ND												1		CDM Smith	N. Ross			
CL-30050	230497	20	A1	F1	ND												1		CDM Smith	N. Ross			
CL-30050	230498	21	A1	F2	ND												1		CDM Smith	N. Ross			
CL-30050	230499	22	A1	F3	ND												1		CDM Smith	N. Ross			
CL-30050	230500	23	A1	F5	ND												1		CDM Smith	N. Ross			
CL-30050	230501	24	A1	F7	ND												1		CDM Smith	N. Ross			
CL-30050	230502	25	A1	F10	ND												1		CDM Smith	N. Ross			
CL-30050	230503	26	A1	G1	ND												1		CDM Smith	N. Ross			
CL-30050	230504	27	A1	G2	ND												1		CDM Smith	N. Ross			
CL-30050	230505	28	A1	G3	ND												1		CDM Smith	N. Ross			
CL-30050	230506	29	A1	G4	ND												1		CDM Smith	N. Ross			
CL-30050	230507	30	A1	H1	ND												1		CDM Smith	N. Ross			
CL-30050	230508	31	A1	H2	ND												1		CDM Smith	N. Ross			
CL-30050	230509	32	A1	H4	ND												1		CDM Smith	N. Ross			
CL-30050	230510	33	A1	H5	ND												1		CDM Smith	N. Ross			
CL-30050	230511	34	A1	H6	ND												1		CDM Smith	N. Ross			
CL-30050	230512	35	A1	H7	ND												1		CDM Smith	N. Ross			
CL-30050	230513	36	A1	J1	ND												1		CDM Smith	N. Ross			
CL-30050	230514	37	A3	A5	ND												1		CDM Smith	N. Ross			
CL-30050	230515	38	A3	A7	ND												1		CDM Smith	N. Ross			
CL-30050	230516	39	A3	B1	ND												1		CDM Smith	N. Ross			
CL-30050	230517	40	A3	B7	ND												1		CDM Smith	N. Ross			
CL-30050	230518	41	A3	C1	ND												1		CDM Smith	N. Ross			
CL-30050	230519	42	A3	C2	ND												1		CDM Smith	N. Ross			
CL-30050	230520	43	A3	C3	ND												1		CDM Smith	N. Ross			
CL-30050	230521	44	A3	C9	ND												1		CDM Smith	N. Ross			
CL-30050	230522	45	A3	D1	ND												1		CDM Smith	N. Ross			
CL-30050	230523	46	A3	D2	ND												1		CDM Smith	N. Ross			
CL-30050	230524	47	A3	D3	ND												1		CDM Smith	N. Ross			
CL-30050	230525	48	A3	D7	ND												1		CDM Smith	N. Ross			
CL-30050	230526	49	A3	D8	ND												1		CDM Smith	N. Ross			
CL-30050	230527	50	A3	D9	ND												1		CDM Smith	N. Ross			
CL-30050	230528	51	A3	D10	ND												1		CDM Smith	N. Ross			
CL-30050	230529	52	A3	E1	ND												1		CDM Smith	N. Ross			
CL-30050	230530	53	A3	E6	ND												1		CDM Smith	N. Ross			
CL-30050	230531	54	A3	E7	ND												1		CDM Smith	N. Ross			
CL-30050	230532	55	A3	E9	ND												1		CDM Smith	N. Ross			
CL-30050	230533	56	A3	F2	ND												1		CDM Smith	N. Ross			
CL-30050	230534	57	A3	F4	ND												1		CDM Smith	N. Ross			
CL-30050	230535	58	A3	F8	ND												1		CDM Smith	N. Ross			
CL-30050	230536	59	A3	G1	ND												1		CDM Smith	N. Ross			
CL-30050	230537	60	A3	G2	ND												1		CDM Smith	N. Ross			
CL-30050	230538	61	A3	G4	ND												1		CDM Smith	N. Ross			
CL-30050	230539	62	A3	G5	ND												1		CDM Smith	N. Ross			
CL-30050	230540	63	A3	G7	ND												1		CDM Smith	N. Ross			
CL-30050	230541	64	A3	G8	ND												1		CDM Smith	N. Ross			
CL-30050	230542	65	A3	H1	ND												1		CDM Smith	N. Ross			
CL-30050	230543	66	A3	H2	ND												1		CDM Smith	N. Ross			
CL-30050	230544	67	A3	H3	ND												1		CDM Smith	N. Ross			
CL-30050	230545	68	A3	H5	ND												1		CDM Smith	N. Ross			
CL-30050	230546	69	A3	H7	ND												1		CDM Smith	N. Ross			
CL-30050	230547	70	A3	H8	ND												1		CDM Smith	N. Ross			
CL-30050	230548	71	A3	H10	ND												1		CDM Smith	N. Ross			
CL-30050	230549	72	A3	I4	ND												1		CDM Smith	N. Ross			
CL-30050	230550	73	A3	I5	ND												1		CDM Smith	N. Ross			
CL-30050	230551	74	A3	J4	ND												1		CDM Smith	N. Ross			
CL-30050	230552	75	A3	J5	ND												1		CDM Smith	N. Ross			
CL-30050	230553	76	A5	A5	ND												1		CDM Smith	N. Ross			
CL-30050	230554	77	A5	A6	F	0	0	8	0.45	17.777778	LA		ADX	1		1	1	s countable grid	CDM Smith	N. Ross			
CL-30050	230555	78	A5	A7	ND												1		CDM Smith	N. Ross			
CL-30050	230556	79	A5	A8	ND												1		CDM Smith	N. Ross			
CL-30050	230557	80	A5	A10	MD11	1											1		CDM Smith	N. Ross			
CL-30050	230558	81	A5	A10	MF		1	7.3	0.5	14.6	LA		ADX	1	1	1	NaK, WRTA; Photo 06613		CDM Smith	N. Ross			
CL-30050	230559	82	A5	B1	ND												1		CDM Smith	N. Ross			
CL-30050	230560	83	A5	B2	ND												1		CDM Smith	N. Ross			
CL-30050	230561	84	A5	B3	ND												1		CDM Smith	N. Ross			
CL-30050	230562	85	A5	B4	ND												1		CDM Smith	N. Ross			
CL-30050	230563	86	A5	B6	ND												1		CDM Smith	N. Ross			
CL-30050	230564	87	A5	B7	ND												1		CDM Smith	N. Ross			
CL-30050	230565	88	A5	B8	ND												1		CDM Smith	N. Ross			
CL-30050	230566	89	A5	B9	ND												1		CDM Smith	N. Ross			
CL-30050	230567	90	A5	B10	ND												1		CDM Smith	N. Ross			
CL-30050	230568	91	A5	C1	ND												1		CDM Smith	N. Ross			
CL-30050	230569	92	A5	C3	ND												1		CDM Smith	N. Ross			
CL-30050	230570	93	A5	C4	ND												1		CDM Smith	N. Ross			
CL-30050	230571	94	A5	C6	ND												1		CDM Smith	N. Ross			
CL-30050	230572	95	A5	C7	B	2	2	22.5	2.6	8.653846	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30050	230573	96	A5	C8	ND												1		CDM Smith	N. Ross			
CL-30050	230574	97	A5	C9	ND												1		CDM Smith	N. Ross			
CL-30050	230575	98	A5	C10	ND												1		CDM Smith	N. Ross			
CL-30050	230576	99	A5	D1	ND												1		CDM Smith	N. Ross			
CL-30050	230577	100	A5	D3	ND												1		CDM Smith	N. Ross			
CL-30050	230578	101	A5	D4	ND												1		CDM Smith	N. Ross			
CL-30050	230579	102	A5	D5	ND												1		CDM Smith	N. Ross			
CL-30050	230580	103	A5	D6	ND												1		CDM Smith	N. Ross			
CL-30050	230581	104	A5	D7	ND												1		CDM Smith	N. Ross			
CL-30050	230582	105	A5	D8	ND												1		CDM Smith	N. Ross			
CL-30050	230583	106	A5	D9	ND												1		CDM Smith	N. Ross			
CL-30050	230584	107	A5	D10	ND												1		CDM Smith	N. Ross			
CL-30050	230585	108	A5	E2	ND												1		CDM Smith	N. Ross			
CL-30050	230586	109	A5	E3	ND												1		CDM Smith	N. Ross			
CL-30050	230587	110	A5	E5	ND												1		CDM Smith	N. Ross			
CL-30050	230588	111	A5	E6	ND												1		CDM Smith	N. Ross			
CL-30050	230589	112	A5	E7	ND												1		CDM Smith	N. Ross			
CL-30050	230590	113	A5	E8	ND												1		CDM Smith	N. Ross			
CL-30050	230591	114	A5	E9	ND												1		CDM Smith	N. Ross			
CL-30050	230592	115	A5	E10	ND												1		CDM Smith	N. Ross			
CL-30050	230593	116	A5	F1	ND												1		CDM Smith	N. Ross			
CL-30050	230594	117	A5	F2	ND												1		CDM Smith	N. Ross			
CL-30050	230595	118	A5	F5	ND												1		CDM Smith	N. Ross			
CL-30050	230596	119	A5	F6	ND												1		CDM Smith	N. Ross			
CL-30050	230597	120	A5	F7	ND												1		CDM Smith	N. Ross			
CL-30050	230598	121	A5	F8	ND												1		CDM Smith	N. Ross			
CL-30050	230599	122	A5	F9	ND												1		CDM Smith	N. Ross			
CL-30050	230600	123	A5	G2	ND												1		CDM Smith	N. Ross			
CL-30050	230601	124	A5	G3	ND												1		CDM Smith	N. Ross			
CL-30050	230602	125	A5	G4	ND												1		CDM Smith	N. Ross			
CL-30050	230603	126	A5	G5	ND												1		CDM Smith	N. Ross			
CL-30050	230604	127	A5	G6	ND												1		CDM Smith	N. Ross			
CL-30050	230605	128	A5	G7	ND												1		CDM Smith	N. Ross			
CL-30050	230606	129	A5	G8	ND												1		CDM Smith	N. Ross			
CL-30050	230607	130	A5	G9	ND												1		CDM Smith	N. Ross			
CL-30050	230608	131	A5	H2	ND												1		CDM Smith	N. Ross			
CL-30050	230609	132	A5	H3	ND												1		CDM Smith	N. Ross			
CL-30050	230610	133	A5	H5	ND												1		CDM Smith	N. Ross			
CL-30050	230611	134	A5	H6	ND												1		CDM Smith	N. Ross			
CL-30050	230612	135	A5	H7	ND												1		CDM Smith	N. Ross			
CL-30050	230613	136	A5	H8	ND												1		CDM Smith	N. Ross			
CL-30050	230614	137	A5	H9	ND												1		CDM Smith	N. Ross			
CL-30050	230615	138	A5	H10	ND												1		CDM Smith	N. Ross			
CL-30054	230616	1	B2	E7	ND												1		CDM Smith	N. Ross			
CL-30054	230617	2	B2	E9	F	1	1	13.1	0.75	17.466667	LA		ADX	1	1	1	1	s 06612, 06613	CDM Smith	N. Ross			
CL-30054	230618	3	B2	G2	ND												1		CDM Smith	N. Ross			
CL-30054	230619	4	B2	G6	ND												1		CDM Smith	N. Ross			
CL-30054	230620	5	B2	G8	ND												1		CDM Smith	N. Ross			
CL-30054	230621	6	B2	H4	ND												1		CDM Smith	N. Ross			
CL-30054	230622	7	B2	H9	ND												1		CDM Smith	N. Ross			
CL-30054	230623	8	B2	I3	ND												1		CDM Smith	N. Ross			
CL-30054	230624	9	B2	I10	ND												1		CDM Smith	N. Ross			
CL-30054	230625	10	B2	J2	ND												1		CDM Smith	N. Ross			
CL-30054	230626	11	B4	A6	ND												1		CDM Smith	N. Ross			
CL-30054	230627	12	B4	A8	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING ABS AIR (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-30054	230628	13	B4	B7	ND												1		CDM Smith	N. Ross			
CL-30054	230629	14	B4	B9	ND												1		CDM Smith	N. Ross			
CL-30054	230630	15	B4	C4	ND												1		CDM Smith	N. Ross			
CL-30054	230631	16	B4	C6	ND												1		CDM Smith	N. Ross			
CL-30054	230632	17	B4	C8	MD11	2											1		CDM Smith	N. Ross			
CL-30054	230633	18	B4	C8	MF		2	8.9	0.6	14.833333	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
CL-30054	230634	19	B4	D7	ND												1		CDM Smith	N. Ross			
CL-30054	230635	20	B4	D9	ND												1		CDM Smith	N. Ross			
CL-30054	230636	21	B4	E2	ND												1		CDM Smith	N. Ross			
CL-30054	230637	22	B4	E4	ND												1		CDM Smith	N. Ross			
CL-30054	230638	23	B4	E6	ND												1		CDM Smith	N. Ross			
CL-30054	230639	24	B4	E10	ND												1		CDM Smith	N. Ross			
CL-30054	230640	25	B4	F1	ND												1		CDM Smith	N. Ross			
CL-30054	230641	26	B4	F3	ND												1		CDM Smith	N. Ross			
CL-30054	230642	27	B4	F7	ND												1		CDM Smith	N. Ross			
CL-30054	230643	28	B4	G2	ND												1		CDM Smith	N. Ross			
CL-30054	230644	29	B4	G4	ND												1		CDM Smith	N. Ross			
CL-30054	230645	30	B4	G6	ND												1		CDM Smith	N. Ross			
CL-30054	230646	31	B4	H1	ND												1		CDM Smith	N. Ross			
CL-30054	230647	32	B4	H7	ND												1		CDM Smith	N. Ross			
CL-30054	230648	33	B4	I2	ND												1		CDM Smith	N. Ross			
CL-30054	230649	34	B4	I6	ND												1		CDM Smith	N. Ross			
CL-30054	230650	35	B4	I8	ND												1		CDM Smith	N. Ross			
CL-30054	230651	36	B4	J4	ND												1		CDM Smith	N. Ross			
CL-30054	230652	37	B4	J9	ND												1		CDM Smith	N. Ross			
CL-30054	230653	38	B6	A4	ND												1		CDM Smith	N. Ross			
CL-30054	230654	39	B6	A6	ND												1		CDM Smith	N. Ross			
CL-30054	230655	40	B6	A8	ND												1		CDM Smith	N. Ross			
CL-30054	230656	41	B6	B1	ND												1		CDM Smith	N. Ross			
CL-30054	230657	42	B6	B3	ND												1		CDM Smith	N. Ross			
CL-30054	230658	43	B6	B5	ND												1		CDM Smith	N. Ross			
CL-30054	230659	44	B6	C4	ND												1		CDM Smith	N. Ross			
CL-30054	230660	45	B6	C7	ND												1		CDM Smith	N. Ross			
CL-30054	230661	46	B6	C9	ND												1		CDM Smith	N. Ross			
CL-30054	230662	47	B6	D3	F	3	3	17.5	0.5	35	LA		ADX	1		1	1	WRTA; decorate	CDM Smith	N. Ross			
CL-30054	230663	48	B6	D5	ND												1		CDM Smith	N. Ross			
CL-30054	230664	49	B6	D9	ND												1		CDM Smith	N. Ross			
CL-30054	230665	50	B6	E2	ND												1		CDM Smith	N. Ross			
CL-30054	230666	51	B6	E4	ND												1		CDM Smith	N. Ross			
CL-30054	230667	52	B6	E8	ND												1		CDM Smith	N. Ross			
CL-30054	230668	53	B6	F5	ND												1		CDM Smith	N. Ross			
CL-30054	230669	54	B6	G2	ND												1		CDM Smith	N. Ross			
CL-30054	230670	55	B6	G6	ND												1		CDM Smith	N. Ross			
CL-30054	230671	56	B6	G8	ND												1		CDM Smith	N. Ross			
CL-30054	230672	57	B6	H3	ND												1		CDM Smith	N. Ross			
CL-30054	230673	58	B6	H5	ND												1		CDM Smith	N. Ross			
CL-30054	230674	59	B6	H7	ND												1		CDM Smith	N. Ross			
CL-30054	230675	60	B6	I4	ND												1		CDM Smith	N. Ross			
CL-30054	230676	61	B6	I6	ND												1		CDM Smith	N. Ross			
CL-30054	230677	62	B6	I8	ND												1		CDM Smith	N. Ross			
CL-30054	230678	63	B6	J2	ND												1		CDM Smith	N. Ross			
CL-30054	230679	64	B8	A7	ND												1		CDM Smith	N. Ross			
CL-30054	230680	65	B8	B6	ND												1		CDM Smith	N. Ross			
CL-30054	230681	66	B8	C5	ND												1		CDM Smith	N. Ross			
CL-30054	230682	67	B8	D6	ND												1		CDM Smith	N. Ross			
CL-30054	230683	68	B8	D8	ND												1		CDM Smith	N. Ross			
CL-30054	230684	69	B8	D10	ND												1		CDM Smith	N. Ross			
CL-30054	230685	70	B8	E3	ND												1		CDM Smith	N. Ross			
CL-30054	230686	71	B8	E7	ND												1		CDM Smith	N. Ross			
CL-30054	230687	72	B8	E9	ND												1		CDM Smith	N. Ross			
CL-30054	230688	73	B8	G2	ND												1		CDM Smith	N. Ross			
CL-30054	230689	74	B8	G4	ND												1		CDM Smith	N. Ross			
CL-30054	230690	75	B8	G6	ND												1		CDM Smith	N. Ross			
CL-30054	230691	76	B8	G8	ND												1		CDM Smith	N. Ross			
CL-30054	230692	77	B8	G10	ND												1		CDM Smith	N. Ross			
CL-30054	230693	78	B8	F1	ND												1		CDM Smith	N. Ross			
CL-30054	230694	79	B8	F3	ND												1		CDM Smith	N. Ross			
CL-30054	230695	80	B8	F5	ND												1		CDM Smith	N. Ross			
CL-30054	230696	81	B8	F7	ND												1		CDM Smith	N. Ross			
CL-30054	230697	82	B8	F9	ND												1		CDM Smith	N. Ross			
CL-30054	230698	83	B8	H2	ND												1		CDM Smith	N. Ross			
CL-30054	230699	84	B8	H4	ND												1		CDM Smith	N. Ross			
CL-30054	230700	85	B8	H6	ND												1		CDM Smith	N. Ross			
CL-30056	230701	1	C1	A9	ND												1		CDM Smith	N. Ross			
CL-30056	230702	2	C1	B5	ND												1		CDM Smith	N. Ross			
CL-30056	230703	3	C1	B7	ND												1		CDM Smith	N. Ross			
CL-30056	230704	4	C1	C4	ND												1		CDM Smith	N. Ross			
CL-30056	230705	5	C1	C6	ND												1		CDM Smith	N. Ross			
CL-30056	230706	6	C1	C8	ND												1		CDM Smith	N. Ross			
CL-30056	230707	7	C1	C10	ND												1		CDM Smith	N. Ross			
CL-30056	230708	8	C1	D5	ND												1		CDM Smith	N. Ross			
CL-30056	230709	9	C1	D7	ND												1		CDM Smith	N. Ross			
CL-30056	230710	10	C1	D9	ND												1		CDM Smith	N. Ross			
CL-30056	230711	11	C1	E2	ND												1		CDM Smith	N. Ross			
CL-30056	230712	12	C1	E4	ND												1		CDM Smith	N. Ross			
CL-30056	230713	13	C1	E6	ND												1		CDM Smith	N. Ross			
CL-30056	230714	14	C1	E8	ND												1		CDM Smith	N. Ross			
CL-30056	230715	15	C1	F1	ND												1		CDM Smith	N. Ross			
CL-30056	230716	16	C1	F3	ND												1		CDM Smith	N. Ross			
CL-30056	230717	17	C1	F5	ND												1		CDM Smith	N. Ross			
CL-30056	230718	18	C1	F7	ND												1		CDM Smith	N. Ross			
CL-30056	230719	19	C1	F9	ND												1		CDM Smith	N. Ross			
CL-30056	230720	20	C1	G2	ND												1		CDM Smith	N. Ross			
CL-30056	230721	21	C1	G4	ND												1		CDM Smith	N. Ross			
CL-30056	230722	22	C1	G6	ND												1		CDM Smith	N. Ross			
CL-30056	230723	23	C1	G8	ND												1		CDM Smith	N. Ross			
CL-30056	230724	24	C1	H1	ND												1		CDM Smith	N. Ross			
CL-30056	230725	25	C1	H5	ND												1		CDM Smith	N. Ross			
CL-30056	230726	26	C1	H7	ND												1		CDM Smith	N. Ross			
CL-30056	230727	27	C1	H9	ND												1		CDM Smith	N. Ross			
CL-30056	230728	28	C1	I2	ND												1		CDM Smith	N. Ross			
CL-30056	230729	29	C1	I4	ND												1		CDM Smith	N. Ross			
CL-30056	230730	30	C1	I6	ND												1		CDM Smith	N. Ross			
CL-30056	230731	31	C1	I8	ND												1		CDM Smith	N. Ross			
CL-30056	230732	32	C1	J1	ND												1		CDM Smith	N. Ross			
CL-30056	230733	33	C1	J7	ND												1		CDM Smith	N. Ross			
CL-30056	230734	34	C3	A2	ND												1		CDM Smith	N. Ross			
CL-30056	230735	35	C3	A4	ND												1		CDM Smith	N. Ross			
CL-30056	230736	36	C3	A6	ND												1		CDM Smith	N. Ross			
CL-30056	230737	37	C3	B3	ND												1		CDM Smith	N. Ross			
CL-30056	230738	38	C3	B5	ND												1		CDM Smith	N. Ross			
CL-30056	230739	39	C3	C1	ND												1		CDM Smith	N. Ross			
CL-30056	230740	40	C3	C10	ND												1		CDM Smith	N. Ross			
CL-30056	230741	41	C3	D2	ND												1		CDM Smith	N. Ross			
CL-30056	230742	42	C3	D7	ND												1		CDM Smith	N. Ross			
CL-30056	230743	43	C3	D9	ND												1		CDM Smith	N. Ross			
CL-30056	230744	44	C3	E3	ND												1		CDM Smith	N. Ross			
CL-30056	230745	45	C3	E5	ND												1		CDM Smith	N. Ross			
CL-30056	230746	46	C3	F9	ND												1		CDM Smith	N. Ross			
CL-30056	230747	47	C3	G2	ND												1		CDM Smith	N. Ross			
CL-30056	230748	48	C3	G6	ND												1		CDM Smith	N. Ross			
CL-30056	230749	49	C3	H3	ND												1		CDM Smith	N. Ross	Grid_grid opening should be C3_H3, not C3_A3 according to benchsheet (page 4).	3/21/2013	
CL-30056	230750	50	C3	H7	ND												1		CDM Smith	N. Ross			
CL-30056	230751	51	C3	H9	ND												1		CDM Smith	N. Ross			
CL-30056	230752	52	C3	I2	ND												1		CDM Smith	N. Ross			
CL-30056	230753	53	C3	I4	ND												1		CDM Smith	N. Ross			
CL-30056	230754	54	C3	I8	ND												1		CDM Smith	N. Ross			
CL-30056	230755	55	C3	I10	ND												1		CDM Smith	N. Ross			
CL-30056	230756	56	C3	J1	ND												1		CDM Smith	N. Ross			
CL-30056	230757	57	C3	J4	ND												1		CDM Smith	N. Ross			
CL-30056	230758	58	C3	J9	ND												1		CDM Smith	N. Ross			
CL-30056	230759	59	C5	A2	ND												1		CDM Smith	N. Ross			
CL-30056	230760	60	C5	A4	ND												1		CDM Smith	N. Ross			
CL-30056	230761	61	C5	A6	ND												1		CDM Smith	N. Ross			
CL-30056	230762	62	C5	A8	ND												1		CDM Smith	N. Ross			
CL-30056	230763	63	C5	A10	ND												1		CDM Smith	N. Ross			
CL-30056	230764	64	C5	B5	ND												1		CDM Smith	N. Ross			
CL-30056	230765	65	C5	B7	ND												1		CDM Smith	N. Ross			
CL-30056	230766	66	C5	B9	ND												1		CDM Smith	N. Ross			
CL-30056	230767	67	C5	C2	ND												1		CDM Smith	N. Ross			
CL-30056	230768	68	C5	C4	ND												1		CDM Smith	N. Ross			
CL-30056	230769	69	C5	C6	ND												1		CDM Smith	N. Ross			
CL-30056	230770	70	C5	C8	ND												1		CDM Smith	N. Ross			
CL-30056	230771	71	C5	D1	ND												1		CDM Smith	N. Ross			
CL-30056	230772	72	C5	D3	ND												1		CDM Smith	N. Ross			
CL-30056	230773	73	C5	D7	ND												1		CDM Smith	N. Ross			
CL-30056	230774	74	C5	D9	ND												1		CDM Smith	N. Ross			
CL-30056	230775	75	C5	E2	ND												1		CDM Smith	N. Ross			
CL-30056	230776	76	C5	E10	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING ABS AIR (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-30056	230777	77	C5	F1	ND												1		CDM Smith	N. Ross			
CL-30056	230778	78	C5	F3	ND												1		CDM Smith	N. Ross			
CL-30056	230779	79	C5	F7	ND												1		CDM Smith	N. Ross			
CL-30056	230780	80	C5	G2	ND												1		CDM Smith	N. Ross			
CL-30056	230781	81	C5	G6	ND												1		CDM Smith	N. Ross			
CL-30056	230782	82	C5	G10	ND												1		CDM Smith	N. Ross			
CL-30056	230783	83	C5	H1	ND												1		CDM Smith	N. Ross			
CL-30056	230784	84	C5	H3	ND												1		CDM Smith	N. Ross			
CL-30056	230785	85	C5	H5	ND												1		CDM Smith	N. Ross			
CL-30056	230786	86	C5	H8	F	1	1	25.1	1.7	14.764706	LA		ADX	1	1	1	1	A; Photo # 066	CDM Smith	N. Ross			
CL-30056	230787	87	C5	H10	ND												1		CDM Smith	N. Ross			
CL-30056	230788	88	C5	I1	ND												1		CDM Smith	N. Ross			
CL-30056	230789	89	C5	I3	ND												1		CDM Smith	N. Ross			
CL-30056	230790	90	C5	I5	ND												1		CDM Smith	N. Ross			
CL-30056	230791	91	C5	I7	ND												1		CDM Smith	N. Ross			
CL-30056	230792	92	C5	I9	ND												1		CDM Smith	N. Ross			
CL-30056	230793	93	C5	J2	ND												1		CDM Smith	N. Ross			
CL-30056	230794	94	C5	J4	ND												1		CDM Smith	N. Ross			
CL-30056	230795	95	C5	J6	ND												1		CDM Smith	N. Ross			
CL-30056	230796	96	C5	J8	ND												1		CDM Smith	N. Ross			
CL-30056	230797	97	C7	A3	ND												1		CDM Smith	N. Ross			
CL-30056	230798	98	C7	A5	ND												1		CDM Smith	N. Ross			
CL-30056	230799	99	C7	A7	ND												1		CDM Smith	N. Ross			
CL-30056	230800	100	C7	A8	ND												1		CDM Smith	N. Ross			
CL-30056	230801	101	C7	A9	ND												1		CDM Smith	N. Ross			
CL-30056	230802	102	C7	A10	ND												1		CDM Smith	N. Ross			
CL-30056	230803	103	C7	B4	ND												1		CDM Smith	N. Ross			
CL-30056	230804	104	C7	B5	ND												1		CDM Smith	N. Ross			
CL-30056	230805	105	C7	B6	ND												1		CDM Smith	N. Ross			
CL-30056	230806	106	C7	B7	ND												1		CDM Smith	N. Ross			
CL-30056	230807	107	C7	B8	ND												1		CDM Smith	N. Ross			
CL-30056	230808	108	C7	B9	ND												1		CDM Smith	N. Ross			
CL-30056	230809	109	C7	B10	ND												1		CDM Smith	N. Ross			
CL-30056	230810	110	C7	C1	ND												1		CDM Smith	N. Ross			
CL-30056	230811	111	C7	C2	ND												1		CDM Smith	N. Ross			
CL-30056	230812	112	C7	C7	ND												1		CDM Smith	N. Ross			
CL-30056	230813	113	C7	C8	ND												1		CDM Smith	N. Ross			
CL-30056	230814	114	C7	C9	ND												1		CDM Smith	N. Ross			
CL-30056	230815	115	C7	C10	ND												1		CDM Smith	N. Ross			
CL-30056	230816	116	C7	D1	ND												1		CDM Smith	N. Ross			
CL-30056	230817	117	C7	D2	ND												1		CDM Smith	N. Ross			
CL-30056	230818	118	C7	D5	ND												1		CDM Smith	N. Ross			
CL-30056	230819	119	C7	D9	ND												1		CDM Smith	N. Ross			
CL-30056	230820	120	C7	D10	ND												1		CDM Smith	N. Ross			
CL-30056	230821	121	C7	E4	ND												1		CDM Smith	N. Ross			
CL-30056	230822	122	C7	E5	ND												1		CDM Smith	N. Ross			
CL-30056	230823	123	C7	E7	ND												1		CDM Smith	N. Ross			
CL-30056	230824	124	C7	E9	F	2	2	16.2	0.8	20.25	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30056	230825	125	C7	F3	ND												1		CDM Smith	N. Ross			
CL-30056	230826	126	C7	F4	ND												1		CDM Smith	N. Ross			
CL-30056	230827	127	C7	F5	ND												1		CDM Smith	N. Ross			
CL-30056	230828	128	C7	F6	ND												1		CDM Smith	N. Ross			
CL-30056	230829	129	C7	F7	ND												1		CDM Smith	N. Ross			
CL-30056	230830	130	C7	F8	ND												1		CDM Smith	N. Ross			
CL-30056	230831	131	C7	G2	ND												1		CDM Smith	N. Ross			
CL-30056	230832	132	C7	G3	ND												1		CDM Smith	N. Ross			
CL-30056	230833	133	C7	G5	ND												1		CDM Smith	N. Ross			
CL-30056	230834	134	C7	G6	ND												1		CDM Smith	N. Ross			
CL-30056	230835	135	C7	G7	ND												1		CDM Smith	N. Ross			
CL-30056	230836	136	C7	G9	ND												1		CDM Smith	N. Ross			
CL-30056	230837	137	C7	G10	F	3	3	11.9	0.7	17	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30056	230838	138	C7	H4	ND												1		CDM Smith	N. Ross			
CL-30056	230839	139	C7	H5	ND												1		CDM Smith	N. Ross			
CL-30056	230840	140	C7	H6	ND												1		CDM Smith	N. Ross			
CL-30056	230841	141	C7	I4	ND												1		CDM Smith	N. Ross			
CL-30056	230842	142	C7	J3	ND												1		CDM Smith	N. Ross			
CL-30056	230843	143	C7	J4	ND												1		CDM Smith	N. Ross			
CL-30056	230844	144	C7	J5	ND												1		CDM Smith	N. Ross			
CL-30056	230845	145	C7	J6	ND												1		CDM Smith	N. Ross			
CL-30057	230846	1	D2	A2	F	1	1	5.9	0.5	11.8	LA		ADX	1	1	1	1	A; Photo #066	CDM Smith	N. Ross			EF
CL-30057	230847	2	D2	A3	ND												1		CDM Smith	N. Ross			EF
CL-30057	230848	3	D2	A4	ND												1		CDM Smith	N. Ross			EF
CL-30057	230849	4	D2	A5	F	2	2	5.2	0.25	20.8	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230850	5	D2	A6	ND												1		CDM Smith	N. Ross			EF
CL-30057	230851	6	D2	B2	F	3	3	9.9	1.05	9.4285714	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230852	7	D2	B2	MD11	4													CDM Smith	N. Ross			EF
CL-30057	230853	8	D2	B2	MF		4	7.3	0.35	20.857143	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230854	9	D2	B2	F	5	5	7.1	0.9	7.8888889	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230855	10	D2	B6	F	6	6	5.2	0.25	20.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230856	11	D2	B6	F	7	7	6.1	0.75	8.1333333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230857	12	D2	D3	ND												1		CDM Smith	N. Ross			EF
CL-30057	230858	13	D2	D5	F	8	8	14.3	0.6	23.833333	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230859	14	D2	D5	MD11	9													CDM Smith	N. Ross			EF
CL-30057	230860	15	D2	D5	MF		9	15.9	1.1	14.454545	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230861	16	D2	F1	ND												1		CDM Smith	N. Ross			EF
CL-30057	230862	17	D2	F3	F	10	10	5.1	0.25	20.4	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230863	18	D2	I1	ND												1		CDM Smith	N. Ross			EF
CL-30057	230864	19	D2	J3	F	11	11	8.1	0.35	23.142857	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230865	20	D2	J3	F	12	12	5.6	0.5	11.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230866	21	D2	J4	ND												1		CDM Smith	N. Ross			EF
CL-30057	230867	22	D2	J5	ND												1		CDM Smith	N. Ross			EF
CL-30057	230868	23	D2	J6	ND												1		CDM Smith	N. Ross			EF
CL-30057	230869	24	D2	J7	F	13	13	5.1	0.25	20.4	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230870	25	D4	A2	MD11	14											1		CDM Smith	N. Ross			EF
CL-30057	230871	26	D4	A2	MF		14	5.9	0.6	9.8333333	LA		ADX					NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230872	27	D4	A2	MD11	15													CDM Smith	N. Ross			EF
CL-30057	230873	28	D4	A2	MF		15	7.2	0.55	13.090909	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230874	29	D4	A2	F	16	16	6.9	1.1	6.2727273	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230875	30	D4	B8	F	17	17	5.4	0.27	20	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230876	31	D4	B8	F	18	18	8	1.1	7.2727273	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230877	32	D4	B8	F	19	19	7	0.5	14	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230878	33	D4	B8	F	20	20	8.5	0.4	21.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230879	34	D4	D10	F	21	21	12.1	1.3	9.3076923	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230880	35	D4	D10	F	22	22	7.9	0.25	31.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230881	36	D4	D10	F	23	23	8.4	0.6	14	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230882	37	D4	E1	F	24	24	10.2	0.4	25.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230883	38	D4	F3	F	25	25	5.4	0.3	18	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230884	39	D4	G8	F	26	26	8.1	0.6	13.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
CL-30057	230885	40	D4	G8	F	27	27	7.6	0.9	8.4444444	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
CL-30061	230886	1	I1	B3	F	1	1	5.1	0.7	7.2857143	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230887	2	I1	B7	F	2	2	12.6	0.7	18	LA		ADX	1	1	1	1	TA; Photo 066	CDM Smith	N. Ross			
CL-30061	230888	3	I1	B8	ND												1		CDM Smith	N. Ross			
CL-30061	230889	4	I1	C6	F	3	3	5.9	0.8	7.375	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230890	5	I1	C6	F	4	4	16.8	0.75	22.4	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230891	6	I1	C7	F	5	5	18.9	0.8	23.625	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230892	7	I1	C8	ND												1		CDM Smith	N. Ross			
CL-30061	230893	8	I1	C9	F	6	6	8.4	0.5	16.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230894	9	I1	C10	ND												1		CDM Smith	N. Ross			
CL-30061	230895	10	I1	D4	ND												1		CDM Smith	N. Ross			
CL-30061	230896	11	I1	D9	F	7	7	21.8	2.9	7.5172414	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230897	12	I1	D9	F	8	8	11	0.4	27.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230898	13	I1	D9	F	9	9	5.35	0.5	10.7	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230899	14	I1	E4	F	10	10	6.1	0.55	11.090909	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230900	15	I1	F1	ND												1		CDM Smith	N. Ross			
CL-30061	230901	16	I1	F2	F	11	11	8.9	0.5	17.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230902	17	I1	H5	ND												1		CDM Smith	N. Ross			
CL-30061	230903	18	I1	H6	ND												1		CDM Smith	N. Ross			
CL-30061	230904	19	I1	H9	F	12	12	6.1	0.25	24.4	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230905	20	I1	H10	ND												1		CDM Smith	N. Ross			
CL-30061	230906	21	I1	I1	ND												1		CDM Smith	N. Ross			
CL-30061	230907	22	I1	I2	ND												1		CDM Smith	N. Ross			
CL-30061	230908	23	I1	I3	ND												1		CDM Smith	N. Ross			
CL-30061	230909	24	I1	I4	ND												1		CDM Smith	N. Ross			
CL-30061	230910	25	I1	I5	F	13	13	5.9	0.25	23.6	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230911	26	I1	I6	F	14	14	9.7	0.4	24.25	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230912	27	I1	I7	ND												1		CDM Smith	N. Ross			
CL-30061	230913	28	I1	I8	ND												1		CDM Smith	N. Ross			
CL-30061	230914	29	I1	I9	ND												1		CDM Smith	N. Ross			
CL-30061	230915	30	I1	I10	F	15	15	34	1.8	18.888889	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230916	31	I1	J1	F	16	16	17.9	0.8	22.375	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230917	32	I1	J1	F	17	17	7.1	0.25	28.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230918	33	I1	J1	F	18	18	5.05	0.25	20.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230919	34	I1	J2	F	19	19	5.4	0.25	21.6	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230920	35	I3	B5	F	20	20	5.6	0.27	20.740741	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230921	36	I3	B5	F	21	21	8.6	0.5	17.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230922	37	I3	B7	F	22	22	10.1	0.3	33.666667	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230923	38	I3	B7	F	23	23	10.1	0.95	10.631579	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230924	39	I3	C5	F	24	24	5.65	0.35	16.142857	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230925	40	I3	F2	ND												1		CDM Smith	N. Ross			
CL-30061	230926	41	I3	F5	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING ABS AIR (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-30061	230927	42	I3	F7	ND												1		CDM Smith	N. Ross			
CL-30061	230928	43	I3	G1	F	25	25	7	0.7	10	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30061	230929	44	I3	G1	F	26	26	5.1	0.27	18.888889	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230930	1	G1	A2	ND												1		CDM Smith	N. Ross			
CL-30062	230931	2	G1	A3	F	1	1	16.2	0.8	20.25	LA		ADX	1	1	1	1	TA; Photo 0661	CDM Smith	N. Ross			
CL-30062	230932	3	G1	A3	F	2	2	6.2	0.25	24.8	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230933	4	G1	A4	ND												1		CDM Smith	N. Ross			
CL-30062	230934	5	G1	A5	F	3	3	8	0.5	16	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230935	6	G1	A5	F	4	4	7.5	1.7	4.4117647	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230936	7	G1	A6	F	5	5	9	0.25	36	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230937	8	G1	A7	F	6	6	51	2.9	17.586207	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230938	9	G1	A8	F	7	7	20.5	1.4	14.642857	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230939	10	G1	A8	F	8	8	5.1	0.27	18.888889	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230940	11	G1	A9	F	9	9	10.15	0.6	16.916667	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230941	12	G1	A9	F	10	10	13.1	0.85	15.411765	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230942	13	G1	A10	F	11	11	5.8	0.3	19.333333	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230943	14	G1	C4	F	12	12	10.1	0.45	22.444444	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230944	15	G1	C4	F	13	13	42.2	0.4	105.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230945	16	G1	C5	F	14	14	7.8	0.3	26	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230946	17	G1	C6	F	15	15	5.6	0.26	21.538462	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230947	18	G1	C6	F	16	16	12	0.35	34.285714	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230948	19	C3	A4	F	17	17	5.2	0.3	17.333333	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230949	20	C3	A5	F	18	18	5.1	0.7	7.2857143	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230950	21	C3	A5	F	19	19	5.3	0.3	17.666667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230951	22	C3	A5	F	20	20	5.05	0.5	10.1	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230952	23	C3	A7	F	21	21	5.1	0.25	20.4	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230953	24	C3	A8	ND												1		CDM Smith	N. Ross			
CL-30062	230954	25	C3	B5	F	22	22	6.2	0.45	13.777778	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230955	26	C3	B5	F	23	23	7	0.7	10	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230956	27	C3	B6	F	24	24	5.6	0.45	12.444444	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230957	28	C3	B9	ND												1		CDM Smith	N. Ross			
CL-30062	230958	29	C3	C3	F	25	25	5.1	0.25	20.4	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30062	230959	30	C3	C3	F	26	26	14.6	0.25	58.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230960	1	H2	A8	F	1	1	10.9	0.25	43.6	LA		ADX	1	1	1	1	TA; Photo 0662	CDM Smith	N. Ross			
CL-30064	230961	2	H2	D10	F	2	2	31	1.8	17.222222	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230962	3	H2	H10	F	3	3	28.3	0.9	31.444444	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230963	4	H2	I6	F	4	4	10.4	0.25	41.6	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230964	5	H2	I6	F	5	5	5.1	0.5	10.2	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230965	6	H2	I8	F	6	6	12.5	0.5	25	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230966	7	H2	I10	F	7	7	7.9	0.5	15.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230967	8	H2	J4	F	8	8	13.8	0.35	39.428571	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230968	9	H4	A3	F	9	9	8.4	0.25	33.6	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230969	10	H4	A3	B	10	10	40.2	0.6	67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230970	11	H4	A6	F	11	11	5.8	0.8	7.25	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230971	12	H4	A6	F	12	12	6.1	0.25	24.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230972	13	H4	A8	ND												1		CDM Smith	N. Ross			
CL-30064	230973	14	H4	B3	F	13	13	5.2	0.35	14.857143	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230974	15	H4	B6	F	14	14	8.2	0.4	20.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230975	16	H4	B6	F	15	15	6.1	0.3	20.333333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230976	17	H4	B9	F	16	16	5.7	0.3	19	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230977	18	H4	B9	F	17	17	5.9	0.4	14.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230978	19	H4	C3	ND												1		CDM Smith	N. Ross			
CL-30064	230979	20	H4	C8	MD11	18											1		CDM Smith	N. Ross			
CL-30064	230980	21	H4	C8	MF		18	22.3	1.2	18.583333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230981	22	H4	C8	F	19	19	30.2	0.85	35.529412	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230982	23	H4	D2	F	20	20	7.6	0.4	19	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230983	24	H4	D4	F	21	21	10.6	0.5	21.2	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230984	25	H4	D4	F	22	22	41.6	0.85	48.941176	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230985	26	H4	D4	F	23	23	5.8	0.45	12.888889	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230986	27	H4	E3	F	24	24	5.9	0.4	14.75	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230987	28	H4	E3	F	25	25	7.9	0.28	28.214286	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230988	29	H4	E3	F	26	26	7.7	0.5	15.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30064	230989	30	H4	E3	F	27	27	14.1	0.45	31.333333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30066	230990	1	I1	A2	ND												1		CDM Smith	N. Ross			
CL-30066	230991	2	I1	A4	ND												1		CDM Smith	N. Ross			
CL-30066	230992	3	I1	A6	ND												1		CDM Smith	N. Ross			
CL-30066	230993	4	I1	A8	ND												1		CDM Smith	N. Ross			
CL-30066	230994	5	I1	A10	ND												1		CDM Smith	N. Ross			
CL-30066	230995	6	I1	B1	ND												1		CDM Smith	N. Ross			
CL-30066	230996	7	I1	B3	ND												1		CDM Smith	N. Ross			
CL-30066	230997	8	I1	B5	ND												1		CDM Smith	N. Ross			
CL-30066	230998	9	I1	B7	ND												1		CDM Smith	N. Ross			
CL-30066	230999	10	I1	B9	ND												1		CDM Smith	N. Ross			
CL-30066	231000	11	I1	D1	ND												1		CDM Smith	N. Ross			
CL-30066	231001	12	I1	D3	ND												1		CDM Smith	N. Ross			
CL-30066	231002	13	I1	D5	ND												1		CDM Smith	N. Ross			
CL-30066	231003	14	I1	D7	ND												1		CDM Smith	N. Ross			
CL-30066	231004	15	I1	D9	ND												1		CDM Smith	N. Ross			
CL-30066	231005	16	I1	E2	ND												1		CDM Smith	N. Ross			
CL-30066	231006	17	I1	E6	ND												1		CDM Smith	N. Ross			
CL-30066	231007	18	I1	E8	ND												1		CDM Smith	N. Ross			
CL-30066	231008	19	I1	E10	F	1	1	10.2	0.25	40.8	LA		ADX	1	1	1	1	TA; Photo 0662	CDM Smith	N. Ross			
CL-30066	231009	20	I1	F1	ND												1		CDM Smith	N. Ross			
CL-30066	231010	21	I1	F3	ND												1		CDM Smith	N. Ross			
CL-30066	231011	22	I1	F5	F	2	2	7.3	1.3	5.6153846	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30066	231012	23	I1	F7	ND												1		CDM Smith	N. Ross			
CL-30066	231013	24	I3	A4	ND												1		CDM Smith	N. Ross			
CL-30066	231014	25	I3	A6	ND												1		CDM Smith	N. Ross			
CL-30066	231015	26	I3	A8	ND												1		CDM Smith	N. Ross			
CL-30066	231016	27	I3	A10	ND												1		CDM Smith	N. Ross			
CL-30066	231017	28	I3	B3	ND												1		CDM Smith	N. Ross			
CL-30066	231018	29	I3	B7	ND												1		CDM Smith	N. Ross			
CL-30066	231019	30	I3	C4	ND												1		CDM Smith	N. Ross			
CL-30066	231020	31	I3	C8	ND												1		CDM Smith	N. Ross			
CL-30066	231021	32	I3	C10	ND												1		CDM Smith	N. Ross			
CL-30066	231022	33	I3	D3	ND												1		CDM Smith	N. Ross			
CL-30066	231023	34	I3	D5	ND												1		CDM Smith	N. Ross			
CL-30066	231024	35	I3	D7	ND												1		CDM Smith	N. Ross			
CL-30066	231025	36	I3	E6	ND												1		CDM Smith	N. Ross			
CL-30066	231026	37	I3	E8	F	3	3	52	6	8.6666667	LA		ADX	1	1	1	1	WRTA; Photo 0	CDM Smith	N. Ross			
CL-30066	231027	38	I3	F2	ND												1		CDM Smith	N. Ross			
CL-30066	231028	39	I3	F5	ND												1		CDM Smith	N. Ross			
CL-30066	231029	40	I3	F7	ND												1		CDM Smith	N. Ross			
CL-30069	231030	1	L1	A2	ND												1		CDM Smith	N. Ross			
CL-30069	231031	2	L1	A4	ND												1		CDM Smith	N. Ross			
CL-30069	231032	3	L1	A6	ND												1		CDM Smith	N. Ross			
CL-30069	231033	4	L1	A8	ND												1		CDM Smith	N. Ross			
CL-30069	231034	5	L1	A10	ND												1		CDM Smith	N. Ross			
CL-30069	231035	6	L1	B1	ND												1		CDM Smith	N. Ross			
CL-30069	231036	7	L1	B3	ND												1		CDM Smith	N. Ross			
CL-30069	231037	8	L1	B5	ND												1		CDM Smith	N. Ross			
CL-30069	231038	9	L1	B7	ND												1		CDM Smith	N. Ross			
CL-30069	231039	10	L1	B9	ND												1		CDM Smith	N. Ross			
CL-30069	231040	11	L1	C2	ND												1		CDM Smith	N. Ross			
CL-30069	231041	12	L1	C4	ND												1		CDM Smith	N. Ross			
CL-30069	231042	13	L1	C6	ND												1		CDM Smith	N. Ross			
CL-30069	231043	14	L1	C8	ND												1		CDM Smith	N. Ross			
CL-30069	231044	15	L1	C10	ND												1		CDM Smith	N. Ross			
CL-30069	231045	16	L1	D1	ND												1		CDM Smith	N. Ross			
CL-30069	231046	17	L1	D3	ND												1		CDM Smith	N. Ross			
CL-30069	231047	18	L1	D5	ND												1		CDM Smith	N. Ross			
CL-30069	231048	19	L1	D7	F	1	1	6.1	0.35	17.428571	LA		ADX	1	1	1	1	TA; Photo 0662	CDM Smith	N. Ross			
CL-30069	231049	20	L1	D9	ND												1		CDM Smith	N. Ross			
CL-30069	231050	21	L3	A2	ND												1		CDM Smith	N. Ross			
CL-30069	231051	22	L3	A4	ND												1		CDM Smith	N. Ross			
CL-30069	231052	23	L3	A6	ND												1		CDM Smith	N. Ross			
CL-30069	231053	24	L3	A8	ND												1		CDM Smith	N. Ross			
CL-30069	231054	25	L3	A10	ND												1		CDM Smith	N. Ross			
CL-30069	231055	26	L3	B1	ND												1		CDM Smith	N. Ross			
CL-30069	231056	27	L3	B3	ND												1		CDM Smith	N. Ross			
CL-30069	231057	28	L3	B5	ND												1		CDM Smith	N. Ross			
CL-30069	231058	29	L3	B7	ND												1		CDM Smith	N. Ross			
CL-30069	231059	30	L3	B9	ND												1		CDM Smith	N. Ross			
CL-30069	231060	31	L3	D1	ND												1		CDM Smith	N. Ross			
CL-30069	231061	32	L3	D3	ND												1		CDM Smith	N. Ross			
CL-30069	231062	33	L3	D7	ND												1		CDM Smith	N. Ross			
CL-30069	231063	34	L3	D9	ND												1		CDM Smith	N. Ross			
CL-30069	231064	35	L3	E2	ND												1		CDM Smith	N. Ross			
CL-30069	231065	36	L3	E4	ND												1		CDM Smith	N. Ross			
CL-30069	231066	37	L3	E6	ND												1		CDM Smith	N. Ross			
CL-30069	231067	38	L3	F1	ND												1		CDM Smith	N. Ross			
CL-30069	231068	39	L3	F3	ND												1		CDM Smith	N. Ross			
CL-30069	231069	40	L3	F5	ND												1		CDM Smith	N. Ross			
CL-30076	231197	1	M2	C9	ND												1		CDM Smith	N. Ross			
CL-30076	231198	2	M2	C10	ND												1		CDM Smith	N. Ross			
CL-30076	231199	3	M2	D2	ND												1		CDM Smith	N. Ross			
CL-30076	231200	4	M2	D3	ND												1		CDM Smith	N. Ross			
CL-30076	231201	5	M2	D5	ND												1		CDM Smith	N. Ross			
CL-30076	231202	6	M2	D6	ND												1		CDM Smith	N. Ross			
CL-30076	231203	7	M2	D7	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING ABS AIR (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-30076	231204	8	M2	D10	ND												1		CDM Smith	N. Ross			
CL-30076	231205	9	M2	E6	ND												1		CDM Smith	N. Ross			
CL-30076	231206	10	M2	E7	ND												1		CDM Smith	N. Ross			
CL-30076	231207	11	M2	E8	ND												1		CDM Smith	N. Ross			
CL-30076	231208	12	M2	E9	ND												1		CDM Smith	N. Ross			
CL-30076	231209	13	M2	E10	ND												1		CDM Smith	N. Ross			
CL-30076	231210	14	M2	F1	ND												1		CDM Smith	N. Ross			
CL-30076	231211	15	M2	F3	ND												1		CDM Smith	N. Ross			
CL-30076	231212	16	M2	F6	ND												1		CDM Smith	N. Ross			
CL-30076	231213	17	M2	F7	ND												1		CDM Smith	N. Ross			
CL-30076	231214	18	M2	F8	ND												1		CDM Smith	N. Ross			
CL-30076	231215	19	M2	F9	ND												1		CDM Smith	N. Ross			
CL-30076	231216	20	M2	F10	ND												1		CDM Smith	N. Ross			
CL-30076	231217	21	M2	G1	ND												1		CDM Smith	N. Ross			
CL-30076	231218	22	M2	G2	ND												1		CDM Smith	N. Ross			
CL-30076	231219	23	M2	G3	ND												1		CDM Smith	N. Ross			
CL-30076	231220	24	M2	G4	ND												1		CDM Smith	N. Ross			
CL-30076	231221	25	M2	G6	ND												1		CDM Smith	N. Ross			
CL-30076	231222	26	M2	H1	ND												1		CDM Smith	N. Ross			
CL-30076	231223	27	M2	H2	ND												1		CDM Smith	N. Ross			
CL-30076	231224	28	M2	H4	ND												1		CDM Smith	N. Ross			
CL-30076	231225	29	M2	H5	ND												1		CDM Smith	N. Ross			
CL-30076	231226	30	M2	H6	ND												1		CDM Smith	N. Ross			
CL-30076	231227	31	M2	I1	ND												1		CDM Smith	N. Ross			
CL-30076	231228	32	M2	I2	ND												1		CDM Smith	N. Ross			
CL-30076	231229	33	M2	I8	ND												1		CDM Smith	N. Ross			
CL-30076	231230	34	M2	I9	ND												1		CDM Smith	N. Ross			
CL-30076	231231	35	M2	J2	ND												1		CDM Smith	N. Ross			
CL-30076	231232	36	M2	J5	ND												1		CDM Smith	N. Ross			
CL-30076	231233	37	M2	J7	ND												1		CDM Smith	N. Ross			
CL-30076	231234	38	M2	J8	ND												1		CDM Smith	N. Ross			
CL-30076	231235	39	M4	A2	ND												1		CDM Smith	N. Ross			
CL-30076	231236	40	M4	C6	ND												1		CDM Smith	N. Ross			
CL-30076	231237	41	M4	D1	ND												1		CDM Smith	N. Ross			
CL-30076	231238	42	M4	D4	ND												1		CDM Smith	N. Ross			
CL-30076	231239	43	M4	E1	ND												1		CDM Smith	N. Ross			
CL-30076	231240	44	M4	E2	ND												1		CDM Smith	N. Ross			
CL-30076	231241	45	M4	E3	ND												1		CDM Smith	N. Ross			
CL-30076	231242	46	M4	E6	ND												1		CDM Smith	N. Ross			
CL-30076	231243	47	M4	F1	ND												1		CDM Smith	N. Ross			
CL-30076	231244	48	M4	F2	ND												1		CDM Smith	N. Ross			
CL-30076	231245	49	M4	F4	ND												1		CDM Smith	N. Ross			
CL-30076	231246	50	M4	F5	ND												1		CDM Smith	N. Ross			
CL-30076	231247	51	M4	F6	ND												1		CDM Smith	N. Ross			
CL-30076	231248	52	M4	F7	ND												1		CDM Smith	N. Ross			
CL-30076	231249	53	M4	G4	ND												1		CDM Smith	N. Ross			
CL-30076	231250	54	M4	G7	ND												1		CDM Smith	N. Ross			
CL-30076	231251	55	M4	G8	ND												1		CDM Smith	N. Ross			
CL-30076	231252	56	M4	H2	ND												1		CDM Smith	N. Ross			
CL-30076	231253	57	M4	H3	ND												1		CDM Smith	N. Ross			
CL-30076	231254	58	M4	H4	ND												1		CDM Smith	N. Ross			
CL-30076	231255	59	M4	H8	ND												1		CDM Smith	N. Ross			
CL-30076	231256	60	M4	H9	ND												1		CDM Smith	N. Ross			
CL-30076	231257	61	M4	I5	ND												1		CDM Smith	N. Ross			
CL-30076	231258	62	M4	I8	ND												1		CDM Smith	N. Ross			
CL-30076	231259	63	M4	I9	ND												1		CDM Smith	N. Ross			
CL-30076	231260	64	M6	A1	ND												1		CDM Smith	N. Ross			
CL-30076	231261	65	M6	A3	ND												1		CDM Smith	N. Ross			
CL-30076	231262	66	M6	A6	ND												1		CDM Smith	N. Ross			
CL-30076	231263	67	M6	A7	ND												1		CDM Smith	N. Ross			
CL-30076	231264	68	M6	B2	ND												1		CDM Smith	N. Ross			
CL-30076	231265	69	M6	B3	ND												1		CDM Smith	N. Ross			
CL-30076	231266	70	M6	C1	ND												1		CDM Smith	N. Ross			
CL-30076	231267	71	M6	C2	ND												1		CDM Smith	N. Ross			
CL-30076	231268	72	M6	C3	ND												1		CDM Smith	N. Ross			
CL-30076	231269	73	M6	C6	ND												1		CDM Smith	N. Ross			
CL-30076	231270	74	M6	D2	ND												1		CDM Smith	N. Ross			
CL-30076	231271	75	M6	D5	ND												1		CDM Smith	N. Ross			
CL-30076	231272	76	M6	E1	ND												1		CDM Smith	N. Ross			
CL-30076	231273	77	M6	E2	ND												1		CDM Smith	N. Ross			
CL-30076	231274	78	M6	E3	ND												1		CDM Smith	N. Ross			
CL-30076	231275	79	M6	E4	ND												1		CDM Smith	N. Ross			
CL-30076	231276	80	M6	F2	ND												1		CDM Smith	N. Ross			
CL-30076	231277	81	M6	F7	ND												1		CDM Smith	N. Ross			
CL-30076	231278	82	M8	D7	ND												1		CDM Smith	N. Ross			
CL-30076	231279	83	M8	E8	F	1	1	10.6	1.1	9.6363636	LA		ADX	1	1	1	1	TA; Photo 0662	CDM Smith	N. Ross			
CL-30076	231280	84	M8	F9	ND												1		CDM Smith	N. Ross			
CL-30076	231281	85	M8	H6	ND												1		CDM Smith	N. Ross			
CL-30076	231282	86	M8	H7	ND												1		CDM Smith	N. Ross			
CL-30076	231283	87	M8	I8	ND												1		CDM Smith	N. Ross			
CL-30076	231284	88	M10	A1	ND												1		CDM Smith	N. Ross			
CL-30076	231285	89	M10	A2	ND												1		CDM Smith	N. Ross			
CL-30076	231286	90	M10	A3	ND												1		CDM Smith	N. Ross			
CL-30076	231287	91	M10	A4	ND												1		CDM Smith	N. Ross			
CL-30076	231288	92	M10	A5	ND												1		CDM Smith	N. Ross			
CL-30076	231289	93	M10	A6	ND												1		CDM Smith	N. Ross			
CL-30076	231290	94	M10	A8	ND												1		CDM Smith	N. Ross			
CL-30076	231291	95	M10	B1	ND												1		CDM Smith	N. Ross			
CL-30076	231292	96	M10	B2	ND												1		CDM Smith	N. Ross			
CL-30076	231293	97	M10	B3	ND												1		CDM Smith	N. Ross			
CL-30076	231294	98	M10	B4	ND												1		CDM Smith	N. Ross			
CL-30076	231295	99	M10	B10	ND												1		CDM Smith	N. Ross			
CL-30076	231296	100	M10	C1	ND												1		CDM Smith	N. Ross			
CL-30076	231297	101	M10	C2	ND												1		CDM Smith	N. Ross			
CL-30076	231298	102	M10	C3	ND												1		CDM Smith	N. Ross			
CL-30076	231299	103	M10	C6	ND												1		CDM Smith	N. Ross			
CL-30076	231300	104	M10	C7	ND												1		CDM Smith	N. Ross			
CL-30076	231301	105	M10	C9	ND												1		CDM Smith	N. Ross			
CL-30076	231302	106	M10	D4	ND												1		CDM Smith	N. Ross			
CL-30076	231303	107	M10	D5	ND												1		CDM Smith	N. Ross			
CL-30076	231304	108	M10	D6	MD11	2											1		CDM Smith	N. Ross			
CL-30076	231305	109	M10	D6	MF		2	10	0.25	40	LA		ADX	1		1		NaK, WRTA; *decor	CDM Smith	N. Ross			
CL-30076	231306	110	M10	D8	ND												1		CDM Smith	N. Ross			
CL-30076	231307	111	M10	D9	ND												1		CDM Smith	N. Ross			
CL-30076	231308	112	M10	E2	ND												1		CDM Smith	N. Ross			
CL-30076	231309	113	M10	E3	ND												1		CDM Smith	N. Ross			
CL-30076	231310	114	M10	E4	ND												1		CDM Smith	N. Ross			
CL-30076	231311	115	M10	E5	ND												1		CDM Smith	N. Ross			
CL-30076	231312	116	M10	E6	ND												1		CDM Smith	N. Ross			
CL-30076	231313	117	M10	F1	ND												1		CDM Smith	N. Ross			
CL-30076	231314	118	M10	F3	ND												1		CDM Smith	N. Ross			
CL-30076	231315	119	M10	F4	ND												1		CDM Smith	N. Ross			
CL-30076	231316	120	M10	F5	ND												1		CDM Smith	N. Ross			
CL-30076	231317	121	M10	F6	ND												1		CDM Smith	N. Ross			
CL-30076	231318	122	M10	G2	ND												1		CDM Smith	N. Ross			
CL-30076	231319	123	M10	G3	ND												1		CDM Smith	N. Ross			
CL-30076	231320	124	M10	G5	ND												1		CDM Smith	N. Ross			
CL-30076	231321	125	M10	H2	ND												1		CDM Smith	N. Ross			
CL-30076	231322	126	M10	H3	ND												1		CDM Smith	N. Ross			
CL-30076	231323	127	M10	H7	ND												1		CDM Smith	N. Ross			
CL-30076	231324	128	M10	I3	ND												1		CDM Smith	N. Ross			
CL-30076	231070	129	M10	I4	ND												1		CDM Smith	N. Ross			
CL-30076	231071	130	M10	I5	ND												1		CDM Smith	N. Ross			
CL-30076	231072	131	D2	A2	ND												1	s of grid box 27	CDM Smith	N. Ross			
CL-30076	231073	132	D2	A3	ND												1		CDM Smith	N. Ross			
CL-30076	231074	133	D2	A8	ND												1		CDM Smith	N. Ross			
CL-30076	231075	134	D2	A10	ND												1		CDM Smith	N. Ross			
CL-30076	231076	135	D2	B4	ND												1		CDM Smith	N. Ross			
CL-30076	231077	136	D2	B5	ND												1		CDM Smith	N. Ross			
CL-30076	231078	137	D2	C3	ND												1		CDM Smith	N. Ross			
CL-30076	231079	138	D2	C10	ND												1		CDM Smith	N. Ross			
CL-30076	231080	139	D2	D1	ND												1		CDM Smith	N. Ross			
CL-30076	231081	140	D2	D2	ND												1		CDM Smith	N. Ross			
CL-30076	231082	141	D2	D6	ND												1		CDM Smith	N. Ross			
CL-30076	231083	142	D2	D9	ND												1		CDM Smith	N. Ross			
CL-30076	231084	143	D2	E3	ND												1		CDM Smith	N. Ross			
CL-30076	231085	144	D2	E4	ND												1		CDM Smith	N. Ross			
CL-30076	231086	145	D2	E8	ND												1		CDM Smith	N. Ross			
CL-30076	231087	146	D2	E10	ND												1		CDM Smith	N. Ross			
CL-30076	231088	147	D2	F1	ND												1		CDM Smith	N. Ross			
CL-30076	231089	148	D2	G1	ND												1		CDM Smith	N. Ross			
CL-30076	231090	149	D2	G8	CD33	3											1		CDM Smith	N. Ross			
CL-30076	231091	150	D2	G8	CB		3	11.9	1.2	9.9166667	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
CL-30076	231092	151	D2	G8	CF		4	7.3	0.55	13.272727	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
CL-30076	231093	152	D2	G8	CF		5	6.9	0.9	7.6666667	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
CL-30076	231094	153	D2	H1	ND												1		CDM Smith	N. Ross			
CL-30076	231095	154	D2	H2	ND												1		CDM Smith	N. Ross			
CL-30076	231096	155	D2	H3	ND												1		CDM Smith	N. Ross			
CL-30076	231097	156	D2	H4	ND												1		CDM Smith	N. Ross			
CL-30076	231098	157	D2	H6	F	4	6	10.7	0.35	30.571429	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING ABS AIR (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-30076	231099	158	D2	H7	ND												1		CDM Smith	N. Ross			
CL-30076	231100	159	D2	H10	ND												1		CDM Smith	N. Ross			
CL-30076	231101	160	D2	I2	ND												1		CDM Smith	N. Ross			
CL-30076	231102	161	D2	I9	ND												1		CDM Smith	N. Ross			
CL-30076	231103	162	D2	I10	ND												1		CDM Smith	N. Ross			
CL-30076	231104	163	D2	J2	ND												1		CDM Smith	N. Ross			
CL-30076	231105	164	D2	J3	ND												1		CDM Smith	N. Ross			
CL-30076	231106	165	D4	A5	ND												1		CDM Smith	N. Ross			
CL-30076	231107	166	D4	A6	ND												1		CDM Smith	N. Ross			
CL-30076	231108	167	D4	A8	ND												1		CDM Smith	N. Ross			
CL-30076	231109	168	D4	A10	ND												1		CDM Smith	N. Ross			
CL-30076	231110	169	D4	B1	F	5	7	8.1	0.75	10.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30076	231111	170	D4	B3	ND												1		CDM Smith	N. Ross			
CL-30076	231112	171	D4	B5	ND												1		CDM Smith	N. Ross			
CL-30076	231113	172	D4	B7	ND												1		CDM Smith	N. Ross			
CL-30076	231114	173	D4	B10	ND												1		CDM Smith	N. Ross			
CL-30076	231115	174	D4	C3	ND												1		CDM Smith	N. Ross			
CL-30076	231116	175	D4	C5	ND												1		CDM Smith	N. Ross			
CL-30076	231117	176	D4	C7	ND												1		CDM Smith	N. Ross			
CL-30076	231118	177	D4	C10	ND												1		CDM Smith	N. Ross			
CL-30076	231119	178	D4	D2	ND												1		CDM Smith	N. Ross			
CL-30076	231120	179	D4	D3	ND												1		CDM Smith	N. Ross			
CL-30076	231121	180	D4	D4	ND												1		CDM Smith	N. Ross			
CL-30076	231122	181	D4	D5	ND												1		CDM Smith	N. Ross			
CL-30076	231123	182	D4	D7	ND												1		CDM Smith	N. Ross			
CL-30076	231124	183	D4	D10	ND												1		CDM Smith	N. Ross			
CL-30076	231125	184	D4	E1	ND												1		CDM Smith	N. Ross			
CL-30076	231126	185	D4	E3	ND												1		CDM Smith	N. Ross			
CL-30076	231127	186	D4	E4	ND												1		CDM Smith	N. Ross			
CL-30076	231128	187	D4	E5	ND												1		CDM Smith	N. Ross			
CL-30076	231129	188	D4	E7	ND												1		CDM Smith	N. Ross			
CL-30076	231130	189	D4	E8	ND												1		CDM Smith	N. Ross			
CL-30076	231131	190	D4	E9	ND												1		CDM Smith	N. Ross			
CL-30076	231132	191	D4	E10	ND												1		CDM Smith	N. Ross			
CL-30076	231133	192	D4	F1	ND												1		CDM Smith	N. Ross			
CL-30076	231134	193	D4	F3	ND												1		CDM Smith	N. Ross			
CL-30076	231135	194	D4	F4	ND												1		CDM Smith	N. Ross			
CL-30076	231136	195	D4	F5	ND												1		CDM Smith	N. Ross			
CL-30076	231137	196	D4	F7	ND												1		CDM Smith	N. Ross			
CL-30076	231138	197	D4	F8	ND												1		CDM Smith	N. Ross			
CL-30076	231139	198	D4	F9	ND												1		CDM Smith	N. Ross			
CL-30076	231140	199	D4	F10	ND												1		CDM Smith	N. Ross			
CL-30076	231141	200	D4	G4	ND												1		CDM Smith	N. Ross			
CL-30076	231142	201	D4	G5	ND												1		CDM Smith	N. Ross			
CL-30076	231143	202	D4	G8	ND												1		CDM Smith	N. Ross			
CL-30076	231144	203	D4	G9	ND												1		CDM Smith	N. Ross			
CL-30076	231145	204	D4	G10	ND												1		CDM Smith	N. Ross			
CL-30076	231146	205	D4	H5	ND												1		CDM Smith	N. Ross			
CL-30076	231147	206	D4	H8	ND												1		CDM Smith	N. Ross			
CL-30076	231148	207	D4	H10	ND												1		CDM Smith	N. Ross			
CL-30076	231149	208	D4	I4	ND												1		CDM Smith	N. Ross			
CL-30076	231150	209	D4	I6	ND												1		CDM Smith	N. Ross			
CL-30076	231151	210	D4	I8	ND												1		CDM Smith	N. Ross			
CL-30076	231152	211	D4	I9	ND												1		CDM Smith	N. Ross			
CL-30076	231153	212	D4	I10	ND												1		CDM Smith	N. Ross			
CL-30076	231154	213	D4	J6	ND												1		CDM Smith	N. Ross			
CL-30076	231155	214	D4	J7	ND												1		CDM Smith	N. Ross			
CL-30076	231156	215	D4	J8	ND												1		CDM Smith	N. Ross			
CL-30076	231157	216	D4	J9	ND												1		CDM Smith	N. Ross			
CL-30076	231158	217	D4	J10	ND												1		CDM Smith	N. Ross			
CL-30076	231159	218	D6	A1	ND												1		CDM Smith	N. Ross			
CL-30076	231160	219	D6	A3	ND												1		CDM Smith	N. Ross			
CL-30076	231161	220	D6	A4	ND												1		CDM Smith	N. Ross			
CL-30076	231162	221	D6	A5	ND												1		CDM Smith	N. Ross			
CL-30076	231163	222	D6	A6	ND												1		CDM Smith	N. Ross			
CL-30076	231164	223	D6	A7	ND												1		CDM Smith	N. Ross			
CL-30076	231165	224	D6	A8	ND												1		CDM Smith	N. Ross			
CL-30076	231166	225	D6	A10	ND												1		CDM Smith	N. Ross			
CL-30076	231167	226	D6	B4	ND												1		CDM Smith	N. Ross			
CL-30076	231168	227	D6	B5	ND												1		CDM Smith	N. Ross			
CL-30076	231169	228	D6	B7	ND												1		CDM Smith	N. Ross			
CL-30076	231170	229	D6	C2	ND												1		CDM Smith	N. Ross			
CL-30076	231171	230	D6	C3	ND												1		CDM Smith	N. Ross			
CL-30076	231172	231	D6	C4	ND												1		CDM Smith	N. Ross			
CL-30076	231173	232	D6	C5	ND												1		CDM Smith	N. Ross			
CL-30076	231174	233	D6	C6	ND												1		CDM Smith	N. Ross			
CL-30076	231175	234	D6	C7	ND												1		CDM Smith	N. Ross			
CL-30076	231176	235	D6	C9	ND												1		CDM Smith	N. Ross			
CL-30076	231177	236	D6	C10	ND												1		CDM Smith	N. Ross			
CL-30076	231178	237	D6	D3	ND												1		CDM Smith	N. Ross			
CL-30076	231179	238	D6	D4	ND												1		CDM Smith	N. Ross			
CL-30076	231180	239	D6	D5	ND												1		CDM Smith	N. Ross			
CL-30076	231181	240	D6	D6	ND												1		CDM Smith	N. Ross			
CL-30076	231182	241	D6	D7	ND												1		CDM Smith	N. Ross			
CL-30076	231183	242	D6	D8	ND												1		CDM Smith	N. Ross			
CL-30076	231184	243	D6	D9	ND												1		CDM Smith	N. Ross			
CL-30076	231185	244	D6	D10	ND												1		CDM Smith	N. Ross			
CL-30076	231186	245	D6	E2	ND												1		CDM Smith	N. Ross			
CL-30076	231187	246	D6	E3	ND												1		CDM Smith	N. Ross			
CL-30076	231188	247	D6	E4	ND												1		CDM Smith	N. Ross			
CL-30076	231189	248	D6	E5	ND												1		CDM Smith	N. Ross			
CL-30076	231190	249	D6	E7	ND												1		CDM Smith	N. Ross			
CL-30076	231191	250	D6	E9	ND												1		CDM Smith	N. Ross			
CL-30076	231192	251	D6	E10	ND												1		CDM Smith	N. Ross			
CL-30076	231193	252	D6	F1	ND												1		CDM Smith	N. Ross			
CL-30076	231194	253	D6	F2	ND												1		CDM Smith	N. Ross			
CL-30076	231195	254	D6	F3	ND												1		CDM Smith	N. Ross			
CL-30076	231196	255	D6	F8	ND												1		CDM Smith	N. Ross			
CL-30076	231325	256	D6	G2	ND												1		CDM Smith	N. Ross			
CL-30076	231326	257	D6	G4	ND												1		CDM Smith	N. Ross			
CL-30076	231327	258	D6	G6	ND												1		CDM Smith	N. Ross			
CL-30076	231328	259	D6	G7	ND												1		CDM Smith	N. Ross			
CL-30076	231329	260	D6	G8	ND												1		CDM Smith	N. Ross			
CL-30076	231330	261	D6	G9	ND												1		CDM Smith	N. Ross			
CL-30076	231331	262	D6	G10	ND												1		CDM Smith	N. Ross			
CL-30076	231332	263	D6	H1	ND												1		CDM Smith	N. Ross			
CL-30076	231333	264	D6	H2	ND												1		CDM Smith	N. Ross			
CL-30076	231334	265	D6	H3	ND												1		CDM Smith	N. Ross			
CL-30076	231335	266	D6	H5	ND												1		CDM Smith	N. Ross			
CL-30076	231336	267	D6	H6	ND												1		CDM Smith	N. Ross			
CL-30076	231337	268	D6	H7	ND												1		CDM Smith	N. Ross			
CL-30076	231338	269	D6	H8	ND												1		CDM Smith	N. Ross			
CL-30076	231339	270	D6	H9	ND												1		CDM Smith	N. Ross			
CL-30076	231340	271	D6	H10	ND												1		CDM Smith	N. Ross			
CL-30076	231341	272	D6	I1	ND												1		CDM Smith	N. Ross			
CL-30076	231342	273	D6	I3	ND												1		CDM Smith	N. Ross			
CL-30076	231343	274	D6	I4	ND												1		CDM Smith	N. Ross			
CL-30076	231344	275	D6	I6	ND												1		CDM Smith	N. Ross			
CL-30076	231345	276	D6	I7	ND												1		CDM Smith	N. Ross			
CL-30076	231346	277	D6	I8	ND												1		CDM Smith	N. Ross			
CL-30076	231347	278	D6	I9	ND												1		CDM Smith	N. Ross			
CL-30076	231348	279	D6	I10	ND												1		CDM Smith	N. Ross			
CL-30076	231349	280	D6	J4	ND												1		CDM Smith	N. Ross			
CL-30076	231350	281	D6	J6	ND												1		CDM Smith	N. Ross			
CL-30076	231351	282	D6	J7	ND												1		CDM Smith	N. Ross			
CL-30076	231352	283	D6	J8	ND												1		CDM Smith	N. Ross			
CL-30076	231353	284	D8	A1	ND												1		CDM Smith	N. Ross			
CL-30076	231354	285	D8	A2	ND												1		CDM Smith	N. Ross			
CL-30076	231355	286	D8	A3	ND												1		CDM Smith	N. Ross			
CL-30076	231356	287	D8	A4	ND												1		CDM Smith	N. Ross			
CL-30076	231357	288	D8	A5	ND												1		CDM Smith	N. Ross			
CL-30076	231358	289	D8	A6	ND												1		CDM Smith	N. Ross			
CL-30076	231359	290	D8	A7	ND												1		CDM Smith	N. Ross			
CL-30076	231360	291	D8	A8	ND												1		CDM Smith	N. Ross			
CL-30076	231361	292	D8	C1	ND												1		CDM Smith	N. Ross	Grid_grid opening is D8_C1, not D8_C10 according to benchsheet (page 20).	2/21/2014	
CL-30076	231362	293	D8	C2	ND												1		CDM Smith	N. Ross			
CL-30076	231363	294	D8	C3	ND												1		CDM Smith	N. Ross			
CL-30076	231364	295	D8	C4	ND												1		CDM Smith	N. Ross			
CL-30078	231365	1	A1	A4	ND												1		CDM Smith	N. Ross			
CL-30078	231366	2	A1	A5	ND												1		CDM Smith	N. Ross			
CL-30078	231367	3	A1	A8	F	1	1	6.9	0.7	9.8571429	LA		ADX	1	1	1	1	TA; Photo 0662	CDM Smith	N. Ross			
CL-30078	231368	4	A1	A8	F	2	2	10	0.48	20.833333	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231369	5	A1	B10	F	3	3	8.1	0.9	9	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231370	6	A1	C9	ND												1		CDM Smith	N. Ross			
CL-30078	231371	7	A1	D5	ND												1		CDM Smith	N. Ross			
CL-30078	231372	8	A1	D8	ND												1		CDM Smith	N. Ross			
CL-30078	231373	9	A1	D10	ND												1		CDM Smith	N. Ross			
CL-30078	231374	10	A1	E3	ND												1		CDM Smith	N. Ross			
CL-30078	231375	11	A1	E4	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING ABS AIR (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-30078	231376	12	A1	E5	ND												1		CDM Smith	N. Ross			
CL-30078	231377	13	A1	E10	ND												1		CDM Smith	N. Ross			
CL-30078	231378	14	A1	F2	ND												1		CDM Smith	N. Ross			
CL-30078	231379	15	A1	F3	ND												1		CDM Smith	N. Ross			
CL-30078	231380	16	A1	F4	ND												1		CDM Smith	N. Ross			
CL-30078	231381	17	A1	F5	ND												1		CDM Smith	N. Ross			
CL-30078	231382	18	A1	F6	ND												1		CDM Smith	N. Ross			
CL-30078	231383	19	A1	F10	ND												1		CDM Smith	N. Ross			
CL-30078	231384	20	A1	G3	ND												1		CDM Smith	N. Ross			
CL-30078	231385	21	A1	G5	ND												1		CDM Smith	N. Ross			
CL-30078	231386	22	A1	G6	F	4	4	24.9	0.8	31.125	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231387	23	A1	G7	ND												1		CDM Smith	N. Ross			
CL-30078	231388	24	A1	G8	ND												1		CDM Smith	N. Ross			
CL-30078	231389	25	A1	G9	ND												1		CDM Smith	N. Ross			
CL-30078	231390	26	A1	G10	ND												1		CDM Smith	N. Ross			
CL-30078	231391	27	A1	H1	ND												1		CDM Smith	N. Ross			
CL-30078	231392	28	A1	H3	ND												1		CDM Smith	N. Ross			
CL-30078	231393	29	A1	H4	ND												1		CDM Smith	N. Ross			
CL-30078	231394	30	A1	H8	ND												1		CDM Smith	N. Ross			
CL-30078	231395	31	A1	H10	ND												1		CDM Smith	N. Ross			
CL-30078	231396	32	A1	I4	ND												1		CDM Smith	N. Ross			
CL-30078	231397	33	A1	I6	ND												1		CDM Smith	N. Ross			
CL-30078	231398	34	A1	I7	ND												1		CDM Smith	N. Ross			
CL-30078	231399	35	A1	I9	ND												1		CDM Smith	N. Ross			
CL-30078	231400	36	A1	I10	ND												1		CDM Smith	N. Ross			
CL-30078	231401	37	A1	J2	ND												1		CDM Smith	N. Ross			
CL-30078	231402	38	A1	J3	ND												1		CDM Smith	N. Ross			
CL-30078	231403	39	A1	J4	ND												1		CDM Smith	N. Ross			
CL-30078	231404	40	A1	J5	ND												1		CDM Smith	N. Ross			
CL-30078	231405	41	A1	J6	ND												1		CDM Smith	N. Ross			
CL-30078	231406	42	A1	J8	ND												1		CDM Smith	N. Ross			
CL-30078	231407	43	A1	J9	ND												1		CDM Smith	N. Ross			
CL-30078	231408	44	A1	J10	ND												1		CDM Smith	N. Ross			
CL-30078	231409	45	A3	A2	F	5	5	16.3	0.25	65.2	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231410	46	A3	A3	ND												1		CDM Smith	N. Ross			
CL-30078	231411	47	A3	A5	ND												1		CDM Smith	N. Ross			
CL-30078	231412	48	A3	A6	ND												1		CDM Smith	N. Ross			
CL-30078	231413	49	A3	A7	ND												1		CDM Smith	N. Ross			
CL-30078	231414	50	A3	A8	ND												1		CDM Smith	N. Ross			
CL-30078	231415	51	A3	A9	ND												1		CDM Smith	N. Ross			
CL-30078	231416	52	A3	A10	ND												1		CDM Smith	N. Ross			
CL-30078	231417	53	A3	B1	ND												1		CDM Smith	N. Ross			
CL-30078	231418	54	A3	B2	ND												1		CDM Smith	N. Ross			
CL-30078	231419	55	A3	B7	ND												1		CDM Smith	N. Ross			
CL-30078	231420	56	A3	C2	ND												1		CDM Smith	N. Ross			
CL-30078	231421	57	A3	C3	ND												1		CDM Smith	N. Ross			
CL-30078	231422	58	A3	C6	ND												1		CDM Smith	N. Ross			
CL-30078	231423	59	A3	C7	ND												1		CDM Smith	N. Ross			
CL-30078	231424	60	A3	C8	ND												1		CDM Smith	N. Ross			
CL-30078	231425	61	A3	D2	ND												1		CDM Smith	N. Ross			
CL-30078	231426	62	A3	D7	ND												1		CDM Smith	N. Ross			
CL-30078	231427	63	A3	D8	ND												1		CDM Smith	N. Ross			
CL-30078	231428	64	A3	E3	ND												1		CDM Smith	N. Ross			
CL-30078	231429	65	A3	E4	ND												1		CDM Smith	N. Ross			
CL-30078	231430	66	A3	F2	ND												1		CDM Smith	N. Ross			
CL-30078	231431	67	A3	F3	ND												1		CDM Smith	N. Ross			
CL-30078	231432	68	A3	F4	ND												1		CDM Smith	N. Ross			
CL-30078	231433	69	A3	G5	ND												1		CDM Smith	N. Ross			
CL-30078	231434	70	A3	G9	ND												1		CDM Smith	N. Ross			
CL-30078	231435	71	A3	H8	ND												1		CDM Smith	N. Ross			
CL-30078	231436	72	A5	A3	F	6	6	7.8	0.75	10.4	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231437	73	A5	A4	ND												1		CDM Smith	N. Ross			
CL-30078	231438	74	A5	A5	ND												1		CDM Smith	N. Ross			
CL-30078	231439	75	A5	A6	ND												1		CDM Smith	N. Ross			
CL-30078	231440	76	A5	A7	ND												1		CDM Smith	N. Ross			
CL-30078	231441	77	A5	A8	ND												1		CDM Smith	N. Ross			
CL-30078	231442	78	A5	A9	ND												1		CDM Smith	N. Ross			
CL-30078	231443	79	A5	A10	ND												1		CDM Smith	N. Ross			
CL-30078	231444	80	A5	B3	ND												1		CDM Smith	N. Ross			
CL-30078	231445	81	A5	B4	ND												1		CDM Smith	N. Ross			
CL-30078	231446	82	A5	B5	ND												1		CDM Smith	N. Ross			
CL-30078	231447	83	A5	B6	ND												1		CDM Smith	N. Ross			
CL-30078	231448	84	A5	B7	ND												1		CDM Smith	N. Ross			
CL-30078	231449	85	A5	B8	ND												1		CDM Smith	N. Ross			
CL-30078	231450	86	A5	B9	F	7	7	8.1	0.75	10.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231451	87	A5	B10	ND												1		CDM Smith	N. Ross			
CL-30078	231452	88	A5	C3	F	8	8	7.1	0.7	10.142857	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231453	89	A5	C8	ND												1		CDM Smith	N. Ross			
CL-30078	231454	90	A5	C9	ND												1		CDM Smith	N. Ross			
CL-30078	231455	91	A5	C10	ND												1		CDM Smith	N. Ross			
CL-30078	231456	92	A5	D2	ND												1		CDM Smith	N. Ross			
CL-30078	231457	93	A5	D3	ND												1		CDM Smith	N. Ross			
CL-30078	231458	94	A5	E2	ND												1		CDM Smith	N. Ross			
CL-30078	231459	95	A5	E3	ND												1		CDM Smith	N. Ross			
CL-30078	231460	96	A5	E9	ND												1		CDM Smith	N. Ross			
CL-30078	231461	97	A5	F4	ND												1		CDM Smith	N. Ross			
CL-30078	231462	98	A5	F8	ND												1		CDM Smith	N. Ross			
CL-30078	231463	99	A5	F9	ND												1		CDM Smith	N. Ross			
CL-30078	231464	100	A5	F10	ND												1		CDM Smith	N. Ross			
CL-30078	231465	101	A5	G6	ND												1		CDM Smith	N. Ross			
CL-30078	231466	102	A5	G7	ND												1		CDM Smith	N. Ross			
CL-30078	231467	103	A5	G8	ND												1		CDM Smith	N. Ross			
CL-30078	231468	104	A5	G9	ND												1		CDM Smith	N. Ross			
CL-30078	231469	105	A5	G10	ND												1		CDM Smith	N. Ross			
CL-30078	231470	106	A5	H6	ND												1		CDM Smith	N. Ross			
CL-30078	231471	107	A5	H10	ND												1		CDM Smith	N. Ross			
CL-30078	231472	108	A5	I6	ND												1		CDM Smith	N. Ross			
CL-30078	231473	109	A5	I7	ND												1		CDM Smith	N. Ross			
CL-30078	231474	110	A5	I8	ND												1		CDM Smith	N. Ross			
CL-30078	231475	111	A5	J5	ND												1		CDM Smith	N. Ross			
CL-30078	231476	112	A5	J6	ND												1		CDM Smith	N. Ross			
CL-30078	231477	113	A7	A10	ND												1		CDM Smith	N. Ross			
CL-30078	231478	114	A7	G5	ND												1		CDM Smith	N. Ross			
CL-30078	231479	115	A7	H5	ND												1		CDM Smith	N. Ross			
CL-30078	231480	116	A7	I5	ND												1		CDM Smith	N. Ross			
CL-30078	231481	117	A7	I7	ND												1		CDM Smith	N. Ross			
CL-30078	231482	118	A7	J1	ND												1		CDM Smith	N. Ross			
CL-30078	231483	119	A7	J2	ND												1		CDM Smith	N. Ross			
CL-30078	231484	120	A7	J6	ND												1		CDM Smith	N. Ross			
CL-30078	231485	121	A7	J7	ND												1		CDM Smith	N. Ross			
CL-30078	231486	122	A9	A10	ND												1		CDM Smith	N. Ross			
CL-30078	231487	123	A9	D4	ND												1		CDM Smith	N. Ross			
CL-30078	231488	124	A9	D5	ND												1		CDM Smith	N. Ross			
CL-30078	231489	125	A9	F4	ND												1		CDM Smith	N. Ross			
CL-30078	231490	126	A9	F5	ND												1		CDM Smith	N. Ross			
CL-30078	231491	127	A9	F7	ND												1		CDM Smith	N. Ross			
CL-30078	231492	128	A9	F8	ND												1		CDM Smith	N. Ross			
CL-30078	231493	129	A9	I3	ND												1		CDM Smith	N. Ross			
CL-30078	231494	130	A9	I4	ND												1		CDM Smith	N. Ross			
CL-30078	231495	131	A9	J1	ND												1		CDM Smith	N. Ross			
CL-30078	231496	132	A9	J2	ND												1		CDM Smith	N. Ross			
CL-30078	231497	133	A9	J3	ND												1		CDM Smith	N. Ross			
CL-30078	231498	134	A9	J8	ND												1		CDM Smith	N. Ross			
CL-30078	231499	135	A9	J9	ND												1		CDM Smith	N. Ross			
CL-30078	231500	136	A9	J10	ND												1		CDM Smith	N. Ross			
CL-30078	231501	137	K2	A1	ND												1		CDM Smith	N. Ross			
CL-30078	231502	138	K2	A2	ND												1		CDM Smith	N. Ross			
CL-30078	231503	139	K2	A3	ND												1		CDM Smith	N. Ross			
CL-30078	231504	140	K2	A4	ND												1		CDM Smith	N. Ross			
CL-30078	231505	141	K2	A5	ND												1		CDM Smith	N. Ross			
CL-30078	231506	142	K2	A6	ND												1		CDM Smith	N. Ross			
CL-30078	231507	143	K2	A7	ND												1		CDM Smith	N. Ross			
CL-30078	231508	144	K2	A8	ND												1		CDM Smith	N. Ross			
CL-30078	231509	145	K2	A9	ND												1		CDM Smith	N. Ross			
CL-30078	231510	146	K2	A10	ND												1		CDM Smith	N. Ross			
CL-30078	231511	147	K2	B1	ND												1		CDM Smith	N. Ross			
CL-30078	231512	148	K2	B2	ND												1		CDM Smith	N. Ross			
CL-30078	231513	149	K2	B3	ND												1		CDM Smith	N. Ross			
CL-30078	231514	150	K2	B4	ND												1		CDM Smith	N. Ross			
CL-30078	231515	151	K2	B5	ND												1		CDM Smith	N. Ross			
CL-30078	231516	152	K2	B6	F	9	9	19.6	1.9	10.315789	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231517	153	K2	B7	ND												1		CDM Smith	N. Ross			
CL-30078	231518	154	K2	B8	ND												1		CDM Smith	N. Ross			
CL-30078	231519	155	K2	B9	ND												1		CDM Smith	N. Ross			
CL-30078	231520	156	K2	B10	ND												1		CDM Smith	N. Ross			
CL-30078	231521	157	K2	C5	ND												1		CDM Smith	N. Ross			
CL-30078	231522	158	K2	C6	ND												1		CDM Smith	N. Ross			
CL-30078	231523	159	K2	C7	F	0	0	28	0.5	56	LA		ADX	1			1	es non countbl	CDM Smith	N. Ross			
CL-30078	231524	160	K2	C8	ND												1		CDM Smith	N. Ross			
CL-30078	231525	161	K2	C9	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING ABS AIR (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-30078	231526	162	K2	C10	ND												1		CDM Smith	N. Ross			
CL-30078	231527	163	K2	D8	ND												1		CDM Smith	N. Ross			
CL-30078	231528	164	K2	D9	ND												1		CDM Smith	N. Ross			
CL-30078	231529	165	K2	D10	ND												1		CDM Smith	N. Ross			
CL-30078	231530	166	K2	F9	ND												1		CDM Smith	N. Ross			
CL-30078	231531	167	K2	F10	ND												1		CDM Smith	N. Ross			
CL-30078	231532	168	K2	G1	ND												1		CDM Smith	N. Ross			
CL-30078	231533	169	K2	G2	ND												1		CDM Smith	N. Ross			
CL-30078	231534	170	K2	G3	ND												1		CDM Smith	N. Ross			
CL-30078	231535	171	K2	G4	ND												1		CDM Smith	N. Ross			
CL-30078	231536	172	K2	G5	ND												1		CDM Smith	N. Ross			
CL-30078	231537	173	K2	G6	ND												1		CDM Smith	N. Ross			
CL-30078	231538	174	K2	G7	ND												1		CDM Smith	N. Ross			
CL-30078	231539	175	K2	G9	ND												1		CDM Smith	N. Ross			
CL-30078	231540	176	K2	G10	ND												1		CDM Smith	N. Ross			
CL-30078	231541	177	K2	H1	ND												1		CDM Smith	N. Ross			
CL-30078	231542	178	K2	H2	ND												1		CDM Smith	N. Ross			
CL-30078	231543	179	K2	H3	ND												1		CDM Smith	N. Ross			
CL-30078	231544	180	K2	H4	ND												1		CDM Smith	N. Ross			
CL-30078	231545	181	K2	H5	ND												1		CDM Smith	N. Ross			
CL-30078	231546	182	K2	H6	ND												1		CDM Smith	N. Ross			
CL-30078	231547	183	K2	H7	ND												1		CDM Smith	N. Ross			
CL-30078	231548	184	K2	H9	ND												1		CDM Smith	N. Ross			
CL-30078	231549	185	K2	H10	ND												1		CDM Smith	N. Ross			
CL-30078	231550	186	K2	I1	ND												1		CDM Smith	N. Ross			
CL-30078	231551	187	K2	I2	ND												1		CDM Smith	N. Ross			
CL-30078	231552	188	K2	I3	ND												1		CDM Smith	N. Ross			
CL-30078	231553	189	K2	I4	ND												1		CDM Smith	N. Ross			
CL-30078	231554	190	K2	I5	ND												1		CDM Smith	N. Ross			
CL-30078	231555	191	K2	I6	ND												1		CDM Smith	N. Ross			
CL-30078	231556	192	K2	I7	F	10	10	9.1	0.75	12.133333	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231557	193	K2	I8	ND												1		CDM Smith	N. Ross			
CL-30078	231558	194	K2	I9	ND												1		CDM Smith	N. Ross			
CL-30078	231559	195	K2	I10	ND												1		CDM Smith	N. Ross			
CL-30078	231560	196	K2	J1	ND												1		CDM Smith	N. Ross			
CL-30078	231561	197	K2	J2	ND												1		CDM Smith	N. Ross			
CL-30078	231562	198	K2	J3	ND												1		CDM Smith	N. Ross			
CL-30078	231563	199	K2	J4	ND												1		CDM Smith	N. Ross			
CL-30078	231564	200	K2	J5	ND												1		CDM Smith	N. Ross			
CL-30078	231565	201	K2	J6	ND												1		CDM Smith	N. Ross			
CL-30078	231566	202	K2	J7	ND												1		CDM Smith	N. Ross			
CL-30078	231567	203	K2	J8	ND												1		CDM Smith	N. Ross			
CL-30078	231568	204	K2	J9	ND												1		CDM Smith	N. Ross			
CL-30078	231569	205	K2	J10	ND												1		CDM Smith	N. Ross			
CL-30078	231570	206	K4	A2	ND												1		CDM Smith	N. Ross			
CL-30078	231571	207	K4	A3	ND												1		CDM Smith	N. Ross			
CL-30078	231572	208	K4	A4	F	11	11	6.9	0.3	23	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231573	209	K4	A5	ND												1		CDM Smith	N. Ross			
CL-30078	231574	210	K4	A6	ND												1		CDM Smith	N. Ross			
CL-30078	231575	211	K4	A7	ND												1		CDM Smith	N. Ross			
CL-30078	231576	212	K4	A8	ND												1		CDM Smith	N. Ross			
CL-30078	231577	213	K4	A9	ND												1		CDM Smith	N. Ross			
CL-30078	231578	214	K4	A10	ND												1		CDM Smith	N. Ross			
CL-30078	231579	215	K4	B1	ND												1		CDM Smith	N. Ross			
CL-30078	231580	216	K4	B2	ND												1		CDM Smith	N. Ross			
CL-30078	231581	217	K4	B3	ND												1		CDM Smith	N. Ross			
CL-30078	231582	218	K4	B4	ND												1		CDM Smith	N. Ross			
CL-30078	231583	219	K4	B5	ND												1		CDM Smith	N. Ross			
CL-30078	231584	220	K4	B6	ND												1		CDM Smith	N. Ross			
CL-30078	231585	221	K4	B7	ND												1		CDM Smith	N. Ross			
CL-30078	231586	222	K4	B8	F	12	12	7.6	0.3	25.333333	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30078	231587	223	K4	B9	ND												1		CDM Smith	N. Ross			
CL-30078	231588	224	K4	B10	ND												1		CDM Smith	N. Ross			
CL-30078	231589	225	K4	C2	ND												1		CDM Smith	N. Ross			
CL-30078	231590	226	K4	C3	ND												1		CDM Smith	N. Ross			
CL-30078	231591	227	K4	C4	ND												1		CDM Smith	N. Ross			
CL-30078	231592	228	K4	C5	ND												1		CDM Smith	N. Ross			
CL-30078	231593	229	K4	C6	ND												1		CDM Smith	N. Ross			
CL-30078	231594	230	K4	C7	ND												1		CDM Smith	N. Ross			
CL-30078	231595	231	K4	C8	ND												1		CDM Smith	N. Ross			
CL-30078	231596	232	K4	C9	ND												1		CDM Smith	N. Ross			
CL-30078	231597	233	K4	C10	ND												1		CDM Smith	N. Ross			
CL-30078	231598	234	K4	D2	ND												1		CDM Smith	N. Ross			
CL-30078	231599	235	K4	D3	ND												1		CDM Smith	N. Ross			
CL-30078	231600	236	K4	D4	ND												1		CDM Smith	N. Ross			
CL-30078	231601	237	K4	D5	ND												1		CDM Smith	N. Ross			
CL-30078	231602	238	K4	D6	ND												1		CDM Smith	N. Ross			
CL-30078	231603	239	K4	D7	ND												1		CDM Smith	N. Ross			
CL-30078	231604	240	K4	D8	ND												1		CDM Smith	N. Ross			
CL-30078	231605	241	K4	D9	ND												1		CDM Smith	N. Ross			
CL-30078	231606	242	K4	D10	ND												1		CDM Smith	N. Ross			
CL-30078	231607	243	K4	E1	ND												1		CDM Smith	N. Ross			
CL-30078	231608	244	K4	E2	ND												1		CDM Smith	N. Ross			
CL-30078	231609	245	K4	E3	ND												1		CDM Smith	N. Ross			
CL-30078	231610	246	K4	E4	ND												1		CDM Smith	N. Ross			
CL-30078	231611	247	K4	E5	ND												1		CDM Smith	N. Ross			
CL-30078	231612	248	K4	E6	ND												1		CDM Smith	N. Ross			
CL-30078	231613	249	K4	E7	ND												1		CDM Smith	N. Ross			
CL-30078	231614	250	K4	E8	ND												1		CDM Smith	N. Ross			
CL-30078	231615	251	K4	E9	F	0	0	50	3.5	14.285714	LA		ADX	1			1	s non countab	CDM Smith	N. Ross			
CL-30078	231616	252	K4	E10	ND												1		CDM Smith	N. Ross			
CL-30078	231617	253	K4	F1	ND												1		CDM Smith	N. Ross			
CL-30078	231618	254	K4	F2	ND												1		CDM Smith	N. Ross			
CL-30078	231619	255	K4	F3	ND												1		CDM Smith	N. Ross			
CL-30078	231620	256	K4	F4	ND												1		CDM Smith	N. Ross			
CL-30078	231621	257	K4	F5	ND												1		CDM Smith	N. Ross			
CL-30078	231622	258	K4	F6	ND												1		CDM Smith	N. Ross			
CL-30078	231623	259	K4	F7	ND												1		CDM Smith	N. Ross			
CL-30078	231624	260	K4	F8	ND												1		CDM Smith	N. Ross			
CL-30078	231625	261	K4	F9	ND												1		CDM Smith	N. Ross			
CL-30078	231626	262	K4	F10	ND												1		CDM Smith	N. Ross			
CL-30078	231627	263	K4	G1	ND												1		CDM Smith	N. Ross			
CL-30078	231628	264	K4	G2	ND												1		CDM Smith	N. Ross			
CL-30078	231629	265	K4	G3	ND												1		CDM Smith	N. Ross			
CL-30078	231630	266	K4	G4	ND												1		CDM Smith	N. Ross			
CL-30078	231631	267	K4	G5	ND												1		CDM Smith	N. Ross			
CL-30078	231632	268	K4	G6	ND												1		CDM Smith	N. Ross			
CL-30078	231633	269	K4	G7	ND												1		CDM Smith	N. Ross			
CL-30078	231634	270	K4	G8	ND												1		CDM Smith	N. Ross			
CL-30078	231635	271	K4	G9	ND												1		CDM Smith	N. Ross			
CL-30078	231636	272	K4	G10	ND												1		CDM Smith	N. Ross			
CL-30078	231637	273	K4	H1	ND												1		CDM Smith	N. Ross			
CL-30078	231638	274	K4	H2	ND												1		CDM Smith	N. Ross			
CL-30078	231639	275	K4	H3	ND												1		CDM Smith	N. Ross			
CL-30078	231640	276	K4	H4	ND												1		CDM Smith	N. Ross			
CL-30078	231641	277	K4	H5	ND												1		CDM Smith	N. Ross			
CL-30078	231642	278	K4	H6	ND												1		CDM Smith	N. Ross			
CL-30078	231643	279	K4	H7	ND												1		CDM Smith	N. Ross			
CL-30078	231644	280	K4	H8	F	13	13	30.7	1.2	25.583333	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231657	1	O2	A2	ND												1		CDM Smith	N. Ross			
CL-30080	231658	2	O2	A3	ND												1		CDM Smith	N. Ross			
CL-30080	231659	3	O2	A4	ND												1		CDM Smith	N. Ross			
CL-30080	231660	4	O2	A6	ND												1		CDM Smith	N. Ross			
CL-30080	231661	5	O2	A8	ND												1		CDM Smith	N. Ross			
CL-30080	231662	6	O2	A9	F	1	1	10.1	0.5	20.2	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231663	7	O2	A10	ND												1		CDM Smith	N. Ross			
CL-30080	231664	8	O2	B2	ND												1		CDM Smith	N. Ross			
CL-30080	231665	9	O2	B3	ND												1		CDM Smith	N. Ross			
CL-30080	231666	10	O2	B6	F	2	2	18.5	0.45	41.111111	LA		ADX	1	1	1	1	TA; Photo 066:3	CDM Smith	N. Ross			
CL-30080	231667	11	O2	B10	ND												1		CDM Smith	N. Ross			
CL-30080	231668	12	O2	C4	F	3	3	10.2	0.25	40.8	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231669	13	O2	C6	ND												1		CDM Smith	N. Ross			
CL-30080	231670	14	O2	D7	ND												1		CDM Smith	N. Ross			
CL-30080	231671	15	O2	D9	MD11	4											1		CDM Smith	N. Ross			
CL-30080	231672	16	O2	D9	MF		4	5.1	0.27	18.888889	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231673	17	O2	E2	F	5	5	6.8	0.55	12.363636	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231674	18	O2	E5	ND												1		CDM Smith	N. Ross			
CL-30080	231675	19	O2	E10	F	6	6	5.3	0.45	11.777778	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231676	20	O2	F2	ND												1		CDM Smith	N. Ross			
CL-30080	231677	21	O2	F3	F	7	7	5.05	0.28	18.035714	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231678	22	O2	F4	F	8	8	9.4	0.25	37.6	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231679	23	O2	F4	F	9	9	5.1	0.27	18.888889	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231680	24	O2	F4	F	10	10	5.03	0.25	20.12	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231681	25	O2	F5	ND												1		CDM Smith	N. Ross			
CL-30080	231682	26	O2	F8	ND												1		CDM Smith	N. Ross			
CL-30080	231683	27	O2	F9	F	11	11	6	0.5	12	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231684	28	O2	F9	F	12	12	10.1	0.8	12.625	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231685	29	O2	G1	ND												1		CDM Smith	N. Ross			
CL-30080	231686	30	O2	G4	ND												1		CDM Smith	N. Ross			
CL-30080	231687	31	O2	G5	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING ABS AIR (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-30080	231688	32	O2	G9	ND												1		CDM Smith	N. Ross			
CL-30080	231689	33	O2	G10	F	13	13	5.3	0.26	20.384615	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231690	34	O2	G10	F	14	14	8.3	0.4	20.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231691	35	O2	H1	ND												1		CDM Smith	N. Ross			
CL-30080	231692	36	O2	H10	ND												1		CDM Smith	N. Ross			
CL-30080	231693	37	O2	I4	F	15	15	13	0.42	30.952381	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231694	38	O2	I6	ND												1		CDM Smith	N. Ross			
CL-30080	231645	39	O2	I10	F	16	16	12	1.8	6.6666667	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231646	40	O2	J3	F	17	17	5.9	0.5	11.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231647	41	O2	J5	F	18	18	18.1	0.35	51.714286	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231648	42	O2	J7	ND												1		CDM Smith	N. Ross			
CL-30080	231649	43	O4	A6	F	19	19	5.9	0.4	14.75	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231650	44	O4	A8	F	20	20	6.8	0.26	26.153846	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231651	45	O4	B2	F	21	21	6.6	0.75	8.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231652	46	O4	B3	MD22	22											1		CDM Smith	N. Ross			
CL-30080	231653	47	O4	B3	MF		22	5.6	0.27	20.740741	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231654	48	O4	B3	MF		23	5.4	0.25	21.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231655	49	O4	B3	F	23	24	17.5	2.4	7.2916667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30080	231656	50	O4	B8	F	24	25	11.9	0.7	17	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231695	1	P1	A1	ND												1		CDM Smith	N. Ross			
CL-30082	231696	2	P1	A2	ND												1		CDM Smith	N. Ross			
CL-30082	231697	3	P1	A3	ND												1		CDM Smith	N. Ross			
CL-30082	231698	4	P1	A4	ND												1		CDM Smith	N. Ross			
CL-30082	231699	5	P1	A5	ND												1		CDM Smith	N. Ross			
CL-30082	231700	6	P1	A6	F	1	1	21.5	2	10.75	LA		ADX	1	1	1	1	TA; Photo 0663	CDM Smith	N. Ross			
CL-30082	231701	7	P1	A7	ND												1		CDM Smith	N. Ross			
CL-30082	231702	8	P1	A8	ND												1		CDM Smith	N. Ross			
CL-30082	231703	9	P1	A9	ND												1		CDM Smith	N. Ross			
CL-30082	231704	10	P1	A10	ND												1		CDM Smith	N. Ross			
CL-30082	231705	11	P1	B1	ND												1		CDM Smith	N. Ross			
CL-30082	231706	12	P1	B2	ND												1		CDM Smith	N. Ross			
CL-30082	231707	13	P1	B3	ND												1		CDM Smith	N. Ross			
CL-30082	231708	14	P1	B4	ND												1		CDM Smith	N. Ross			
CL-30082	231709	15	P1	B5	B	2	2	43	1.8	23.888889	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231710	16	P1	B6	ND												1		CDM Smith	N. Ross			
CL-30082	231711	17	P1	B7	ND												1		CDM Smith	N. Ross			
CL-30082	231712	18	P1	C3	ND												1		CDM Smith	N. Ross			
CL-30082	231713	19	P1	C4	F	3	3	11.1	1	11.1	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231714	20	P1	C5	ND												1		CDM Smith	N. Ross			
CL-30082	231715	21	P1	C6	F	4	4	6.6	0.25	26.4	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231716	22	P1	C7	ND												1		CDM Smith	N. Ross			
CL-30082	231717	23	P1	C8	ND												1		CDM Smith	N. Ross			
CL-30082	231718	24	P1	D2	ND												1		CDM Smith	N. Ross			
CL-30082	231719	25	P1	D3	ND												1		CDM Smith	N. Ross			
CL-30082	231720	26	P1	D4	F	5	5	9.4	0.3	31.333333	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231721	27	P1	D5	ND												1		CDM Smith	N. Ross			
CL-30082	231722	28	P1	D6	ND												1		CDM Smith	N. Ross			
CL-30082	231723	29	P1	D7	ND												1		CDM Smith	N. Ross			
CL-30082	231724	30	P1	D8	ND												1		CDM Smith	N. Ross			
CL-30082	231725	31	P1	E1	ND												1		CDM Smith	N. Ross			
CL-30082	231726	32	P1	E2	ND												1		CDM Smith	N. Ross			
CL-30082	231727	33	P1	E3	ND												1		CDM Smith	N. Ross			
CL-30082	231728	34	P1	E4	ND												1		CDM Smith	N. Ross			
CL-30082	231729	35	P1	E5	ND												1		CDM Smith	N. Ross			
CL-30082	231730	36	P1	E7	ND												1		CDM Smith	N. Ross			
CL-30082	231731	37	P1	E10	ND												1		CDM Smith	N. Ross			
CL-30082	231732	38	P1	F1	ND												1		CDM Smith	N. Ross			
CL-30082	231733	39	P1	F2	ND												1		CDM Smith	N. Ross			
CL-30082	231734	40	P1	F3	ND												1		CDM Smith	N. Ross			
CL-30082	231735	41	P1	F4	ND												1		CDM Smith	N. Ross			
CL-30082	231736	42	P1	F5	ND												1		CDM Smith	N. Ross			
CL-30082	231737	43	P1	F6	ND												1		CDM Smith	N. Ross			
CL-30082	231738	44	P1	F7	ND												1		CDM Smith	N. Ross			
CL-30082	231739	45	P1	F8	ND												1		CDM Smith	N. Ross			
CL-30082	231740	46	P1	F9	F	6	6	28	2.7	10.37037	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231741	47	P1	G1	ND												1		CDM Smith	N. Ross			
CL-30082	231742	48	P1	G2	ND												1		CDM Smith	N. Ross			
CL-30082	231743	49	P1	G3	ND												1		CDM Smith	N. Ross			
CL-30082	231744	50	P1	G4	ND												1		CDM Smith	N. Ross			
CL-30082	231745	51	P1	G5	ND												1		CDM Smith	N. Ross			
CL-30082	231746	52	P1	G6	ND												1		CDM Smith	N. Ross			
CL-30082	231747	53	P1	G7	ND												1		CDM Smith	N. Ross			
CL-30082	231748	54	P1	G8	ND												1		CDM Smith	N. Ross			
CL-30082	231749	55	P1	G9	ND												1		CDM Smith	N. Ross			
CL-30082	231750	56	P1	G10	ND												1		CDM Smith	N. Ross			
CL-30082	231751	57	P1	H1	ND												1		CDM Smith	N. Ross			
CL-30082	231752	58	P1	H2	ND												1		CDM Smith	N. Ross			
CL-30082	231753	59	P1	H3	ND												1		CDM Smith	N. Ross			
CL-30082	231754	60	P1	H4	ND												1		CDM Smith	N. Ross			
CL-30082	231755	61	P1	H5	ND												1		CDM Smith	N. Ross			
CL-30082	231756	62	P1	H6	ND												1		CDM Smith	N. Ross			
CL-30082	231757	63	P1	H7	ND												1		CDM Smith	N. Ross			
CL-30082	231758	64	P1	H8	ND												1		CDM Smith	N. Ross			
CL-30082	231759	65	P1	H9	ND												1		CDM Smith	N. Ross			
CL-30082	231760	66	P1	H10	ND												1		CDM Smith	N. Ross			
CL-30082	231761	67	P1	I1	ND												1		CDM Smith	N. Ross			
CL-30082	231762	68	P1	I2	ND												1		CDM Smith	N. Ross			
CL-30082	231763	69	P1	I3	ND												1		CDM Smith	N. Ross			
CL-30082	231764	70	P1	I4	ND												1		CDM Smith	N. Ross			
CL-30082	231765	71	P1	J1	ND												1		CDM Smith	N. Ross			
CL-30082	231766	72	P1	J2	ND												1		CDM Smith	N. Ross			
CL-30082	231767	73	P1	J3	ND												1		CDM Smith	N. Ross			
CL-30082	231768	74	P1	J4	ND												1		CDM Smith	N. Ross			
CL-30082	231769	75	P1	J5	ND												1		CDM Smith	N. Ross			
CL-30082	231770	76	P1	J6	ND												1		CDM Smith	N. Ross			
CL-30082	231771	77	P1	J7	ND												1		CDM Smith	N. Ross			
CL-30082	231772	78	P1	J8	ND												1		CDM Smith	N. Ross			
CL-30082	231773	79	P1	J9	ND												1		CDM Smith	N. Ross			
CL-30082	231774	80	P1	J10	ND												1		CDM Smith	N. Ross			
CL-30082	231775	81	P3	A4	F	7	7	13.4	0.5	26.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231776	82	P3	A5	F	8	8	9.1	0.45	20.222222	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231777	83	P3	A6	ND												1		CDM Smith	N. Ross			
CL-30082	231778	84	P3	A7	ND												1		CDM Smith	N. Ross			
CL-30082	231779	85	P3	A8	ND												1		CDM Smith	N. Ross			
CL-30082	231780	86	P3	A9	ND												1		CDM Smith	N. Ross			
CL-30082	231781	87	P3	B1	ND												1		CDM Smith	N. Ross			
CL-30082	231782	88	P3	B5	ND												1		CDM Smith	N. Ross			
CL-30082	231783	89	P3	B6	ND												1		CDM Smith	N. Ross			
CL-30082	231784	90	P3	B7	F	9	9	8.2	0.5	16.4	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231785	91	P3	B7	F	10	10	7.7	0.9	8.5555556	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231786	92	P3	B9	ND												1		CDM Smith	N. Ross			
CL-30082	231787	93	P3	B10	ND												1		CDM Smith	N. Ross			
CL-30082	231788	94	P3	C2	ND												1		CDM Smith	N. Ross			
CL-30082	231789	95	P3	C3	F	11	11	12.9	0.55	23.454545	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231790	96	P3	C4	ND												1		CDM Smith	N. Ross			
CL-30082	231791	97	P3	C5	ND												1		CDM Smith	N. Ross			
CL-30082	231792	98	P3	C6	ND												1		CDM Smith	N. Ross			
CL-30082	231793	99	P3	C9	ND												1		CDM Smith	N. Ross			
CL-30082	231794	100	P3	C10	ND												1		CDM Smith	N. Ross			
CL-30082	231795	101	P3	D1	ND												1		CDM Smith	N. Ross			
CL-30082	231796	102	P3	D2	ND												1		CDM Smith	N. Ross			
CL-30082	231797	103	P3	D3	ND												1		CDM Smith	N. Ross			
CL-30082	231798	104	P3	D4	ND												1		CDM Smith	N. Ross			
CL-30082	231799	105	P3	D5	ND												1		CDM Smith	N. Ross			
CL-30082	231800	106	P3	D6	ND												1		CDM Smith	N. Ross			
CL-30082	231801	107	P3	D7	ND												1		CDM Smith	N. Ross			
CL-30082	231802	108	P3	D8	ND												1		CDM Smith	N. Ross			
CL-30082	231803	109	P3	D9	ND												1		CDM Smith	N. Ross			
CL-30082	231804	110	P3	D10	ND												1		CDM Smith	N. Ross			
CL-30082	231805	111	P3	E1	ND												1		CDM Smith	N. Ross			
CL-30082	231806	112	P3	E2	ND												1		CDM Smith	N. Ross			
CL-30082	231807	113	P3	E3	ND												1		CDM Smith	N. Ross			
CL-30082	231808	114	P3	E4	ND												1		CDM Smith	N. Ross			
CL-30082	231809	115	P3	E5	ND												1		CDM Smith	N. Ross			
CL-30082	231810	116	P3	E6	F	12	12	15.6	0.4	39	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231811	117	P3	E7	ND												1		CDM Smith	N. Ross			
CL-30082	231812	118	P3	E8	ND												1		CDM Smith	N. Ross			
CL-30082	231813	119	P3	E9	ND												1		CDM Smith	N. Ross			
CL-30082	231814	120	P3	E10	F	13	13	15.3	0.9	17	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231815	121	P3	F1	ND												1		CDM Smith	N. Ross			
CL-30082	231816	122	P3	F2	ND												1		CDM Smith	N. Ross			
CL-30082	231817	123	P3	F3	ND												1		CDM Smith	N. Ross			
CL-30082	231818	124	P3	F4	ND												1		CDM Smith	N. Ross			
CL-30082	231819	125	P3	F5	ND												1		CDM Smith	N. Ross			
CL-30082	231820	126	P3	F6	ND												1		CDM Smith	N. Ross			
CL-30082	231821	127	P3	F7	ND												1		CDM Smith	N. Ross			
CL-30082	231822	128	P3	F8	ND												1		CDM Smith	N. Ross			
CL-30082	231823	129	P3	F9	ND												1		CDM Smith	N. Ross			
CL-30082	231824	130	P3	F10	ND												1		CDM Smith	N. Ross			
CL-30082	231825	131	P3	G1	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING ABS AIR (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-30082	231826	132	P3	G2	ND												1		CDM Smith	N. Ross			
CL-30082	231827	133	P3	G3	F	14	14	8.9	0.8	11.125	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231828	134	P3	G4	ND												1		CDM Smith	N. Ross			
CL-30082	231829	135	P3	G5	ND												1		CDM Smith	N. Ross			
CL-30082	231830	136	P3	G6	ND												1		CDM Smith	N. Ross			
CL-30082	231831	137	P3	G7	ND												1		CDM Smith	N. Ross			
CL-30082	231832	138	P3	G8	ND												1		CDM Smith	N. Ross			
CL-30082	231833	139	P3	G9	ND												1		CDM Smith	N. Ross			
CL-30082	231834	140	P3	G10	ND												1		CDM Smith	N. Ross			
CL-30082	231835	141	P3	H1	ND												1		CDM Smith	N. Ross			
CL-30082	231836	142	P3	H2	F	15	15	17.7	0.35	50.571429	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
CL-30082	231837	143	P3	H3	ND												1		CDM Smith	N. Ross			
CL-30082	231838	144	P3	H4	ND												1		CDM Smith	N. Ross			
CL-30082	231839	145	P3	H5	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING DUFF (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-3-0001	198841	1	T1	C7	F	1	1	4.5	0.25	18	LA		ADX	1	1	1		NaK, WRTA; Ph	CDM Smith	A. Coler			x-NR
CL-3-0001	198842	2	T1	C7	F	2	2	3	0.75	4	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198843	3	T1	C7	MD21	3													CDM Smith	A. Coler			x-NR
CL-3-0001	198844	4	T1	C7	MFO		3	5.5	1.1	5	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198845	5	T1	C7	MFO		4	4.1	0.25	16.4	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198846	6	T1	C7	MD20	4													CDM Smith	A. Coler			x-NR
CL-3-0001	198847	7	T1	C7	MF		5	4	0.5	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198848	8	T1	C7	MFO		6	4.8	0.25	19.2	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198849	9	T1	C7	F	5	7	2.25	0.75	3	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198850	10	T1	C7	F	6	8	3.5	0.5	7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198851	11	T1	C7	MD10	7													CDM Smith	A. Coler			x-NR
CL-3-0001	198852	12	T1	C7	MFO		9	1.5	0.4	3.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198853	13	T1	C7	F	8	10	2.25	0.12	18.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198854	14	T1	C7	MD10	9													CDM Smith	A. Coler			x-NR
CL-3-0001	198855	15	T1	C7	MFO		11	2.4	0.09	26.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198856	16	T1	C7	F	10	12	4	0.2	20	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198857	17	T1	C7	F	11	13	4.5	0.25	18	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198858	18	T1	C7	F	12	14	3.5	0.5	7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198859	19	T1	G8	MD10	13													CDM Smith	A. Coler			x-NR
CL-3-0001	198860	20	T1	G8	MF		15	2.3	0.25	9.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198861	21	T1	G8	F	14	16	1.5	0.3	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198862	22	T1	G8	F	15	17	10	0.5	20	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	For total structure #17 (page 2), the "Sketch" field was not marked on the benchsheet but was entered in the EDD.	2/21/2014	x-NR
CL-3-0001	198863	23	T1	G8	F	16	18	2.7	0.12	22.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198864	24	T1	G8	MD21	17													CDM Smith	A. Coler			x-NR
CL-3-0001	198865	25	T1	G8	MFO		19	6.1	0.2	30.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198866	26	T1	G8	MFO		20	3.5	0.3	11.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198867	27	T1	G8	MD20	18													CDM Smith	A. Coler			x-NR
CL-3-0001	198868	28	T1	G8	MF		21	1.8	0.2	9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198869	29	T1	G8	MFO		22	2.8	0.2	14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198870	30	T1	G8	F	19	23	5	0.4	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198871	31	T1	G8	F	20	24	4.2	1	4.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198872	32	T1	G8	F	21	25	5.2	0.6	8.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198873	33	T1	G8	MD32	22													CDM Smith	A. Coler	For primary structure #22 (page 3), the "Sketch" field should not be marked in the EDD, according to the benchsheet.	2/21/2014	x-NR
CL-3-0001	198874	34	T1	G8	MF		26	27.5	2.1	13.1	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198875	35	T1	G8	MFO		27	5.5	0.09	61.11	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198876	36	T1	G8	MFO		28	4.2	0.12	35	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198877	37	T1	G8	F	23	29	5.5	0.5	11	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198878	38	T1	G8	F	24	30	4	0.25	16	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198879	39	T1	G8	MD31	25													CDM Smith	A. Coler	For primary structure #25 (page 4), the "Sketch" field should not be marked in the EDD, according to the benchsheet.	2/21/2014	x-NR
CL-3-0001	198880	40	T1	G8	MB		31	7.6	0.7	10.86	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198881	41	T1	G8	MFO		32	3	0.25	12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198882	42	T1	G8	MFO		33	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198883	43	T1	G8	F	26	34	4.8	0.25	19.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198884	44	T1	G8	F	27	35	17	1.5	11.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198885	45	T1	G8	CD22	28													CDM Smith	A. Coler	For primary structure #28 (page 4), the "Sketch" field should not be marked in the EDD, according to the benchsheet.	2/21/2014	x-NR
CL-3-0001	198886	46	T1	G8	CB		36	22	0.8	27.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198887	47	T1	G8	CF		37	10.7	0.75	14.27	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198888	48	T1	G8	F	29	38	3.5	0.3	11.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198889	49	T2	D1	F	30	39	13	3.5	3.71	LA		ADX	1				XK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198890	50	T2	D1	F	31	40	4.6	0.4	11.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198891	51	T2	D1	F	32	41	20	0.3	66.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198892	52	T2	D1	MD10	33													CDM Smith	A. Coler			x-NR
CL-3-0001	198893	53	T2	D1	MFO		42	2.2	0.2	11	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198894	54	T2	D1	F	34	43	3	0.25	12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198895	55	T2	D1	MD11	35													CDM Smith	A. Coler			x-NR
CL-3-0001	198896	56	T2	D1	MFO		44	7	0.2	35	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198897	57	T2	D1	F	36	0	4.5	0.2	22.5	LA		ADX	1					CDM Smith	A. Coler			x-NR
CL-3-0001	198898	58	T2	D1	F	37	45	3.5	0.4	8.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198899	59	T2	D1	MD21	38													CDM Smith	A. Coler			x-NR
CL-3-0001	198900	60	T2	D1	MF		46	11	0.5	22	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198901	61	T2	D1	MF		47	2.5	0.5	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198902	62	T2	D1	MD11	39													CDM Smith	A. Coler			x-NR
CL-3-0001	198903	63	T2	D1	MF		48	8	0.5	16	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198904	64	T2	D1	F	40	49	2.7	0.4	6.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198905	65	T2	D1	F	41	50	4.2	0.4	10.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198906	66	T2	D1	F	42	51	12.5	0.75	16.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198907	67	T2	D1	MD10	43													CDM Smith	A. Coler			x-NR
CL-3-0001	198908	68	T2	D1	MFO		52	4.5	0.3	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198909	69	T2	D1	MD11	44													CDM Smith	A. Coler			x-NR
CL-3-0001	198910	70	T2	D1	MFO		53	8	0.75	10.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198911	71	T2	D1	MD10	45													CDM Smith	A. Coler			x-NR
CL-3-0001	198912	72	T2	D1	MFO		54	5	0.2	25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198913	73	T2	D1	F	46	55	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198914	74	T2	D1	F	47	56	5.5	0.3	18.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198915	75	T2	D1	F	48	57	32	0.5	64	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198916	76	T2	H3	F	49	58	3	0.3	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198917	77	T2	H3	MD10	50													CDM Smith	A. Coler			x-NR
CL-3-0001	198918	78	T2	H3	MFO		59	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198919	79	T2	H3	F	51	60	1.4	0.3	4.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198920	80	T2	H3	F	52	61	4	0.4	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198921	81	T2	H3	F	53	62	12.5	0.5	25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198922	82	T2	H3	MD11	54													CDM Smith	A. Coler			x-NR
CL-3-0001	198923	83	T2	H3	MFO		63	8.1	0.75	10.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198924	84	T2	H3	MD10	55													CDM Smith	A. Coler			x-NR
CL-3-0001	198925	85	T2	H3	MFO		64	1.5	0.5	3	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198926	86	T2	H3	F	56	65	1.7	0.2	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198927	87	T2	H3	MD11	57													CDM Smith	A. Coler			x-NR
CL-3-0001	198928	88	T2	H3	MFO		66	5.6	0.3	18.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198929	89	T2	H3	F	58	67	3	0.5	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198930	90	T2	H3	MD11	59													CDM Smith	A. Coler			x-NR
CL-3-0001	198931	91	T2	H3	MFO		68	7.5	0.5	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198932	92	T2	H3	F	60	69	1.5	0.25	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198933	93	T2	H3	MD10	61													CDM Smith	A. Coler			x-NR
CL-3-0001	198934	94	T2	H3	MF		70	4	0.75	5.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198935	95	T2	H3	F	62	71	10.7	0.5	21.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198936	96	T2	H3	F	63	72	2.5	0.25	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198937	97	T2	H3	F	64	73	1.5	0.25	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198938	98	T2	H3	F	65	74	3.5	0.5	7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198939	99	T2	H3	MD10	66													CDM Smith	A. Coler			x-NR
CL-3-0001	198940	100	T2	H3	MFO		75	2.2	0.09	24.44	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0001	198941	101	T2	H3	F	67	76	2.7	0.5	5.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198942	102	T2	H3	F	68	77	1.2	0.09	13.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0001	198943	103	T2	H3	MD10	69													CDM Smith	A. Coler			x-NR
CL-3-0001	198944	104	T2	H3	MFO		78	2.5	0.25	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type is MFO, not MF0 (the letter O not the number 0). Applies to all 24 MFO structures in this EDD.	2/21/2014	x-NR
CL-3-0007	199152	1	J1	A10	F	1	1	3.2	0.3	10.666667	LA		ADX	1	1	1	1	NaK, WRTA; Ph	CDM Smith	A. Coler			x-NR
CL-3-0007	199153	2	J1	A10	F	2	2	3.6	0.6	6	LA		ADX	1	1	1		XK, AC; Photos	CDM Smith	A. Coler			x-NR
CL-3-0007	199154	3	J1	F9	F	3	3	11.6	1.3	8.9230769	LA		ADX	1	1	1	1	XK, TR; Photos	CDM Smith	A. Coler			x-NR
CL-3-0007	199155	4	J1	F9	F	4	4	5.3	0.8	6.625	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199156	5	J1	F9	F	5	5	2.9	0.6	4.8333333	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199157	6	J1	F9	F	6	6	7	1.1	6.3636364	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199158	7	J1	F9	F	7	7	9.2	0.5	18.4	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199159	8	J1	F9	F	8	8	2.8	0.3	9.3333333	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199160	9	J1	H7	F	9	9	9.5	0.9	10.555556	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199161	10	J1	H7	F	10	10	2	0.2	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199162	11	J1	H7	F	11	11	5.2	0.2	26	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199163	12	J1	H7	F	12	12	10	0.8	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199164	13	J2	I2	MD10	13											1		CDM Smith	A. Coler			x-NR
CL-3-0007	199165	14	J2	I2	MF		13	2.4	0.2	12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	For total structure #13 (page 2), the structure type was recorded on the benchsheet as MF but entered in the EDD as MFO. Please confirm the correct structure type and revise the EDD or benchsheet accordingly.	2/21/2014	x-NR
CL-3-0007	199166	15	J2	I2	F	14	14	2.4	0.6	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199167	16	J2	F3	F	15	15	10.1	1	10.1	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199168	17	J2	F3	F	16	16	1.9	0.3	6.3333333	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199169	18	J2	F3	B	17	17	11.3	2	5.65	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199170	19	J2	F3	F	18	18	13	1.6	8.125	LA		ADX	1		1		XK, AC	CDM Smith	A. Coler			x-NR
CL-3-0007	199171	20	J2	F3	F	19	19	3	0.4	7.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199172	21	J2	F3	F	20	20	10	0.2	50	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199173	22	J2	F3	F	21	21	4.5	1	4.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199174	23	J2	F3	F	22	22	17	0.2	85	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING DUFF (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-3-0007	199175	24	J2	C5	MD10	23											1		CDM Smith	A. Coler			x-NR
CL-3-0007	199176	25	J2	C5	MFO		23	1.5	0.4	3.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199177	26	J2	C5	F	24	24	4.3	0.5	8.6	LA		ADX	1		1		XX, AC	CDM Smith	A. Coler			x-NR
CL-3-0007	199178	27	J2	C5	F	25	25	12	0.4	30	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0007	199179	28	J2	C5	F	26	26	6.6	0.6	11	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - COMMERCIAL LOGGING TREE BARK (2012

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
CL-3-0002	198522	1	F1	J1	MD11	1											1		CDM Smith	A. Coler			x-NR
CL-3-0002	198523	2	F1	J1	MF		1	9.6	0.3	32	LA		ADX	1	1	1		NaK, WRTA; PH	CDM Smith	A. Coler			x-NR
CL-3-0002	198524	3	F1	J1	F	2	2	2.3	0.4	5.75	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198525	4	F1	J1	F	3	3	2.9	0.4	7.25	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198526	5	F1	J1	F	4	4	2.5	0.4	6.25	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198527	6	F1	J1	F	5	5	4	0.3	13.33	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198528	7	F1	J1	F	6	6	5.1	0.6	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198529	8	F1	J1	MD10	7													CDM Smith	A. Coler			x-NR
CL-3-0002	198530	9	F1	J1	MF		7	3.4	0.4	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198531	10	F1	J1	F	8	8	5.9	0.4	14.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198532	11	F1	J1	F	9	9	2.4	0.2	12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198533	12	F1	J3	F	10	10	1.5	0.2	7.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198534	13	F1	J3	F	11	11	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198535	14	F1	J3	MD10	12													CDM Smith	A. Coler			x-NR
CL-3-0002	198536	15	F1	J3	MF		12	3.6	0.2	18	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198537	16	F1	J3	F	13	13	4.6	0.1	46	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198538	17	F1	J3	F	14	14	2.9	0.2	14.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198539	18	F1	J3	MD10	15													CDM Smith	A. Coler			x-NR
CL-3-0002	198540	19	F1	J3	MF		15	2.8	0.5	5.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198541	20	F1	J3	F	16	16	6.8	0.3	22.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198542	21	F1	J3	F	17	17	2	0.3	6.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198543	22	F1	J3	F	18	18	2.5	0.7	3.57	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198544	23	F1	J3	F	19	19	3.7	0.4	9.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198545	24	F1	J3	F	0	0	11	0.8	13.75	LA		ADX	1					CDM Smith	A. Coler			x-NR
CL-3-0002	198546	25	F2	J2	MD10	20											1		CDM Smith	A. Coler			x-NR
CL-3-0002	198547	26	F2	J2	MF		20	2.6	0.2	13	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198548	27	F2	J2	F	21	21	2.2	0.1	22	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198549	28	F2	J2	F	22	22	7.4	0.8	9.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198550	29	F2	J2	F	23	23	1.6	0.3	5.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198551	30	F2	J2	F	24	24	1.6	0.3	5.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198552	31	F2	J2	F	25	25	13	1	13	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198553	32	F2	G3	F	0	0	4.1	0.5	8.2	LA		ADX	1			1	; Structure cros	CDM Smith	A. Coler			x-NR
CL-3-0002	198554	33	F2	G3	F	26	26	3.1	0.4	7.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198555	34	F2	G3	F	27	27	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198556	35	F2	G3	F	28	28	2	0.3	6.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198557	36	F2	F5	MD10	29											1		CDM Smith	A. Coler			x-NR
CL-3-0002	198558	37	F2	F5	MFO		29	3	0.5	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198559	38	F2	F5	F	30	30	2.4	0.3	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198560	39	F2	F5	F	31	31	4	0.2	20	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198561	40	F2	F5	F	32	32	1.4	0.3	4.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198562	41	F2	F5	F	33	33	5	0.3	16.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198563	42	F2	F5	F	34	34	3.1	0.3	10.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198564	43	F2	F5	F	35	35	1.7	0.2	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198565	44	F2	F5	F	36	36	4	0.2	20	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198566	45	F2	F5	F	37	37	2.7	0.5	5.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198567	46	F2	F5	MD10	38													CDM Smith	A. Coler			x-NR
CL-3-0002	198568	47	F2	F5	MFO		38	2.6	0.5	5.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198569	48	F2	F5	F	39	39	1.6	0.2	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198570	49	F2	F5	F	40	40	2.7	0.1	27	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198571	50	F2	F5	F	41	41	2.3	0.3	7.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198572	51	F2	F5	F	42	42	22.6	0.6	37.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198573	52	F2	D7	F	43	43	2.7	0.2	13.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198574	53	F2	D7	F	44	44	4.5	0.4	11.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198575	54	F2	D7	F	45	45	3.4	0.4	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198576	55	F2	D7	F	46	46	3.2	0.2	16	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198577	56	F2	D7	F	47	47	16.4	0.6	27.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198578	57	F2	D7	F	48	48	0.9	0.2	4.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198579	58	F2	D7	F	49	49	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198580	59	F2	D7	F	50	50	5.5	0.3	18.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198581	60	F2	D7	MD10	51													CDM Smith	A. Coler			x-NR
CL-3-0002	198582	61	F2	D7	MFO		51	0.8	0.2	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	198583	62	F2	D7	F	52	52	0.7	0.1	7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198632	1	G1	C8	F	1	1	3.5	0.25	14	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198633	2	G1	C8	MD10	2													CDM Smith	A. Coler			x-NR
CL-3-0008	198634	3	G1	C8	MFO		2	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198635	4	G1	C8	F	3	3	2	0.09	22.22	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198636	5	G1	C8	F	4	4	1.5	0.25	6	LA		ADX	1	1	1		NaK, WRTA; PH	CDM Smith	A. Coler			x-NR
CL-3-0008	198637	6	G1	C8	F	5	5	4	0.3	13.33	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198638	7	G1	E4	F	6	6	3.5	0.25	14	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198639	8	G1	E4	F	7	7	2.25	0.2	11.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198640	9	G1	G9	F	0	0	5	0.12	41.67	LA		ADX	1			1	; STR CROSSES	CDM Smith	A. Coler			x-NR
CL-3-0008	198641	10	G1	G9	F	8	8	3	0.12	25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198642	11	G1	G9	F	9	9	2.5	0.25	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198643	12	G1	G9	F	10	10	2	0.25	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198644	13	G1	G9	F	11	11	4	0.2	20	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198645	14	G1	G9	F	12	12	1	0.25	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198646	15	G1	G9	F	13	13	4	0.75	5.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198647	16	G1	G9	MD11	14													CDM Smith	A. Coler			x-NR
CL-3-0008	198648	17	G1	G9	MFO		0	10.5	1	10.5	LA		ADX	1				; Structure cros	CDM Smith	A. Coler			x-NR
CL-3-0008	198649	18	G2	B3	F	15	14	4.5	0.25	18	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198650	19	G2	B3	F	16	15	5	1.1	4.55	LA		ADX	1				XX, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198651	20	G2	B3	MD11	17													CDM Smith	A. Coler			x-NR
CL-3-0008	198652	21	G2	B3	MFO		16	10	0.4	25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198653	22	G2	B3	F	18	17	5	0.5	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198654	23	G2	B3	F	19	18	3.5	0.25	14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198655	24	G2	I5	F	0	0	4	0.7	5.71	LA		ADX	1			1	; STR CROSSES	CDM Smith	A. Coler			x-NR
CL-3-0008	198656	25	G2	I5	F	20	19	1.75	0.2	8.75	LA		ADX	1				NaX, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198657	26	G2	I5	F	21	20	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198658	27	G2	I5	MD21	22													CDM Smith	A. Coler			x-NR
CL-3-0008	198659	28	G2	I5	MF		21	7.5	1.2	6.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	For total structure #22 (page 1), the structure type was recorded on the benchsheet as MF but entered in the EDD as MFO. Please confirm the correct structure type and revise the EDD or benchsheet accordingly.	2/21/2014	x-NR
CL-3-0008	198660	29	G2	I5	MF		22	3.6	0.4	9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	For total structure #22 (page 1), the structure type was recorded on the benchsheet as MF but entered in the EDD as MFO. Please confirm the correct structure type and revise the EDD or benchsheet accordingly.	2/21/2014	x-NR
CL-3-0008	198661	30	G2	I5	F	23	23	5	0.3	16.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198662	31	G2	I5	F	24	24	4.5	0.5	9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198663	32	G2	I5	F	25	25	22	3.5	6.29	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198664	33	G2	F2	MD31	26											1		CDM Smith	A. Coler			x-NR
CL-3-0008	198665	34	G2	F2	MF		26	7	0.25	28	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198666	35	G2	F2	MFO		27	4.5	0.2	22.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198667	36	G2	F2	MF		28	1.5	0.25	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198668	37	G2	F2	F	27	29	6.5	0.3	21.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198669	38	G2	F2	F	28	30	2	0.4	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198670	39	G2	F2	F	29	31	3	0.4	7.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0008	198671	40	G2	F2	F	30	32	3.75	0.4	9.38	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - WILDFIRE CONTINGENCY MONITORING PLAN - JULY 2012 SOUSE GULCH WILDFIRE ABS AIR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identificati on	Sketch	Photo	EDS	CH Not Counted	StrucComm ents	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC Check (100%)
SM-10061	181039	1	A4	B2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181040	2	A4	B4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181041	3	A4	B6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181042	4	A4	B8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181043	5	A4	B10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181044	6	A4	C1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181045	7	A4	C3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181046	8	A4	C5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181047	9	A4	C7	B	1	1	13.15	0.5	26.3	LA		ADX	1	1	1	NaK, WRTA; Photos:		CDM Smith	A. Coler			x-NR
SM-10061	181048	10	A4	C9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181049	11	A4	D2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181050	12	A4	D4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181051	13	A4	D6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181052	14	A4	D8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181053	15	A4	D10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181054	16	A4	E1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181055	17	A4	E3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181056	18	A4	E5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181057	19	A4	E7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181058	20	A4	E9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181059	21	A4	F2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181060	22	A4	F4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181061	23	A4	F6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181062	24	A4	F8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181063	25	A4	F10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181064	26	A4	G1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181065	27	A4	G3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181066	28	A4	G5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181067	29	A4	G7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181068	30	A4	G9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181069	31	A4	H2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181070	32	A4	H4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181071	33	A4	H6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181072	34	A4	H8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181073	35	A4	H10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181074	36	A4	I1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181075	37	A4	I3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181076	38	A4	I5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181077	39	A4	I7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181078	40	A4	I9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181079	41	A5	A2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181080	42	A5	A4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181081	43	A5	A6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181082	44	A5	A8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181083	45	A5	A10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181084	46	A5	B1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181085	47	A5	B3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181086	48	A5	B5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181087	49	A5	B7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181088	50	A5	B9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181089	51	A5	C2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181090	52	A5	C4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181091	53	A5	C6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181092	54	A5	C8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181093	55	A5	C10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181094	56	A5	D1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181095	57	A5	D3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181096	58	A5	D5	F	0	0	1.35	0.15	9	LA		ADX	1		1			CDM Smith	A. Coler			x-NR
SM-10061	181097	59	A5	D7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181098	60	A5	D9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181099	61	A5	E2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181100	62	A5	E4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181101	63	A5	E6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181102	64	A5	E8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181103	65	A5	E10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181104	66	A5	F1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181105	67	A5	F3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181106	68	A5	F5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181107	69	A5	F7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181108	70	A5	F9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181109	71	A5	G2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181110	72	A5	G4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181111	73	A5	G6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181112	74	A5	G8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181113	75	A5	G10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181114	76	A5	H1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181115	77	A5	H3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181116	78	A5	H5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181117	79	A5	H7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181118	80	A5	H9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181119	81	A5	I2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181120	82	A5	I4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181121	83	A5	I6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181122	84	A5	I8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181123	85	A5	I10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181124	86	K1	G10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181125	87	K1	G8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181126	88	K1	G6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181127	89	K1	G4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181128	90	K1	G2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181129	91	K1	F9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181130	92	K1	F7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181131	93	K1	F5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181132	94	K1	F3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181133	95	K1	F1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181134	96	K1	E10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181135	97	K1	E9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181136	98	K1	E8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181137	99	K1	E7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181138	100	K1	E6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181139	101	K1	E5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181140	102	K1	E4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181141	103	K1	E3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181142	104	K1	E2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181143	105	K1	E1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181144	106	K1	D10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181145	107	K1	D9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181146	108	K1	D8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181147	109	K1	D7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181148	110	K1	D6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181149	111	K1	D5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181150	112	K1	D4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181151	113	K1	D3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181152	114	K1	D2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181153	115	K1	D1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181154	116	K1	C10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181155	117	K1	C9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181156	118	K1	C8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181157	119	K1	C7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181158	120	K1	C6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181159	121	K1	C5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181160	122	K1	C4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181161	123	K1	C3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181162	124	K1	C2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181163	125	K1	C1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181164	126	K1	B10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181165	127	K1	B9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181166	128	K1	B8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181167	129	K1	B7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181168	130	K1	B6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181169	131	K1	B5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181170	132	K1	B4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181171	133	K1	B3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181172	134	K1	B2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181173	135	K1	B1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181174	136	K1	A10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181175	137	K1	A9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181176	138	K1	A8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181177	139	K1	A7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181178	140	K1	A6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181179	141	K1	A5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181180	142	K1	A4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181181	143	K1	A3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181182	144	K1	A2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181183	145	K1	A1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181184	146	K2	B1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181185	147	K2	B2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181186	148	K2	B3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181187	149	K2	B4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181188	150	K2	B5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181189	151	K2	B6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181190	152	K2	B7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181191	153	K2	B8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181192	154	K2	B9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181193	155	K2	B10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181194	156	K2	C1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181195	157	K2	C2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181196	158	K2	C3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181197	159	K2	C4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181198	160	K2	C5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181199	161	K2	C6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181200	162	K2	C7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181201	163	K2	C8	ND														CDM Smith	A. Coler			x-NR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identificati on	Sketch	Photo	EDS	CH Not Counted	StrucComm ents	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC Check (100%)
SM-10061	181202	164	K2	C9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181203	165	K2	C10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181204	166	K2	D1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181205	167	K2	D2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181206	168	K2	D3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181207	169	K2	D4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181208	170	K2	D5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181209	171	K2	D6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181210	172	K2	D7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181211	173	K2	D8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181212	174	K2	D9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181213	175	K2	D10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181214	176	K2	E1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181215	177	K2	E2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181216	178	K2	E3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181217	179	K2	E4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181218	180	K2	E6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181219	181	K2	E8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181220	182	K2	E9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181221	183	K2	E10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181222	184	K2	F1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181223	185	K2	F2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181224	186	K2	F3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181225	187	K2	F4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181226	188	K2	F5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181227	189	K2	F6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181228	190	K2	F7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181229	191	K2	F8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181230	192	K2	F9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181231	193	K2	F10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181232	194	K2	G1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181233	195	K2	G2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181234	196	K2	G3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181235	197	K2	G4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181236	198	K2	G5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181237	199	K2	G6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181238	200	K2	G7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181239	201	K2	G8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181240	202	K2	G9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181241	203	K2	G10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181242	204	K2	H1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181243	205	K2	H2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181244	206	K2	H3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181245	207	K2	H4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181246	208	K2	H5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181247	209	K2	H6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181248	210	K2	H7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181249	211	K2	H8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181250	212	K2	H9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181251	213	K2	H10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181252	214	K2	I1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181253	215	K2	I2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181254	216	K2	I3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181255	217	K2	I4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181256	218	K2	I5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181257	219	K2	I6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181258	220	K2	I7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181259	221	K2	I8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181260	222	K2	I9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181261	223	K2	I10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181262	224	K2	J1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181263	225	K2	J2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181264	226	K2	J3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181265	227	K2	J4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181266	228	K2	J5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181267	229	K2	J6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181268	230	K2	J7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181269	231	K2	J8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181270	232	K2	J9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181271	233	K2	J10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181272	234	K3	A1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181273	235	K3	A2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181274	236	K3	A3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181275	237	K3	A4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181276	238	K3	A5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181277	239	K3	A6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181278	240	K3	A7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181279	241	K3	A8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181280	242	K3	A9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181281	243	K3	A10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181282	244	K3	B1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181283	245	K3	B2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181284	246	K3	B3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181285	247	K3	B4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181286	248	K3	B5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181287	249	K3	B6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181288	250	K3	B7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181289	251	K3	B8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181290	252	K3	B9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181291	253	K3	B10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181292	254	K3	C1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181293	255	K3	C2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181294	256	K3	C4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181295	257	K3	C5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181296	258	K3	C6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181297	259	K3	C7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181298	260	K3	C8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181299	261	K3	C9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181300	262	K3	C10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181301	263	K3	D1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181302	264	K3	D2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181303	265	K3	D3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181304	266	K3	D4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181305	267	K3	D5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181306	268	K3	D6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181307	269	K3	D7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181308	270	K3	D8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181309	271	K3	D9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181310	272	K3	D10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181311	273	K3	E1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181312	274	K3	E2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181313	275	K3	E3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181314	276	K3	E4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181315	277	K3	E5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181316	278	K3	E6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181317	279	K3	E7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181318	280	K3	E8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181319	281	K3	E9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181320	282	K3	E10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181321	283	K3	F1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181322	284	K3	F2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181323	285	K3	F3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181324	286	K3	F4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181325	287	K3	F5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181326	288	K3	F6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181327	289	K3	F7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181328	290	K3	F8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181329	291	K3	F9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181330	292	K3	F10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181331	293	K3	G1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181332	294	K3	G2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181333	295	K3	G3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181334	296	K3	G4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181335	297	K3	G5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181336	298	K3	G6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181337	299	K3	G7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181338	300	K3	G8	ND														CDM Smith	A. Coler			x-NR
SM-10061	181339	301	K3	G9	ND														CDM Smith	A. Coler			x-NR
SM-10061	181340	302	K3	G10	ND														CDM Smith	A. Coler			x-NR
SM-10061	181341	303	K3	H1	ND														CDM Smith	A. Coler			x-NR
SM-10061	181342	304	K3	H2	ND														CDM Smith	A. Coler			x-NR
SM-10061	181343	305	K3	H3	ND														CDM Smith	A. Coler			x-NR
SM-10061	181344	306	K3	H4	ND														CDM Smith	A. Coler			x-NR
SM-10061	181345	307	K3	H5	ND														CDM Smith	A. Coler			x-NR
SM-10061	181346	308	K3	H6	ND														CDM Smith	A. Coler			x-NR
SM-10061	181347	309	K3	H7	ND														CDM Smith	A. Coler			x-NR
SM-10061	181348	310	K3	H8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181349	1	B1	H9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181350	2	B1	H7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181351	3	B1	H5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181352	4	B1	H3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181353	5	B1	H1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181354	6	B1	G10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181355	7	B1	G8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181356	8	B1	G6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181357	9	B1	G4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181358	10	B1	G2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181359	11	B1	F9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181360	12	B1	F7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181361	13	B1	F5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181362	14	B1	F3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181363	15	B1	F1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181364	16	B1	E10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181365	17	B1	E8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181366	18	B1	E6	ND														CDM Smith	A. Coler			x-NR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC Check (100%)
SM-10062	181367	19	B1	E4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181368	20	B1	E2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181369	21	B1	D9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181370	22	B1	D7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181371	23	B1	D5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181372	24	B1	D3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181373	25	B1	D1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181374	26	B1	C10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181375	27	B1	C8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181376	28	B1	C6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181377	29	B1	C4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181378	30	B1	C2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181379	31	B1	B9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181380	32	B1	B7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181381	33	B1	B5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181382	34	B1	B3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181383	35	B1	B1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181384	36	B1	A10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181385	37	B1	A8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181386	38	B1	A6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181387	39	B1	A4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181388	40	B1	A2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181389	41	B2	B2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181390	42	B2	B4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181391	43	B2	B6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181392	44	B2	B8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181393	45	B2	B10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181394	46	B2	C1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181395	47	B2	C3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181396	48	B2	C5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181397	49	B2	C7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181398	50	B2	C9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181399	51	B2	D2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181400	52	B2	D4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181401	53	B2	D6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181402	54	B2	D8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181403	55	B2	D10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181404	56	B2	E1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181405	57	B2	E3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181406	58	B2	E5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181407	59	B2	E7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181408	60	B2	E9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181409	61	B2	F2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181410	62	B2	F4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181411	63	B2	F6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181412	64	B2	F8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181413	65	B2	F10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181414	66	B2	G1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181415	67	B2	G3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181416	68	B2	G5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181417	69	B2	G7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181418	70	B2	G9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181419	71	B2	H2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181420	72	B2	H4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181421	73	B2	H6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181422	74	B2	H8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181423	75	B2	H10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181424	76	B2	I1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181425	77	B2	I3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181426	78	B2	I5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181427	79	B2	I7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181428	80	B2	I9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181429	81	B2	T2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181430	82	B2	T4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181431	83	B2	T6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181432	84	B2	T8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181433	85	B2	T10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181434	86	L1	A1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181435	87	L1	A2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181436	88	L1	A3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181437	89	L1	A4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181438	90	L1	A5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181439	91	L1	A6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181440	92	L1	A7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181441	93	L1	A8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181442	94	L1	A9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181443	95	L1	A10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181444	96	L1	B1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181445	97	L1	B2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181446	98	L1	B3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181447	99	L1	B4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181448	100	L1	B5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181449	101	L1	B6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181450	102	L1	B7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181451	103	L1	B8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181452	104	L1	B9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181453	105	L1	B10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181454	106	L1	C1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181455	107	L1	C2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181456	108	L1	C3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181457	109	L1	C4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181458	110	L1	C5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181459	111	L1	C6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181460	112	L1	C7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181461	113	L1	C8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181462	114	L1	C9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181463	115	L1	C10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181464	116	L1	D1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181465	117	L1	D2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181466	118	L1	D3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181467	119	L1	D4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181468	120	L1	D5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181469	121	L1	D6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181470	122	L1	D7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181471	123	L1	D8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181472	124	L1	D9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181473	125	L1	D10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181474	126	L1	E1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181475	127	L1	E2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181476	128	L1	E3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181477	129	L1	E4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181478	130	L1	E5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181479	131	L1	E6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181480	132	L1	E7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181481	133	L1	E8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181482	134	L1	E9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181483	135	L1	E10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181484	136	L1	F1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181485	137	L1	F2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181486	138	L1	F3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181487	139	L1	F4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181488	140	L1	F5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181489	141	L1	F6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181490	142	L1	F7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181491	143	L1	F8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181492	144	L1	F9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181493	145	L1	F10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181494	146	L1	G1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181495	147	L1	G2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181496	148	L1	G3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181497	149	L1	G4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181498	150	L1	G5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181499	151	L1	G6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181500	152	L1	G7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181501	153	L1	G8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181502	154	L1	G9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181503	155	L1	G10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181504	156	L1	H1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181505	157	L1	H2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181506	158	L1	H3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181507	159	L1	H4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181508	160	L1	H5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181509	161	L1	H6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181510	162	L1	H7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181511	163	L1	H8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181512	164	L1	H9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181513	165	L1	H10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181514	166	L1	I1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181515	167	L1	I2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181516	168	L1	I3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181517	169	L1	I4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181518	170	L1	I5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181519	171	L1	I6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181520	172	L1	I7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181521	173	L1	I8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181522	174	L1	I9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181523	175	L1	I10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181524	176	L1	J1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181525	177	L1	J2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181526	178	L1	J3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181527	179	L1	J4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181528	180	L1	J5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181529	181	L1	J6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181530	182	L1	J7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181531	183	L1	J8	ND														CDM Smith	A. Coler			x-NR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC Check (100%)
SM-10062	181532	184	L1	J9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181533	185	L1	J10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181534	186	L2	J10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181535	187	L2	J9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181536	188	L2	J8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181537	189	L2	J7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181538	190	L2	J6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181539	191	L2	J5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181540	192	L2	J4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181541	193	L2	J3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181542	194	L2	J2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181543	195	L2	J1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181544	196	L2	I10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181545	197	L2	I9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181546	198	L2	I8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181547	199	L2	I7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181548	200	L2	I6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181549	201	L2	I5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181550	202	L2	I3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181551	203	L2	I2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181552	204	L2	I1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181553	205	L2	I4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181554	206	L2	H10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181555	207	L2	H9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181556	208	L2	H8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181557	209	L2	H7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181558	210	L2	H6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181559	211	L2	H5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181560	212	L2	H4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181561	213	L2	H3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181562	214	L2	H2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181563	215	L2	H1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181564	216	L2	G10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181565	217	L2	G8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181566	218	L2	G6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181567	219	L2	G4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181568	220	L2	G2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181569	221	L2	F10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181570	222	L2	F9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181571	223	L2	F8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181572	224	L2	F7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181573	225	L2	F6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181574	226	L2	F5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181575	227	L2	F4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181576	228	L2	F3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181577	229	L2	F2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181578	230	L2	F1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181579	231	L2	E10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181580	232	L2	E9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181581	233	L2	E8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181582	234	L2	E7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181583	235	L2	E6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181584	236	L2	E5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181585	237	L2	E4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181586	238	L2	E3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181587	239	L2	E2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181588	240	L2	E1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181589	241	L2	D10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181590	242	L2	D9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181591	243	L2	D8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181592	244	L2	D7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181593	245	L2	D6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181594	246	L2	D5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181595	247	L2	D4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181596	248	L2	D3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181597	249	L2	D2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181598	250	L2	D1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181599	251	L2	C10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181600	252	L2	C9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181601	253	L2	C8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181602	254	L2	C7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181603	255	L2	C5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181604	256	L2	C3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181605	257	L2	C2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181606	258	L2	C1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181607	259	L2	B10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181608	260	L2	B9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181609	261	L2	B8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181610	262	L2	B7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181611	263	L2	B5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181612	264	L2	B4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181613	265	L2	B3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181614	266	L2	B2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181615	267	L2	B1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181616	268	L2	A10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181617	269	L2	A9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181618	270	L2	A7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181619	271	L2	A6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181620	272	L2	A5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181621	273	L2	A4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181622	274	L2	A3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181623	275	L2	A2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181624	276	L2	A1	ND														CDM Smith	A. Coler			x-NR
SM-10062	181625	277	L3	J10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181626	278	L3	J8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181627	279	L3	J6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181628	280	L3	J4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181629	281	L3	J2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181630	282	L3	H10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181631	283	L3	H8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181632	284	L3	H6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181633	285	L3	H4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181634	286	L3	H2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181635	287	L3	F10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181636	288	L3	F8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181637	289	L3	F6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181638	290	L3	F4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181639	291	L3	F2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181640	292	L3	D10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181641	293	L3	D8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181642	294	L3	D6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181643	295	L3	D4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181644	296	L3	D2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181645	297	L3	B10	ND														CDM Smith	A. Coler			x-NR
SM-10062	181646	298	L3	B9	ND														CDM Smith	A. Coler			x-NR
SM-10062	181647	299	L3	B8	ND														CDM Smith	A. Coler			x-NR
SM-10062	181648	300	L3	B7	ND														CDM Smith	A. Coler			x-NR
SM-10062	181649	301	L3	B6	ND														CDM Smith	A. Coler			x-NR
SM-10062	181650	302	L3	B5	ND														CDM Smith	A. Coler			x-NR
SM-10062	181651	303	L3	B4	ND														CDM Smith	A. Coler			x-NR
SM-10062	181652	304	L3	B3	ND														CDM Smith	A. Coler			x-NR
SM-10062	181653	305	L3	B2	ND														CDM Smith	A. Coler			x-NR
SM-10062	181654	306	L3	B1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191013	1	C1	B2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191014	2	C1	B4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191015	3	C1	B6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191016	4	C1	B8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191017	5	C1	B10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191018	6	C1	C1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191019	7	C1	C3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191020	8	C1	C5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191021	9	C1	C7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191022	10	C1	C9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191023	11	C1	D2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191024	12	C1	D4	MD10	0													CDM Smith	A. Coler			x-NR
SM-10064	191025	13	C1	D4	MFO		0	4.8	0.25	19.2	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-10064	191026	14	C1	D6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191027	15	C1	D8	B	1	1	15.75	0.7	21.79	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler	The length for total structure #1 is 15.75, not 15.25 according to benchsheet (page 2).	1/29/2014	x-NR
SM-10064	191028	16	C1	D10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191029	17	C1	E1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191030	18	C1	E3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191031	19	C1	E5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191032	20	C1	E7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191033	21	C1	E9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191034	22	C1	F2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191035	23	C1	F4	B	2	2	42.4	1.65	25.7	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-10064	191036	24	C1	F6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191037	25	C1	F8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191038	26	C1	F10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191039	27	C1	G1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191040	28	C1	G3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191041	29	C1	G5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191042	30	C1	G7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191043	31	C1	G9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191044	32	C1	H2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191045	33	C1	H4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191046	34	C1	H6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191047	35	C1	H8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191048	36	C1	H10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191049	37	C1	I1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191050	38	C1	I3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191051	39	C1	I5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191052	40	C1	I7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191053	41	C1	I9	ND														CDM Smith	A. Coler			x-NR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identificati on	Sketch	Photo	EDS	CH Not Counted	StrucComm ents	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC Check (100%)
SM-10064	191054	42	C2	J10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191055	43	C2	J8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191056	44	C2	J6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191057	45	C2	J4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191058	46	C2	J2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191059	47	C2	I9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191060	48	C2	I7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191061	49	C2	I5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191062	50	C2	I3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191063	51	C2	I1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191064	52	C2	H10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191065	53	C2	H8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191066	54	C2	H6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191067	55	C2	H4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191068	56	C2	G9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191069	57	C2	G7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191070	58	C2	G5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191071	59	C2	G3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191072	60	C2	G1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191073	61	C2	F10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191074	62	C2	F8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191075	63	C2	F6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191076	64	C2	F4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191077	65	C2	F2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191078	66	C2	E9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191079	67	C2	E7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191080	68	C2	E5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191081	69	C2	E3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191082	70	C2	E1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191083	71	C2	D10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191084	72	C2	D8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191085	73	C2	D6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191086	74	C2	D4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191087	75	C2	D2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191088	76	C2	C9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191089	77	C2	C7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191090	78	C2	C5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191091	79	C2	C3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191092	80	C2	C1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191093	81	C2	B10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191094	82	C2	B8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191095	83	C2	B6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191096	84	C2	B4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191097	85	C2	B2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191098	86	N1	A1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191099	87	N1	A2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191100	88	N1	A3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191101	89	N1	A4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191102	90	N1	A5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191103	91	N1	A6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191104	92	N1	A7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191105	93	N1	A8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191106	94	N1	A9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191107	95	N1	A10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191108	96	N1	B1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191109	97	N1	B2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191110	98	N1	B3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191111	99	N1	B4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191112	100	N1	B5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191113	101	N1	B6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191114	102	N1	B7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191115	103	N1	B8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191116	104	N1	B9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191117	105	N1	B10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191118	106	N1	C1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191119	107	N1	C2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191120	108	N1	C3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191121	109	N1	C4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191122	110	N1	C5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191123	111	N1	C6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191124	112	N1	C7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191125	113	N1	C8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191126	114	N1	C9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191127	115	N1	C10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191128	116	N1	D1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191129	117	N1	D2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191130	118	N1	D3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191131	119	N1	D4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191132	120	N1	D5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191133	121	N1	D6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191134	122	N1	D7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191135	123	N1	D8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191136	124	N1	D9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191137	125	N1	D10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191138	126	N1	E1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191139	127	N1	E2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191140	128	N1	E3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191141	129	N1	E4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191142	130	N1	E5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191143	131	N1	E6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191144	132	N1	E7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191145	133	N1	E8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191146	134	N1	E9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191147	135	N1	E10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191148	136	N1	F1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191149	137	N1	F2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191150	138	N1	F3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191151	139	N1	F4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191152	140	N1	F5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191153	141	N1	F6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191154	142	N1	F7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191155	143	N1	F8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191156	144	N1	F9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191157	145	N1	F10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191158	146	N1	G1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191159	147	N1	G2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191160	148	N1	G3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191161	149	N1	G4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191162	150	N1	G5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191163	151	N1	G6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191164	152	N1	G7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191165	153	N1	G8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191166	154	N1	G9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191167	155	N1	G10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191168	156	N1	H1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191169	157	N1	H2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191170	158	N1	H3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191171	159	N1	H4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191172	160	N1	H5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191173	161	N1	H6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191174	162	N1	H7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191175	163	N1	H8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191176	164	N1	H9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191177	165	N1	H10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191178	166	N1	I1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191179	167	N1	I2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191180	168	N1	I3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191181	169	N1	I4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191182	170	N1	I5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191183	171	N1	I6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191184	172	N1	I7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191185	173	N1	I8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191186	174	N1	I9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191187	175	N1	I10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191188	176	N1	J1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191189	177	N1	J2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191190	178	N1	J3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191191	179	N1	J4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191192	180	N1	J5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191193	181	N1	J6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191194	182	N1	J7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191195	183	N1	J8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191196	184	N1	J9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191197	185	N1	J10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191198	186	N2	A1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191199	187	N2	A2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191200	188	N2	A3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191201	189	N2	A4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191202	190	N2	A5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191203	191	N2	A6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191204	192	N2	A7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191205	193	N2	A8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191206	194	N2	A9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191207	195	N2	A10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191208	196	N2	B1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191209	197	N2	B2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191210	198	N2	B3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191211	199	N2	B4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191212	200	N2	B5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191213	201	N2	B6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191214	202	N2	B7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191215	203	N2	B8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191216	204	N2	B9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191217	205	N2	B10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191218	206	N2	C1	ND														CDM Smith	A. Coler			x-NR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identificati on	Sketch	Photo	EDS	CH Not Counted	StrucComm ents	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC Check (100%)
SM-10064	191219	207	N2	C2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191220	208	N2	C3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191221	209	N2	C4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191222	210	N2	C5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191223	211	N2	C6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191224	212	N2	C7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191225	213	N2	C8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191226	214	N2	C9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191227	215	N2	C10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191228	216	N2	D1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191229	217	N2	D2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191230	218	N2	D3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191231	219	N2	D4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191232	220	N2	D5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191233	221	N2	D6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191234	222	N2	D7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191235	223	N2	D8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191236	224	N2	D9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191237	225	N2	D10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191238	226	N2	E1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191239	227	N2	E2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191240	228	N2	E3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191241	229	N2	E4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191242	230	N2	E5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191243	231	N2	E6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191244	232	N2	E7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191245	233	N2	E8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191246	234	N2	E9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191247	235	N2	E10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191248	236	N2	F1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191249	237	N2	F2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191250	238	N2	F3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191251	239	N2	F4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191252	240	N2	F5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191253	241	N2	F6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191254	242	N2	F7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191255	243	N2	F8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191256	244	N2	F9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191257	245	N2	F10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191258	246	N2	G1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191259	247	N2	G2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191260	248	N2	G3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191261	249	N2	G4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191262	250	N2	G5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191263	251	N2	G6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191264	252	N2	G7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191265	253	N2	G8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191266	254	N2	G9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191267	255	N2	G10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191268	256	N2	H1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191269	257	N2	H2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191270	258	N2	H3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191271	259	N2	H4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191272	260	N2	H5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191273	261	N2	H6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191274	262	N2	H7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191275	263	N2	H8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191276	264	N2	H9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191277	265	N2	H10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191278	266	N2	I1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191279	267	N2	I2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191280	268	N2	I3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191281	269	N2	I4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191282	270	N2	I5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191283	271	N2	I6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191284	272	N2	I7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191285	273	N2	I8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191286	274	N2	I9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191287	275	N2	I10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191288	276	N2	J1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191289	277	N2	J2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191290	278	N2	J3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191291	279	N2	J4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191292	280	N2	J5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191293	281	N2	J6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191294	282	N2	J7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191295	283	N2	J8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191296	284	N2	J9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191297	285	N2	J10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191298	286	N3	J10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191299	287	N3	J9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191300	288	N3	J8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191301	289	N3	J7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191302	290	N3	J6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191303	291	N3	J5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191304	292	N3	J4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191305	293	N3	J3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191306	294	N3	J2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191307	295	N3	J1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191308	296	N3	I10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191309	297	N3	I9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191310	298	N3	I7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191311	299	N3	I6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191312	300	N3	I5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191313	301	N3	I4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191314	302	N3	I3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191315	303	N3	I2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191316	304	N3	I1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191317	305	N3	H10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191318	306	N3	H9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191319	307	N3	H8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191320	308	N3	H6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191321	309	N3	H5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191322	310	N3	H4	ND														CDM Smith	A. Coler			x-NR
SM-10064	191323	311	N3	H3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191324	312	N3	H2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191325	313	N3	H1	ND														CDM Smith	A. Coler			x-NR
SM-10064	191326	314	N3	G10	ND														CDM Smith	A. Coler			x-NR
SM-10064	191327	315	N3	G9	ND														CDM Smith	A. Coler			x-NR
SM-10064	191328	316	N3	G8	ND														CDM Smith	A. Coler			x-NR
SM-10064	191329	317	N3	G7	ND														CDM Smith	A. Coler			x-NR
SM-10064	191330	318	N3	G6	ND														CDM Smith	A. Coler			x-NR
SM-10064	191331	319	N3	G5	ND														CDM Smith	A. Coler			x-NR
SM-10064	191332	320	N3	G3	ND														CDM Smith	A. Coler			x-NR
SM-10064	191333	321	N3	G2	ND														CDM Smith	A. Coler			x-NR
SM-10064	191334	322	N3	G1	ND														CDM Smith	A. Coler			x-NR
SM-10068	183258	1	E1	A1	ND														CDM Smith	A. Coler			x-NR
SM-10068	183259	2	E1	A3	ND														CDM Smith	A. Coler			x-NR
SM-10068	183260	3	E1	A5	ND														CDM Smith	A. Coler			x-NR
SM-10068	183261	4	E1	A7	ND														CDM Smith	A. Coler			x-NR
SM-10068	183262	5	E1	A9	ND														CDM Smith	A. Coler			x-NR
SM-10068	183263	6	E1	B2	ND														CDM Smith	A. Coler			x-NR
SM-10068	183264	7	E1	B4	ND														CDM Smith	A. Coler			x-NR
SM-10068	183265	8	E1	B6	ND														CDM Smith	A. Coler			x-NR
SM-10068	183266	9	E1	B8	ND														CDM Smith	A. Coler			x-NR
SM-10068	183267	10	E1	B10	ND														CDM Smith	A. Coler			x-NR
SM-10068	183268	11	E1	C1	ND														CDM Smith	A. Coler			x-NR
SM-10068	183269	12	E1	C3	ND														CDM Smith	A. Coler			x-NR
SM-10068	183270	13	E1	C5	ND														CDM Smith	A. Coler			x-NR
SM-10068	183271	14	E1	C7	ND														CDM Smith	A. Coler			x-NR
SM-10068	183272	15	E1	C9	ND														CDM Smith	A. Coler			x-NR
SM-10068	183273	16	E1	D2	ND														CDM Smith	A. Coler			x-NR
SM-10068	183274	17	E1	D4	ND														CDM Smith	A. Coler			x-NR
SM-10068	183275	18	E1	D6	ND														CDM Smith	A. Coler			x-NR
SM-10068	183276	19	E1	D8	ND														CDM Smith	A. Coler			x-NR
SM-10068	183277	20	E1	D10	ND														CDM Smith	A. Coler			x-NR
SM-10068	183278	21	E1	E1	ND														CDM Smith	A. Coler			x-NR
SM-10068	183279	22	E1	E3	ND														CDM Smith	A. Coler			x-NR
SM-10068	183280	23	E1	E5	ND														CDM Smith	A. Coler			x-NR
SM-10068	183281	24	E1	E7	ND														CDM Smith	A. Coler			x-NR
SM-10068	183282	25	E1	E9	ND														CDM Smith	A. Coler			x-NR
SM-10068	183283	26	E1	F2	ND														CDM Smith	A. Coler			x-NR
SM-10068	183284	27	E1	F4	ND														CDM Smith	A. Coler			x-NR
SM-10068	183285	28	E1	F6	ND														CDM Smith	A. Coler			x-NR
SM-10068	183286	29	E1	F8	ND														CDM Smith	A. Coler			x-NR
SM-10068	183287	30	E1	F10	ND														CDM Smith	A. Coler			x-NR
SM-10068	183288	31	E1	G1	ND														CDM Smith	A. Coler			x-NR
SM-10068	183289	32	E1	G3	ND														CDM Smith	A. Coler			x-NR
SM-10068	183290	33	E1	G5	ND														CDM Smith	A. Coler			x-NR
SM-10068	183291	34	E1	G7	ND														CDM Smith	A. Coler			x-NR
SM-10068	183292	35	E1	G9	ND														CDM Smith	A. Coler			x-NR
SM-10068	183293	36	E1	H2	ND														CDM Smith	A. Coler			x-NR
SM-10068	183294	37	E1	H4	ND														CDM Smith	A. Coler			x-NR
SM-10068	183295	38	E1	H6	ND														CDM Smith	A. Coler			x-NR
SM-10068	183296	39	E1	H8	ND														CDM Smith	A. Coler			x-NR
SM-10068	183297	40	E1	H10	ND														CDM Smith	A. Coler			x-NR
SM-10068	183298	41	E2	J10	ND														CDM Smith	A. Coler			x-NR
SM-10068	183299	42	E2	J8	ND														CDM Smith	A. Coler			x-NR
SM-10068	183300	43	E2	J6	ND														CDM Smith	A. Coler			x-NR
SM-10068	183301	44	E2	J4	ND														CDM Smith	A. Coler			x-NR
SM-10068	183302	45	E2	J2	ND														CDM Smith	A. Coler			x-NR
SM-10068	183303	46	E2	I9	ND														CDM Smith	A. Coler			x-NR
SM-10068	183304	47	E2	I7	ND														CDM Smith	A. Coler			x-NR
SM-10068	183305	48	E2	I5	ND														CDM Smith	A. Coler			x-NR
SM-10068	183306	49	E2	I3	ND														CDM Smith	A. Coler			x-NR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC Check (100%)
SM-10068	183307	50	E2	I1	ND														CDM Smith	A. Coler			x-NR
SM-10068	183308	51	E2	H10	ND														CDM Smith	A. Coler			x-NR
SM-10068	183309	52	E2	H8	ND														CDM Smith	A. Coler			x-NR
SM-10068	183310	53	E2	H6	ND														CDM Smith	A. Coler			x-NR
SM-10068	183311	54	E2	H4	ND														CDM Smith	A. Coler			x-NR
SM-10068	183312	55	E2	H2	ND														CDM Smith	A. Coler			x-NR
SM-10068	183313	56	E2	G9	ND														CDM Smith	A. Coler			x-NR
SM-10068	183314	57	E2	G7	ND														CDM Smith	A. Coler			x-NR
SM-10068	183315	58	E2	G5	ND														CDM Smith	A. Coler			x-NR
SM-10068	183316	59	E2	G3	ND														CDM Smith	A. Coler			x-NR
SM-10068	183317	60	E2	G1	ND														CDM Smith	A. Coler			x-NR
SM-10068	183318	61	E2	F10	ND														CDM Smith	A. Coler			x-NR
SM-10068	183319	62	E2	F8	ND														CDM Smith	A. Coler			x-NR
SM-10068	183320	63	E2	F6	ND														CDM Smith	A. Coler			x-NR
SM-10068	183321	64	E2	F4	ND														CDM Smith	A. Coler			x-NR
SM-10068	183322	65	E2	F2	ND														CDM Smith	A. Coler			x-NR
SM-10068	183323	66	E2	E9	ND														CDM Smith	A. Coler			x-NR
SM-10068	183324	67	E2	E7	ND														CDM Smith	A. Coler			x-NR
SM-10068	183325	68	E2	E5	ND														CDM Smith	A. Coler			x-NR
SM-10068	183326	69	E2	E3	ND														CDM Smith	A. Coler			x-NR
SM-10068	183327	70	E2	E1	ND														CDM Smith	A. Coler			x-NR
SM-10068	183328	71	E2	D10	ND														CDM Smith	A. Coler			x-NR
SM-10068	183329	72	E2	D8	ND														CDM Smith	A. Coler			x-NR
SM-10068	183330	73	E2	D6	ND														CDM Smith	A. Coler			x-NR
SM-10068	183331	74	E2	D4	ND														CDM Smith	A. Coler			x-NR
SM-10068	183332	75	E2	D2	ND														CDM Smith	A. Coler			x-NR
SM-10068	183333	76	E2	C9	ND														CDM Smith	A. Coler			x-NR
SM-10068	183334	77	E2	C7	ND														CDM Smith	A. Coler			x-NR
SM-10068	183335	78	E2	C5	ND														CDM Smith	A. Coler			x-NR
SM-10068	183336	79	E2	C3	ND														CDM Smith	A. Coler			x-NR
SM-10068	183337	80	E2	C1	ND														CDM Smith	A. Coler			x-NR
SM-10068	183338	81	E2	B10	ND														CDM Smith	A. Coler			x-NR
SM-10068	183339	82	E2	B8	ND														CDM Smith	A. Coler			x-NR
SM-10068	183340	83	E2	B6	ND														CDM Smith	A. Coler			x-NR
SM-10068	183341	84	E2	B4	ND														CDM Smith	A. Coler			x-NR
SM-10068	183342	85	E2	B2	ND														CDM Smith	A. Coler			x-NR
SM-10071	192953	1	F1	J10	ND														CDM Smith	A. Coler			x-NR
SM-10071	192954	2	F1	J8	ND														CDM Smith	A. Coler			x-NR
SM-10071	192955	3	F1	J6	ND														CDM Smith	A. Coler			x-NR
SM-10071	192956	4	F1	J4	ND														CDM Smith	A. Coler			x-NR
SM-10071	192957	5	F1	J2	ND														CDM Smith	A. Coler			x-NR
SM-10071	192958	6	F1	I9	ND														CDM Smith	A. Coler			x-NR
SM-10071	192959	7	F1	I7	ND														CDM Smith	A. Coler			x-NR
SM-10071	192960	8	F1	I5	ND														CDM Smith	A. Coler			x-NR
SM-10071	192961	9	F1	I3	ND														CDM Smith	A. Coler			x-NR
SM-10071	192962	10	F1	I1	ND														CDM Smith	A. Coler			x-NR
SM-10071	192963	11	F1	H10	ND														CDM Smith	A. Coler			x-NR
SM-10071	192964	12	F1	H8	ND														CDM Smith	A. Coler			x-NR
SM-10071	192965	13	F1	H6	ND														CDM Smith	A. Coler			x-NR
SM-10071	192966	14	F1	H4	ND														CDM Smith	A. Coler			x-NR
SM-10071	192967	15	F1	H2	ND														CDM Smith	A. Coler			x-NR
SM-10071	192968	16	F1	G9	ND														CDM Smith	A. Coler			x-NR
SM-10071	192969	17	F1	G7	ND														CDM Smith	A. Coler			x-NR
SM-10071	192970	18	F1	G5	ND														CDM Smith	A. Coler			x-NR
SM-10071	192971	19	F1	G3	ND														CDM Smith	A. Coler			x-NR
SM-10071	192972	20	F1	G1	ND														CDM Smith	A. Coler			x-NR
SM-10071	192973	21	F1	F10	ND														CDM Smith	A. Coler			x-NR
SM-10071	192974	22	F1	F8	ND														CDM Smith	A. Coler			x-NR
SM-10071	192975	23	F1	F6	ND														CDM Smith	A. Coler			x-NR
SM-10071	192976	24	F1	F4	ND														CDM Smith	A. Coler			x-NR
SM-10071	192977	25	F1	F2	ND														CDM Smith	A. Coler			x-NR
SM-10071	192978	26	F1	E9	ND														CDM Smith	A. Coler			x-NR
SM-10071	192979	27	F1	E7	ND														CDM Smith	A. Coler			x-NR
SM-10071	192980	28	F1	E5	ND														CDM Smith	A. Coler			x-NR
SM-10071	192981	29	F1	E3	ND														CDM Smith	A. Coler			x-NR
SM-10071	192982	30	F1	E1	ND														CDM Smith	A. Coler			x-NR
SM-10071	192983	31	F1	D10	ND														CDM Smith	A. Coler			x-NR
SM-10071	192984	32	F1	D8	ND														CDM Smith	A. Coler			x-NR
SM-10071	192985	33	F1	D6	ND														CDM Smith	A. Coler			x-NR
SM-10071	192986	34	F1	D4	ND														CDM Smith	A. Coler			x-NR
SM-10071	192987	35	F1	D2	ND														CDM Smith	A. Coler			x-NR
SM-10071	192988	36	F1	C9	ND														CDM Smith	A. Coler			x-NR
SM-10071	192989	37	F1	C7	ND														CDM Smith	A. Coler			x-NR
SM-10071	192990	38	F1	C5	ND														CDM Smith	A. Coler			x-NR
SM-10071	192991	39	F1	C3	ND														CDM Smith	A. Coler			x-NR
SM-10071	192992	40	F1	C1	ND														CDM Smith	A. Coler			x-NR
SM-10071	192993	41	F1	B10	ND														CDM Smith	A. Coler			x-NR
SM-10071	192994	42	F1	B8	ND														CDM Smith	A. Coler			x-NR
SM-10071	192995	43	F1	B6	ND														CDM Smith	A. Coler			x-NR
SM-10071	192996	44	F1	B4	ND														CDM Smith	A. Coler			x-NR
SM-10071	192997	45	F1	B2	ND														CDM Smith	A. Coler			x-NR
SM-10071	192998	46	F2	A1	ND														CDM Smith	A. Coler			x-NR
SM-10071	192999	47	F2	A3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193000	48	F2	A5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193001	49	F2	A7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193002	50	F2	A9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193003	51	F2	B2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193004	52	F2	B4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193005	53	F2	B6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193006	54	F2	B8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193007	55	F2	B10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193008	56	F2	C1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193009	57	F2	C3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193010	58	F2	C5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193011	59	F2	C7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193012	60	F2	C9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193013	61	F2	D2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193014	62	F2	D4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193015	63	F2	D6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193016	64	F2	D8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193017	65	F2	D10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193018	66	F2	E1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193019	67	F2	E3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193020	68	F2	E5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193021	69	F2	E7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193022	70	F2	E9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193023	71	F2	F2	ND														CDM Smith	A. Coler	Grid_grid opening F2_F4 was recorded on the benchsheet but was not entered in the EDD (page).	1/29/2014	x-NR
SM-10071	193024	72	F2	F4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193025	73	F2	F6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193026	74	F2	F8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193027	75	F2	F10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193028	76	F2	G1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193029	77	F2	G3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193030	78	F2	G5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193031	79	F2	G7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193032	80	F2	G9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193033	81	F2	H2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193034	82	F2	H4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193035	83	F2	H6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193036	84	F2	H8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193037	85	F2	H10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193038	86	T1	J10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193039	87	T1	J9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193040	88	T1	J8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193041	89	T1	J7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193042	90	T1	J6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193043	91	T1	J5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193044	92	T1	J4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193045	93	T1	J3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193046	94	T1	J2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193047	95	T1	J1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193048	96	T1	I10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193049	97	T1	I9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193050	98	T1	I8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193051	99	T1	I7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193052	100	T1	I6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193053	101	T1	I5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193054	102	T1	I4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193055	103	T1	I3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193056	104	T1	I2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193057	105	T1	I1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193058	106	T1	H10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193059	107	T1	H9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193060	108	T1	H8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193061	109	T1	H7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193062	110	T1	H6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193063	111	T1	H5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193064	112	T1	H4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193065	113	T1	H3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193066	114	T1	H2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193067	115	T1	H1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193068	116	T1	G10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193069	117	T1	G9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193070	118	T1	G8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193071	119	T1	G7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193072	120	T1	G6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193073	121	T1	G5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193074	122	T1	G4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193075	123	T1	G3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193076	124	T1	G2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193077	125	T1	G1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193078	126	T1	F10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193079	127	T1	F9	ND														CDM Smith	A. Coler			x-NR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identificati on	Sketch	Photo	EDS	CH Not Counted	StrucComm ents	Verifier's Company	Verifier's Name	Comment	Correction Date	QVC Check (100%)
SM-10071	193080	128	T1	F8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193081	129	T1	F7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193082	130	T1	F6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193083	131	T1	E10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193084	132	T1	E9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193085	133	T1	E8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193086	134	T1	E7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193087	135	T1	E6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193088	136	T1	E5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193089	137	T1	E4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193090	138	T1	E3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193091	139	T1	E2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193092	140	T1	E1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193093	141	T1	D10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193094	142	T1	D9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193095	143	T1	D8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193096	144	T1	D7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193097	145	T1	D6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193098	146	T1	D5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193099	147	T1	D4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193100	148	T1	D3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193101	149	T1	D2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193102	150	T1	D1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193103	151	T1	C10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193104	152	T1	C9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193105	153	T1	C8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193106	154	T1	C7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193107	155	T1	C6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193108	156	T1	C5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193109	157	T1	C4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193110	158	T1	C3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193111	159	T1	C2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193112	160	T1	C1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193113	161	T1	B10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193114	162	T1	B9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193115	163	T1	B8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193116	164	T1	B7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193117	165	T1	B6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193118	166	T1	B5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193119	167	T1	B4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193120	168	T1	B3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193121	169	T1	B2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193122	170	T1	B1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193123	171	T1	A10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193124	172	T1	A9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193125	173	T1	A8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193126	174	T1	A7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193127	175	T1	A6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193128	176	T1	A5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193129	177	T1	A4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193130	178	T1	A3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193131	179	T1	A2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193132	180	T1	A1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193133	181	T2	J10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193134	182	T2	J9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193135	183	T2	J8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193136	184	T2	J7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193137	185	T2	J6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193138	186	T2	J5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193139	187	T2	J4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193140	188	T2	J3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193141	189	T2	J2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193142	190	T2	J1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193143	191	T2	I10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193144	192	T2	I9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193145	193	T2	I8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193146	194	T2	I7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193147	195	T2	I6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193148	196	T2	I5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193149	197	T2	I4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193150	198	T2	I3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193151	199	T2	I2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193152	200	T2	I1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193153	201	T2	H10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193154	202	T2	H9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193155	203	T2	H8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193156	204	T2	H7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193157	205	T2	H6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193158	206	T2	H5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193159	207	T2	H4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193160	208	T2	H3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193161	209	T2	H2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193162	210	T2	H1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193163	211	T2	E10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193164	212	T2	E9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193165	213	T2	E8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193166	214	T2	E7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193167	215	T2	E6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193168	216	T2	E5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193169	217	T2	E4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193170	218	T2	E3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193171	219	T2	E2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193172	220	T2	E1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193173	221	T2	D10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193174	222	T2	D9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193175	223	T2	D8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193176	224	T2	D7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193177	225	T2	D6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193178	226	T2	D5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193179	227	T2	D4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193180	228	T2	D3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193181	229	T2	D2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193182	230	T2	D1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193183	231	T2	C10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193184	232	T2	C9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193185	233	T2	C8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193186	234	T2	C7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193187	235	T2	C6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193188	236	T2	C5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193189	237	T2	C4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193190	238	T2	C3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193191	239	T2	C2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193192	240	T2	C1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193193	241	T2	B10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193194	242	T2	B9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193195	243	T2	B8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193196	244	T2	B7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193197	245	T2	B6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193198	246	T2	B5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193199	247	T2	B4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193200	248	T2	B3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193201	249	T2	B2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193202	250	T2	B1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193203	251	T2	A10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193204	252	T2	A9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193205	253	T2	A8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193206	254	T2	A7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193207	255	T2	A6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193208	256	T2	A5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193209	257	T2	A4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193210	258	T2	A3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193211	259	T2	A2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193212	260	T2	A1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193213	261	T3	A1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193214	262	T3	A2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193215	263	T3	A3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193216	264	T3	A4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193217	265	T3	A5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193218	266	T3	A6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193219	267	T3	A7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193220	268	T3	A8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193221	269	T3	A9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193222	270	T3	A10	ND														CDM Smith	A. Coler			x-NR
SM-10071	193223	271	T3	B1	ND														CDM Smith	A. Coler			x-NR
SM-10071	193224	272	T3	B2	ND														CDM Smith	A. Coler			x-NR
SM-10071	193225	273	T3	B3	ND														CDM Smith	A. Coler			x-NR
SM-10071	193226	274	T3	B4	ND														CDM Smith	A. Coler			x-NR
SM-10071	193227	275	T3	B5	ND														CDM Smith	A. Coler			x-NR
SM-10071	193228	276	T3	B6	ND														CDM Smith	A. Coler			x-NR
SM-10071	193229	277	T3	B7	ND														CDM Smith	A. Coler			x-NR
SM-10071	193230	278	T3	B8	ND														CDM Smith	A. Coler			x-NR
SM-10071	193231	279	T3	B9	ND														CDM Smith	A. Coler			x-NR
SM-10071	193232	280	T3	B10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185063	1	H4	A2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185064	2	H4	A4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185065	3	H4	A6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185066	4	H4	A8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185067	5	H4	A10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185068	6	H4	B1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185069	7	H4	B3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185070	8	H4	B5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185071	9	H4	B7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185072	10	H4	B9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185073	11	H4	C2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185074	12	H4	C4	ND														CDM Smith	A. Coler			x-NR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date	QVC Check (100%)
SM-10076	185075	13	H4	C6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185076	14	H4	C8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185077	15	H4	C10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185078	16	H4	D1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185079	17	H4	D3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185080	18	H4	D5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185081	19	H4	D7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185082	20	H4	D9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185083	21	H4	E2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185084	22	H4	E4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185085	23	H4	E6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185086	24	H4	E8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185087	25	H4	E10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185088	26	H4	F1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185089	27	H4	F3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185090	28	H4	F5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185091	29	H4	F7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185092	30	H4	F9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185093	31	H4	G2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185094	32	H4	G4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185095	33	H4	G6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185096	34	H4	G8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185097	35	H4	G10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185098	36	H4	H1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185099	37	H4	H3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185100	38	H4	H5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185101	39	H4	H7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185102	40	H4	H9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185103	41	H5	D2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185104	42	H5	D4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185105	43	H5	D6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185106	44	H5	D8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185107	45	H5	D10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185108	46	H5	E1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185109	47	H5	E3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185110	48	H5	E5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185111	49	H5	E7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185112	50	H5	E9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185113	51	H5	F2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185114	52	H5	F4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185115	53	H5	F6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185116	54	H5	F8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185117	55	H5	F10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185118	56	H5	G1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185119	57	H5	G3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185120	58	H5	G5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185121	59	H5	G7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185122	60	H5	G9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185123	61	H5	H2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185124	62	H5	H4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185125	63	H5	H6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185126	64	H5	H8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185127	65	H5	H10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185128	66	H5	I1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185129	67	H5	I3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185130	68	H5	I5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185131	69	H5	I7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185132	70	H5	I9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185133	71	H5	J2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185134	72	H5	J4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185135	73	H5	J6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185136	74	H5	J8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185137	75	H5	J10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185138	76	H6	I9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185139	77	H6	I7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185140	78	H6	I5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185141	79	H6	I3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185142	80	H6	I1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185143	81	H6	H10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185144	82	H6	H8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185145	83	H6	H6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185146	84	H6	H4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185147	85	H6	H2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185148	86	H6	G9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185149	87	H6	G7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185150	88	H6	G5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185151	89	H6	G3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185152	90	H6	G1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185153	91	D1	A1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185154	92	D1	A2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185155	93	D1	A3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185156	94	D1	A4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185157	95	D1	A5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185158	96	D1	A6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185159	97	D1	A7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185160	98	D1	A8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185161	99	D1	A9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185162	100	D1	A10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185163	101	D1	B1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185164	102	D1	B2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185165	103	D1	B3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185166	104	D1	B4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185167	105	D1	B5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185168	106	D1	B6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185169	107	D1	B7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185170	108	D1	B8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185171	109	D1	B9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185172	110	D1	B10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185173	111	D1	C1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185174	112	D1	C2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185175	113	D1	C3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185176	114	D1	C4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185177	115	D1	C5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185178	116	D1	C6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185179	117	D1	C7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185180	118	D1	C8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185181	119	D1	C9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185182	120	D1	C10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185183	121	D1	D1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185184	122	D1	D2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185185	123	D1	D3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185186	124	D1	D4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185187	125	D1	D5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185188	126	D1	D6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185189	127	D1	D7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185190	128	D1	D8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185191	129	D1	D9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185192	130	D1	D10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185193	131	D1	E1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185194	132	D1	E2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185195	133	D1	E3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185196	134	D1	E4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185197	135	D1	E5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185198	136	D1	E6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185199	137	D1	E7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185200	138	D1	E8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185201	139	D1	E9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185202	140	D1	E10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185203	141	D1	F1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185204	142	D1	F2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185205	143	D1	F3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185206	144	D1	F4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185207	145	D1	F5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185208	146	D1	F6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185209	147	D1	F7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185210	148	D1	F8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185211	149	D1	F9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185212	150	D1	F10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185213	151	D1	G1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185214	152	D1	G2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185215	153	D1	G3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185216	154	D1	G4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185217	155	D1	G5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185218	156	D1	G6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185219	157	D1	G7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185220	158	D1	G8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185221	159	D1	G9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185222	160	D1	G10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185223	161	D1	H1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185224	162	D1	H2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185225	163	D1	H3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185226	164	D1	H4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185227	165	D1	H5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185228	166	D1	H6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185229	167	D1	H7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185230	168	D1	H8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185231	169	D1	H9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185232	170	D1	H10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185233	171	D1	I1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185234	172	D1	I2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185235	173	D1	I3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185236	174	D1	I4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185237	175	D1	I5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185238	176	D1	I6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185239	177	D1	I7	ND														CDM Smith	A. Coler			x-NR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC Check (100%)
SM-10076	185240	178	D1	I8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185241	179	D1	I9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185242	180	D1	I10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185243	181	D1	J1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185244	182	D1	J2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185245	183	D1	J3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185246	184	D1	J4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185247	185	D1	J5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185248	186	D1	J6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185249	187	D1	J7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185250	188	D1	J8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185251	189	D1	J9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185252	190	D1	J10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185253	191	D2	A1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185254	192	D2	A2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185255	193	D2	A3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185256	194	D2	A4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185257	195	D2	A5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185258	196	D2	A6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185259	197	D2	A7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185260	198	D2	A8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185261	199	D2	A9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185262	200	D2	A10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185263	201	D2	B1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185264	202	D2	B2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185265	203	D2	B3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185266	204	D2	B4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185267	205	D2	B5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185268	206	D2	B6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185269	207	D2	B7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185270	208	D2	B8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185271	209	D2	B9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185272	210	D2	B10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185273	211	D2	C1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185274	212	D2	C2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185275	213	D2	C3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185276	214	D2	C4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185277	215	D2	C5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185278	216	D2	C6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185279	217	D2	C7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185280	218	D2	C8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185281	219	D2	C9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185282	220	D2	C10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185283	221	D2	D1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185284	222	D2	D2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185285	223	D2	D3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185286	224	D2	D4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185287	225	D2	D5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185288	226	D2	D6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185289	227	D2	D7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185290	228	D2	D8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185291	229	D2	D9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185292	230	D2	D10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185293	231	D2	E1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185294	232	D2	E2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185295	233	D2	E3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185296	234	D2	E4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185297	235	D2	E5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185298	236	D2	E6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185299	237	D2	E7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185300	238	D2	E8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185301	239	D2	E9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185302	240	D2	E10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185303	241	D2	F1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185304	242	D2	F2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185305	243	D2	F3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185306	244	D2	F4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185307	245	D2	F5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185308	246	D2	F6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185309	247	D2	F7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185310	248	D2	F8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185311	249	D2	F9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185312	250	D2	F10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185313	251	D2	G1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185314	252	D2	G2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185315	253	D2	G3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185316	254	D2	G4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185317	255	D2	G5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185318	256	D2	G6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185319	257	D2	G7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185320	258	D2	G8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185321	259	D2	G9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185322	260	D2	G10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185323	261	D2	H1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185324	262	D2	H2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185325	263	D2	H3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185326	264	D2	H4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185327	265	D2	H5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185328	266	D2	H6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185329	267	D2	H7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185330	268	D2	H8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185331	269	D2	H9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185332	270	D2	H10	ND														CDM Smith	A. Coler			x-NR
SM-10076	185333	271	D2	I1	ND														CDM Smith	A. Coler			x-NR
SM-10076	185334	272	D2	I2	ND														CDM Smith	A. Coler			x-NR
SM-10076	185335	273	D2	I3	ND														CDM Smith	A. Coler			x-NR
SM-10076	185336	274	D2	I4	ND														CDM Smith	A. Coler			x-NR
SM-10076	185337	275	D2	I5	ND														CDM Smith	A. Coler			x-NR
SM-10076	185338	276	D2	I6	ND														CDM Smith	A. Coler			x-NR
SM-10076	185339	277	D2	I7	ND														CDM Smith	A. Coler			x-NR
SM-10076	185340	278	D2	I8	ND														CDM Smith	A. Coler			x-NR
SM-10076	185341	279	D2	I9	ND														CDM Smith	A. Coler			x-NR
SM-10076	185342	280	D2	I10	ND														CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - WILDFIRE CONTINGENCY MONITORING PLAN - JULY 2012 SOUSE GULCH WILDFIRE ASH

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identificati on	Sketch	Photo	EDS	CH Not Counted	StrucComm ents	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC Check (100%)
SM-20001	187628	1	A1	C7	ND														CDM Smith	A. Coler			x-NR
SM-20001	187629	2	A1	B4	F	1	1	3.7	0.6	6.17	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20001	187630	3	A1	D6	F	2	2	5.2	0.3	17.33	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20001	187631	4	A1	D8	ND														CDM Smith	A. Coler			x-NR
SM-20001	187632	5	A1	E5	ND														CDM Smith	A. Coler			x-NR
SM-20001	187633	6	A1	H7	ND														CDM Smith	A. Coler			x-NR
SM-20001	187634	7	A2	B4	ND														CDM Smith	A. Coler			x-NR
SM-20001	187635	8	A2	E5	B	3	3	9.2	1.47	6.26	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20001	187636	9	A2	D7	ND														CDM Smith	A. Coler			x-NR
SM-20001	187637	10	A2	G5	F	0	0	4	0.75	5.33	NAM		NAM	1		1			CDM Smith	A. Coler			x-NR
SM-20001	187638	11	A2	G5	F	0	0	5.8	0.7	8.29	NAM		NAM	1	1	1		; Photo #01	CDM Smith	A. Coler			x-NR
SM-20001	187639	12	A2	I3	F	4	4	12.2	1.75	6.97	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20002	187683	1	E1	H3	MD10	1													CDM Smith	A. Coler			x-NR
SM-20002	187684	2	E1	H3	MF		1	1.3	0.25	5.2	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20002	187685	3	E1	F1	ND														CDM Smith	A. Coler			x-NR
SM-20002	187686	4	E1	G5	F	2	2	7.9	0.7	11.29	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20002	187687	5	E1	C3	F	3	3	1.3	0.1	13	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20002	187688	6	E1	C3	F	0	0	7.2	0.9	8	LA		ADX	1		1		; Structure i	CDM Smith	A. Coler			x-NR
SM-20002	187689	7	E2	A5	ND														CDM Smith	A. Coler			x-NR
SM-20002	187690	8	E2	D6	F	4	4	3.1	0.4	7.75	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20002	187691	9	E2	D6	MD10	0													CDM Smith	A. Coler			x-NR
SM-20002	187692	10	E2	D6	MF	0	0	11.2	0.3	37.33	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
SM-20002	187693	11	E2	G9	MD21	5													CDM Smith	A. Coler			x-NR
SM-20002	187694	12	E2	G9	MF		5	5.7	0.3	19	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20002	187695	13	E2	G9	MF		6	4.5	0.4	11.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20002	187696	14	E2	J8	F	6	7	4.2	0.5	8.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20002	187697	15	E3	B10	ND														CDM Smith	A. Coler			x-NR
SM-20002	187698	16	E3	D7	ND														CDM Smith	A. Coler			x-NR
SM-20002	187699	17	E3	I6	F	7	8	2.5	0.6	4.17	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20003	187756	1	I1	A10	ND														CDM Smith	A. Coler			x-NR
SM-20003	187757	2	I1	C9	F	1	1	9.9	0.8	12.38	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20003	187758	3	M1	J3	ND														CDM Smith	A. Coler			x-NR
SM-20003	187759	4	M1	G6	F	2	2	2.4	0.4	6	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20003	187760	5	M1	F1	F	3	3	1.9	0.3	6.33	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20003	187761	6	M1	F1	F	4	4	2.6	0.3	8.67	LA		ADX	1	1	1		XX, TR; Phot	CDM Smith	A. Coler			x-NR
SM-20003	187762	7	M1	E7	ND														CDM Smith	A. Coler			x-NR
SM-20003	187763	8	M1	B9	ND														CDM Smith	A. Coler			x-NR
SM-20003	187764	9	M2	I1	F	5	5	2.9	0.3	9.67	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20003	187765	10	M2	F6	ND														CDM Smith	A. Coler			x-NR
SM-20003	187766	11	M2	D7	F	6	6	9.2	0.4	23	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
SM-20003	187767	12	M2	A6	F	7	7	2	0.2	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I AMBIENT AIR

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P1-00005	23	1	B4	C7	ND														CDM Smith	N. Ross	Grid is B4, not 4. Manually revised in EDD and in project database by Data Manager (CDM Smith).	4/3/2013
P1-00005	24	2	B4	E9	ND														CDM Smith	N. Ross	Grid is B4, not 4. Manually revised in EDD and in project database by Data Manager (CDM Smith).	4/3/2013
P1-00005	25	3	B5	D8	ND														CDM Smith	N. Ross	Grid is B5, not 5. Manually revised in EDD and in project database by Data Manager (CDM Smith).	4/3/2013
P1-00005	26	4	B5	H6	ND														CDM Smith	N. Ross	Grid is B5, not 5. Manually revised in EDD and in project database by Data Manager (CDM Smith).	4/3/2013
P1-00007	31	1	C1	J5	ND														CDM Smith	N. Ross	Grid is C1, not 1. Manually revised in EDD and in project database by Data Manager (CDM Smith).	4/3/2013
P1-00007	32	2	C1	D2	ND														CDM Smith	N. Ross	Grid is C1, not 1. Manually revised in EDD and in project database by Data Manager (CDM Smith).	4/3/2013
P1-00007	33	3	C2	I6	ND														CDM Smith	N. Ross	Grid is C2, not 2. Manually revised in EDD and in project database by Data Manager (CDM Smith).	4/3/2013
P1-00007	34	4	C2	C3	ND														CDM Smith	N. Ross	Grid is C2, not 2. Manually revised in EDD and in project database by Data Manager (CDM Smith).	4/3/2013
P1-00245	141	1	N4	G7	ND														CDM Smith	N. Ross		
P1-00245	142	2	N4	J4	ND														CDM Smith	N. Ross		
P1-00245	143	3	N4	C6	ND														CDM Smith	N. Ross		
P1-00245	144	4	N5	F9	ND														CDM Smith	N. Ross		
P1-00245	145	5	N5	C8	ND														CDM Smith	N. Ross		
P1-00276	205	1	I4	I3	ND														CDM Smith	N. Ross		
P1-00276	206	2	I4	H8	ND														CDM Smith	N. Ross		
P1-00276	207	3	I5	G1	ND														CDM Smith	N. Ross		
P1-00276	208	4	I5	E7	ND														CDM Smith	N. Ross		
P1-00279	217	1	J4	J5	ND														CDM Smith	N. Ross		
P1-00279	218	2	J4	A7	ND														CDM Smith	N. Ross		
P1-00279	219	3	J5	A9	ND														CDM Smith	N. Ross		
P1-00279	220	4	J5	I7	ND														CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I DUFF

IndexID	Initial Analysis ID	Lab QC Type	Grid ID	Sequence ID	Grid Opening ID	StructureType	Primary	Total	Length um	Width um	AR	AR Check	Identification	Mineral Class	Mineral Desc	Structure Comments	Verifier's Company	Verifier	Comments
P1-00164	3409	Not QA	F4	1	A4	F	1	1	1	0.2	5	5	ADX	LA		WRTA; NaK; Photo # 580554	SRC	A Bacom	
P1-00164	3409	Not QA	F4	2	A4	F	2	2	1.5	0.3	5	5	ADX	LA		WRTA; NaK; Photo # 580555 & 580556	SRC	A Bacom	
P1-00164	3409	Not QA	F4	3	A4	MD11	3										SRC	A Bacom	
P1-00164	3409	Not QA	F4	4	A4	MF		3	5.25	0.5	10.5	10.5	ADX	LA		WRTA; NaK; Photo # 580557	SRC	A Bacom	
P1-00164	3409	Not QA	F4	5	G2	MD11	4										SRC	A Bacom	
P1-00164	3409	Not QA	F4	6	G2	MF		4	6.5	0.25	26	26	ADX	LA		WRTA; NaK; Photo # 580558	SRC	A Bacom	
P1-00164	3409	Not QA	F4	7	G2	F	5	5	9	0.25	36	36	ADX	LA		WRTA; NaK; Photo # 580559	SRC	A Bacom	
P1-00164	3409	Not QA	F4	8	F5	F	6	6	1.5	0.25	6	6	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00164	3409	Not QA	F5	9	G4	F	7	7	3	0.2	15	15	ADX	LA		WRTA; NaX	SRC	A Bacom	
P1-00164	3409	Not QA	F5	10	G4	F	8	8	3	0.25	12	12	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00164	3409	Not QA	F5	11	G4	F	9	9	1.5	0.2	7.5	7.5	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00164	3409	Not QA	F5	12	D3	MD10	10										SRC	A Bacom	
P1-00164	3409	Not QA	F5	13	D3	MF		10	3.75	0.2	18.75	18.75	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00164	3409	Not QA	F5	14	D3	B	11	11	4	0.5	8	8	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00164	3409	Not QA	F5	15	D3	F	12	12	10.5	0.5	21	21	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00164	3409	Not QA	F5	16	B1	ND											SRC	A Bacom	
P1-00110	3415	Not QA	F2	1	D5	MD10	1										SRC	A Bacom	
P1-00110	3415	Not QA	F2	2	D5	MF		1	1.75	0.25	7	7	ADX	LA		WRTA; NaK; Photo # 580581	SRC	A Bacom	
P1-00110	3415	Not QA	F2	3	D5	MD10	2										SRC	A Bacom	
P1-00110	3415	Not QA	F2	4	D5	MF		2	4.5	0.4	11.25	11.25	ADX	LA		WRTA; NaK; Photo # 580582	SRC	A Bacom	
P1-00110	3415	Not QA	F2	5	J6	F	3	3	6.5	0.5	13	13	ADX	LA		WRTA; NaK; Photo # 580583 & 580584	SRC	A Bacom	
P1-00110	3415	Not QA	F2	6	J6	F	4	4	3.5	0.25	14	14	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00110	3415	Not QA	F2	7	J6	F	5	5	1.3	0.1	13	13	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00110	3415	Not QA	F2	8	J6	F	6	6	1.2	0.2	6	6	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00110	3415	Not QA	F3	9	F7	F	7	7	1.1	0.2	5.5	5.5	ADX	LA		WRTA; NaK; Photo # 580585	SRC	A Bacom	
P1-00110	3415	Not QA	F3	10	F7	MD10	8										SRC	A Bacom	
P1-00110	3415	Not QA	F3	11	F7	MF		8	3.5	0.4	8.75	8.75	ADX	LA		WRTA; NaK; Photo # 580586	SRC	A Bacom	
P1-00110	3415	Not QA	F3	12	F7	MD10	9										SRC	A Bacom	
P1-00110	3415	Not QA	F3	13	F7	MF		9	1	0.15	6.666667	6.666667	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00110	3415	Not QA	F3	14	F7	F	10	10	2.2	0.25	8.8	8.8	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00110	3415	Not QA	F3	15	F7	MD10	11										SRC	A Bacom	
P1-00110	3415	Not QA	F3	16	F7	MF		11	1.5	0.4	3.75	3.75	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00110	3415	Not QA	F3	17	C5	F	12	12	3.2	0.3	10.66667	10.66667	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00110	3415	Not QA	F3	18	C5	MD11	13										SRC	A Bacom	
P1-00110	3415	Not QA	F3	19	C5	MF		13	7.5	0.3	25	25	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00110	3415	Not QA	F3	20	C5	F	14	14	3.5	0.5	7	7	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00032	6137	Not QA	K4	1	B2	MD11	1										SRC	A Bacom	
P1-00032	6137	Not QA	K4	2	B2	MF		1	6	0.25	24	24	ADX	LA		WRTA; NaK; Photo # 3285 & 3286	SRC	A Bacom	
P1-00032	6137	Not QA	K4	3	B2	MD10	2										SRC	A Bacom	
P1-00032	6137	Not QA	K4	4	B2	MF		2	2	0.13	15.38462	15.38462	ADX	LA		WRTA; NaK; Photo # 3335	SRC	A Bacom	
P1-00032	6137	Not QA	K4	5	D7	F	3	3	3	0.25	12	12	ADX	LA		WRTA; NaK; Photo # 3288	SRC	A Bacom	
P1-00032	6137	Not QA	K4	6	F3	ND											SRC	A Bacom	
P1-00032	6137	Not QA	K5	7	G2	MD10	4										SRC	A Bacom	
P1-00032	6137	Not QA	K5	8	G2	MF		4	4	0.25	16	16	ADX	LA		WRTA; NaK; Photo # 3290	SRC	A Bacom	
P1-00032	6137	Not QA	K5	9	I3	MD10	5										SRC	A Bacom	
P1-00032	6137	Not QA	K5	10	I3	MF		5	3	0.25	12	12	ADX	LA		WRTA; NaK; Photo # 3291	SRC	A Bacom	
P1-00032	6137	Not QA	K5	11	I3	F	6	6	2.5	0.13	19.23077	19.23077	ADX	LA		WRTA; NaK; Photo # 3314	SRC	A Bacom	Photo #3314 not listed in StrucComments but listed on benchsheet. Manually added to EDD and project database by Data Manager (CDM Smith).
P1-00068	6146	Not QA	E4	1	H6	ND											SRC	A Bacom	
P1-00068	6146	Not QA	E4	2	F5	ND											SRC	A Bacom	
P1-00068	6146	Not QA	E5	3	E1	ND											SRC	A Bacom	
P1-00068	6146	Not QA	E5	4	B9	ND											SRC	A Bacom	
P1-00068	6146	Not QA	E6	5	D4	ND											SRC	A Bacom	
P1-00083	6147	Not QA	Q1	1	C9	F	0	0	4.5	0.4	11.25	11.25	ADX	LA		WRTA; NaK; Structure intersects noncountable grid bar; Photo # 32445 & 32446	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	2	C9	F	1	1	1.5	0.25	6	6	ADX	LA		WRTA; NaK; Photo # 32447	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	3	C9	MD10	2										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	4	C9	MF		2	2	0.25	8	8	ADX	LA		WRTA; NaK; Photo # 32448	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	5	C9	MD10	3										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	6	C9	MF		3	2	0.3	6.666667	6.666667	ADX	LA		WRTA; NaX; Photo # 32449	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	7	C9	MD10	4										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	8	C9	MF		4	3	0.2	15	15	ADX	LA		WRTA; NaK ; Photo # 32450	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	9	G10	MD10	5										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	10	G10	MF		5	3	0.5	6	6	ADX	LA		WRTA; NaK; Photo # 32451 & 32452	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	11	G10	MD10	6										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	12	G10	MF		6	3	0.5	6	6	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	13	G10	MD10	7										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	14	G10	MF		7	2.5	0.25	10	10	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	15	G10	F	8	8	1.25	0.2	6.25	6.25	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	16	G10	MD10	9										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	17	G10	MF		9	2	0.25	8	8	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	18	I4	MD10	10										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	19	I4	MF		10	2	0.4	5	5	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	20	I4	MD10	11										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	21	I4	MF		11	4.5	0.45	10	10	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	22	I4	F	12	12	1	0.25	4	4	ADX	LA		WRTA; NaX	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	23	F2	F	13	13	0.75	0.25	3	3	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	24	F2	MD10	14										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	25	F2	MF		14	2	0.15	13.33333	13.33333	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	26	F2	MD10	15										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	27	F2	MF		15	3.5	0.4	8.75	8.75	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q1	28	D6	MD10	16										SRC	A Bacom	
P1-00083	6147	Not QA	Q1	29	D6	MF		16	1	0.25	4	4	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	30	B3	F	17	17	1.5	0.2	7.5	7.5	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	31	B3	F	18	18	2.5	0.2	12.5	12.5	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	32	B3	F	19	19	3.5	0.75	4.666667	4.666667	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	33	H9	F	20	20	3.25	0.45	7.222222	7.222222	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	34	H9	F	21	21	6.25	1	6.25	6.25	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	35	H9	F	22	22	1	0.25	4	4	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	36	H9	MD10	23										SRC	A Bacom	
P1-00083	6147	Not QA	Q2	37	H9	MF		23	4.75	0.5	9.5	9.5	ADX	LA		WRTA; NaX	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	38	H9	F	24	24	4	0.6	6.666667	6.666667	ADX	LA		WRTA; NaX	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	39	H9	MD10	25										SRC	A Bacom	
P1-00083	6147	Not QA	Q2	40	H9	MF		25	2.5	0.45	5.555556	5.555556	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	41	H9	MD10	26										SRC	A Bacom	
P1-00083	6147	Not QA	Q2	42	H9	MF		26	2	0.3	6.666667	6.666667	ADX	LA		WRTA; NaX	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	43	I6	F	27	27	3.75	0.35	10.71429	10.71429	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	44	I6	MD10	28										SRC	A Bacom	
P1-00083	6147	Not QA	Q2	45	I6	MF		28	1.25	0.25	5	5	ADX	LA		WRTA; NaX	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	46	I6	MD10	29										SRC	A Bacom	
P1-00083	6147	Not QA	Q2	47	I6	MF		29	1.75	0.35	5	5	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	48	F3	MD11	30										SRC	A Bacom	
P1-00083	6147	Not QA	Q2	49	F3	MF		30	20.5	0.75	27.33333	27.33333	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	50	F3	MD10	31										SRC	A Bacom	
P1-00083	6147	Not QA	Q2	51	F3	MF		31	1.25	0.2	6.25	6.25	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	52	F3	MD10	32										SRC	A Bacom	
P1-00083	6147	Not QA	Q2	53	F3	MF		32	2.5	0.4	6.25	6.25	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	54	D1	F	33	33	4	0.45	8.888889	8.888889	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	55	D1	MD10	0										SRC	A Bacom	
P1-00083	6147	Not QA	Q2	56	D1	MF		0	2	0.25	8	8	NAM	NAM		UN; NaX; Photo # 32482	SRC	A Bacom	
P1-00083	6147	Not QA	Q2	57	D1	MD10	34										SRC	A Bacom	
P1-00083	6147	Not QA	Q2	58	D1	MF		34	4.5	0.3	15	15	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q3	59	B3	ND											SRC	A Bacom	
P1-00083	6147	Not QA	Q3	60	F7	F	35	35	3.25	0.45	7.222222	7.222222	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q3	61	F7	MD20	36										SRC	A Bacom	
P1-00083	6147	Not QA	Q3	62	F7	MF		36	2.5	0.5	5	5	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q3	63	F7	MF		37	1.25	0.4	3.125	3.125	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q3	64	F7	MD10	37										SRC	A Bacom	
P1-00083	6147	Not QA	Q3	65	F7	MF		38	2.5	0.45	5.555556	5.555556	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q3	66	B8	F	38	39	2	0.25	8	8	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q3	67	B8	F	39	40	1	0.25	4	4	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q3	68	B8	MD10	40										SRC	A Bacom	
P1-00083	6147	Not QA	Q3	69	B8	MF		41	2.25	0.15	15	15	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q3	70	H9	F	41	42	4.5	0.4	11.25	11.25	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q3	71	H9	F	42	43	1.75	0.3	5.833333	5.833333	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00083	6147	Not QA	Q3	72	H9	F	43	44	3	0.5	6	6	ADX	LA		WRTA; NaK	SRC	A Bacom	
LB-25	6114	DB	P2	1	I4	ND											SRC	A Bacom	
LB-25	6114	DB	P2	2	G9	ND											SRC	A Bacom	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I DUFF

IndexID	Initial Analysis ID	Lab QC Type	Grid ID	Sequence ID	Grid Opening ID	StructureType	Primary	Total	Length um	Width um	AR	AR Check	Identification	Mineral Class	Mineral Desc	Structure Comments	Verifier's Company	Verifier	Comments
LB-25	6114	DB	P2	3	F2	ND											SRC	A Bacom	
LB-25	6114	DB	P2	4	D5	ND											SRC	A Bacom	
LB-25	6114	DB	P2	5	B7	ND											SRC	A Bacom	
LB-25	6114	DB	P3	6	I8	ND											SRC	A Bacom	
LB-25	6114	DB	P3	7	E3	ND											SRC	A Bacom	
LB-25	6114	DB	P1	8	D3	ND											SRC	A Bacom	
LB-25	6114	DB	P1	9	B2	ND											SRC	A Bacom	
LB-25	6114	DB	P1	10	C9	ND											SRC	A Bacom	
LB-28	6117	DB	I1	1	H5	ND											SRC	A Bacom	
LB-28	6117	DB	I1	2	G8	ND											SRC	A Bacom	
LB-28	6117	DB	I1	3	E6	ND											SRC	A Bacom	
LB-28	6117	DB	I1	4	B5	ND											SRC	A Bacom	
LB-28	6117	DB	I1	5	A8	ND											SRC	A Bacom	
LB-28	6117	DB	I3	6	I7	ND											SRC	A Bacom	
LB-28	6117	DB	I3	7	G5	ND											SRC	A Bacom	
LB-28	6117	DB	I3	8	E3	ND											SRC	A Bacom	
LB-28	6117	DB	I3	9	C3	ND											SRC	A Bacom	
LB-28	6117	DB	I3	10	A6	ND											SRC	A Bacom	
LB-35	6124	LB	1	1	B4	ND											SRC	A Bacom	
LB-35	6124	LB	1	2	B2	ND											SRC	A Bacom	
LB-35	6124	LB	1	3	D3	ND											SRC	A Bacom	
LB-35	6124	LB	1	4	D1	ND											SRC	A Bacom	
LB-35	6124	LB	1	5	I2	ND											SRC	A Bacom	
LB-35	6124	LB	2	6	I5	ND											SRC	A Bacom	
LB-35	6124	LB	2	7	I7	ND											SRC	A Bacom	
LB-35	6124	LB	2	8	I9	ND											SRC	A Bacom	
LB-35	6124	LB	2	9	D8	ND											SRC	A Bacom	
LB-35	6124	LB	2	10	D10	ND											SRC	A Bacom	
LB-38	6127	DB	B1	1	B8	ND											SRC	A Bacom	
LB-38	6127	DB	B1	2	A10	ND											SRC	A Bacom	
LB-38	6127	DB	B1	3	G6	ND											SRC	A Bacom	
LB-38	6127	DB	B1	4	I10	ND											SRC	A Bacom	
LB-38	6127	DB	B2	5	J4	ND											SRC	A Bacom	
LB-38	6127	DB	B2	6	I8	ND											SRC	A Bacom	
LB-38	6127	DB	B2	7	A10	ND											SRC	A Bacom	
LB-38	6127	DB	B3	8	D1	ND											SRC	A Bacom	
LB-38	6127	DB	B3	9	H5	ND											SRC	A Bacom	
LB-38	6127	DB	B3	10	J4	ND											SRC	A Bacom	
P1-00115	8715	Not QA	B4	1	E7	MD11	1										SRC	A Bacom	
P1-00115	8715	Not QA	B4	2	E7	MF		1	7	0.18	38.89	38.89	ADX	LA		WRTA; NaK; Photo # 03028 & 03029	SRC	A Bacom	
P1-00115	8715	Not QA	B4	3	E7	MD10	2										SRC	A Bacom	
P1-00115	8715	Not QA	B4	4	E7	MF		2	1	0.15	6.67	6.67	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B4	5	E7	MD10	3										SRC	A Bacom	
P1-00115	8715	Not QA	B4	6	E7	MF		3	2.25	0.26	8.65	8.65	ADX	LA		WRTA; NaK; Photo # 03030	SRC	A Bacom	
P1-00115	8715	Not QA	B4	7	E7	MC11	4	4	7.5	6.4	1.17	1.17	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B4	8	E7	MD10	5										SRC	A Bacom	
P1-00115	8715	Not QA	B4	9	E7	MF		5	3.4	0.25	13.60	13.60	ADX	LA		WRTA; NaK; Photo # 03031	SRC	A Bacom	
P1-00115	8715	Not QA	B4	10	E7	F	6	6	2.5	0.5	5.00	5.00	ADX	LA		WRTA; NaK; Photo # 03032	SRC	A Bacom	
P1-00115	8715	Not QA	B4	11	E7	MD11	7										SRC	A Bacom	
P1-00115	8715	Not QA	B4	12	E7	MF		7	8.5	0.4	21.25	21.25	ADX	LA		WRTA; NaK; Photo # 03033	SRC	A Bacom	
P1-00115	8715	Not QA	B4	13	E7	MD10	8										SRC	A Bacom	
P1-00115	8715	Not QA	B4	14	E7	MF		8	1.7	0.22	7.73	7.73	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B4	15	E7	MD10	9										SRC	A Bacom	
P1-00115	8715	Not QA	B4	16	E7	MF		9	1.9	0.24	7.92	7.92	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B4	17	E7	F	10	10	2.7	0.175	15.43	15.43	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B4	18	I7	MD10	0										SRC	A Bacom	
P1-00115	8715	Not QA	B4	19	I7	MF		0	1	0.375	2.67	2.67	ADX	LA		WRTA; NaK;structure does not meet aspect ratio	SRC	A Bacom	
P1-00115	8715	Not QA	B4	20	I7	MD21	11										SRC	A Bacom	
P1-00115	8715	Not QA	B4	21	I7	MF		11	6.3	0.5	12.60	12.60	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B4	22	I7	MF		12	1.8	0.175	10.29	10.29	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B4	23	I7	MC10	12	13	2.75	1.95	1.41	1.41	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B5	24	F2	MD10	13										SRC	A Bacom	
P1-00115	8715	Not QA	B5	25	F2	MF		14	3	0.5	6.00	6.00	ADX	LA		AT; XX	SRC	A Bacom	
P1-00115	8715	Not QA	B5	26	F2	MC11	14	15	17.25	11.3	1.53	1.53	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B5	27	F2	MD11	15										SRC	A Bacom	
P1-00115	8715	Not QA	B5	28	F2	MF		16	21.75	0.43	50.58	50.58	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B5	29	F2	F	16	17	0.75	0.175	4.29	4.29	ADX	LA		AT; XX	SRC	A Bacom	
P1-00115	8715	Not QA	B5	30	F2	F	17	18	0.7	0.13	5.38	5.38	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B5	31	F2	MD10	18										SRC	A Bacom	
P1-00115	8715	Not QA	B5	32	F2	MF		19	5	0.25	20.00	20.00	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B5	33	F2	MD20	19										SRC	A Bacom	
P1-00115	8715	Not QA	B5	34	F2	MF		20	2.1	0.2	10.50	10.50	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B5	35	F2	MF		21	1.8	0.25	7.20	7.20	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B5	36	F2	MD10	20										SRC	A Bacom	
P1-00115	8715	Not QA	B5	37	F2	MF		22	3.6	0.2	18.00	18.00	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B5	38	H6	MD10	21										SRC	A Bacom	
P1-00115	8715	Not QA	B5	39	H6	MF		23	1	0.23	4.35	4.35	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B5	40	H6	MD10	22										SRC	A Bacom	
P1-00115	8715	Not QA	B5	41	H6	MF		24	2	0.2	10.00	10.00	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00115	8715	Not QA	B5	42	H6	MD11	23										SRC	A Bacom	
P1-00115	8715	Not QA	B5	43	H6	MF		25	5.4	0.325	16.62	16.62	ADX	LA		WRTA; NaK	SRC	A Bacom	
P1-00124	6521	Not QA	S4	1	J6	MD10	1										SRC	A Bacom	
P1-00124	6521	Not QA	S4	2	J6	MF		1	1	0.25	4.00	4.00	ADX	LA		WRTA; NaK; Photo # 02483 & 02497	SRC	A Bacom	
P1-00124	6521	Not QA	S4	3	J6	F	2	2	5.25	0.5	10.50	10.50	ADX	LA		WRTA; NaK; Photo # 02486	SRC	A Bacom	
P1-00124	6521	Not QA	S4	4	A3	ND											SRC	A Bacom	
P1-00124	6521	Not QA	S4	5	B9	ND											SRC	A Bacom	
P1-00124	6521	Not QA	S6	6	B3	MD10	3										SRC	A Bacom	
P1-00124	6521	Not QA	S6	7	B3	MF		3	2.75	0.5	5.50	5.50	ADX	LA		WRTA; NaK; Photo # 02487	SRC	A Bacom	
P1-00124	6521	Not QA	S6	8	H7	MD11	4										SRC	A Bacom	
P1-00124	6521	Not QA	S6	9	H7	MF		4	5.5	0.25	22.00	22.00	ADX	LA		WRTA; NaK;Photo # 02488	SRC	A Bacom	
P1-00147	6509	Not QA	N5	1	B9	ND											SRC	A Bacom	
P1-00147	6509	Not QA	N5	2	D7	ND											SRC	A Bacom	
P1-00147	6509	Not QA	N5	3	G10	ND											SRC	A Bacom	
P1-00147	6509	Not QA	N6	4	H7	ND											SRC	A Bacom	
P1-00147	6509	Not QA	N6	5	F5	ND											SRC	A Bacom	
P1-00147	6509	Not QA	N6	6	C8	ND											SRC	A Bacom	
P1-00106	6507	Not QA	C5	1	B8	F	1	1	6.7	1.2	5.58	5.58	ADX	LA		WRTA; NaK; Photo # 13493 & 13494	SRC	A Bacom	
P1-00106	6507	Not QA	C5	2	G9	ND											SRC	A Bacom	
P1-00106	6507	Not QA	C6	3	I5	ND											SRC	A Bacom	
P1-00106	6507	Not QA	C6	4	F2	ND											SRC	A Bacom	
P1-00106	6507	Not QA	C6	5	G6	ND											SRC	A Bacom	
P1-00096	6505	Not QA	C1	1	B9	MD10	1										SRC	A Bacom	
P1-00096	6505	Not QA	C1	2	B9	MB		1	1.4	0.3	4.67	4.67	ADX	LA		WRTA; NaK; Photo # 13517 & 13518	SRC	A Bacom	
P1-00096	6505	Not QA	C1	3	B9	F	2	2	2.3	0.4	5.75	5.75	ADX	LA		WRTA; NaK; Photo # 13519	SRC	A Bacom	
P1-00096	6505	Not QA	C1	4	G5	F	3	3	1.9	0.4	4.75	4.75	ADX	LA		WRTA; NaK; Photo # 13520 & 13521	SRC	A Bacom	
P1-00096	6505	Not QA	C1	5	E8	ND											SRC	A Bacom	
P1-00096	6505	Not QA	C2	6	B2	ND											SRC	A Bacom	
P1-00096	6505	Not QA	C2	7	D5	ND											SRC	A Bacom	
P1-00096	6505	Not QA	C2	8	F1	B	4	4	2.5	0.3	8.33	8.33	ADX	LA		WRTA; NaK; Photo # 13522	SRC	A Bacom	
P1-00096	6505	Not QA	C2	9	F1	F	5	5	4.5	0.5	9.00	9.00	ADX	LA		WRTA; NaK; Photo # 13523	SRC	A Bacom	
P1-00096	6505	Not QA	C2	10	H4	MD10	6										SRC	A Bacom	
P1-00096	6505	Not QA	C2	11	H4	MF		6	2.75	0.3	9.17	9.17	ADX	LA		WRTA; NaK	SRC	A Bacom	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I SURFACE WATER

Index ID	Grid	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Check AR	Mineral Class	Mineral Desc	Structure Comments	Verifier's Company	Verifier	Comments
P1-00257	1	E1	F		1	5	0.4	12.5	12.5	LA		WRTA;Nak; Photo#04427,04428	SRC	A. Bacom	
P1-00257	1	E3	ND										SRC	A. Bacom	
P1-00257	1	E5	ND										SRC	A. Bacom	
P1-00257	1	E7	ND										SRC	A. Bacom	
P1-00257	1	E9	ND										SRC	A. Bacom	
P1-00257	1	I2	ND										SRC	A. Bacom	
P1-00257	1	I4	ND										SRC	A. Bacom	
P1-00257	1	I6	ND										SRC	A. Bacom	
P1-00257	1	I8	ND										SRC	A. Bacom	
P1-00257	1	F8	ND										SRC	A. Bacom	
P1-00257	2	J2	ND										SRC	A. Bacom	
P1-00257	2	J4	ND										SRC	A. Bacom	
P1-00257	2	J6	ND										SRC	A. Bacom	
P1-00257	2	J10	ND										SRC	A. Bacom	
P1-00257	2	F10	ND										SRC	A. Bacom	
P1-00257	3	J2	ND										SRC	A. Bacom	
P1-00257	3	J6	ND										SRC	A. Bacom	
P1-00257	3	J9	ND										SRC	A. Bacom	
P1-00257	3	G7	ND										SRC	A. Bacom	
P1-00257	3	G10	ND										SRC	A. Bacom	
P1-00300	1	D2	ND										SRC	A. Bacom	
P1-00300	1	D4	ND										SRC	A. Bacom	
P1-00300	1	D6	ND										SRC	A. Bacom	
P1-00300	1	D8	ND										SRC	A. Bacom	
P1-00300	1	D10	ND										SRC	A. Bacom	
P1-00300	1	C1	ND										SRC	A. Bacom	
P1-00300	1	C3	ND										SRC	A. Bacom	
P1-00300	1	C5	ND										SRC	A. Bacom	
P1-00300	1	C7	ND										SRC	A. Bacom	
P1-00300	1	C9	ND										SRC	A. Bacom	
P1-00300	2	F2	ND										SRC	A. Bacom	
P1-00300	2	F4	ND										SRC	A. Bacom	
P1-00300	2	F6	ND										SRC	A. Bacom	
P1-00300	2	F8	ND										SRC	A. Bacom	
P1-00300	2	F10	ND										SRC	A. Bacom	
P1-00300	2	E1	ND										SRC	A. Bacom	
P1-00300	2	E3	ND										SRC	A. Bacom	
P1-00300	2	E5	ND										SRC	A. Bacom	
P1-00300	2	E7	ND										SRC	A. Bacom	
P1-00300	2	E9	ND										SRC	A. Bacom	
P1-00381	1	G1	ND										SRC	A. Bacom	
P1-00381	1	G3	ND										SRC	A. Bacom	
P1-00381	1	G5	F		1	17	0.3	56.66666667	56.66667	LA		WRTA; NaK; Photo # 04312 & 04313	SRC	A. Bacom	
P1-00381	1	G7	M		2	2.1	0.4	5.25	5.25	LA		wRTA; NaK; Photo # 04314 & 04315	SRC	A. Bacom	
P1-00381	1	G9	F		3	7.7	0.5	15.4	15.4	LA		WRTA; NaK; Photo # 04316	SRC	A. Bacom	
P1-00381	1	G9	F		4	9.6	0.3	32	32	LA		WRTA; NaK; Photo # 04317	SRC	A. Bacom	
P1-00381	1	G9	F		5	5.8	0.3	19.33333333	19.33333	LA		WRTA; NaK; Photo # 04318	SRC	A. Bacom	
P1-00381	1	D7	F		6	5.7	0.6	9.5	9.5	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	1	D7	F		7	7.2	1.2	6	6	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	1	D9	ND										SRC	A. Bacom	
P1-00381	2	H2	ND										SRC	A. Bacom	
P1-00381	2	H4	ND										SRC	A. Bacom	
P1-00381	2	H6	B		8	18	0.7	25.71428571	25.71429	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	2	H8	F		0	12	0.8	15	15	LA		WRTA; NaK;Structure intersects noncountable grid bar	SRC	A. Bacom	
P1-00381	2	H8	F		9	8	0.2	40	40	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	2	H8	F		10	6.2	0.2	31	31	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	2	H8	F		11	6.8	0.6	11.33333333	11.33333	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	2	H10	F		12	5.2	0.25	20.8	20.8	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	2	C6	ND										SRC	A. Bacom	
P1-00381	2	C8	F		13	3.1	0.3	10.33333333	10.33333	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	3	I4	ND										SRC	A. Bacom	
P1-00381	3	I6	ND										SRC	A. Bacom	
P1-00381	3	I8	F		14	6	1.1	5.454545455	5.454545	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	3	I8	F		0	22	0.7	31.42857143	31.42857	LA		WRTA; NaK; Structure intersects noncountable grid bar	SRC	A. Bacom	
P1-00381	3	I10	F		15	12	0.35	34.28571429	34.28571	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	3	G4	F		16	28	0.7	40	40	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	3	G4	F		17	12	0.2	60	60	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	3	G4	F		18	5.3	0.4	13.25	13.25	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	3	G6	ND										SRC	A. Bacom	
P1-00381	3	G8	F		19	37	1.2	30.83333333	30.83333	LA		WRTA; NaK	SRC	A. Bacom	
P1-00381	3	G8	F		20	12.3	0.4	30.75	30.75	LA		WRTA; NaK	SRC	A. Bacom	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I TREE BARK

Index ID	Lab QC Type	Media	Lab Job Number	Grid ID	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Mineral Class	Mineral Desc	Identification	Structure Comments	Verifier's Company	Verifier's Name	Comment
P1-00201	Not QA	Tree Bark	040726269	1	D4	MD10	1									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MF		1	2.2	0.25	8.8	LA		ADX	WRTA; NaK;MN; Photo # 22803 & 22804	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F		0	10.2	0.4	25.5	LA		ADX	WRTA; NaK; Structure intersects noncountable	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MD10	2									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MF		2	1.7	0.15	11.33333	LA		ADX	WRTA; NaK; MN; Photo # 22805	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	3	3	2.7	0.35	7.714286	LA		ADX	WRTA; NaK; MN; Photo # 22806	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	4	4	1.5	0.25	6	LA		ADX	WRTA; NaK; MN; Photo # 22807	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	5	5	5.6	0.7	8	LA		ADX	WRTA; NaK; Photo # 22808	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	6	6	2.2	0.3	7.333333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	7	7	2.1	0.2	10.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	CD20	8									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	CF		8	3.1	0.3	10.33333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	CF		9	3	0.2	15	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MD10	9									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MF		10	1.5	0.35	4.285714	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MD20	10									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MF		11	3.3	0.8	4.125	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MF		12	3.2	0.2	16	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	11	13	4.8	0.3	16	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	12	14	9	0.45	20	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	13	15	3.2	0.2	16	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	14	16	3.5	0.5	7	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	15	17	2.8	0.4	7	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MD10	16									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MF		18	1.8	0.15	12	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	17	19	3.6	0.25	14.4	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MD10	18									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MF		20	3.2	0.6	5.333333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	19	21	1.2	0.2	6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	20	22	7.9	0.3	26.33333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	21	23	6.4	0.7	9.142857	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	22	24	1.1	0.25	4.4	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	23	25	3.8	0.2	19	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	24	26	1.5	0.1	15	LA		AX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	25	27	2.4	0.2	12	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	26	28	1.1	0.2	5.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	27	29	2.5	0.1	25	LA		AX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	28	30	1.9	0.2	9.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MD10	29									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	MF		31	0.9	0.25	3.6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	30	32	2	0.25	8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	31	33	3.7	0.5	7.4	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	32	34	4.6	0.15	30.66667	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	33	35	1.2	0.25	4.8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	34	36	2	0.15	13.33333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	1	D4	F	35	37	2.3	0.1	23	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	36	38	16.5	1	16.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	37	39	3.9	0.3	13	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	38	40	1.6	0.2	8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	39	41	0.9	0.2	4.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	40	42	3.8	0.7	5.428571	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F		0	5.6	0.3	18.66667	LA		ADX	WRTA; NaK; MN; Structure intersects noncour	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	41	43	2.4	0.25	9.6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	42	44	2.7	0.7	3.857143	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	MD10	43									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	MF		45	3.3	0.25	13.2	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	44	46	5.1	0.2	25.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	45	47	7.5	0.5	15	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	46	48	2.3	0.3	7.666667	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	47	49	4.8	0.1	48	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	48	50	1.2	0.2	6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	MD10	49									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	MF		51	2.6	0.15	17.33333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	50	52	1.8	0.4	4.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	51	53	1.9	0.2	9.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	52	54	2.7	0.4	6.75	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	53	55	1	0.2	5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	54	56	1.6	0.1	16	LA		AD	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	55	57	1.3	0.2	6.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	56	58	4.8	0.6	8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	57	59	2.6	0.3	8.666667	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	58	60	3	0.4	7.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	MD10	59									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	MF		61	4.8	0.2	24	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	60	62	2.5	0.25	10	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	61	63	4.6	0.25	18.4	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	62	64	4.2	0.25	16.8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	63	65	1.9	0.35	5.428571	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	64	66	4	0.3	13.33333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	65	67	2.3	0.25	9.2	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	66	68	2.1	0.1	21	LA		AX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	67	69	8	0.3	26.66667	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark	040726269	2	F4	F	68	70	3	0.5	6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00227	Not QA	Tree Bark	040726269	1	A7	F	1	1	1.8	0.3	6	LA		ADX	WRTA; NaK; MN; Photo # 22790 & 22791	SRC	A. Bacom	
P1-00227	Not QA	Tree Bark	040726269	1	A9	F	2	2	4.4	0.4	11	LA		ADX	WRTA; NaK; MN; Photo # 22792 & 22793	SRC	A. Bacom	
P1-00227	Not QA	Tree Bark	040726269	1	A9	F	3	3	1	0.25	4	LA		ADX	WRTA; NaK; MN; Photo # 22794	SRC	A. Bacom	
P1-00227	Not QA	Tree Bark	040726269	2	G5	F	4	4	2.7	0.3	9	LA		ADX	WRTA; NaK; MN; Photo # 22795	SRC	A. Bacom	
P1-00227	Not QA	Tree Bark	040726269	2	G5	F	5	5	1.4	0.3	4.666667	LA		ADX	WRTA; NaK; MN; Photo # 22796	SRC	A. Bacom	
P1-00227	Not QA	Tree Bark	040726269	2	G3	F	6	6	3.9	0.4	9.75	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		1	E10	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		1	E8	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		1	E6	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		1	E4	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		1	E2	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		1	J9	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		1	J7	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		1	J5	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		1	J3	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		1	J1	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		2	J3	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		2	J7	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		2	J10	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		2	F2	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		2	G5	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		2	E8	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		2	C4	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		2	C8	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		2	A4	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		2	A6	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	J1	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	J3	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	J5	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	J7	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	J9	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	H2	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	H4	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	H6	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	H8	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	H10	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	F2	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	F4	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	F6	ND										SRC	A. Bacom	
P1-00037	Not QA	Tree Bark		3	F8	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		1	J9	F	1	1	0.75	0.15	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00037	RD	Tree Bark		1	J7	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		1	J5	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		1	J3	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		1	J1	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		2	J3	F	2	2	2.5	0.5	5	LA		ADX		SRC	A. Bacom	
P1-00037	RD	Tree Bark		2	J7	ND										SRC	A. Bacom	Comment not entered: "small tear in GO". Per laboratory, it is not usually entered in the EDD if the GO is analyzed.
P1-00037	RD	Tree Bark		2	J10	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		2	F2	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		2	G5	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		2	E8	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		2	C4	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		2	C8	ND										SRC	A. Bacom	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I TREE BARK

Index ID	Lab QC Type	Media	Lab Job Number	Grid ID	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Mineral Class	Mineral Desc	Identification	Structure Comments	Verifier's Company	Verifier's Name	Comment
P1-00037	RD	Tree Bark		2	A4	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		2	A6	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	J1	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	J3	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	J5	ND										SRC	A. Bacom	Comment not entered: "small tear in GO". Per laboratory, it is not usually entered in the EDD if the GO is analyzed.
P1-00037	RD	Tree Bark		3	J7	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	J9	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	H2	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	H4	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	H6	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	H8	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	H10	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	F2	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	F4	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	F6	ND										SRC	A. Bacom	
P1-00037	RD	Tree Bark		3	F8	ND										SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	I8	F	1	1	3.5	0.35	10	LA		ADX	WRTA; NaK; Photo # 54813	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	I8	MD10	2								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	I8	MF		2	1.5	0.25	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	I8	MD11	3								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	I8	MF		3	6	0.2	30	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	I8	MD11	4								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	I8	MF		4	10.25	0.3	34.16667	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	I8	F	5	5	2.5	0.25	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	I8	MD11	6								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	I8	MF		6	5	0.5	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	I8	MD10	7								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	I8	MF		7	1.5	0.3	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	I8	MD11	8								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	I8	MF		8	5	0.8	6.25	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	I8	F	9	9	2.5	0.3	8.333333	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	I8	MD10	10								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	I8	MF		10	1.75	0.2	8.75	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	E7	MD11	11								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	E7	MF		11	6.5	0.25	26	LA		ADX	WRTA; NaK; Photo # 54816	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	E7	F	12	12	7.5	0.55	13.63636	LA		ADX	TR; XX; Photo # 54814 & 54815	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	E7	F	13	13	3.5	0.2	17.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	E7	MD10	14								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	E7	MF		14	4.25	0.25	17	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	E7	F	15	15	1.75	0.25	7	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	E7	F	16	16	2	0.1	20	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	E7	MD10	17								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	E7	MF		17	3	0.25	12	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	E7	MD10	18								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	E7	MF		18	4	0.25	16	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F4	E7	MD10	19								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F4	E7	MF		19	2.5	0.25	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	C6	MD11	20								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F5	C6	MF		20	12.5	0.4	31.25	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	C6	F	21	21	2.75	0.2	13.75	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	C6	MD10	22								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F5	C6	MF		22	2	0.3	6.666667	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	C6	F	23	23	2	0.25	8	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	C6	MD11	24								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F5	C6	MF		24	6.5	0.5	13	LA		ADX	WRTA; NaK; Photo # 54817	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	C6	CD20	25								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F5	C6	CF		25	1.4	0.2	7	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	C6	CF		26	1	0.2	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	F5	MD20	26								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F5	F5	MF		27	3.6	0.3	12	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	F5	MF		28	3.5	0.5	7	LA		ADX	WRTA; NaK;Photo # 54818	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	F5	F	27	29	4.5	0.75	6	LA		ADX	WRTA; NaK; Photo # 54819	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	F5	MD10	28								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F5	F5	MF		30	2.75	0.25	11	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F5	F5	F	29	31	2.4	0.4	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	E4	CD20	30								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	E4	CF		32	3.5	0.2	17.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	E4	CF		33	1.75	0.25	7	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	E4	MD22	31								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	E4	MF		34	40	3.25	12.30769	LA		ADX	WRTA; NaK; Photo # 54820	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	E4	MB		35	7	1.1	6.363636	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	E4	MD32	32								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	E4	MF		36	15	2	7.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	E4	MF		37	11	0.9	12.22222	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	E4	MB		38	1.8	0.3	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"; Structure type should be "MB", not "MB10" on hard copy and EDD
P1-00039	Not QA	Tree Bark		F6	E4	F	33	39	4.5	0.25	18	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	E4	MD10	34								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	E4	MF		40	3	0.2	15	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	E4	MD10	35								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	E4	MF		41	1.5	0.25	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	G3	F	36	42	6.75	0.5	13.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	G3	F	37	43	1.4	0.25	5.6	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	G3	MD10	38								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	G3	MF		44	1.4	0.25	5.6	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	G3	MD10	39								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	G3	MF		45	4.5	0.5	9	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	G3	MD10	40								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	G3	MF		46	3	0.25	12	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	G3	MD10	41								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	G3	MF		47	1.7	0.25	6.8	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	G3	MD11	42								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	G3	MF		48	6	0.7	8.571429	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	G3	F	43	49	2.5	0.25	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	G3	MD11	44								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	G3	MF		50	21	1.2	17.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00039	Not QA	Tree Bark		F6	G3	MD10	45								WRTA; NaK	SRC	A. Bacom	
P1-00039	Not QA	Tree Bark		F6	G3	MF		51	4.5	0.25	18	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification not entered "ADX"
P1-00045	Not QA	Tree Bark		G1	I8	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	I6	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	I4	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	I2	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	G8	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	G6	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	G4	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	G2	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	E8	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	E6	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	E4	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G1	E2	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	D2	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	D4	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	D6	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	D8	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	F3	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	F5	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	F7	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	F9	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	H5	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	H7	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G2	H9	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	I9	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	I7	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	I5	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	I3	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	G8	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	G6	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	G4	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	G2	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	E7	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	E5	ND										SRC	A. Bacom	
P1-00045	Not QA	Tree Bark		G3	E3	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M1	B3	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M1	B5	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M1	B7	ND										SRC	A. Bacom	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I TREE BARK

Index ID	Lab QC Type	Media	Lab Job Number	Grid ID	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Mineral Class	Mineral Desc	Identification	Structure Comments	Verifier's Company	Verifier's Name	Comment
P1-00057	Not QA	Tree Bark		M1	E6	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M1	E4	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M2	G7	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M2	G5	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M2	G3	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M2	D6	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M2	D4	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M3	H7	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M3	H5	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M3	E4	ND										SRC	A. Bacom	
P1-00057	Not QA	Tree Bark		M3	E2	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		F8	E3	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		F8	C8	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		F8	I3	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		F8	I5	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		F8	H9	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		Q1	D1	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		Q1	J10	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		Q2	I1	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		Q2	E10	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		Q2	F1	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		Q3	C10	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		Q3	D2	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		Q3	J8	ND										SRC	A. Bacom	
P1-00063	Not QA	Tree Bark		Q3	J10	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	I8	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	I6	F	0	0	1.7	0.3	5.666667	NAM		Nam	XX; UN; Photo #54923M	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	I4	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	I2	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	G8	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	G6	F	1	1	9.5	1.5	6.333333	LA		ADX	WRTA; Nak; Photo #54924D,54925M	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	G4	F	2	2	3	0.4	7.5	LA		ADX	WRTA; Nak; Photo #54926M	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	G2	F	3	3	4.5	0.4	11.25	LA		ADX	WRTA; Nak; Photo #54927M	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	E8	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	E6	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	E4	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	E2	F	0	0	2.25	0.4	5.625	NAM		Nam	XX; UN; Photo #54929M	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	C5	F	4	4	1.5	0.3	5	LA		ADX	WRTA; Nak; Photo #54930M	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	C3	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H7	C1	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	A3	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	A5	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	C3	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	C5	F	5	5	2.5	0.4	6.25	LA		ADX	WRTA; Nak; Photo #54931M	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	C7	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	E3	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	E5	F	6	6	3.5	0.9	3.888889	LA		ADX	WRTA; Nak	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	E7	MD10	7					NAM		NAM	UN	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	E7	MF		0	3.25	0.4	8.125	NAM		Nam	UN; Nak; Photo #54932M	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	E9	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	G3	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	G6	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	I3	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H8	I10	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	J8	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	J6	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	J4	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	J2	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	H8	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	H6	F	0	0	1.2	0.2	6	NAM		Nam	UN; Nak; Photo 54933	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	H4	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	H2	F	8	7	3.2	0.6	5.333333	LA		ADX	WRTA; Nak	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	E3	F	9	8	1.8	0.2	9	LA		ADX	WRTA; Nak	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	E1	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	D7	F	10	9	2.8	0.2	14	LA		ADX	WRTA; Nak	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		H9	C5	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	B2	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	B4	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	B6	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	D2	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	D4	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	D6	F	11	10	3.5	0.5	7	LA		ADX	WRTA; Nak	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	D8	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	F1	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	F3	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	F5	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	F7	F	12	11	3.5	0.5	7	LA		ADX	WRTA; Nak	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	F9	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	H1	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	H3	F	13	12	6.5	1	6.5	LA		ADX	WRTA; Nak	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	H5	F	14	13	3.5	0.2	17.5	LA		ADX	WRTA; Nak	SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	H7	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K1	H9	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	H10	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	H8	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	H6	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	H4	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	H2	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	F9	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	F7	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	F5	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	F3	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	F1	ND										SRC	A. Bacom	
P1-00079	Not QA	Tree Bark		K2	D8	ND										SRC	A. Bacom	
P1-00111	Not QA	Tree Bark		1	I7	F	1	1	2.8	0.2	14	LA		ADX	WRTA; NaK; Photo # 04594 & 04595	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	I7	F	2	2	2.8	0.35	8	LA		ADX	WRTA; NaK; Photo # 04596	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	I5	F	3	3	1.9	0.15	12.66667	LA		ADX	WRTA; NaK; Photo # 04597	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	I5	F	4	4	1.1	0.2	5.5	LA		ADX	WRTA; NaK; Photo # 04598	SRC	A. Bacom	Structure comments "Decorated" not entered in EDD. Per the laboratory, this information is not usually entered in EDD). Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	I3	F	5	5	4.4	0.25	17.6	LA		ADX	WRTA; NaK; Photo # 04599	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	I3	F	6	6	14	2.8	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	I1	F	7	7	2.8	0.6	4.666667	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	H8	F	8	8	1	0.2	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	H6	ND										SRC	A. Bacom	
P1-00111	Not QA	Tree Bark		1	H4	F	9	9	2.3	0.25	9.2	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	H2	ND										SRC	A. Bacom	
P1-00111	Not QA	Tree Bark		1	G7	F	10	10	4	0.25	16	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	G7	F	11	11	6.4	1.2	5.333333	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	G7	F	12	12	3.9	0.7	5.571429	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	G5	F	13	13	2.6	0.2	13	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	G3	ND										SRC	A. Bacom	
P1-00111	Not QA	Tree Bark		1	G1	F	14	14	3.7	0.25	14.8	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	G1	F	15	15	6.3	0.35	18	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	F6	F	16	16	4.4	0.3	14.66667	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	F4	ND										SRC	A. Bacom	
P1-00111	Not QA	Tree Bark		1	F2	F	17	17	1.2	0.2	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	F2	F	18	18	3.2	0.4	8	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	F2	F	19	19	16.5	0.9	18.33333	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	D7	F	20	20	1.9	0.3	6.333333	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	D7	F	21	21	9.7	0.7	13.85714	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	D7	F	22	22	5.9	0.2	29.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	D5	F	23	23	2.6	0.4	6.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	D5	F	24	24	4.5	0.3	15	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	D5	F	25	25	1.1	0.25	4.4	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	D5	F	26	26	3.1	0.2	15.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	D5	F	27	27	3.2	0.25	12.8	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		1	D5	F	28	28	2.4	0.4	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	A3	F	29	29	4.7	0.25	18.8	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	A5	F	30	30	1.5	0.25	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	A5	F	31	31	1.5	0.3	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	A7	F	32	32	2.9	0.3	9.666667	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	A9	F	33	33	3.5	0.2	17.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	B4	F	34	34	1.4	0.2	7	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	B4	F	35	35	3.2	0.4	8	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	B6	F	36	36	4	0.5	8	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	B8	F	37	37	11.9	0.8	14.875	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I TREE BARK

Index ID	Lab QC Type	Media	Lab Job Number	Grid ID	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Mineral Class	Mineral Desc	Identification	Structure Comments	Verifier's Company	Verifier's Name	Comment
P1-00111	Not QA	Tree Bark		2	B10	F	38	38	3	0.35	8.571429	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	C5	F	39	39	1.3	0.15	8.666667	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	C5	F	40	40	5.9	0.4	14.75	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	C5	F	41	41	2.1	0.2	10.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	C5	MD10	42								WRTA; NaK	SRC	A. Bacom	
P1-00111	Not QA	Tree Bark		2	C5	MF		42	2.9	0.5	5.8	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	C7	F	43	43	2.1	0.25	8.4	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	C7	F	44	44	1.2	0.1	12	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	C7	F	45	45	3.3	0.3	11	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	C9	F	46	46	1.5	0.15	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	C9	F	47	47	3.3	0.45	7.333333	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	D4	F	48	48	4.5	0.4	11.25	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	D4	F	49	49	6	0.9	6.666667	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00111	Not QA	Tree Bark		2	D4	F	50	50	3	0.2	15	LA		ADX	WRTA; NaK	SRC	A. Bacom	Identification "ADX" not entered
P1-00127	Not QA	Tree Bark		2	A5	MD10	1									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	A5	MF		1	3	0.6	5	LA		ADX	WRTA; NaK; MN; Photo # 580224	SRC	A. Bacom	Photo # 580225M
P1-00127	Not QA	Tree Bark		2	A5	MD11	2									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	A5	MF		2	5.5	0.5	11	LA		ADX	WRTA; NaK; MN; Photo # 580225	SRC	A. Bacom	Photo # 580225M; comment coated
P1-00127	Not QA	Tree Bark		2	A5	MD11	3									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	A5	MF		3	9	0.8	11.25	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	A5	F	4	4	25	1.5	16.66667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	A5	F	5	5	3.25	0.5	6.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	D8	MD10	6									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	D8	MF		6	1.3	0.15	8.666667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	D8	F	7	7	2.25	0.3	7.5	LA		ADX	WRTA; NaK; MN; Photo #580226 & 580227	SRC	A. Bacom	Photo # suffix
P1-00127	Not QA	Tree Bark		2	H6	MD11	8									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	H6	MF		8	6.5	0.5	13	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	H6	MD11	9									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	H6	MF		9	7.25	0.3	24.16667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	H6	MD11	10									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	H6	MF		10	5.5	0.4	13.75	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	J8	MD10	11									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	J8	MF		11	4.5	0.5	9	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	J6	MD10	12									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	J6	MF		12	4	0.3	13.33333	LA		ADX	WRTA; XK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	J6	MD10	13									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		2	J6	MF		13	0.75	0.15	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B6	F	14	14	2.8	0.8	3.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B6	F	15	15	4.25	0.7	6.071429	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B6	F	16	16	2.25	0.15	15	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B4	F	17	17	0.9	0.15	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B4	CD20	18									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B4	CF		18	1.5	0.25	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B4	CF		19	0.9	0.25	3.6	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B4	MD11	19									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B4	MF		20	7.5	0.3	25	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B4	F	20	21	1.1	0.3	3.666667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B1	F	21	22	3.25	0.3	10.83333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B1	F	22	23	5.75	0.7	8.214286	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B1	MD10	23									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B1	MF		24	4.25	0.3	14.16667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B1	F	24	25	4.75	0.3	15.83333	LA		ADX	WRTA; NaK; MN; Photo # 580232	SRC	A. Bacom	Photo # suffix
P1-00127	Not QA	Tree Bark		3	B1	MD10	25									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	B1	MF		26	2	0.2	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	C3	MD11	26									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	C3	MF		27	6.75	0.3	22.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	G2	MD10	27									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	G2	MF		28	1.5	0.2	7.5	LA		ADX	WRTA; NaK; Photo # 580233	SRC	A. Bacom	Photo # suffix
P1-00127	Not QA	Tree Bark		3	G4	MD10	28									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	G4	MF		29	3.5	0.5	7	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	G4	F	29	30	6.5	0.25	26	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	G6	F	30	31	3.5	0.8	4.375	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	G6	MD10	31									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	G6	MF		32	3	0.7	4.285714	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	E5	MD10	32									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	E5	MF		33	1.7	0.15	11.33333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	E5	MD10	33									SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	E5	MF		34	4.8	0.8	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	E5	F	34	35	5	1.1	4.545455	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00127	Not QA	Tree Bark		3	E5	F	35	36	7.5	0.75	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00137	Not QA	Tree Bark		1	F8	CD+1	51								Photo #22817	SRC	A. Bacom	
P1-00137	Not QA	Tree Bark		1	F8	CF		55	32	1.8	17.77778	LA		ADX	WRTA;NAK;Mn	SRC	A. Bacom	
P1-00137	Not QA	Tree Bark		1	F8	CF		56	4	0.25	16	LA		ADX	WRTA;NAK;Mn	SRC	A. Bacom	
P1-00137	Not QA	Tree Bark		1	F8	CF		57	3	0.3	10	LA		ADX	WRTA;NAK;Mn	SRC	A. Bacom	
P1-00137	Not QA	Tree Bark		1	F8	CR+0		58	11	10	1.1	LA		AX	WRTA;NAK;Mn	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F		0	2	0.3	6.666667	LA		AD	Structure intersects noncountable grid bar	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F		0	4	0.3	13.33333	LA		AD	Structure intersects noncountable grid bar	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F		0	3	0.25	12	LA		AD	Structure intersects noncountable grid bar	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CD21	1									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CF		1	6.8	0.5	13.6	LA		ADX	WRTA; NAK; MN; Photo #22843,22844	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CF		2	1.1	0.3	3.666667	LA		ADX	WRTA; NAK; MN; Photo #22844	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	2	3	4.2	0.7	6	LA		ADX	WRTA; NAK; Photo #22845	SRC	A. Bacom	MN not listed on benchsheet
P1-00173	Not QA	Tree Bark		1	C6	F	3	4	3.5	0.25	14	LA		ADX	WRTA; NAK; MN; Photo #22846	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MD10	4									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MF		5	3.2	0.3	10.66667	LA		ADX	WRTA; NAK; MN; Photo #22847	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	5	6	6	0.35	17.14286	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MD20	6									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MF		7	1.2	0.3	4	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MF		8	1.2	0.25	4.8	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MD21	7									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MF		9	5.1	0.4	12.75	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MF		10	0.9	0.2	4.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	8	11	1.1	0.2	5.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	9	12	2.5	0.35	7.142857	LA		ADX	WRTA; NAK;	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CD22	10									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CF		13	10.9	0.6	18.16667	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CF		14	5.2	0.4	13	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	11	15	2.1	0.2	10.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	12	16	1.1	0.2	5.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MD10	13									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MF		17	1.8	0.2	9	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MD10	14									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MF		18	2.5	0.25	10	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	15	19	10	1.2	8.333333	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	16	20	0.7	0.15	4.666667	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	17	21	1.5	0.25	6	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	18	22	4.1	0.45	9.111111	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	19	23	5	1	5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CD21	20									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CF		24	5.1	0.6	8.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CF		25	1.2	0.25	4.8	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	21	26	6.4	0.35	18.28571	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	22	27	3.3	0.3	11	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MD11	23									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MF		28	5.6	0.5	11.2	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	MN is on benchsheet but was not entered in EDD
P1-00173	Not QA	Tree Bark		1	C6	MD10	24									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MF		29	1.9	0.2	9.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	25	30	2.8	0.1	28	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MD10	26									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	MF		31	2	0.25	8	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	27	32	2	0.2	10	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CD20	28									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CF		33	2.8	0.25	11.2	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	CF		34	1.2	0.25	4.8	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		1	C6	F	29	35	2.6	0.3	8.666667	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	30	36	3.3	0.3	11	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	31	37	3.4	0.5	6.8	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	32	38	1.8	0.2	9	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	33	39	1.9	0.2	9.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	34	40	3	0.2	15	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	35	41	3	0.3	10	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	36	42	1.9	0.2	9.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	37	43	5.1	1.1	4.636364	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	38	44	22.3	0.4	55.75	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	39	45	4	0.4	10	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	MD10	40									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	MF		46	3.4	0.4	8.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	MD20	41									SRC	A. Bacom	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I TREE BARK

Index ID	Lab QC Type	Media	Lab Job Number	Grid ID	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Mineral Class	Mineral Desc	Identification	Structure Comments	Verifier's Company	Verifier's Name	Comment
P1-00173	Not QA	Tree Bark		2	A9	MF		47	3.3	0.2	16.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	MF		48	1.8	0.2	9	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	42	49	1.2	0.15	8	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	43	50	1.8	0.2	9	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	44	51	1.2	0.2	6	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	MD10	45									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	MF		52	2.1	0.25	8.4	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	46	53	2.7	0.2	13.5	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	47	54	2.7	0.15	18	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	48	55	4	0.7	5.714286	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	MD10	49									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	MF		56	4.5	0.25	18	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	50	57	2.1	0.3	7	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	51	58	6.5	0.4	16.25	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	MD10	52									SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	MF		59	2.6	0.2	13	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	53	60	3.1	0.25	12.4	LA		ADX	WRTA; NAK; MN	SRC	A. Bacom	
P1-00173	Not QA	Tree Bark		2	A9	F	54	61	6	0.3	20	LA		ADX	WRTA; NAK	SRC	A. Bacom	MN not recorded on benchsheet
P1-00211	Not QA	Tree Bark		1	J4	F	1	1	2.2	0.2	11	LA		ADX	WRTA; NaK; MN; Photo # 22797 & 22798	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	J4	F	2	2	2.5	0.45	5.555556	LA		ADX	WRTA; NaK; MN; Photo # 22799	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	J4	F	3	3	2.5	0.4	6.25	LA		ADX	WRTA; NaK; MN; Photo # 22800	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	J4	F	4	4	14	0.9	15.55556	LA		ADX	WRTA; NaK; MN; Photo # 22801	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	J4	F	5	5	5.7	0.5	11.4	LA		ADX	WRTA; NaK; MN; Photo # 22802	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	J4	F	6	6	2	0.25	8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	I3	F	7	7	2.4	0.2	12	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	I3	F	8	8	1.4	0.3	4.666667	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	I3	F	9	9	9.6	1	9.6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	H4	MD10	10									SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	H4	MF		10	2.5	0.2	12.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	H4	F	11	11	5.7	0.6	9.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	E3	MD11	12									SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	E3	MF		12	5.9	0.2	29.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	E3	F	13	13	8.9	0.25	35.6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		1	E3	F	14	14	3	0.2	15	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H6	CD20	15									SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H6	CF		15	4.4	0.2	22	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H6	CF		16	2.1	0.25	8.4	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H6	F	16	17	5.2	0.7	7.428571	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H6	F	17	18	2.7	0.25	10.8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H6	F	18	19	2	0.25	8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H6	F	19	20	1.2	0.15	8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H4	F	20	21	1.5	0.2	7.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H4	F	21	22	9.5	0.7	13.57143	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H4	F	22	23	4	0.4	10	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	H4	F	23	24	1	0.25	4	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00211	Not QA	Tree Bark		2	G2	F	24	25	2.8	0.3	9.333333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
LB-03	Blank	Tree Bark		G4	H7	ND										SRC	A. Bacom	
LB-03	Blank	Tree Bark		G4	H5	ND										SRC	A. Bacom	
LB-03	Blank	Tree Bark		G4	H3	ND										SRC	A. Bacom	
LB-03	Blank	Tree Bark		G4	H1	ND										SRC	A. Bacom	
LB-03	Blank	Tree Bark		G5	F6	ND										SRC	A. Bacom	
LB-03	Blank	Tree Bark		G5	F8	ND										SRC	A. Bacom	
LB-03	Blank	Tree Bark		G5	F10	ND										SRC	A. Bacom	
LB-03	Blank	Tree Bark		G6	D5	ND										SRC	A. Bacom	
LB-03	Blank	Tree Bark		G6	D3	ND										SRC	A. Bacom	
LB-03	Blank	Tree Bark		G6	D1	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	H9	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	H7	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	H5	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	H3	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	H1	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	D9	F	1	1	8.5	0.75	11.33333	LA		ADX	WRTA; Nak; Photo#54889D,54890M	SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	D7	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	D5	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	D3	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	D1	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	B8	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G1	B6	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	D3	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	D5	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	D7	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	D9	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	F3	F	0	0	2.5	0.2	12.5	NAM		NAM	UN; Nak; Photo #54891M	SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	F5	MD11	2									SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	F5	MF		0	7	0.6	11.66667	NAM		NAM	UN; Nak; Photo #54892M	SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	F7	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	F9	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	H5	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	H7	F	3	2	2	0.15	13.33333	LA		ADX	WRTA; Nak; Photo #54893M	SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G2	H9	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	D2	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	D4	F	4	3	1.3	0.4	3.25	LA		ADX	WRTA; Nak; Photo #54894M	SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	D7	F	5	4	5	0.4	12.5	LA		ADX	WRTA; Nak; Photo #54895M	SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	D9	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	F2	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	F4	MD11	6									SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	F4	MF		0	7.5	0.6	12.5	NAM		NAM	UN;XX; Photo #54896M	SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	F6	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	F8	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	F10	ND										SRC	A. Bacom	
P1-00076	Not QA	Tree Bark		G3	H3	F	7	5	2.5	0.25	10	LA		ADX	WRTA; Nak; Photo #54897M	SRC	A. Bacom	Photo #54898M
P1-00076	Not QA	Tree Bark		G3	H5	F	8	6	2.8	0.5	5.6	LA		ADX	WRTA; Nak; MN	SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	C3	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	C5	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	C7	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	C10	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	E2	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	E4	MD10	1									SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	E4	MF		1	3	0.25	12	LA		ADX	WRTA; NaK; Photo # 54963	SRC	A. Bacom	Photo #54963M
P1-00091	Not QA	Tree Bark		L4	E6	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	E10	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	H3	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	H6	F	2	2	8.2	0.75	10.93333	LA		ADX	WRTA; NaK; Photo # 54964 & 54965	SRC	A. Bacom	Photo# 54964D & 54966M
P1-00091	Not QA	Tree Bark		L4	H6	F	3	3	2.75	0.7	3.928571	LA		ADX	WRTA; NaK; Photo # 54966	SRC	A. Bacom	Photo #54966M
P1-00091	Not QA	Tree Bark		L4	H8	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L4	H10	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L5	I8	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L5	I6	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L5	I4	F	4	4	2.3	0.3	7.666667	LA		ADX	WRTA; NaK; Photo # 54967	SRC	A. Bacom	Photo # 54967M
P1-00091	Not QA	Tree Bark		L5	I2	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L5	G8	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L5	G6	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L5	F3	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L5	F1	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L5	D7	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L5	D4	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L5	D2	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L6	I8	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L6	I6	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L6	H4	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L6	H2	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L6	E9	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L6	E7	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L6	E5	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L6	C9	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L6	C7	F	5	5	10.5	0.5	21	LA		ADX	WRTA; NaK; Photo # 54968	SRC	A. Bacom	Photo #54968M
P1-00091	Not QA	Tree Bark		L6	C7	F	6	6	5.6	0.25	22.4	LA		ADX	WRTA; NaK; Photo # 54969	SRC	A. Bacom	Photo #54969M
P1-00091	Not QA	Tree Bark		L6	C5	ND										SRC	A. Bacom	
P1-00091	Not QA	Tree Bark		L6	C3	ND										SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	H9	MD10	1									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	H9	MF		1	1.5	0.15	10	LA		ADX	WRTA; NaK; Photo # 580268	SRC	A. Bacom	Photo missing M
P1-00101	Not QA	Tree Bark		1	H9	F	2	2	5	0.2	25	LA		ADX	WRTA; NaK; Photo # 580269	SRC	A. Bacom	Photo missing M
P1-00101	Not QA	Tree Bark		1	E8	F	3	3	1.2	0.25	4.8	LA		ADX	WRTA; NaK; Photo # 580270	SRC	A. Bacom	Photo missing M
P1-00101	Not QA	Tree Bark		1	E8	MD11	4									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	E8	MF		4	6.5	1.1	5.909091	LA		ADX	WRTA; NaK; Photo # 580271 & 580272	SRC	A. Bacom	Photo missing D missing M
P1-00101	Not QA	Tree Bark		1	E8	MD10	5									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	E8	MF		5	2	0.25	8	LA		ADX	WRTA; NaK; Photo # 580273	SRC	A. Bacom	Photo missing M
P1-00101	Not QA	Tree Bark		1	E8	MD10	6									SRC	A. Bacom	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I TREE BARK

Index ID	Lab QC Type	Media	Lab Job Number	Grid ID	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Mineral Class	Mineral Desc	Identification	Structure Comments	Verifier's Company	Verifier's Name	Comment
P1-00101	Not QA	Tree Bark		1	E8	MF		6	2.7	0.5	5.4	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	E8	CD21	7									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	E8	CB		7	9	0.75	12	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	E8	CF		8	4	0.6	6.666667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	E8	F	8	9	1	0.1	10	LA		ADX	WRTA; XK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	A7	F	9	10	1	0.2	5	LA		ADX	WRTA; XK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	A4	MD10	10									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	A4	MF		11	0.8	0.2	4	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	A4	F	11	12	1.75	0.2	8.75	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	A4	MD10	12									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	A4	MF		13	1.3	0.2	6.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	A4	F	13	14	3.75	0.5	7.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		1	A4	F	14	15	2.3	0.15	15.33333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	B7	F	15	16	1.3	0.25	5.2	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	B7	F	16	17	3	0.7	4.285714	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	B7	MD10	17									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	B7	MF		18	1.7	0.2	8.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	B7	F	18	19	1.3	0.4	3.25	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	B7	F	19	20	0.9	0.25	3.6	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	B7	MD10	20									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	B7	MF		21	1.75	0.3	5.833333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	E9	MD10	21									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	E9	MF		22	4.25	0.4	10.625	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	E9	F	22	23	4.25	0.3	14.16667	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	E9	F	23	24	1.5	0.4	3.75	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	E9	CD20	24									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	E9	CF		25	1.75	0.1	17.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	E9	CF		26	0.7	0.1	7	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	E9	F	25	27	3.25	0.5	6.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	C7	F	26	28	6.5	0.6	10.83333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	C7	MD10	27									SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	C7	MF		29	4.5	1	4.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00101	Not QA	Tree Bark		3	C7	F	28	30	11	1.1	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A6	F	1	1	19.5	0.3	65	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A6	F	2	2	8.5	1	8.5	LA		ADX	WRTA; NaK; Photo # 580341 & 580342	SRC	A. Bacom	Photo # suffix letter
P1-00109	Not QA	Tree Bark		1	A6	F	3	3	1.1	0.2	5.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A6	F	4	4	1.5	0.3	5	LA		ADX	WRTA; NaK; Photo # 580343	SRC	A. Bacom	Photo # suffix letter
P1-00109	Not QA	Tree Bark		1	A6	F	5	5	3.25	0.4	8.125	LA		ADX	WRTA; NaK; Photo # 580344	SRC	A. Bacom	Photo # suffix letter
P1-00109	Not QA	Tree Bark		1	A6	F	6	6	2.25	0.2	11.25	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A6	F	7	7	5.5	1.25	4.4	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A6	MD20	8									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A6	MF		8	1.1	0.2	5.5	LA		ADX	WRTA; NaK; Photo # 580345	SRC	A. Bacom	Photo # suffix letter
P1-00109	Not QA	Tree Bark		1	A6	MF		9	1.3	0.15	8.666667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MD21	9								WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		10	8.5	0.8	10.625	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		11	4	0.3	13.33333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MD10	10									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		12	3.25	0.25	13	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MD11	11									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		13	7	0.7	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	F	12	14	1.2	0.2	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MD10	13									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		15	2.5	0.7	3.571429	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MD10	14									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		16	2.25	0.3	7.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	F	15	17	4.5	1	4.5	LA		ADX	WRTA; NaK; Photo # 580349	SRC	A. Bacom	Photo # suffix letter
P1-00109	Not QA	Tree Bark		1	A3	MD10	16									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		18	2	0.2	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MD10	17									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		19	3.5	0.25	14	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	F	18	20	3.5	0.5	7	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	F	19	21	1.75	0.3	5.833333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	CD21	20									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	CF		22	12.25	1	12.25	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	CF		23	2	0.4	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MD30	21									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		24	3.5	0.3	11.66667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		25	2.5	0.5	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	MF		26	2.5	0.2	12.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	F	22	27	1.5	0.2	7.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		1	A3	F	23	28	2.5	0.8	3.125	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MD10	24									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		29	3.5	0.25	14	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MD10	25									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		30	2	0.25	8	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MD10	26									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		31	2.25	0.75	3	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MD10	27									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		32	4.25	0.6	7.083333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MD10	28									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		33	2.5	0.5	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	F	29	34	2.6	0.15	17.33333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MD10	30									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		35	2.25	0.25	9	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	F	31	36	3	0.5	6	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MD11	32									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		37	9	0.9	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	F	33	38	1	0.25	4	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MD10	34									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		39	4	0.7	5.714286	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	F	35	40	4	0.15	26.66667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MD20	36									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		41	1.3	0.2	6.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		42	0.9	0.2	4.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MD10	37									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	MF		43	1.25	0.25	5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	F	38	44	3	0.4	7.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	F1	F	39	45	0.7	0.2	3.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	F	40	46	3.25	0.4	8.125	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	F	41	47	2.25	0.4	5.625	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	F	42	48	3.25	0.3	10.83333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	F	43	49	4	0.15	26.66667	LA		ADX	WRTA; XK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	F	44	50	8	0.4	20	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	F	45	51	6.5	0.3	21.66667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	MD11	46									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	MF		52	9.5	0.3	31.66667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	MD10	47									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	MF		53	4	0.4	10	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	MD10	48									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	MF		54	2.5	0.4	6.25	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	F	49	55	2.7	0.2	13.5	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	MD10	50									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	MF		56	2.3	0.3	7.666667	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	MD11	51									SRC	A. Bacom	
P1-00109	Not QA	Tree Bark		2	G4	MF		57	9.5	0.6	15.83333	LA		ADX	WRTA; NaK	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MD10	1									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MF		1	2.2	0.25	8.8	LA		ADX	WRTA; NaK;MN; Photo # 22803 & 22804	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F		0	10.2	0.4	25.5	LA		ADX	WRTA; NaK; Structure intersects noncountabl	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MD10	2									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MF		2	1.7	0.15	11.33333	LA		ADX	WRTA; NaK; MN; Photo # 22805	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	3	3	2.7	0.35	7.714286	LA		ADX	WRTA; NaK; MN; Photo # 22806	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	4	4	1.5	0.25	6	LA		ADX	WRTA; NaK; MN; Photo # 22807	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	5	5	5.6	0.7	8	LA		ADX	WRTA; NaK; Photo # 22808	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	6	6	2.2	0.3	7.333333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	7	7	2.1	0.2	10.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	CD20	8									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	CF		8	3.1	0.3	10.33333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	CF		9	3	0.2	15	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MD10	9									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MF		10	1.5	0.35	4.285714	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MD20	10									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MF		11	3.3	0.8	4.125	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MF		12	3.2	0.2	16	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	11	13	4.8	0.3	16	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	12	14	9	0.45	20	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	13	15	3.2	0.2	16	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	14	16	3.5	0.5	7	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	15	17	2.8	0.4	7	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE I TREE BARK

Index ID	Lab QC Type	Media	Lab Job Number	Grid ID	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Mineral Class	Mineral Desc	Identification	Structure Comments	Verifier's Company	Verifier's Name	Comment
P1-00201	Not QA	Tree Bark		1	D4	MD10	16									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MF		18	1.8	0.15	12	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	17	19	3.6	0.25	14.4	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MD10	18									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MF		20	3.2	0.6	5.333333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	19	21	1.2	0.2	6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	20	22	7.9	0.3	26.33333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	21	23	6.4	0.7	9.142857	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	22	24	1.1	0.25	4.4	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	23	25	3.8	0.2	19	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	24	26	1.5	0.1	15	LA		AX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	25	27	2.4	0.2	12	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	26	28	1.1	0.2	5.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	27	29	2.5	0.1	25	LA		AX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	28	30	1.9	0.2	9.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MD10	29									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	MF		31	0.9	0.25	3.6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	30	32	2	0.25	8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	31	33	3.7	0.5	7.4	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	32	34	4.6	0.15	30.66667	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	33	35	1.2	0.25	4.8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	34	36	2	0.15	13.33333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		1	D4	F	35	37	2.3	0.1	23	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	36	38	16.5	1	16.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	37	39	3.9	0.3	13	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	38	40	1.6	0.2	8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	39	41	0.9	0.2	4.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	40	42	3.8	0.7	5.428571	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F		0	5.6	0.3	18.66667	LA		ADX	WRTA; NaK; MN; Structure intersects noncour	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	41	43	2.4	0.25	9.6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	42	44	2.7	0.7	3.857143	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	MD10	43									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	MF		45	3.3	0.25	13.2	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	44	46	5.1	0.2	25.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	45	47	7.5	0.5	15	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	46	48	2.3	0.3	7.666667	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	47	49	4.8	0.1	48	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	48	50	1.2	0.2	6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	MD10	49									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	MF		51	2.6	0.15	17.33333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	50	52	1.8	0.4	4.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	51	53	1.9	0.2	9.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	52	54	2.7	0.4	6.75	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	53	55	1	0.2	5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	54	56	1.6	0.1	16	LA		AD	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	55	57	1.3	0.2	6.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	56	58	4.8	0.6	8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	57	59	2.6	0.3	8.666667	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	58	60	3	0.4	7.5	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	MD10	59									SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	MF		61	4.8	0.2	24	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	60	62	2.5	0.25	10	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	61	63	4.6	0.25	18.4	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	62	64	4.2	0.25	16.8	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	63	65	1.9	0.35	5.428571	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	64	66	4	0.3	13.33333	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	65	67	2.3	0.25	9.2	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	66	68	2.1	0.1	21	LA		AX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	67	69	8	0.3	26.66667	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	
P1-00201	Not QA	Tree Bark		2	F4	F	68	70	3	0.5	6	LA		ADX	WRTA; NaK; MN	SRC	A. Bacom	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II PART B AMBIENT AIR

Index ID	Lab QC Type	Grid	Sequence ID	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00605	Not QA	1	1	E6	ND									SRC	E. Kelly	
P2-00605	Not QA	1	2	E8	ND									SRC	E. Kelly	
P2-00605	Not QA	2	3	H8	ND									SRC	E. Kelly	
P2-00605	Not QA	2	4	H10	ND									SRC	E. Kelly	
P2-00614	Not QA	1	1	D6	ND									SRC	E. Kelly	
P2-00614	Not QA	1	2	D8	ND									SRC	E. Kelly	
P2-00614	Not QA	2	3	D6	ND									SRC	E. Kelly	
P2-00614	Not QA	2	4	D8	ND									SRC	E. Kelly	
P2-00615	Not QA	1	1	C5	ND									SRC	E. Kelly	
P2-00615	Not QA	1	2	C7	MD10	1								SRC	E. Kelly	
P2-00615	Not QA	1	3	C7	MF		1	2	0.2	10	ADX	LA	WRTA;Nak;Photo#04707,04708	SRC	E. Kelly	
P2-00615	Not QA	2	4	C4	ND									SRC	E. Kelly	
P2-00615	Not QA	2	5	C6	ND									SRC	E. Kelly	
P2-00626	Not QA	1	1	B3	MD21	1								SRC	E. Kelly	
P2-00626	Not QA	1	2	B3	MF		1	75	3.1	24.19354839	ADX	LA	WRTA;Nak;Photo#04723,04724	SRC	E. Kelly	
P2-00626	Not QA	1	3	B3	MB		2	3.3	0.3	11	ADX	LA	WRTA;Nak;Photo#04724	SRC	E. Kelly	
P2-00626	Not QA	1	4	B5	F	2	3	14	1.2	11.66666667	ADX	LA	WRTA;Nak;Photo#04725	SRC	E. Kelly	
P2-00626	Not QA	1	5	B5	F	3	4	5.9	0.9	6.555555556	ADX	LA	WRTA;Nak;Photo#04726	SRC	E. Kelly	
P2-00626	Not QA	1	6	B5	MD44	4								SRC	E. Kelly	
P2-00626	Not QA	1	7	B5	MB		5	15.5	0.8	19.375	ADX	LA	WRTA;Nak;Photo#04727	SRC	E. Kelly	
P2-00626	Not QA	1	8	B5	MF		6	12	0.2	60	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00626	Not QA	1	9	B5	MF		7	6.5	0.5	13	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00626	Not QA	1	10	B5	MB		8	5.2	0.45	11.55555556	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00626	Not QA	2	11	D5	F	5	9	16.8	0.4	42	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00626	Not QA	2	12	D7	F	6	10	5.5	1	5.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00626	Not QA	2	13	D7	F	7	11	15	1.1	13.63636364	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00626	Not QA	2	14	D7	F	8	12	7.7	1.1	7	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00626	Not QA	2	15	D7	F	9	13	3.8	0.25	15.2	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00626	Not QA	2	16	D7	F	10	14	8.2	1	8.2	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00630	Not QA	1	1	G8	F	1	1	14	0.7	20	ADX	LA	WRTA;Nak;Photo#04734,04735	SRC	E. Kelly	
P2-00630	Not QA	1	2	G10	CD43	2								SRC	E. Kelly	
P2-00630	Not QA	1	3	G10	CF		2	18	1.2	15	ADX	LA	WRTA;Nak;Photo#04736	SRC	E. Kelly	
P2-00630	Not QA	1	4	G10	CF		3	9.3	1	9.3	ADX	LA	WRTA;Nak;Photo#04736	SRC	E. Kelly	
P2-00630	Not QA	1	5	G10	CF		4	5.2	0.6	8.666666667	ADX	LA	WRTA;Nak;Photo#04736	SRC	E. Kelly	
P2-00630	Not QA	1	6	G10	CF		5	2	0.25	8	ADX	LA	WRTA;Nak;Photo#04736	SRC	E. Kelly	
P2-00630	Not QA	1	7	G10	MD20	3								SRC	E. Kelly	
P2-00630	Not QA	1	8	G10	MF		6	3.8	0.7	5.428571429	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00630	Not QA	1	9	G10	MF		7	2.5	0.25	10	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00630	Not QA	1	10	G10	F	4	8	25	0.8	31.25	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00630	Not QA	2	11	F7	ND									SRC	E. Kelly	
P2-00630	Not QA	2	12	F9	ND									SRC	E. Kelly	
P2-00658	Not QA	1	1	B4	ND									SRC	E. Kelly	
P2-00658	Not QA	1	2	B6	CD32	1								SRC	E. Kelly	
P2-00658	Not QA	1	3	B6	CF		1	22.3	2.2	10.13636364	ADX	LA	WRTA;Nak;Photo#23595,23596	SRC	E. Kelly	
P2-00658	Not QA	1	4	B6	CF		2	7.5	0.7	10.71428571	ADX	LA	WRTA;Nak;Photo#23596	SRC	E. Kelly	
P2-00658	Not QA	1	5	B6	CF		3	1.9	0.25	7.6	ADX	LA	WRTA;Nak;Photo#23596	SRC	E. Kelly	
P2-00658	Not QA	2	6	C6	F	2	4	74	4.2	17.61904762	ADX	LA	WRTA;Nak;Photo#23597	SRC	E. Kelly	
P2-00658	Not QA	2	7	C8	ND									SRC	E. Kelly	
P2-00642	Not QA	1	1	G6	F	1	1	8	0.4	20	ADX	LA	WRTA;Nak;Photo#04776,04777	SRC	E. Kelly	
P2-00642	Not QA	1	2	G8	F	2	2	8	0.3	26.66666667	ADX	LA	WRTA;Nak;Photo#04778	SRC	E. Kelly	
P2-00642	Not QA	1	3	G8	F	3	3	3.4	0.4	8.5	ADX	LA	WRTA;Nak;Photo#04779	SRC	E. Kelly	
P2-00642	Not QA	1	4	G8	MD20	4								SRC	E. Kelly	
P2-00642	Not QA	1	5	G8	MF		4	3	0.3	10	ADX	LA	WRTA;Nak;Photo#04780	SRC	E. Kelly	
P2-00642	Not QA	1	6	G8	MF		5	1.5	0.3	5	ADX	LA	WRTA;Nak;Photo#04780	SRC	E. Kelly	
P2-00642	Not QA	1	7	G8	MD10	5								SRC	E. Kelly	
P2-00642	Not QA	1	8	G8	MF		6	2.5	0.15	16.66666667	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00642	Not QA	2	9	B7	F	6	7	5.2	0.3	17.33333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00642	Not QA	2	10	B7	F	7	8	12.2	0.45	27.11111111	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00642	Not QA	2	11	B9	F	8	9	7.7	0.25	30.8	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00648	Not QA	1	1	C6	ND									SRC	E. Kelly	
P2-00648	Not QA	1	2	C8	ND									SRC	E. Kelly	
P2-00648	Not QA	2	3	C5	ND									SRC	E. Kelly	
P2-00648	Not QA	2	4	C7	ND									SRC	E. Kelly	
P2-00670	Not QA	1	1	B7	ND									SRC	E. Kelly	
P2-00670	Not QA	1	2	B9	ND									SRC	E. Kelly	
P2-00670	Not QA	2	3	C7	ND									SRC	E. Kelly	
P2-00670	Not QA	2	4	C9	ND									SRC	E. Kelly	
P2-00685	Not QA	1	1	C7	ND									SRC	E. Kelly	
P2-00685	Not QA	1	2	C9	ND									SRC	E. Kelly	
P2-00685	Not QA	2	3	D6	ND									SRC	E. Kelly	
P2-00685	Not QA	2	4	D8	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II PART B GROUND WATER

Index ID	Lab QC Type	SeqID	Grid	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00787	Not QA	1	1	A2	ND									SRC	E. Kelly	
P2-00787	Not QA	2	1	A4	ND									SRC	E. Kelly	
P2-00787	Not QA	3	1	A6	ND									SRC	E. Kelly	
P2-00787	Not QA	4	1	A8	ND									SRC	E. Kelly	
P2-00787	Not QA	5	1	A10	ND									SRC	E. Kelly	
P2-00787	Not QA	6	1	B1	ND									SRC	E. Kelly	
P2-00787	Not QA	7	1	B3	ND									SRC	E. Kelly	
P2-00787	Not QA	8	1	B5	ND									SRC	E. Kelly	
P2-00787	Not QA	9	1	B7	ND									SRC	E. Kelly	
P2-00787	Not QA	10	1	B9	ND									SRC	E. Kelly	
P2-00787	Not QA	11	1	C2	ND									SRC	E. Kelly	
P2-00787	Not QA	12	1	C4	ND									SRC	E. Kelly	
P2-00787	Not QA	13	1	C6	ND									SRC	E. Kelly	
P2-00787	Not QA	14	1	C8	ND									SRC	E. Kelly	
P2-00787	Not QA	15	1	C10	ND									SRC	E. Kelly	
P2-00787	Not QA	16	1	D1	ND									SRC	E. Kelly	
P2-00787	Not QA	17	1	D3	ND									SRC	E. Kelly	
P2-00787	Not QA	18	1	D5	ND									SRC	E. Kelly	
P2-00787	Not QA	19	1	D7	ND									SRC	E. Kelly	
P2-00787	Not QA	20	1	D9	ND									SRC	E. Kelly	
P2-00787	Not QA	21	1	E2	ND									SRC	E. Kelly	
P2-00787	Not QA	22	1	E4	ND									SRC	E. Kelly	
P2-00787	Not QA	23	1	E6	ND									SRC	E. Kelly	
P2-00787	Not QA	24	1	E8	ND									SRC	E. Kelly	
P2-00787	Not QA	25	1	E10	ND									SRC	E. Kelly	
P2-00787	Not QA	26	1	F1	ND									SRC	E. Kelly	
P2-00787	Not QA	27	1	F3	ND									SRC	E. Kelly	
P2-00787	Not QA	28	1	F5	ND									SRC	E. Kelly	
P2-00787	Not QA	29	1	F7	ND									SRC	E. Kelly	
P2-00787	Not QA	30	1	F9	ND									SRC	E. Kelly	
P2-00787	Not QA	31	2	G1	ND									SRC	E. Kelly	
P2-00787	Not QA	32	2	G3	ND									SRC	E. Kelly	
P2-00787	Not QA	33	2	G5	ND									SRC	E. Kelly	
P2-00787	Not QA	34	2	G7	ND									SRC	E. Kelly	
P2-00787	Not QA	35	2	G9	ND									SRC	E. Kelly	
P2-00787	Not QA	36	2	H2	ND									SRC	E. Kelly	
P2-00787	Not QA	37	2	H4	ND									SRC	E. Kelly	
P2-00787	Not QA	38	2	H6	ND									SRC	E. Kelly	
P2-00787	Not QA	39	2	H8	ND									SRC	E. Kelly	
P2-00787	Not QA	40	2	H10	ND									SRC	E. Kelly	
P2-00787	Not QA	41	3	D2	ND									SRC	E. Kelly	
P2-00787	Not QA	42	3	D4	ND									SRC	E. Kelly	
P2-00787	Not QA	43	3	D6	ND									SRC	E. Kelly	
P2-00787	Not QA	44	3	D8	ND									SRC	E. Kelly	
P2-00787	Not QA	45	3	D10	ND									SRC	E. Kelly	
P2-00787	Not QA	46	3	E1	ND									SRC	E. Kelly	
P2-00787	Not QA	47	3	E3	ND									SRC	E. Kelly	
P2-00787	Not QA	48	3	E5	ND									SRC	E. Kelly	
P2-00787	Not QA	49	3	E7	ND									SRC	E. Kelly	
P2-00787	Not QA	50	3	E9	ND									SRC	E. Kelly	
P2-00789	Not QA	1	1	A8	F	1	1	4.1	0.2	20.5	ADX	LA	WRTA;NaK;Photo#05090,05091	SRC	E. Kelly	
P2-00789	Not QA	2	1	A8	F	0	0	13	0.35	37.14	AD	LA	WRTA;NaK; structure intersects non-countable grid bar	SRC	E. Kelly	WRTA;NaK not on benchsheet
P2-00789	Not QA	3	1	A8	F	0	0	3	0.35	8.571	AD	LA	WRTA;NaK; structure intersects non-countable grid bar	SRC	E. Kelly	WRTA;NaK not on benchsheet
P2-00789	Not QA	4	1	A8	F	2	2	1.8	0.15	12	ADX	LA	WRTA;NaK;Photo#05092	SRC	E. Kelly	
P2-00789	Not QA	5	1	A8	F	0	0	76	0.5	152	ADX	LA	WRTA;NaK; structure intersects non-countable grid bar	SRC	E. Kelly	
P2-00789	Not QA	6	1	A8	F	3	3	3	0.2	15	ADX	LA	WRTA;NaK;Photo#05093	SRC	E. Kelly	
P2-00789	Not QA	7	1	A8	F	4	4	3.1	0.25	12.4	ADX	LA	WRTA;NaK;Photo#05094	SRC	E. Kelly	
P2-00789	Not QA	8	1	A8	F	5	5	8.2	0.5	16.4	ADX	LA	WRTA;NaK;Photo#05095	SRC	E. Kelly	
P2-00789	Not QA	9	1	A8	F	6	6	3.8	0.2	19	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	10	1	A8	F	7	7	4.4	0.45	9.778	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	11	1	A8	F	8	8	4	0.9	4.444	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	12	1	A8	F	9	9	2.4	0.3	8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	13	1	A8	F	10	10	6.5	0.4	16.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	WRTA;NaK not on benchsheet
P2-00789	Not QA	14	1	A8	CD22	11								SRC	E. Kelly	
P2-00789	Not QA	15	1	A8	CF		11	18	0.15	120	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	16	1	A8	CF		12	9.4	0.4	23.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	17	1	A8	F	12	13	5	0.5	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	18	1	A8	F	13	14	1.1	0.2	5.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	19	1	A8	CD21	14								SRC	E. Kelly	
P2-00789	Not QA	20	1	A8	CF		15	7	0.3	23.33	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	21	1	A8	CF		16	2.7	0.2	13.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	22	1	A8	F	15	17	11.4	0.25	45.6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	23	1	A8	F	16	18	2	0.3	6.667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	24	1	A8	F	17	19	4.7	0.25	18.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	25	1	A8	F	18	20	3.5	0.2	17.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	26	1	A8	B	19	21	5	0.5	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	27	1	A8	F	20	22	1.2	0.3	4	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	28	1	A8	F	21	23	5.4	0.2	27	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	29	1	A8	F	22	24	3.4	0.25	13.6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	30	1	A8	F	23	25	2.2	0.25	8.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	31	1	A8	F	24	26	2.7	0.35	7.714	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	32	1	A8	F	25	27	1.1	0.25	4.4	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	33	1	A8	F	26	28	1.2	0.25	4.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	34	1	A8	F	27	29	2.9	0.15	19.33	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	35	1	A8	F	28	30	2.5	0.5	5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	36	1	A8	F	29	31	5.1	0.25	20.4	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	37	1	A8	F	30	32	2	0.1	20	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	38	1	A8	F	31	33	5.2	0.25	20.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00789	Not QA	39	1	A8	F	32	34	5.2	0.25	20.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	WRTA;NaK not on benchsheet
P2-01041	Not QA	1	1	J7	ND									SRC	E. Kelly	
P2-01041	Not QA	2	1	J9	ND									SRC	E. Kelly	
P2-01041	Not QA	3	1	I6	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II PART B GROUND WATER

Index ID	Lab QC Type	SeqID	Grid	Grid Opening	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-01041	Not QA	4	1	I8	ND									SRC	E. Kelly	
P2-01041	Not QA	5	1	I10	ND									SRC	E. Kelly	
P2-01041	Not QA	6	1	H5	ND									SRC	E. Kelly	
P2-01041	Not QA	7	1	H7	ND									SRC	E. Kelly	
P2-01041	Not QA	8	1	H9	ND									SRC	E. Kelly	
P2-01041	Not QA	9	1	F6	ND									SRC	E. Kelly	
P2-01041	Not QA	10	1	F8	ND									SRC	E. Kelly	
P2-01041	Not QA	11	1	F10	ND									SRC	E. Kelly	
P2-01041	Not QA	12	2	H6	ND									SRC	E. Kelly	
P2-01041	Not QA	13	2	H8	ND									SRC	E. Kelly	
P2-01041	Not QA	14	2	H10	ND									SRC	E. Kelly	
P2-01041	Not QA	15	2	F7	ND									SRC	E. Kelly	
P2-01041	Not QA	16	2	F9	ND									SRC	E. Kelly	
P2-01041	Not QA	17	3	I5	ND									SRC	E. Kelly	
P2-01041	Not QA	18	3	I7	ND									SRC	E. Kelly	
P2-01041	Not QA	19	3	G6	ND									SRC	E. Kelly	
P2-01041	Not QA	20	3	G8	ND									SRC	E. Kelly	
P2-01045	Not QA	1	1	E6	F	1	1	2.4	0.2	12	ADX	LA	WRTA;NaK;Photo#24173,24174	SRC	E. Kelly	
P2-01045	Not QA	2	1	E6	F	2	2	7.5	0.25	30	ADX	LA	WRTA;NaK;Photo#24175	SRC	E. Kelly	
P2-01045	Not QA	3	1	E6	F	3	3	2.5	0.45	5.556	ADX	LA	WRTA;NaK;Photo#24176	SRC	E. Kelly	
P2-01045	Not QA	4	1	E6	B	4	4	2.5	0.25	10	ADX	LA	WRTA;NaK;Photo#24177	SRC	E. Kelly	
P2-01045	Not QA	5	1	E6	F	5	5	2.4	0.2	12	ADX	LA	WRTA;NaK;Photo#24178	SRC	E. Kelly	
P2-01045	Not QA	6	1	E6	F	6	6	1.25	0.2	6.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	7	1	E6	F	7	7	4.2	0.15	28	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	8	1	E6	F	8	8	5.4	0.5	10.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	9	1	E6	F	9	9	3	0.2	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	10	1	E6	F	10	10	8.75	0.4	21.88	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	11	1	E6	F	11	11	7.5	0.15	50	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	12	1	E6	CD20	12								SRC	E. Kelly	
P2-01045	Not QA	13	1	E6	CF		12	1.5	0.25	6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	14	1	E6	CF		13	1.25	0.25	5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	15	1	E6	F	13	14	3.75	0.5	7.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	16	1	E6	F	14	15	3.5	0.2	17.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	17	1	E6	F	15	16	7.5	0.15	50	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	18	1	E6	F	16	17	1.25	0.15	8.333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	19	1	E6	F	17	18	2.75	0.75	3.667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	20	1	E6	F	18	19	1.75	0.3	5.833	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	21	1	E6	F	19	20	4.5	0.25	18	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	22	1	E6	F	20	21	1.5	0.15	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	23	1	E6	F	21	22	2.5	0.25	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	24	1	E6	F	22	23	2.1	0.2	10.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	25	1	E6	F	23	24	4.25	0.25	17	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	26	1	E6	F	24	25	4.25	0.8	5.313	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	27	1	E6	F	25	26	1.2	0.2	6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	28	1	E6	F	26	27	1.9	0.2	9.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	29	1	E6	F	27	28	1.35	0.15	9	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	30	1	E6	F	28	29	2.75	0.2	13.75	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	31	1	E6	MD10	29								SRC	E. Kelly	
P2-01045	Not QA	32	1	E6	MF		30	3.25	0.25	13	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	33	1	E6	F	30	31	6.5	0.75	8.667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	34	1	E6	F	31	32	4.9	0.4	12.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	35	1	E6	F	32	33	1.75	0.1	17.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	36	1	E6	F	33	34	1.75	0.5	3.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	37	1	E6	F	34	35	6.65	0.25	26.6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	38	1	E6	F	35	36	1.5	0.2	7.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	39	1	E6	F	36	37	1.75	0.2	8.75	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	40	1	E6	F	0	0	1.5	0.65	2.308	ADX	LA	WRTA;NaK; Structure does not meet Aspect Ratio	SRC	E. Kelly	
P2-01045	Not QA	41	1	E6	F	37	38	1.5	0.2	7.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	42	1	E6	MD10	38								SRC	E. Kelly	
P2-01045	Not QA	43	1	E6	MF		39	1.5	0.15	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	44	1	E6	F	39	40	1.5	0.25	6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	45	1	E6	F	40	41	8.25	0.15	55	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	46	1	E6	F	41	42	18.35	0.25	73.4	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	47	1	E6	F	42	43	1.5	0.15	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	48	1	E6	F	43	44	9.5	0.25	38	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	49	1	E6	F	44	45	1.5	0.15	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	50	1	E6	F	45	46	7.25	0.4	18.13	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	51	1	E6	F	46	47	3.25	0.1	32.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	52	1	E6	F	47	48	2.85	0.25	11.4	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	53	1	E6	CD22	48								SRC	E. Kelly	
P2-01045	Not QA	54	1	E6	CF		49	6.25	0.2	31.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	55	1	E6	CF		50	6.25	0.1	62.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	56	1	E6	F	49	51	1.75	0.2	8.75	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	57	1	E6	F	50	52	2	0.4	5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	58	1	E6	F	51	53	8.25	0.15	55	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	59	1	E6	F	52	54	18.7	0.25	74.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	60	1	E6	F	53	55	1.6	0.5	3.2	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	61	1	E6	CD31	54								SRC	E. Kelly	
P2-01045	Not QA	62	1	E6	CF		56	40	1.5	26.67	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	63	1	E6	CF		57	2.5	0.2	12.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	64	1	E6	CF		58	2	0.15	13.33	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	65	1	E6	F	55	59	1.5	0.2	7.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	66	1	E6	F	56	60	1.5	0.25	6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	67	1	E6	F	57	61	3.5	0.25	14	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-01045	Not QA	68	1	E6	F	58	62	4	0.2	20	ADX	LA	WRTA;NaK	SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00001	Not QA	A4	I7	F	1	1	3.25	0.3	10.83333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	I7	MD11	2								SRC	E. Kelly	
P2-00001	Not QA	A4	I7	MF		2	5.1	0.2	25.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	I7	F	3	3	1	0.25	4	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G7	F	4	4	12.5	1	12.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G7	F	5	5	20.5	0.3	68.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G7	F	6	6	11	0.5	22	ADX	LA	WRTA; NaK; Photo # 54982 & 54983	SRC	E. Kelly	
P2-00001	Not QA	A4	G7	F	7	7	2.5	0.25	10	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G7	F	8	8	4.5	0.35	12.85714286	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G7	F	9	9	7	0.5	14	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G7	MD10	10								SRC	E. Kelly	
P2-00001	Not QA	A4	G7	MF		10	3.25	0.2	16.25	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G5	F	11	11	3.75	0.75	5	ADX	LA	WRTA; NaK; Photo # 54984	SRC	E. Kelly	
P2-00001	Not QA	A4	G5	MD11	12								SRC	E. Kelly	
P2-00001	Not QA	A4	G5	MF		12	11	0.5	22	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G5	MD10	13								SRC	E. Kelly	
P2-00001	Not QA	A4	G5	MF		13	3.75	0.6	6.25	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G5	MD22	14								SRC	E. Kelly	
P2-00001	Not QA	A4	G5	MF		14	9.5	0.25	38	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G5	MF		15	5	0.25	20	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G5	MD11	15								SRC	E. Kelly	
P2-00001	Not QA	A4	G5	MF		16	6.5	0.3	21.66666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G3	F	16	17	3	0.3	10	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G3	F	17	18	12	0.5	24	ADX	LA	WRTA; NaK; Photo # 54985	SRC	E. Kelly	
P2-00001	Not QA	A4	G3	F	18	19	4.75	0.6	7.916666667	ADX	LA	WRTA; NaK; Photo # 54986	SRC	E. Kelly	
P2-00001	Not QA	A4	G3	F	19	20	5.25	0.15	35	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G3	F	20	21	3	0.2	15	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	G3	F	21	22	3.5	0.7	5	ADX	LA	WRTA; NaK; Photo # 54987	SRC	E. Kelly	
P2-00001	Not QA	A4	G3	F	22	23	7	0.6	11.66666667	ADX	LA	WRTA; NaK; Photo # 54988	SRC	E. Kelly	
P2-00001	Not QA	A4	G3	F	23	24	2.75	0.5	5.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	E6	MD11	0								SRC	E. Kelly	
P2-00001	Not QA	A4	E6	MF		0	13	2	6.5	NAM	NAM	UN; NaK; Photo # 54989	SRC	E. Kelly	
P2-00001	Not QA	A4	E6	F	24	25	5.75	0.3	19.16666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	E6	F	25	26	2.5	0.35	7.142857143	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	E6	F	26	27	3.75	0.25	15	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	E6	F	27	28	3	0.2	15	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	E6	MD10	28								SRC	E. Kelly	
P2-00001	Not QA	A4	E6	MF		29	4.25	0.4	10.625	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	E6	F	29	30	3.25	0.3	10.83333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A4	E6	F	30	31	2	0.25	8	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C4	F	31	32	16.5	0.25	66	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C4	MD21	32								SRC	E. Kelly	
P2-00001	Not QA	A5	C4	MF		33	5.5	0.3	18.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C4	MF		34	1.6	0.2	8	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C4	F	33	35	7.75	0.15	51.66666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C4	MD10	34								SRC	E. Kelly	
P2-00001	Not QA	A5	C4	MF		36	2.5	0.15	16.66666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C4	F	35	37	5.75	0.3	19.16666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C4	MD10	36								SRC	E. Kelly	
P2-00001	Not QA	A5	C4	MF		38	4.75	0.1	47.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MD11	37								SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MF		39	8.5	0.7	12.14285714	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	F	38	40	5.5	0.3	18.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	F	39	41	14.25	0.25	57	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MD10	40								SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MF		42	3.25	0.2	16.25	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	F	41	43	2.25	0.1	22.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MD11	42								SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MF		44	7	0.2	35	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	F	43	45	1.8	0.2	9	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MD11	44								SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MF		46	20.5	0.3	68.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	F	45	47	3	0.3	10	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MD10	46								SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MF		48	1.5	0.25	6	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MD10	47								SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MF		49	4.5	0.25	18	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MD11	48								SRC	E. Kelly	
P2-00001	Not QA	A5	C6	MF		50	5.3	0.35	15.14285714	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00004	Not QA	C1	B2	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	B4	F	1	1	5.1	0.2	25.5	ADX	LA	WRTA; NaK; Photo # 55005	SRC	E. Kelly	
P2-00004	Not QA	C1	B6	MD10	2								SRC	E. Kelly	
P2-00004	Not QA	C1	B6	MF		2	3	0.4	7.5	ADX	LA	WRTA; NaK; Photo # 55006	SRC	E. Kelly	
P2-00004	Not QA	C1	B8	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	B10	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	D2	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	D4	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	D6	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	D8	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	D10	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	F2	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	F4	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	F6	F	3	3	6.25	0.5	12.5	ADX	LA	WRTA; NaK; Photo # 55007 & 55008	SRC	E. Kelly	
P2-00004	Not QA	C1	F8	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	F10	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	I2	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	I4	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	I6	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	I8	ND									SRC	E. Kelly	
P2-00004	Not QA	C1	I10	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	C2	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	C4	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	C6	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	C8	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	C10	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	E2	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	E4	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	E6	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	E8	F	4	4	2.75	0.8	3.4375	ADX	LA	WRTA; NaK; Photo # 55054	SRC	E. Kelly	
P2-00004	Not QA	C2	E10	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	G2	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	G4	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	G6	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	G8	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	G10	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	I2	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	I4	F	5	5	1.7	0.4	4.25	ADX	LA	WRTA; NaK; Photo # 55055	SRC	E. Kelly	
P2-00004	Not QA	C2	I6	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	I8	ND									SRC	E. Kelly	
P2-00004	Not QA	C2	I10	ND									SRC	E. Kelly	
P2-00004	Not QA	C3	C2	ND									SRC	E. Kelly	
P2-00004	Not QA	C3	C4	ND									SRC	E. Kelly	
P2-00004	Not QA	C3	C6	MC10	6	6	16	15	1.066666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00004	Not QA	C3	B9	ND									SRC	E. Kelly	
P2-00004	Not QA	C3	E2	ND									SRC	E. Kelly	
P2-00004	Not QA	C3	E4	F	7	7	4.25	0.5	8.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00004	Not QA	C3	E7	ND									SRC	E. Kelly	
P2-00004	Not QA	C3	E9	ND									SRC	E. Kelly	
P2-00004	Not QA	C3	H8	ND									SRC	E. Kelly	
P2-00004	Not QA	C3	H10	ND									SRC	E. Kelly	
P2-00021	RC	A3	E8	MF		1	7.5	0.25	30	ADX	LA	WRTA; NaK	SRC	E. Kelly-extra	Nak info missing from comment field on hardcopy and EDD
P2-00021	RC	A4	F4	F	2	2	3.5	0.2	17.5	ADX	LA	WRTA; NaK	SRC	E. Kelly-extra	Nak info missing from comment field on hardcopy and EDD

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00021	RC	A4	F4	F	3	3	5.7	0.4	14.25	ADX	LA	WRTA; NaK	SRC	E. Kelly-extra	Nak info missing from comment field on hardcopy and EDD
P2-00021	RC	A5	E5	F	4	4	7.2	1.2	6	ADX	LA	WRTA; NaK	SRC	E. Kelly-extra	Nak info missing from comment field on hardcopy and EDD
P2-00021	RC	A5	E5	F	5	5	1	0.2	5	ADX	LA	WRTA; NaK	SRC	E. Kelly-extra	Nak info missing from comment field on hardcopy and EDD
P2-00027	Not QA	G6	C7	F	1	1	8	1	8	ADX	LA	WRTA; NaK; Photo # 55117 & 55118	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	2	2	1	0.15	6.666666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MC30	3	3	4.5	3.5	1.285714286	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MD10	4								SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MF		4	3	0.25	12	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	5	5	1.3	0.15	8.666666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	6	6	6	0.25	24	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	7	7	9	0.3	30	ADX	LA	WRTA; NaK; Photo # 55119	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	8	8	7	0.45	15.55555556	ADX	LA	WRTA; NaK; Photo # 55120	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	9	9	11.5	0.5	23	ADX	LA	WRTA; NaK; Photo # 55121	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	10	10	2	0.5	4	ADX	LA	WRTA; NaK;	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	11	11	3.5	0.25	14	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	12	12	2.8	0.2	14	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	13	13	2.25	0.2	11.25	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MD20	14								SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MF		14	4	0.6	6.666666667	ADX	LA	WRTA; NaK; Photo # 55122	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MF		15	3.25	0.3	10.83333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MD10	15								SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MF		16	2.25	0.2	11.25	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	16	17	4.25	0.15	28.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	17	18	1.5	0.15	10	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	18	19	2.5	0.15	16.66666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MD20	19								SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MF		20	3	0.2	15	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MF		21	2.5	0.1	25	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	20	22	1.6	0.1	16	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	21	23	2.25	0.25	9	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MD10	22								SRC	E. Kelly	
P2-00027	Not QA	G6	C7	MF		24	2.5	0.6	4.166666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00027	Not QA	G6	C7	F	23	25	1.2	0.1	12	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00029	Not QA	G1	C3	ND									SRC	E. Kelly	
P2-00029	Not QA	G1	C5	ND									SRC	E. Kelly	
P2-00029	Not QA	G1	D9	ND									SRC	E. Kelly	
P2-00029	Not QA	G1	E3	ND									SRC	E. Kelly	
P2-00029	Not QA	G1	E5	ND									SRC	E. Kelly	
P2-00029	Not QA	G1	F8	ND									SRC	E. Kelly	
P2-00029	Not QA	G1	H4	ND									SRC	E. Kelly	
P2-00029	Not QA	G1	H6	ND									SRC	E. Kelly	
P2-00029	Not QA	G1	H8	ND									SRC	E. Kelly	
P2-00029	Not QA	G1	H10	ND									SRC	E. Kelly	
P2-00029	Not QA	G2	C4	ND									SRC	E. Kelly	
P2-00029	Not QA	G2	C6	ND									SRC	E. Kelly	
P2-00029	Not QA	G2	C8	ND									SRC	E. Kelly	
P2-00029	Not QA	G2	C10	ND									SRC	E. Kelly	
P2-00029	Not QA	G2	E4	ND									SRC	E. Kelly	
P2-00029	Not QA	G2	E6	ND									SRC	E. Kelly	
P2-00029	Not QA	G2	E8	ND									SRC	E. Kelly	
P2-00029	Not QA	G2	E10	ND									SRC	E. Kelly	
P2-00029	Not QA	G2	H3	ND									SRC	E. Kelly	
P2-00029	Not QA	G2	H6	ND									SRC	E. Kelly	
P2-00029	Not QA	G3	J4	ND									SRC	E. Kelly	
P2-00029	Not QA	G3	J2	ND									SRC	E. Kelly	
P2-00029	Not QA	G3	H3	ND									SRC	E. Kelly	
P2-00029	Not QA	G3	G5	ND									SRC	E. Kelly	
P2-00029	Not QA	G3	E9	ND									SRC	E. Kelly	
P2-00029	Not QA	G3	E7	ND									SRC	E. Kelly	
P2-00029	Not QA	G3	E5	ND									SRC	E. Kelly	
P2-00029	Not QA	G3	E3	ND									SRC	E. Kelly	
P2-00029	Not QA	G3	E1	ND									SRC	E. Kelly	
P2-00029	Not QA	G3	C2	ND									SRC	E. Kelly	
P2-00029	Not QA	G4	B3	ND									SRC	E. Kelly	
P2-00029	Not QA	G4	B5	ND									SRC	E. Kelly	
P2-00029	Not QA	G4	B8	ND									SRC	E. Kelly	
P2-00029	Not QA	G4	D3	ND									SRC	E. Kelly	
P2-00029	Not QA	G4	D7	ND									SRC	E. Kelly	
P2-00029	Not QA	G4	D9	ND									SRC	E. Kelly	
P2-00029	Not QA	G4	F3	ND									SRC	E. Kelly	
P2-00029	Not QA	G4	F5	ND									SRC	E. Kelly	
P2-00029	Not QA	G4	F7	ND									SRC	E. Kelly	
P2-00029	Not QA	G4	F9	ND									SRC	E. Kelly	
P2-00029	Not QA	G5	B4	ND									SRC	E. Kelly	
P2-00029	Not QA	G5	B6	ND									SRC	E. Kelly	
P2-00029	Not QA	G5	B8	ND									SRC	E. Kelly	
P2-00029	Not QA	G5	D2	ND									SRC	E. Kelly	
P2-00029	Not QA	G5	D4	ND									SRC	E. Kelly	
P2-00029	Not QA	G5	D6	ND									SRC	E. Kelly	
P2-00029	Not QA	G5	D8	ND									SRC	E. Kelly	
P2-00029	Not QA	G5	D10	ND									SRC	E. Kelly	
P2-00029	Not QA	G5	H8	ND									SRC	E. Kelly	
P2-00029	Not QA	G5	G6	ND									SRC	E. Kelly	
P2-00043	Not QA	P1	I9	F	1	1	5	0.25	20	ADX	LA	WRTA; NaK; Photo # 55159 & 55160	SRC	E. Kelly	
P2-00043	Not QA	P1	I9	F	2	2	10.2	0.4	25.5	ADX	LA	WRTA; NaK; Photo # 55161	SRC	E. Kelly	
P2-00043	Not QA	P1	I7	F	3	3	3.25	0.4	8.125	ADX	LA	WRTA; NaK; Photo # 55162	SRC	E. Kelly	
P2-00043	Not QA	P1	I7	F	4	4	1.6	0.2	8	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	I5	ND									SRC	E. Kelly	
P2-00043	Not QA	P1	I3	F	5	5	4.2	0.2	21	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	I3	F	6	6	5.7	0.2	28.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	I1	F	7	7	2.1	0.15	14	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	G9	F	8	8	1.5	0.4	3.75	ADX	LA	WRTA; NaK; Photo # 55163	SRC	E. Kelly	
P2-00043	Not QA	P1	G9	F	9	9	2	0.15	13.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	G7	F	10	10	3	0.2	15	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	G7	F	11	11	2.25	0.3	7.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	G7	F	12	12	3.25	0.4	8.125	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	G5	F	13	13	1.3	0.2	6.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	G5	F	14	14	1.2	0.4	3	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	G5	F	15	15	2.4	0.3	8	ADX	LA	WRTA; NaK; Photo # 55164	SRC	E. Kelly	
P2-00043	Not QA	P1	G3	F	16	16	1.6	0.2	8	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	G3	F	17	17	4.9	0.2	24.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P1	G1	F	18	18	7.5	0.5	15	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P2	G5	F	19	19	1.15	0.2	5.75	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P2	G7	F	20	20	3	0.15	20	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P2	G7	F	21	21	0.8	0.25	3.2	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P2	G9	F	22	22	2.1	0.2	10.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P2	G9	F	23	23	1.15	0.15	7.666666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P2	I6	ND									SRC	E. Kelly	
P2-00043	Not QA	P2	I8	F	24	24	1.1	0.15	7.333333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00043	Not QA	P2	I8	F	25	25	6	0.15	40	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00051	Not QA	A6	B5	ND									SRC	E. Kelly	
P2-00051	Not QA	A6	B7	ND									SRC	E. Kelly	
P2-00051	Not QA	A6	B9	ND									SRC	E. Kelly	
P2-00051	Not QA	A6	D7	ND									SRC	E. Kelly	
P2-00051	Not QA	A6	F7	ND									SRC	E. Kelly	
P2-00051	Not QA	A7	F4	ND									SRC	E. Kelly	
P2-00051	Not QA	A7	F2	ND									SRC	E. Kelly	
P2-00051	Not QA	A7	C5	ND									SRC	E. Kelly	
P2-00051	Not QA	A7	C3	ND									SRC	E. Kelly	
P2-00051	Not QA	A7	C1	ND									SRC	E. Kelly	
P2-00051	Not QA	A8	A4	ND									SRC	E. Kelly	
P2-00051	Not QA	A8	A6	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00051	Not QA	A8	H3	ND									SRC	E. Kelly	
P2-00051	Not QA	A8	H5	ND									SRC	E. Kelly	
P2-00051	Not QA	A8	H7	ND									SRC	E. Kelly	
P2-00051	Not QA	A9	D4	ND									SRC	E. Kelly	
P2-00051	Not QA	A9	D6	ND									SRC	E. Kelly	
P2-00051	Not QA	A9	F8	ND									SRC	E. Kelly	
P2-00051	Not QA	A9	F10	ND									SRC	E. Kelly	
P2-00051	Not QA	A9	H9	ND									SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	1	1	5.4	0.5	10.8	ADX	LA	WRTA; NaK; Photo # 55227 & 55228	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	2	2	4	1	4	ADX	LA	WRTA; NaK; Photo # 55229	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	MC10	3	3	3.5	2.5	1.4	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	4	4	4.5	0.4	11.25	ADX	LA	WRTA; NaK; Photo # 55230	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	5	5	8.5	0.2	42.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	6	6	1.5	0.2	7.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	MC11	7	7	9.5	7.5	1.266666667	ADX	LA	WRTA; NaK; Photo # 55231	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	8	8	5	0.25	20	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	9	9	30	0.5	60	ADX	LA	WRTA; NaK; Photo # 55232	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	10	10	5.5	0.3	18.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	11	11	3	0.5	6	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	12	12	3.75	0.4	9.375	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	13	13	4.5	0.2	22.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	14	14	2.5	0.5	5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B6	I6	F	15	15	2.8	0.2	14	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	F	16	16	7.5	0.5	15	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	F	17	17	7.5	0.3	25	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	MC10	18	18	2	0.2	10	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	F	19	19	9.5	0.3	31.66666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	F	20	20	5.3	0.2	26.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	MD20	21								SRC	E. Kelly	
P2-00053	Not QA	B7	I6	MF		21	3	0.2	15	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	MR10		22	3.5	0.15	23.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	F	22	23	2	0.25	8	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	MD11	23								SRC	E. Kelly	
P2-00053	Not QA	B7	I6	MF		24	11.75	0.2	58.75	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	F	24	25	17	0.3	56.66666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	MD22	25								SRC	E. Kelly	
P2-00053	Not QA	B7	I6	MF		26	7	0.35	20	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	MR11		27	6.75	0.3	22.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00053	Not QA	B7	I6	F	26	28	9.4	0.3	31.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	H9	F	1	1	5.6	0.5	11.2	ADX	LA	WRTA; NaK; Photo # 55247 & 55248	SRC	E. Kelly	
P2-00063	Not QA	D1	H9	F	2	2	1.1	0.2	5.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	H7	F	3	3	4.5	0.25	18	ADX	LA	WRTA; NaK; Photo # 55249	SRC	E. Kelly	
P2-00063	Not QA	D1	H7	F	4	4	2.9	0.15	19.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	H5	F	5	5	3	0.5	6	ADX	LA	WRTA; NaK; Photo # 55250	SRC	E. Kelly	
P2-00063	Not QA	D1	H5	F	6	6	5	0.15	33.33333333	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	H5	MC11	7	7	5.75	1.9	3.026315789	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	H3	F	8	8	1.5	0.4	3.75	ADX	LA	WRTA; NaK; Photo # 55251	SRC	E. Kelly	
P2-00063	Not QA	D1	H3	F	9	9	23.5	0.8	29.375	ADX	LA	WRTA; NaK; Photo # 55252	SRC	E. Kelly	
P2-00063	Not QA	D1	E9	F	10	10	4.4	1.1	4	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	E9	F	11	11	5.2	0.25	20.8	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	E7	F	12	12	2.3	0.25	9.2	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	E7	F	13	13	1.7	0.25	6.8	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	E7	F	14	14	1.15	0.15	7.666666667	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	B8	ND									SRC	E. Kelly	
P2-00063	Not QA	D1	B6	F	15	15	3.1	0.2	15.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	B6	F	16	16	5.3	0.4	13.25	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D1	B6	F	17	17	9.3	0.2	46.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D2	H8	F	18	18	2.25	0.4	5.625	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D2	H8	F	19	19	6.6	0.4	16.5	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D2	H8	F	20	20	4	0.5	8	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D2	H6	F	21	21	1.5	0.25	6	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D2	H4	F	22	22	1.5	0.25	6	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D2	H4	F	23	23	1.4	0.1	14	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D2	B6	F	24	24	4.3	0.65	6.615384615	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00063	Not QA	D2	B6	F	25	25	2	0.25	8	ADX	LA	WRTA; NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	H7	F	1	1	4.25	0.25	17	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	H7	F	2	2	3.5	0.2	17.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	H5	MD11	3								SRC	E. Kelly	
P2-00082	Not QA	O6	H5	MF		3	6.5	0.3	21.66666667	ADX	LA	WRTA;NaK;Photo#55361,55362	SRC	E. Kelly	
P2-00082	Not QA	O6	H5	F	4	4	8.5	0.5	17	ADX	LA	WRTA;NaK;Photo#55363	SRC	E. Kelly	
P2-00082	Not QA	O6	H5	F	5	5	4.7	0.6	7.833333333	ADX	LA	WRTA;NaK;Photo#55364	SRC	E. Kelly	
P2-00082	Not QA	O6	H3	F	6	6	0.8	0.25	3.2	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	H3	F	7	7	2.5	0.2	12.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	E8	F	8	8	2.5	0.25	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	E8	F	9	9	1	0.2	5	ADX	LA	WRTA;NaK	SRC	E. Kelly	The mineral class is not indicated on the benchsheet
P2-00082	Not QA	O6	E8	F	10	10	11	0.3	36.66666667	ADX	LA	WRTA;NaK;Photo#55366	SRC	E. Kelly	
P2-00082	Not QA	O6	E8	MD20	11								SRC	E. Kelly	
P2-00082	Not QA	O6	E8	MF		11	2.25	0.1	22.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	E8	MF		12	2	0.5	4	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	E6	F	12	13	9.5	0.35	27.14285714	ADX	LA	WRTA;NaK;Photo#55365	SRC	E. Kelly	
P2-00082	Not QA	O6	E6	F	13	14	2.5	0.3	8.333333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	E6	MD10	14								SRC	E. Kelly	
P2-00082	Not QA	O6	E6	MF		15	2.5	0.2	12.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	E6	MC10	15	16	4	2.1	1.904761905	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	E6	F	16	17	3.8	0.2	19	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	E6	F	17	18	7.25	0.6	12.08333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	E4	ND									SRC	E. Kelly	
P2-00082	Not QA	O6	E2	F	18	19	10.1	0.5	20.2	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O6	E2	F	19	20	1.9	0.2	9.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O7	D4	F	20	21	4.4	0.2	22	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O7	D4	MD10	21								SRC	E. Kelly	
P2-00082	Not QA	O7	D4	MF		22	3.5	0.25	14	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O7	D6	F	22	23	1.5	0.15	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O7	D6	F	23	24	2.5	0.2	12.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O7	D8	MC10	24	25	3.25	0.6	5.416666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O7	D8	MD11	25								SRC	E. Kelly	
P2-00082	Not QA	O7	D8	MF		26	9.5	0.3	31.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O7	D8	F	26	27	5	0.5	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O7	D8	F	27	28	1.2	0.25	4.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00082	Not QA	O7	D8	F	28	29	3	0.25	12	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	1	1	5.9	0.25	23.6	ADX	LA	WRTA;NaK;Photo#05180,05181	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	2	2	1.5	0.25	6	ADX	LA	WRTA;NaK;Photo#05182	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	3	3	4.2	0.2	21	ADX	LA	WRTA;NaK;Photo#05183	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	4	4	9.7	0.3	32.33333333	ADX	LA	WRTA;NaK;Photo#05184	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	5	5	3	0.2	15	ADX	LA	WRTA;NaK;Photo#05191	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	6	6	3.1	0.25	12.4	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	7	7	1.3	0.15	8.666666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	8	8	9.4	0.6	15.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	9	9	2.4	0.25	9.6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	10	10	3	0.2	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	11	11	2.7	0.3	9	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	12	12	6.8	0.25	27.2	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	13	13	1.8	0.25	7.2	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	14	14	2.4	0.2	12	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	15	15	6.2	0.2	31	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	16	16	3.4	0.25	13.6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	17	17	5.7	0.15	38	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	18	18	2.6	0.2	13	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	19	19	24	0.3	80	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	20	20	5	0.5	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	1	A4	F	21	21	6.4	0.25	25.6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	F	0	0	4	0.25	16	ADX	LA	WRTA;NaK; structure crosses non-countable grid bar	SRC	E. Kelly	"Structure crosses non-countable grid bar" in EDD but not the hard copy report. Which is correct?
P2-00093	Not QA	2	D6	F	22	22	1.4	0.3	4.666666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00093	Not QA	2	D6	F	23	23	4.5	0.1	45	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	F	24	24	7.8	0.25	31.2	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	F	25	25	1.7	0.15	11.33333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	F	26	26	3.6	0.2	18	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	F	27	27	4.7	0.25	18.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	F	28	28	4.8	0.3	16	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	MD21	29								SRC	E. Kelly	
P2-00093	Not QA	2	D6	MF		29	28.2	0.3	94	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	MF		30	2.4	0.1	24	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	F	30	31	14	0.25	56	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	F	31	32	3.2	0.6	5.333333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	F	32	33	2.2	0.2	11	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00093	Not QA	2	D6	F	33	34	6	0.25	24	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00095	Not QA	1	A2	ND									SRC	E. Kelly	
P2-00095	Not QA	1	A4	ND									SRC	E. Kelly	
P2-00095	Not QA	1	A6	ND									SRC	E. Kelly	
P2-00095	Not QA	1	A10	ND									SRC	E. Kelly	
P2-00095	Not QA	1	B1	ND									SRC	E. Kelly	
P2-00095	Not QA	1	B7	ND									SRC	E. Kelly	
P2-00095	Not QA	1	C2	ND									SRC	E. Kelly	
P2-00095	Not QA	1	C4	ND									SRC	E. Kelly	
P2-00095	Not QA	1	C10	ND									SRC	E. Kelly	
P2-00095	Not QA	1	D1	ND									SRC	E. Kelly	
P2-00095	Not QA	1	D3	ND									SRC	E. Kelly	
P2-00095	Not QA	1	D7	ND									SRC	E. Kelly	
P2-00095	Not QA	1	E2	ND									SRC	E. Kelly	
P2-00095	Not QA	1	E8	ND									SRC	E. Kelly	
P2-00095	Not QA	1	E10	ND									SRC	E. Kelly	
P2-00095	Not QA	1	F6	ND									SRC	E. Kelly	
P2-00095	Not QA	1	G5	ND									SRC	E. Kelly	
P2-00095	Not QA	1	G7	ND									SRC	E. Kelly	
P2-00095	Not QA	1	H4	ND									SRC	E. Kelly	
P2-00095	Not QA	1	H9	ND									SRC	E. Kelly	
P2-00095	Not QA	1	I3	ND									SRC	E. Kelly	
P2-00095	Not QA	1	I8	ND									SRC	E. Kelly	
P2-00095	Not QA	1	I10	ND									SRC	E. Kelly	
P2-00095	Not QA	1	J1	ND									SRC	E. Kelly	
P2-00095	Not QA	1	J4	ND									SRC	E. Kelly	
P2-00095	Not QA	1	J7	ND									SRC	E. Kelly	
P2-00095	Not QA	1	J9	ND									SRC	E. Kelly	
P2-00095	Not QA	2	A4	ND									SRC	E. Kelly	
P2-00095	Not QA	2	A8	ND									SRC	E. Kelly	
P2-00095	Not QA	2	A10	ND									SRC	E. Kelly	
P2-00095	Not QA	2	B1	ND									SRC	E. Kelly	
P2-00095	Not QA	2	B5	ND									SRC	E. Kelly	
P2-00095	Not QA	2	B7	ND									SRC	E. Kelly	
P2-00095	Not QA	2	B9	ND									SRC	E. Kelly	
P2-00095	Not QA	2	C8	ND									SRC	E. Kelly	
P2-00095	Not QA	2	C10	ND									SRC	E. Kelly	
P2-00095	Not QA	2	D7	ND									SRC	E. Kelly	
P2-00095	Not QA	2	E6	ND									SRC	E. Kelly	
P2-00095	Not QA	2	E8	ND									SRC	E. Kelly	
P2-00095	Not QA	2	E10	ND									SRC	E. Kelly	
P2-00095	Not QA	2	H5	ND									SRC	E. Kelly	
P2-00095	Not QA	2	H7	ND									SRC	E. Kelly	
P2-00095	Not QA	2	H9	ND									SRC	E. Kelly	
P2-00095	Not QA	3	A1	ND									SRC	E. Kelly	
P2-00095	Not QA	3	A3	ND									SRC	E. Kelly	
P2-00095	Not QA	3	A5	ND									SRC	E. Kelly	
P2-00095	Not QA	3	A7	ND									SRC	E. Kelly	
P2-00095	Not QA	3	A9	ND									SRC	E. Kelly	
P2-00095	Not QA	3	B2	ND									SRC	E. Kelly	
P2-00095	Not QA	3	B4	ND									SRC	E. Kelly	
P2-00098	Not QA	Q6	I9	F	1	1	1.5	0.25	6	ADX	LA	WRTA;NaK;Photo#55379	SRC	E. Kelly	
P2-00098	Not QA	Q6	I7	F	2	2	2	0.15	13.33333333	ADX	LA	WRTA;NaK;Photo#55380	SRC	E. Kelly	
P2-00098	Not QA	Q6	I7	F	3	3	1.4	0.1	14	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	I7	F	4	4	2.15	0.2	10.75	ADX	LA	WRTA;NaK;Photo#55381	SRC	E. Kelly	
P2-00098	Not QA	Q6	I5	F	5	5	3.2	0.3	10.66666667	ADX	LA	WRTA;NaK;Photo#55382	SRC	E. Kelly	
P2-00098	Not QA	Q6	I5	F	6	6	2.25	0.5	4.5	ADX	LA	WRTA;NaK;Photo#55383	SRC	E. Kelly	
P2-00098	Not QA	Q6	I3	F	7	7	6.5	0.5	13	ADX	LA	WRTA;NaK;Photo#55384	SRC	E. Kelly	
P2-00098	Not QA	Q6	I3	F	8	8	2.8	0.25	11.2	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	I1	F	9	9	1.4	0.4	3.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	G8	F	10	10	1.5	0.3	5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	G8	F	11	11	2	0.3	6.666666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	G6	F	12	12	8.5	0.3	28.33333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	G6	F	13	13	2.2	0.3	7.333333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	G6	F	14	14	0.9	0.25	3.6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	G6	F	15	15	2	0.2	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	G6	F	16	16	1.6	0.2	8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	G4	F	17	17	1	0.15	6.666666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	G4	F	18	18	1.9	0.15	12.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q6	G2	F	19	19	4.5	0.2	22.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q7	F4	ND									SRC	E. Kelly	
P2-00098	Not QA	Q7	F6	F	20	20	3.7	0.25	14.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q7	F8	F	21	21	5.5	1.2	4.583333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q7	F10	F	22	22	2.25	0.2	11.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q7	F10	F	23	23	0.75	0.1	7.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q7	F10	F	24	24	0.75	0.1	7.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00098	Not QA	Q7	H4	F	25	25	1.6	0.25	6.4	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	1	J3	ND									SRC	E. Kelly	
P2-00111	Not QA	1	J5	ND									SRC	E. Kelly	
P2-00111	Not QA	1	J7	ND									SRC	E. Kelly	
P2-00111	Not QA	1	J9	ND									SRC	E. Kelly	
P2-00111	Not QA	1	I10	ND									SRC	E. Kelly	
P2-00111	Not QA	1	H3	B	1	1	16.5	1.5	11	ADX	LA	WRTA;NaK;Photo#23812	SRC	E. Kelly	
P2-00111	Not QA	1	H5	ND									SRC	E. Kelly	
P2-00111	Not QA	1	H7	ND									SRC	E. Kelly	
P2-00111	Not QA	1	G4	F	2	2	8.75	0.5	17.5	ADX	LA	WRTA;NaK;Photo#23813	SRC	E. Kelly	
P2-00111	Not QA	1	G4	F	3	3	6.5	0.35	18.57142857	ADX	LA	WRTA;NaK;Photo#23814	SRC	E. Kelly	
P2-00111	Not QA	1	G10	ND									SRC	E. Kelly	
P2-00111	Not QA	1	F1	ND									SRC	E. Kelly	
P2-00111	Not QA	1	F3	ND									SRC	E. Kelly	
P2-00111	Not QA	1	E5	MD10	4								SRC	E. Kelly	
P2-00111	Not QA	1	E5	MF		4	2.25	0.15	15	ADX	LA	WRTA;NaK;Photo#23515,23516	SRC	E. Kelly	
P2-00111	Not QA	1	E5	F	5	5	22.25	0.3	74.16666667	ADX	LA	WRTA;NaK;Photo#23816	SRC	E. Kelly	
P2-00111	Not QA	1	E7	MD11	6								SRC	E. Kelly	
P2-00111	Not QA	1	E7	MF		6	7	0.25	28	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	1	E7	F	7	7	3	0.25	12	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	1	C9	F	8	8	9.5	0.6	15.83333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	I9	ND									SRC	E. Kelly	
P2-00111	Not QA	2	H8	ND									SRC	E. Kelly	
P2-00111	Not QA	2	G9	ND									SRC	E. Kelly	
P2-00111	Not QA	2	F6	ND									SRC	E. Kelly	
P2-00111	Not QA	2	F8	ND									SRC	E. Kelly	
P2-00111	Not QA	2	C3	F	9	9	2.25	0.2	11.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	C3	F	10	10	14.5	0.5	29	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	C5	ND									SRC	E. Kelly	
P2-00111	Not QA	2	C7	F	11	11	4.75	0.25	19	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	C7	F	12	12	1.5	0.25	6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	C9	F	13	13	23.2	0.3	77.33333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	B4	F	14	14	4.5	0.25	18	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	B4	MD11	15								SRC	E. Kelly	
P2-00111	Not QA	2	B4	MF		15	6	0.4	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	B6	F	16	16	2.75	0.25	11	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	B8	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00111	Not QA	2	B10	F	17	17	3	0.2	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	B10	F	18	18	1.2	0.2	6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	2	A3	ND									SRC	E. Kelly	
P2-00111	Not QA	2	A5	B	19	19	7.25	0.15	48.33333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	3	I4	MD10	20								SRC	E. Kelly	comment should not be entered on this line
P2-00111	Not QA	3	I4	MF		20	3.2	0.3	10.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	3	I6	ND									SRC	E. Kelly	
P2-00111	Not QA	3	I8	F	21	21	2.35	0.3	7.833333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	3	I10	F	0	0	3.25	0.25	13	ADX	LA	WRTA;NaK; structure crosses non-countable grid bar	SRC	E. Kelly	comment incomplete. Should contain "non-countable grid bar"
P2-00111	Not QA	3	I10	MD11	22								SRC	E. Kelly	comment should not be entered on this line
P2-00111	Not QA	3	I10	MF		22	13.25	0.25	53	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	3	I10	F	23	23	21.2	0.8	26.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	3	H3	ND									SRC	E. Kelly	
P2-00111	Not QA	3	H5	F	24	24	2.25	0.25	9	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00111	Not QA	3	H5	F	25	25	3	0.15	20	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00302	Not QA	1	A8	MD21	4								SRC	E. Kelly-extra	comment should not be entered on this line
P2-00302	Not QA	2	H6	MD10	16								SRC	E. Kelly-extra	comment should not be entered on this line
P2-00304	Not QA	1	A3	F	1	1	47.7	1	47.7	ADX	LA	WRTA;Nak;Photo#04808,04809	SRC	E. Kelly	
P2-00304	Not QA	1	A3	F	2	2	4.6	0.25	18.4	ADX	LA	WRTA;Nak;Photo#04810	SRC	E. Kelly	
P2-00304	Not QA	1	A3	F	3	3	7	0.7	10	ADX	LA	WRTA;Nak;Photo#04811	SRC	E. Kelly	
P2-00304	Not QA	1	A7	ND									SRC	E. Kelly	
P2-00304	Not QA	1	B4	F	4	4	3.2	0.25	12.8	ADX	LA	WRTA;Nak;Photo#04812	SRC	E. Kelly	
P2-00304	Not QA	1	B4	F	5	5	1.4	0.25	5.6	ADX	LA	WRTA;Nak;Photo#04815	SRC	E. Kelly	
P2-00304	Not QA	1	B4	F	6	6	3.3	0.2	16.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	1	B4	F	7	7	3.1	0.2	15.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	1	B4	F	8	8	5	0.5	10	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	1	B6	F	9	9	4.9	0.2	24.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	1	B10	F	10	10	2.9	0.25	11.6	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	1	B10	F	11	11	3.2	0.25	12.8	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	1	B10	F	12	12	2.5	0.3	8.333333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	1	B10	F	13	13	19.6	0.8	24.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	1	B10	F	14	14	2.7	0.2	13.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	1	B10	F	15	15	5.6	0.6	9.333333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	2	D6	F	16	16	3.3	0.4	8.25	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	2	D6	F	17	17	9	0.4	22.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	2	D6	F	18	18	2.1	0.25	8.4	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	2	D6	F	19	19	4.2	0.25	16.8	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	3	D5	F	20	20	1.1	0.15	7.333333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	3	D5	F	21	21	1.3	0.15	8.666666667	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	3	D5	F	22	22	1.1	0.2	5.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	3	D5	F	23	23	3.3	0.75	4.4	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	3	D5	F	24	24	4.7	0.7	6.714285714	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	3	D5	F	25	25	3.4	0.5	6.8	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00304	Not QA	3	D5	F	26	26	6.4	0.25	25.6	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B6	A4	MD10	0								SRC	E. Kelly	
P2-00308	Not QA	B6	A4	MF		0	3	0.75	12	NAM	NAM	UN:XK;Photo#23414	SRC	E. Kelly	Width is 0.75 on hardcopy
P2-00308	Not QA	B6	A2	ND									SRC	E. Kelly	
P2-00308	Not QA	B6	C5	F	1	1	1.95	0.25	7.8	ADX	LA	WRTA;Nak;Photo#23475,23476	SRC	E. Kelly	Length is 1.75 on hardcopy
P2-00308	Not QA	B6	C5	MD10	2								SRC	E. Kelly	
P2-00308	Not QA	B6	C5	MF		2	1.75	0.25	6.666666667	ADX	LA	WRTA;Nak;Photo#23477	SRC	E. Kelly	Check structure dimensions in EDD; appears that structure 2 was incorrectly modified to the dimentions for structure #1. Please revise both str1 and str2.
P2-00308	Not QA	B6	C3	F	3	3	2.5	0.2	12.5	ADX	LA	WRTA;Nak;Photo#23478	SRC	E. Kelly	
P2-00308	Not QA	B6	C3	F	4	4	4.5	0.15	30	ADX	LA	WRTA;Nak;Photo#23479	SRC	E. Kelly	
P2-00308	Not QA	B6	C3	F	5	5	5.6	0.65	8.615384615	ADX	LA	WRTA;Nak;Photo#23480	SRC	E. Kelly	
P2-00308	Not QA	B6	C1	ND									SRC	E. Kelly	
P2-00308	Not QA	B6	E1	F	0	0	10	0.15	66.66666667	NAM	NAM	UN;Nak;Photo#23481	SRC	E. Kelly	The mineral type "UK" is not one in the list of suggested mineral classifications. Should this be "UN"? Benchsheet and EDD need revision
P2-00308	Not QA	B6	E3	ND									SRC	E. Kelly	
P2-00308	Not QA	B6	E5	F	0	0	3.25	0.1	32.5	ADX	LA	WRTA;Nak;non-ct GB	SRC	E. Kelly	
P2-00308	Not QA	B6	E5	F	6	6	13	0.2	65	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B6	G4	ND									SRC	E. Kelly	
P2-00308	Not QA	B6	G6	F	7	7	3.4	0.2	17	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B6	H10	F	0	0	5.5	1	5.5	ADX	LA	WRTA;Nak;non-ct GB	SRC	E. Kelly	
P2-00308	Not QA	B6	H10	F	8	8	11	0.35	31.42857143	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B6	H10	F	9	9	1.8	0.2	9	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B6	I5	ND									SRC	E. Kelly	
P2-00308	Not QA	B2	A6	ND									SRC	E. Kelly	
P2-00308	Not QA	B2	A4	MD10	10								SRC	E. Kelly	
P2-00308	Not QA	B2	A4	MR10		10	5	0.6	8.333333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	A4	MD11	11								SRC	E. Kelly	
P2-00308	Not QA	B2	A4	MF		11	20.5	0.2	102.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	A4	F	12	12	4.5	0.25	18	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	C1	F	13	13	5.6	0.2	28	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	C1	MD10	14								SRC	E. Kelly	
P2-00308	Not QA	B2	C1	MF		14	0.75	0.1	7.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	C3	MD10	15								SRC	E. Kelly	
P2-00308	Not QA	B2	C3	MF		15	2	0.2	10	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	C5	ND									SRC	E. Kelly	
P2-00308	Not QA	B2	C7	F	16	16	4.5	0.5	9	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	C9	ND									SRC	E. Kelly	
P2-00308	Not QA	B2	E8	ND									SRC	E. Kelly	
P2-00308	Not QA	B2	E6	ND									SRC	E. Kelly	
P2-00308	Not QA	B2	E2	F	17	17	1.5	0.25	6	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	G1	ND									SRC	E. Kelly	
P2-00308	Not QA	B2	G3	ND									SRC	E. Kelly	
P2-00308	Not QA	B2	G6	F	18	18	3.5	0.25	14	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	G8	F	19	19	2.5	0.2	12.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	G8	F	20	20	4.8	0.3	16	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	I10	ND									SRC	E. Kelly	
P2-00308	Not QA	B2	I8	ND									SRC	E. Kelly	
P2-00308	Not QA	B2	I6	F	21	21	1.5	0.45	3.333333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	I4	F	0	0	2	0.15	13.33333333	ADX	LA	WRTA;Nak;non-ct GB	SRC	E. Kelly	
P2-00308	Not QA	B2	I4	F	22	22	2.5	0.2	12.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	I4	F	23	23	2	0.25	8	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	I2	B	24	24	10	0.75	13.33333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00308	Not QA	B2	I2	MD10	25								SRC	E. Kelly	
P2-00308	Not QA	B2	I2	MF		25	1.5	0.25	6	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00309	Not QA	C1	A6	F	0	0	3.5	0.15	23.33333333	NAM	NAM	UN;Nak;Photo#23490	SRC	E. Kelly-extra	The mineral type "UK" is not one in the list of suggested mineral classifications. Should this be "UN"? Benchsheet and EDD need revision
P2-00309	Not QA	C1	C3	F	4	4	1	0.25	4	ADX	LA	WRTA;Nak;Photo#23492	SRC	E. Kelly-extra	Nak info missing from comment field on hardcopy and EDD
P2-00310	Not QA	D4	A9	F	1	1	4.5	0.45	10	ADX	LA	WRTA;Nak;Photo#23495,23496	SRC	E. Kelly	
P2-00310	Not QA	D4	A7	F	2	2	1.5	0.2	7.5	ADX	LA	WRTA;Nak;Photo#23497	SRC	E. Kelly	
P2-00310	Not QA	D4	A7	F	3	3	3	0.2	15	ADX	LA	WRTA;Nak;Photo#23498	SRC	E. Kelly	
P2-00310	Not QA	D4	A5	F	4	4	1.75	0.45	3.888888889	ADX	LA	WRTA;Nak;Photo#23499	SRC	E. Kelly	
P2-00310	Not QA	D4	A5	F	5	5	2.5	0.15	16.66666667	ADX	LA	WRTA;Nak;Photo#23500	SRC	E. Kelly	
P2-00310	Not QA	D4	A5	MD11	6								SRC	E. Kelly	Structure type is MD11 not MD10 according to the benchsheet.
P2-00310	Not QA	D4	A5	MF		6	8.5	0.6	14.16666667	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D4	A3	F	0	0	5.5	0.3	18.33333333	ADX	LA	WRTA;Nak;non-ct GB	SRC	E. Kelly	
P2-00310	Not QA	D4	A1	ND									SRC	E. Kelly	
P2-00310	Not QA	D4	C4	F	7	7	10.25	0.65	15.76923077	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D4	C4	B	8	8	14	1	14	ADX	LA	WRTA;Nak;	SRC	E. Kelly	
P2-00310	Not QA	D4	C6	MD10	9								SRC	E. Kelly	
P2-00310	Not QA	D4	C6	MF		9	1.65	0.5	3.3	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D4	C6	F	10	10	6.25	0.45	13.88888889	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D4	H8	ND									SRC	E. Kelly	
P2-00310	Not QA	D4	H6	F	11	11	6.5	0.25	26	ADX	LA	WRTA;Nak	SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00310	Not QA	D6	A10	F	0	0	5.75	0.2	28.75	ADX	LA	WRTA;Nak;non-ct GB	SRC	E. Kelly	
P2-00310	Not QA	D6	A10	F	12	12	30	0.3	100	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	A10	F	13	13	1.2	0.2	6	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	A10	F	14	14	1.25	0.3	4.166666667	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	A10	MD10	15								SRC	E. Kelly	
P2-00310	Not QA	D6	A10	MF		15	0.75	0.15	5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	B7	F	16	16	11	0.5	22	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	C4	ND									SRC	E. Kelly	
P2-00310	Not QA	D6	C1	F	17	17	10.5	0.5	21	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	C1	F	18	18	0.5	0.1	5	ADX	LA	WRTA;XK	SRC	E. Kelly	
P2-00310	Not QA	D6	C1	MD10	19								SRC	E. Kelly	
P2-00310	Not QA	D6	C1	MF		19	4.75	0.4	11.875	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	E3	B	20	20	21.5	0.5	43	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	E6	F	21	21	5	0.35	14.285714	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	F9	F	22	22	2	0.15	13.33333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	F9	F	23	23	11	0.5	22	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	F9	F	24	24	1.75	0.4	4.375	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	J5	MD10	25								SRC	E. Kelly	
P2-00310	Not QA	D6	J5	MF		25	4.2	0.4	10.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	J5	F	0	0	2.5	0.2	12.5	ADX	LA	WRTA;Nak;structure crossed non-counta	SRC	E. Kelly	
P2-00310	Not QA	D6	J5	MD20	26								SRC	E. Kelly	
P2-00310	Not QA	D6	J5	MF		26	3.5	0.25	14	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00310	Not QA	D6	J5	MF		27	1.5	0.2	7.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00313	Not QA	E1	C9	MF		0	5.5	0.2	27.5	AD	LA	WRTA;XK;Photo#23527,When tillted to a	SRC	E. Kelly-extra	
P2-00326	Not QA	1	A6	F	1	1	14.6	0.45	32.44444444	ADX	LA	WRTA;Nak;Photo#04866, 04867	SRC	E. Kelly	
P2-00326	Not QA	1	A6	F	2	2	2.6	0.2	13	ADX	LA	WRTA;Nak;Photo#04868	SRC	E. Kelly	
P2-00326	Not QA	1	A8	F	3	3	7.8	0.2	39	ADX	LA	WRTA;Nak;Photo#04869	SRC	E. Kelly	
P2-00326	Not QA	1	A8	F	4	4	4.6	0.4	11.5	ADX	LA	WRTA;Nak;Photo#04870	SRC	E. Kelly	
P2-00326	Not QA	1	A8	MD10	5								SRC	E. Kelly	
P2-00326	Not QA	1	A8	MF		5	2.3	0.1	23	ADX	LA	WRTA;Nak;Photo#04870	SRC	E. Kelly	
P2-00326	Not QA	1	A8	F	6	6	5	0.5	10	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	1	A8	F	7	7	2.5	0.25	10	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	1	A8	F	8	8	0.9	0.15	6	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	1	A8	F	9	9	9.7	0.5	19.4	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	1	A8	F	10	10	10	0.2	50	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B5	F	11	11	7.1	0.25	28.4	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B5	CD21	12								SRC	E. Kelly	
P2-00326	Not QA	2	B5	CF		12	13	1	13	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B5	CF		13	0.8	0.15	5.333333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B5	F	13	14	2.9	0.1	29	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B5	F	14	15	3.4	0.1	34	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B5	F	15	16	2	0.15	13.33333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B5	F	16	17	0.9	0.2	4.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B7	F	17	18	1.2	0.2	6	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B7	F	18	19	5.6	0.2	28	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B7	F	19	20	1.2	0.15	8	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B7	F	20	21	1.9	0.15	12.66666667	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B7	F	21	22	4.2	0.25	16.8	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B7	F	22	23	9	0.4	22.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	2	B7	F	23	24	4.5	0.2	22.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	3	D5	F	24	25	3	0.15	20	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	3	D5	F	25	26	9.5	0.15	63.33333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	3	D5	F	26	27	3.1	0.25	12.4	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	3	D5	F	27	28	3.3	0.5	6.6	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	3	D5	F	28	29	1.8	0.25	7.2	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	3	D5	F	29	30	5.7	0.2	28.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00326	Not QA	3	D5	F	30	31	3.8	0.2	19	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	1	B3	F	1	1	5.4	0.5	10.8	ADX	LA	WRTA;Nak;Photo#23778,23779	SRC	E. Kelly	
P2-00337	Not QA	1	B3	F	0	0	15	0.5	30	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	1	B3	F	2	2	2.2	0.1	22	ADX	LA	WRTA;Nak:Photo#23780	SRC	E. Kelly	
P2-00337	Not QA	1	B3	F	3	3	1.9	0.4	4.75	ADX	LA	WRTA;Nak:Photo#23781	SRC	E. Kelly	
P2-00337	Not QA	1	B5	F	4	4	5.75	0.4	14.375	ADX	LA	WRTA;Nak:Photo#23782	SRC	E. Kelly	
P2-00337	Not QA	1	B5	F	5	5	2.6	0.3	8.666666667	ADX	LA	WRTA;Nak;Photo#23783	SRC	E. Kelly	
P2-00337	Not QA	1	B5	MD10	6								SRC	E. Kelly	
P2-00337	Not QA	1	B5	MF		6	4.4	0.2	22	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	1	B7	F	7	7	2.7	0.2	13.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	1	B7	F	8	8	4.8	0.4	12	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	1	B7	F	9	9	3.3	0.2	16.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	1	B9	F	10	10	2.8	0.2	14	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	1	C4	MD22	0								SRC	E. Kelly	
P2-00337	Not QA	1	C4	MF		0	23	0.3	76.66666667	ADX	LA	WRTA;Nak; Structure crosses non-countable grid bar	SRC	E. Kelly	comment on benchsheet does not contain "Structure crosses non-countable grid bar"
P2-00337	Not QA	1	C4	MF		0	12	0.7	17.14285714	ADX	LA	WRTA;Nak; Structure crosses non-countable grid bar	SRC	E. Kelly	comment on benchsheet does not contain "Structure crosses non-countable grid bar"
P2-00337	Not QA	1	C4	F	11	11	2.4	0.15	16	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	1	C4	F	12	12	2.6	0.2	13	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	2	B3	F	13	13	1.6	0.15	10.66666667	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	2	B3	F	14	14	3.3	0.2	16.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	2	B3	F	15	15	1.3	0.15	8.666666667	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	2	B3	F	16	16	1.5	0.1	15	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	2	B5	MD21	0								SRC	E. Kelly	
P2-00337	Not QA	2	B5	MF		0	9	0.25	36	ADX	LA	WRTA;Nak; Structure crosses non-countable grid bar	SRC	E. Kelly	comment on benchsheet does not contain "Structure crosses non-countable grid bar"
P2-00337	Not QA	2	B5	MF		0	4	0.2	20	ADX	LA	WRTA;Nak; Structure crosses non-countable grid bar	SRC	E. Kelly	comment on benchsheet does not contain "Structure crosses non-countable grid bar"
P2-00337	Not QA	2	B5	F	17	17	6.9	0.25	27.6	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	2	B5	F	18	18	4.6	0.4	11.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	3	C4	F	19	19	2.6	0.15	17.33333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	3	C6	F	20	20	3.1	0.2	15.5	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	3	C6	F	21	21	5.8	0.5	11.6	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	3	C8	F	22	22	5	0.3	16.66666667	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	3	C8	F	23	23	4	0.35	11.42857143	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	3	C8	F	24	24	5.6	0.45	12.44444444	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	3	D5	F	25	25	7.3	0.3	24.33333333	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	3	D5	MD10	26								SRC	E. Kelly	
P2-00337	Not QA	3	D5	MB		26	3.3	0.7	4.714285714	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00337	Not QA	3	D5	F	27	27	2	0.35	5.714285714	ADX	LA	WRTA;Nak	SRC	E. Kelly	
P2-00345	Not QA	1	A5	ND									SRC	E. Kelly	
P2-00345	Not QA	1	A7	ND									SRC	E. Kelly	
P2-00345	Not QA	1	A10	ND									SRC	E. Kelly	
P2-00345	Not QA	1	B2	ND									SRC	E. Kelly	
P2-00345	Not QA	1	B4	ND									SRC	E. Kelly	
P2-00345	Not QA	1	B6	ND									SRC	E. Kelly	
P2-00345	Not QA	1	B8	ND									SRC	E. Kelly	
P2-00345	Not QA	1	G3	ND									SRC	E. Kelly	
P2-00345	Not QA	1	G5	ND									SRC	E. Kelly	
P2-00345	Not QA	1	G7	ND									SRC	E. Kelly	
P2-00345	Not QA	2	D4	ND									SRC	E. Kelly	
P2-00345	Not QA	2	D6	ND									SRC	E. Kelly	
P2-00345	Not QA	2	D8	ND									SRC	E. Kelly	
P2-00345	Not QA	2	I3	ND									SRC	E. Kelly	
P2-00345	Not QA	2	I5	ND									SRC	E. Kelly	
P2-00345	Not QA	2	I7	ND									SRC	E. Kelly	
P2-00345	Not QA	3	D2	ND									SRC	E. Kelly	
P2-00345	Not QA	3	D4	ND									SRC	E. Kelly	
P2-00345	Not QA	3	D6	ND									SRC	E. Kelly	
P2-00345	Not QA	3	D8	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00348	Not QA	1	A7	ND									SRC	E. Kelly	
P2-00348	Not QA	1	A9	ND									SRC	E. Kelly	
P2-00348	Not QA	1	B4	ND									SRC	E. Kelly	
P2-00348	Not QA	1	B6	ND									SRC	E. Kelly	
P2-00348	Not QA	1	B8	ND									SRC	E. Kelly	
P2-00348	Not QA	1	C7	ND									SRC	E. Kelly	
P2-00348	Not QA	1	C9	ND									SRC	E. Kelly	
P2-00348	Not QA	1	D8	ND									SRC	E. Kelly	
P2-00348	Not QA	1	D10	ND									SRC	E. Kelly	
P2-00348	Not QA	1	E9	ND									SRC	E. Kelly	
P2-00348	Not QA	1	F5	ND									SRC	E. Kelly	
P2-00348	Not QA	1	G4	ND									SRC	E. Kelly	
P2-00348	Not QA	2	A10	ND									SRC	E. Kelly	
P2-00348	Not QA	2	C10	ND									SRC	E. Kelly	
P2-00348	Not QA	2	G8	ND									SRC	E. Kelly	
P2-00348	Not QA	2	G10	ND									SRC	E. Kelly	
P2-00348	Not QA	3	A10	ND									SRC	E. Kelly	
P2-00348	Not QA	3	B6	ND									SRC	E. Kelly	
P2-00348	Not QA	3	C4	ND									SRC	E. Kelly	
P2-00348	Not QA	3	H3	ND									SRC	E. Kelly	
P2-00351	Not QA	1	I4	ND									SRC	E. Kelly	
P2-00351	Not QA	1	I6	ND									SRC	E. Kelly	
P2-00351	Not QA	1	H3	ND									SRC	E. Kelly	
P2-00351	Not QA	1	H5	F	1	1	2	0.55	3.636363636	ADX	LA	WRTA;NaK;Photo#23843,23844	SRC	E. Kelly	
P2-00351	Not QA	1	G4	F	2	2	5.7	0.45	12.66666667	ADX	LA	WRTA;NaK;Photo#23845	SRC	E. Kelly	
P2-00351	Not QA	1	G4	MD10	3								SRC	E. Kelly	
P2-00351	Not QA	1	G4	MF		3	2.9	0.5	5.8	ADX	LA	WRTA;NaK;Photo#23846	SRC	E. Kelly	
P2-00351	Not QA	1	G4	F	4	4	2.5	0.4	6.25	ADX	LA	WRTA;NaK;Photo#23847	SRC	E. Kelly	
P2-00351	Not QA	1	G4	MD10	5								SRC	E. Kelly	
P2-00351	Not QA	1	G4	MF		5	1.75	0.35	5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	1	G4	F	6	6	2.75	0.25	11	ADX	LA	WRTA;NaK;Photo#23848	SRC	E. Kelly	
P2-00351	Not QA	1	F1	F	7	7	1	0.15	6.666666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	1	F9	F	8	8	22.25	2.5	8.9	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	1	E2	MD11	9								SRC	E. Kelly	
P2-00351	Not QA	1	E2	MF		9	5.2	0.4	13	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	1	E6	F	10	10	3.7	0.35	10.57142857	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	1	E10	ND									SRC	E. Kelly	
P2-00351	Not QA	2	J6	F	11	11	2.25	0.25	9	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	2	J6	MD11	12								SRC	E. Kelly	
P2-00351	Not QA	2	J6	MB		12	22.5	0.65	34.61538462	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	2	J6	MD11	13								SRC	E. Kelly	
P2-00351	Not QA	2	J6	MF		13	5.5	0.25	22	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	2	J8	ND									SRC	E. Kelly	
P2-00351	Not QA	2	J10	F	0	0	4.3	0.25	17.2	ADX	LA	WRTA;NaK; structure crosses non-count	SRC	E. Kelly	
P2-00351	Not QA	2	J10	F	14	14	1.8	0.15	12	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	2	J10	B	15	15	4.8	0.7	6.857142857	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	2	J10	F	16	16	17.75	0.55	32.27272727	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	2	H4	MD10	17								SRC	E. Kelly	
P2-00351	Not QA	2	H4	MF		17	1.25	0.25	5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	2	H4	F	18	18	3.25	0.85	3.823529412	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	2	H4	F	19	19	24	0.75	32	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	2	H6	ND									SRC	E. Kelly	
P2-00351	Not QA	2	H9	F	20	20	6.2	0.25	24.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	3	I9	MD31	21								SRC	E. Kelly	
P2-00351	Not QA	3	I9	MF		21	6.8	0.2	34	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	3	I9	MF		22	4.9	1.1	4.454545455	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	3	I9	MF		23	2.5	0.15	16.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	3	F8	F	22	24	1.25	0.35	3.571428571	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	3	C10	F	23	25	4	0.8	5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	3	C10	F	24	26	2.25	0.15	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00351	Not QA	3	C10	F	25	27	2.85	0.4	7.125	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00355	Not QA	1	J1	ND									SRC	E. Kelly	
P2-00355	Not QA	1	J3	ND									SRC	E. Kelly	
P2-00355	Not QA	1	J5	ND									SRC	E. Kelly	
P2-00355	Not QA	1	J7	ND									SRC	E. Kelly	
P2-00355	Not QA	1	J9	ND									SRC	E. Kelly	
P2-00355	Not QA	1	I2	ND									SRC	E. Kelly	
P2-00355	Not QA	1	I4	ND									SRC	E. Kelly	
P2-00355	Not QA	1	I6	ND									SRC	E. Kelly	
P2-00355	Not QA	1	I8	ND									SRC	E. Kelly	
P2-00355	Not QA	1	I10	ND									SRC	E. Kelly	
P2-00355	Not QA	1	H1	ND									SRC	E. Kelly	
P2-00355	Not QA	1	H3	ND									SRC	E. Kelly	
P2-00355	Not QA	1	H5	ND									SRC	E. Kelly	
P2-00355	Not QA	1	H7	ND									SRC	E. Kelly	
P2-00355	Not QA	1	H9	ND									SRC	E. Kelly	
P2-00355	Not QA	1	G2	ND									SRC	E. Kelly	
P2-00355	Not QA	1	G4	ND									SRC	E. Kelly	
P2-00355	Not QA	1	G6	ND									SRC	E. Kelly	
P2-00355	Not QA	1	G8	ND									SRC	E. Kelly	
P2-00355	Not QA	1	G10	ND									SRC	E. Kelly	
P2-00355	Not QA	2	G2	ND									SRC	E. Kelly	
P2-00355	Not QA	2	G4	ND									SRC	E. Kelly	
P2-00355	Not QA	2	G6	ND									SRC	E. Kelly	
P2-00355	Not QA	2	G8	ND									SRC	E. Kelly	
P2-00355	Not QA	2	G10	ND									SRC	E. Kelly	
P2-00355	Not QA	2	E2	ND									SRC	E. Kelly	
P2-00355	Not QA	2	E4	ND									SRC	E. Kelly	
P2-00355	Not QA	2	E6	ND									SRC	E. Kelly	
P2-00355	Not QA	2	E8	ND									SRC	E. Kelly	
P2-00355	Not QA	2	E10	ND									SRC	E. Kelly	
P2-00355	Not QA	3	I1	ND									SRC	E. Kelly	
P2-00355	Not QA	3	I3	ND									SRC	E. Kelly	
P2-00355	Not QA	3	I5	ND									SRC	E. Kelly	
P2-00355	Not QA	3	I7	ND									SRC	E. Kelly	
P2-00355	Not QA	3	I9	ND									SRC	E. Kelly	
P2-00355	Not QA	3	F2	ND									SRC	E. Kelly	
P2-00355	Not QA	3	F4	ND									SRC	E. Kelly	
P2-00355	Not QA	3	F6	ND									SRC	E. Kelly	
P2-00355	Not QA	3	F8	ND									SRC	E. Kelly	
P2-00355	Not QA	3	F10	ND									SRC	E. Kelly	
P2-00361	Not QA	1	I2	ND									SRC	E. Kelly	
P2-00361	Not QA	1	I4	ND									SRC	E. Kelly	
P2-00361	Not QA	1	I6	ND									SRC	E. Kelly	
P2-00361	Not QA	1	I8	ND									SRC	E. Kelly	
P2-00361	Not QA	1	I10	ND									SRC	E. Kelly	
P2-00361	Not QA	1	H1	ND									SRC	E. Kelly	
P2-00361	Not QA	1	H3	ND									SRC	E. Kelly	
P2-00361	Not QA	1	H5	ND									SRC	E. Kelly	
P2-00361	Not QA	1	H7	ND									SRC	E. Kelly	
P2-00361	Not QA	1	H9	ND									SRC	E. Kelly	
P2-00361	Not QA	1	G2	ND									SRC	E. Kelly	
P2-00361	Not QA	1	G4	ND									SRC	E. Kelly	
P2-00361	Not QA	1	G6	ND									SRC	E. Kelly	
P2-00361	Not QA	1	G8	ND									SRC	E. Kelly	
P2-00361	Not QA	1	G10	ND									SRC	E. Kelly	
P2-00361	Not QA	1	F1	ND									SRC	E. Kelly	
P2-00361	Not QA	1	F3	ND									SRC	E. Kelly	
P2-00361	Not QA	1	F5	ND									SRC	E. Kelly	
P2-00361	Not QA	1	F7	ND									SRC	E. Kelly	
P2-00361	Not QA	1	F9	ND									SRC	E. Kelly	
P2-00361	Not QA	2	G1	ND									SRC	E. Kelly	
P2-00361	Not QA	2	G3	ND									SRC	E. Kelly	
P2-00361	Not QA	2	G5	ND									SRC	E. Kelly	
P2-00361	Not QA	2	G7	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00361	Not QA	2	G9	ND									SRC	E. Kelly	
P2-00361	Not QA	2	E1	ND									SRC	E. Kelly	
P2-00361	Not QA	2	E3	ND									SRC	E. Kelly	
P2-00361	Not QA	2	E5	ND									SRC	E. Kelly	
P2-00361	Not QA	2	E7	ND									SRC	E. Kelly	
P2-00361	Not QA	2	E9	ND									SRC	E. Kelly	
P2-00361	Not QA	3	J2	ND									SRC	E. Kelly	
P2-00361	Not QA	3	J4	ND									SRC	E. Kelly	
P2-00361	Not QA	3	J6	ND									SRC	E. Kelly	
P2-00361	Not QA	3	I1	ND									SRC	E. Kelly	
P2-00361	Not QA	3	I3	ND									SRC	E. Kelly	
P2-00361	Not QA	3	I5	ND									SRC	E. Kelly	
P2-00361	Not QA	3	H2	ND									SRC	E. Kelly	
P2-00361	Not QA	3	H4	ND									SRC	E. Kelly	
P2-00361	Not QA	3	B8	ND									SRC	E. Kelly	
P2-00361	Not QA	3	B10	ND									SRC	E. Kelly	
P2-00365	Not QA	1	J4	ND									SRC	E. Kelly	
P2-00365	Not QA	1	J6	ND									SRC	E. Kelly	
P2-00365	Not QA	1	J8	ND									SRC	E. Kelly	
P2-00365	Not QA	1	J10	ND									SRC	E. Kelly	
P2-00365	Not QA	1	I3	ND									SRC	E. Kelly	
P2-00365	Not QA	1	I5	ND									SRC	E. Kelly	
P2-00365	Not QA	1	I7	ND									SRC	E. Kelly	
P2-00365	Not QA	1	I9	ND									SRC	E. Kelly	
P2-00365	Not QA	1	H4	ND									SRC	E. Kelly	
P2-00365	Not QA	1	H6	ND									SRC	E. Kelly	
P2-00365	Not QA	1	H8	ND									SRC	E. Kelly	
P2-00365	Not QA	1	H10	ND									SRC	E. Kelly	
P2-00365	Not QA	1	G3	ND									SRC	E. Kelly	
P2-00365	Not QA	1	G5	ND									SRC	E. Kelly	
P2-00365	Not QA	1	G7	ND									SRC	E. Kelly	
P2-00365	Not QA	1	G9	ND									SRC	E. Kelly	
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P2-00365	Not QA	1	F6	ND									SRC	E. Kelly	
P2-00365	Not QA	1	F8	ND									SRC	E. Kelly	
P2-00365	Not QA	1	F10	ND									SRC	E. Kelly	
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P2-00365	Not QA	2	J4	ND									SRC	E. Kelly	
P2-00365	Not QA	2	J6	ND									SRC	E. Kelly	
P2-00365	Not QA	2	J8	ND									SRC	E. Kelly	
P2-00365	Not QA	2	I3	ND									SRC	E. Kelly	
P2-00365	Not QA	2	I5	ND									SRC	E. Kelly	
P2-00365	Not QA	2	I7	ND									SRC	E. Kelly	
P2-00365	Not QA	2	I9	ND									SRC	E. Kelly	
P2-00365	Not QA	2	H4	ND									SRC	E. Kelly	
P2-00365	Not QA	2	H6	ND									SRC	E. Kelly	
P2-00365	Not QA	2	H8	ND									SRC	E. Kelly	
P2-00365	Not QA	3	J1	ND									SRC	E. Kelly	
P2-00365	Not QA	3	J3	ND									SRC	E. Kelly	
P2-00365	Not QA	3	J5	ND									SRC	E. Kelly	
P2-00365	Not QA	3	J7	ND									SRC	E. Kelly	
P2-00365	Not QA	3	J9	ND									SRC	E. Kelly	
P2-00365	Not QA	3	I4	ND									SRC	E. Kelly	
P2-00365	Not QA	3	I6	ND									SRC	E. Kelly	
P2-00365	Not QA	3	I8	ND									SRC	E. Kelly	
P2-00365	Not QA	3	I10	ND									SRC	E. Kelly	
P2-00371	Not QA	1	H6	ND									SRC	E. Kelly	
P2-00371	Not QA	1	H8	ND									SRC	E. Kelly	
P2-00371	Not QA	1	H10	ND									SRC	E. Kelly	
P2-00371	Not QA	1	G5	F	1	1	3.2	0.25	12.8	ADX	LA	WRTA;NaK;Photo#05047,05048	SRC	E. Kelly	
P2-00371	Not QA	1	G9	ND									SRC	E. Kelly	
P2-00371	Not QA	1	F4	ND									SRC	E. Kelly	
P2-00371	Not QA	1	F6	ND									SRC	E. Kelly	
P2-00371	Not QA	2	H5	ND									SRC	E. Kelly	
P2-00371	Not QA	2	H7	ND									SRC	E. Kelly	
P2-00371	Not QA	2	H9	ND									SRC	E. Kelly	
P2-00371	Not QA	2	G6	ND									SRC	E. Kelly	
P2-00371	Not QA	2	G8	ND									SRC	E. Kelly	
P2-00371	Not QA	2	F7	ND									SRC	E. Kelly	
P2-00371	Not QA	2	F9	ND									SRC	E. Kelly	
P2-00371	Not QA	3	G4	ND									SRC	E. Kelly	
P2-00371	Not QA	3	G6	ND									SRC	E. Kelly	
P2-00371	Not QA	3	G8	ND									SRC	E. Kelly	
P2-00371	Not QA	3	G10	ND									SRC	E. Kelly	
P2-00371	Not QA	3	E8	ND									SRC	E. Kelly	
P2-00371	Not QA	3	E10	ND									SRC	E. Kelly	
P2-00374	Not QA	D3	A7	ND									SRC	E. Kelly	
P2-00374	Not QA	D3	C4	ND									SRC	E. Kelly	
P2-00374	Not QA	D3	E8	ND									SRC	E. Kelly	
P2-00374	Not QA	D3	G6	ND									SRC	E. Kelly	
P2-00374	Not QA	D3	H3	ND									SRC	E. Kelly	
P2-00374	Not QA	D3	I5	ND									SRC	E. Kelly	
P2-00374	Not QA	D3	J6	ND									SRC	E. Kelly	
P2-00374	Not QA	D1	A2	ND									SRC	E. Kelly	
P2-00374	Not QA	D1	D1	ND									SRC	E. Kelly	
P2-00374	Not QA	D1	B6	ND									SRC	E. Kelly	
P2-00374	Not QA	D1	G9	ND									SRC	E. Kelly	
P2-00374	Not QA	D1	G4	ND									SRC	E. Kelly	
P2-00374	Not QA	D1	I2	ND									SRC	E. Kelly	
P2-00374	Not QA	D1	J5	ND									SRC	E. Kelly	
P2-00374	Not QA	D2	B3	ND									SRC	E. Kelly	
P2-00374	Not QA	D2	D7	ND									SRC	E. Kelly	
P2-00374	Not QA	D2	F8	ND									SRC	E. Kelly	
P2-00374	Not QA	D2	A9	ND									SRC	E. Kelly	
P2-00374	Not QA	D2	H4	ND									SRC	E. Kelly	
P2-00374	Not QA	D2	J9	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	A10	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	A8	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	A6	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	A4	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	A2	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	C1	ND									SRC	E. Kelly	
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P2-00375	Not QA	B1	C5	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	C7	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	C9	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	E1	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	E3	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	E7	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	G2	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	G6	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	H1	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	I4	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	I7	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	I9	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	J5	ND									SRC	E. Kelly	
P2-00375	Not QA	B1	J2	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	C4	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	D1	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	F6	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	E7	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	E9	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	G9	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	G7	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	G5	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00375	Not QA	B2	G2	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	I1	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	I4	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	I7	ND									SRC	E. Kelly	
P2-00375	Not QA	B2	I9	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	D2	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	D5	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	D9	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	F1	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	F3	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	F7	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	F5	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	F9	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	G2	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	G4	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	G6	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	G8	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	I5	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	I7	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	I9	ND									SRC	E. Kelly	
P2-00375	Not QA	B4	J3	ND									SRC	E. Kelly	
P2-00402	Not QA	1	I5	F	1	1	3.25	0.6	5.416666667	ADX	LA	WRTA;NaK;Photo#23933,23934	SRC	E. Kelly	
P2-00402	Not QA	1	I5	MD10	2								SRC	E. Kelly	
P2-00402	Not QA	1	I5	MF		2	3.1	0.35	8.857142857	ADX	LA	WRTA;NaK;Photo#23935	SRC	E. Kelly	
P2-00402	Not QA	1	I7	F	3	3	16.6	1.5	11.06666667	ADX	LA	WRTA;NaK;Photo#23936	SRC	E. Kelly	
P2-00402	Not QA	1	I7	F	4	4	1.75	0.25	7	ADX	LA	WRTA;NaK;Photo#23937	SRC	E. Kelly	
P2-00402	Not QA	1	I7	F	5	5	5.5	0.25	22	ADX	LA	WRTA;NaK;Photo#23938	SRC	E. Kelly	
P2-00402	Not QA	1	I7	F	6	6	2.25	0.15	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	1	I7	F	7	7	7.25	0.6	12.08333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	1	I9	F	8	8	5	0.1	50	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	1	I9	F	9	9	12	0.9	13.33333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	1	I9	F	10	10	7.75	0.65	11.92307692	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	1	G7	F	11	11	5.5	0.5	11	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	1	G7	F	12	12	4.25	0.25	17	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	1	G7	F	13	13	3.25	0.3	10.83333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	1	G7	F	14	14	8.25	0.35	23.57142857	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	2	I3	F	15	15	51	0.3	170	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	2	I3	F	16	16	5	0.45	11.11111111	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	2	I3	F	17	17	3	0.3	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	2	I3	B	18	18	20.25	0.75	27	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	2	I3	B	19	19	4.5	0.65	6.923076923	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	3	J4	F	20	20	15.75	0.25	63	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	3	J4	F	21	21	23.75	0.5	47.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	3	J4	MD10	22								SRC	E. Kelly	
P2-00402	Not QA	3	J4	MB		22	4	0.35	11.42857143	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	3	J4	F	23	23	7.5	0.2	37.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	3	J4	F	24	24	2	0.25	8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00402	Not QA	3	J4	F	25	25	35	0.75	46.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00409	RD	3	E8	MF		11	3.75	0.2	18.75	ADX	LA	WRTA;Nak	SRC	E. Kelly-extra	NaL not a proper comment code, this should be NaK according to benchsheet
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P2-00410	Not QA	1	G5	ND									SRC	E. Kelly	
P2-00410	Not QA	1	G7	ND									SRC	E. Kelly	
P2-00410	Not QA	1	G9	ND									SRC	E. Kelly	
P2-00410	Not QA	1	F2	ND									SRC	E. Kelly	
P2-00410	Not QA	1	F4	ND									SRC	E. Kelly	
P2-00410	Not QA	1	F6	ND									SRC	E. Kelly	
P2-00410	Not QA	1	F8	ND									SRC	E. Kelly	
P2-00410	Not QA	1	F10	ND									SRC	E. Kelly	
P2-00410	Not QA	1	E3	ND									SRC	E. Kelly	
P2-00410	Not QA	1	E5	ND									SRC	E. Kelly	
P2-00410	Not QA	1	E7	ND									SRC	E. Kelly	
P2-00410	Not QA	1	E9	ND									SRC	E. Kelly	
P2-00410	Not QA	1	D4	ND									SRC	E. Kelly	
P2-00410	Not QA	1	D6	ND									SRC	E. Kelly	
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P2-00410	Not QA	2	H7	ND									SRC	E. Kelly	
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P2-00410	Not QA	2	F7	ND									SRC	E. Kelly	
P2-00410	Not QA	2	F9	ND									SRC	E. Kelly	
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P2-00410	Not QA	3	H7	ND									SRC	E. Kelly	
P2-00410	Not QA	3	H9	ND									SRC	E. Kelly	
P2-00410	Not QA	3	G4	ND									SRC	E. Kelly	
P2-00410	Not QA	3	G6	ND									SRC	E. Kelly	
P2-00410	Not QA	3	G8	ND									SRC	E. Kelly	
P2-00410	Not QA	3	G10	ND									SRC	E. Kelly	
P2-00410	Not QA	3	F5	ND									SRC	E. Kelly	
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P2-00410	Not QA	3	F9	ND									SRC	E. Kelly	
P2-00410	Not QA	3	E8	ND									SRC	E. Kelly	
P2-00410	Not QA	3	E10	ND									SRC	E. Kelly	
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P2-00411	Not QA	1	H4	ND									SRC	E. Kelly	
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P2-00411	Not QA	1	E3	ND									SRC	E. Kelly	
P2-00411	Not QA	1	E5	ND									SRC	E. Kelly	
P2-00411	Not QA	1	E7	ND									SRC	E. Kelly	
P2-00411	Not QA	1	E9	ND									SRC	E. Kelly	
P2-00411	Not QA	1	D2	ND									SRC	E. Kelly	
P2-00411	Not QA	1	D4	ND									SRC	E. Kelly	
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P2-00411	Not QA	1	D10	ND									SRC	E. Kelly	
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P2-00411	Not QA	2	H4	ND									SRC	E. Kelly	
P2-00411	Not QA	2	H6	ND									SRC	E. Kelly	
P2-00411	Not QA	2	H8	ND									SRC	E. Kelly	
P2-00411	Not QA	2	H10	ND									SRC	E. Kelly	
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P2-00411	Not QA	2	F6	ND									SRC	E. Kelly	
P2-00411	Not QA	2	F8	ND									SRC	E. Kelly	
P2-00411	Not QA	2	F10	ND									SRC	E. Kelly	
P2-00411	Not QA	3	I2	ND									SRC	E. Kelly	
P2-00411	Not QA	3	I4	ND									SRC	E. Kelly	
P2-00411	Not QA	3	I6	ND									SRC	E. Kelly	
P2-00411	Not QA	3	I8	ND									SRC	E. Kelly	
P2-00411	Not QA	3	H3	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00411	Not QA	3	H7	ND									SRC	E. Kelly	
P2-00411	Not QA	3	G4	ND									SRC	E. Kelly	
P2-00411	Not QA	3	G6	ND									SRC	E. Kelly	
P2-00411	Not QA	3	G8	ND									SRC	E. Kelly	
P2-00411	Not QA	3	G10	ND									SRC	E. Kelly	
P2-00427	Not QA	1	G3	ND									SRC	E. Kelly	
P2-00427	Not QA	1	G5	ND									SRC	E. Kelly	
P2-00427	Not QA	1	G7	ND									SRC	E. Kelly	
P2-00427	Not QA	1	G9	ND									SRC	E. Kelly	
P2-00427	Not QA	1	E6	ND									SRC	E. Kelly	
P2-00427	Not QA	1	E8	ND									SRC	E. Kelly	
P2-00427	Not QA	1	E10	ND									SRC	E. Kelly	
P2-00427	Not QA	1	A6	ND									SRC	E. Kelly	
P2-00427	Not QA	1	A8	ND									SRC	E. Kelly	
P2-00427	Not QA	1	A10	ND									SRC	E. Kelly	
P2-00427	Not QA	2	I5	ND									SRC	E. Kelly	
P2-00427	Not QA	2	I7	ND									SRC	E. Kelly	
P2-00427	Not QA	2	I9	ND									SRC	E. Kelly	
P2-00427	Not QA	2	H4	ND									SRC	E. Kelly	
P2-00427	Not QA	2	H6	ND									SRC	E. Kelly	
P2-00427	Not QA	3	I6	ND									SRC	E. Kelly	
P2-00427	Not QA	3	I8	ND									SRC	E. Kelly	
P2-00427	Not QA	3	I10	ND									SRC	E. Kelly	
P2-00427	Not QA	3	H7	ND									SRC	E. Kelly	
P2-00427	Not QA	3	H9	ND									SRC	E. Kelly	
P2-00444	Not QA	1	H7	F	1	1	5	0.75	6.666666667	ADX	LA	WRTA;NaK;Photo#05067,05068	SRC	E. Kelly	
P2-00444	Not QA	1	H9	ND									SRC	E. Kelly	
P2-00444	Not QA	1	G4	F	2	2	2.25	0.25	9	ADX	LA	WRTA;NaK;Photo#05069	SRC	E. Kelly	
P2-00444	Not QA	1	G4	F	3	3	7.75	0.75	10.33333333	ADX	LA	WRTA;NaK;Photo#05070	SRC	E. Kelly	
P2-00444	Not QA	1	G4	F	4	4	4.25	0.4	10.625	ADX	LA	WRTA;NaK;Photo#05071	SRC	E. Kelly	
P2-00444	Not QA	1	G4	F	5	5	5.5	0.4	13.75	ADX	LA	WRTA;NaK;Photo#05072	SRC	E. Kelly	
P2-00444	Not QA	1	G6	F	6	6	20.6	1.2	17.16666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	1	G8	F	7	7	23	0.3	76.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	1	G10	ND									SRC	E. Kelly	
P2-00444	Not QA	1	D10	F	8	8	9.5	0.5	19	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	1	D10	F	9	9	2	0.2	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	1	B8	F	10	10	6	0.25	24	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	1	B8	MD20	11								SRC	E. Kelly	
P2-00444	Not QA	1	B8	MF		11	3.75	0.25	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	1	B8	MF		12	3.25	0.25	13	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	2	F8	F	12	13	3.75	0.25	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	2	F8	MD11	13								SRC	E. Kelly	
P2-00444	Not QA	2	F8	MF		14	5.75	0.25	23	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	2	F8	MD10	14								SRC	E. Kelly	
P2-00444	Not QA	2	F8	MF		15	4.85	0.5	9.7	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	2	E5	B	15	16	12.25	0.75	16.33333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	2	C8	F	16	17	2.5	0.25	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	2	C10	F	17	18	10	0.25	40	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	2	C10	MD22	18								SRC	E. Kelly	
P2-00444	Not QA	2	C10	MF		19	25	0.75	33.33333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	2	C10	MB		20	7.5	0.4	18.75	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	3	I7	F	19	21	3	0.25	12	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	3	H10	F	20	22	5.5	0.75	7.333333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	3	G9	ND									SRC	E. Kelly	
P2-00444	Not QA	3	F10	F	21	23	30.5	0.75	40.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	3	F10	F	22	24	12.75	0.4	31.875	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	3	F10	F	23	25	3.75	0.2	18.75	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	3	F10	F	24	26	23	0.9	25.55555556	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00444	Not QA	3	F10	F	25	27	2.25	0.3	7.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	I7	ND									SRC	E. Kelly	
P2-00447	Not QA	1	I9	F	1	1	8.5	0.55	15.45454545	ADX	LA	WRTA;NaK;Photo#24045,24047	SRC	E. Kelly	
P2-00447	Not QA	1	I9	F	2	2	18.5	0.5	37	ADX	LA	WRTA;NaK;Photo#24048	SRC	E. Kelly	
P2-00447	Not QA	1	H10	F	3	3	7	0.5	14	ADX	LA	WRTA;NaK;Photo#24049	SRC	E. Kelly	
P2-00447	Not QA	1	H10	F	4	4	5	1	5	ADX	LA	WRTA;NaK;Photo#24050	SRC	E. Kelly	
P2-00447	Not QA	1	H10	F	5	5	6	0.85	7.058823529	ADX	LA	WRTA;NaK;Photo#24051	SRC	E. Kelly	
P2-00447	Not QA	1	G9	F	6	6	3.75	0.25	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	G9	F	0	0	22	0.75	29.33333333	ADX	LA	WRTA;NaK; structure crosses non-count	SRC	E. Kelly	
P2-00447	Not QA	1	G9	F	7	7	15.5	1	15.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	G9	MD10	8								SRC	E. Kelly	
P2-00447	Not QA	1	G9	MF		8	2.5	0.5	5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	F6	F	9	9	35	0.35	100	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	F8	F	0	0	35.5	1.75	20.28571429	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	F8	F	10	10	10	0.3	33.33333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	F8	F	11	11	2	0.25	8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	F10	F	12	12	3.5	0.2	17.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	F10	MD31	13								SRC	E. Kelly	
P2-00447	Not QA	1	F10	MF		13	5.65	0.3	18.83333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	F10	MF		14	3	0.3	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	F10	MF		15	2	0.15	13.33333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	1	F10	F	14	16	1.5	0.25	6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	2	G7	F	15	17	13.25	0.5	26.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	2	G7	F	16	18	2.25	0.15	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	2	G7	F	17	19	0.75	0.15	5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	2	G7	F	18	20	31	1.5	20.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	3	I9	F	19	21	70	4	17.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	3	I9	F	20	22	8.5	1.2	7.083333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	3	I9	F	21	23	10.5	2	5.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	3	I9	F	22	24	3.75	0.6	6.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00447	Not QA	3	D10	F	23	25	3.5	0.25	14	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00452	Not QA	1	J5	ND									SRC	E. Kelly	
P2-00452	Not QA	1	J7	ND									SRC	E. Kelly	
P2-00452	Not QA	1	J9	ND									SRC	E. Kelly	
P2-00452	Not QA	1	I2	ND									SRC	E. Kelly	
P2-00452	Not QA	1	I4	ND									SRC	E. Kelly	
P2-00452	Not QA	1	I6	ND									SRC	E. Kelly	
P2-00452	Not QA	1	I8	ND									SRC	E. Kelly	
P2-00452	Not QA	1	I10	ND									SRC	E. Kelly	
P2-00452	Not QA	1	E2	ND									SRC	E. Kelly	
P2-00452	Not QA	1	E4	ND									SRC	E. Kelly	
P2-00452	Not QA	1	E6	ND									SRC	E. Kelly	
P2-00452	Not QA	1	E8	ND									SRC	E. Kelly	
P2-00452	Not QA	1	E10	ND									SRC	E. Kelly	
P2-00452	Not QA	1	D7	ND									SRC	E. Kelly	
P2-00452	Not QA	1	D9	ND									SRC	E. Kelly	
P2-00452	Not QA	1	C4	ND									SRC	E. Kelly	
P2-00452	Not QA	1	C6	ND									SRC	E. Kelly	
P2-00452	Not QA	1	C8	ND									SRC	E. Kelly	
P2-00452	Not QA	1	C10	ND									SRC	E. Kelly	
P2-00452	Not QA	1	B9	ND									SRC	E. Kelly	
P2-00452	Not QA	2	I4	ND									SRC	E. Kelly	
P2-00452	Not QA	2	I6	ND									SRC	E. Kelly	
P2-00452	Not QA	2	I8	ND									SRC	E. Kelly	
P2-00452	Not QA	2	I10	ND									SRC	E. Kelly	
P2-00452	Not QA	2	H7	ND									SRC	E. Kelly	
P2-00452	Not QA	2	H9	ND									SRC	E. Kelly	
P2-00452	Not QA	2	G6	ND									SRC	E. Kelly	
P2-00452	Not QA	2	G8	ND									SRC	E. Kelly	
P2-00452	Not QA	2	F5	ND									SRC	E. Kelly	
P2-00452	Not QA	2	D5	ND									SRC	E. Kelly	
P2-00452	Not QA	2	D7	ND									SRC	E. Kelly	
P2-00452	Not QA	2	D9	ND									SRC	E. Kelly	
P2-00452	Not QA	3	I2	ND									SRC	E. Kelly	
P2-00452	Not QA	3	I4	ND									SRC	E. Kelly	
P2-00452	Not QA	3	I6	ND									SRC	E. Kelly	
P2-00452	Not QA	3	I8	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00452	Not QA	3	H3	ND									SRC	E. Kelly	
P2-00452	Not QA	3	H5	ND									SRC	E. Kelly	
P2-00452	Not QA	3	H7	ND									SRC	E. Kelly	
P2-00452	Not QA	3	H9	ND									SRC	E. Kelly	
P2-00802	Not QA	1	F10	MD10	9								SRC	E. Kelly-extra	Comment should not be entered on this line
P2-00804	Not QA	1	J7	ND									SRC	E. Kelly	
P2-00804	Not QA	1	J9	F	1	1	19.5	0.3	65	ADX	LA	WRTA;NaK;Photo#24089,24090	SRC	E. Kelly	
P2-00804	Not QA	1	I8	ND									SRC	E. Kelly	
P2-00804	Not QA	1	I10	ND									SRC	E. Kelly	
P2-00804	Not QA	1	H7	ND									SRC	E. Kelly	
P2-00804	Not QA	1	H9	F	2	2	14.8	0.9	16.44444444	ADX	LA	WRTA;NaK;Photo#24091	SRC	E. Kelly	
P2-00804	Not QA	1	H9	F	3	3	3	0.25	12	ADX	LA	WRTA;NaK;Photo#24092	SRC	E. Kelly	
P2-00804	Not QA	1	G8	F	4	4	8.25	0.65	12.69230769	ADX	LA	WRTA;NaK;Photo#24093	SRC	E. Kelly	
P2-00804	Not QA	1	G10	ND									SRC	E. Kelly	
P2-00804	Not QA	1	E9	ND									SRC	E. Kelly	
P2-00804	Not QA	1	D10	ND									SRC	E. Kelly	
P2-00804	Not QA	1	C8	F	5	5	21	0.45	46.66666667	ADX	LA	WRTA;NaK;Photo#24094	SRC	E. Kelly	
P2-00804	Not QA	2	G8	B	6	6	4.5	0.5	9	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	2	G8	F	7	7	10.5	0.5	21	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	2	G10	ND									SRC	E. Kelly	
P2-00804	Not QA	2	F7	F	8	8	13	0.65	20	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	2	F7	F	9	9	3.5	0.1	35	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	2	F9	MD10	10								SRC	E. Kelly	
P2-00804	Not QA	2	F9	MF		10	4.75	0.15	31.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	2	F9	F	11	11	5.15	0.2	25.75	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	3	I7	F	12	12	6.25	0.25	25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	3	I7	F	13	13	6	0.3	20	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	3	I9	F	14	14	3.25	0.3	10.83333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	3	I9	F	15	15	7.5	0.2	37.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	3	I9	F	16	16	2	0.25	8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	3	F7	F	17	17	3.5	0.25	14	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00804	Not QA	3	E10	ND									SRC	E. Kelly	
P2-00804	Not QA	3	C10	ND									SRC	E. Kelly	
P2-00806	Not QA	1	I7	ND									SRC	E. Kelly	
P2-00806	Not QA	1	I9	ND									SRC	E. Kelly	
P2-00806	Not QA	1	H6	MD11	1								SRC	E. Kelly	
P2-00806	Not QA	1	H6	MF		1	18.1	1.2	15.08333333	ADX	LA	WRTA;NaK;Photo#24095,24096	SRC	E. Kelly	
P2-00806	Not QA	1	H6	B	2	2	3.25	1	3.25	ADX	LA	WRTA;NaK;Photo#24097	SRC	E. Kelly	
P2-00806	Not QA	1	H8	MD32	3								SRC	E. Kelly	
P2-00806	Not QA	1	H8	MF		3	16.25	0.85	19.11764706	ADX	LA	WRTA;NaK;Photo#24098	SRC	E. Kelly	
P2-00806	Not QA	1	H8	MF		4	7.25	0.65	11.15384615	ADX	LA	WRTA;NaK;Photo#24099	SRC	E. Kelly	
P2-00806	Not QA	1	H8	MF		5	2.75	0.2	13.75	ADX	LA	WRTA;NaK;Photo#24100	SRC	E. Kelly	
P2-00806	Not QA	1	H8	MD10	4								SRC	E. Kelly	
P2-00806	Not QA	1	H8	MF		6	3.25	0.1	32.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	1	H10	F	5	7	14.75	1	14.75	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	1	H10	F	6	8	7.5	0.65	11.53846154	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	1	E6	MD11	7								SRC	E. Kelly	
P2-00806	Not QA	1	E6	MF		9	7	0.2	35	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	1	E6	F	8	10	7.75	0.25	31	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	1	E6	F	9	11	1.75	0.15	11.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	1	E6	F	10	12	2	0.3	6.666666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	2	H7	F	11	13	5.5	0.25	22	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	2	H7	F	12	14	8.75	0.3	29.16666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	2	H7	B	13	15	6.75	0.35	19.28571429	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	2	H7	F	14	16	11	1	11	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	2	H9	ND									SRC	E. Kelly	
P2-00806	Not QA	2	D6	F	15	17	3.25	0.75	4.333333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	2	D6	MD22	16								SRC	E. Kelly	
P2-00806	Not QA	2	D6	MF		18	9	1	9	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	2	D6	MF		19	5.5	0.25	22	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	2	D6	F	17	20	4.85	0.25	19.4	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	3	I7	F	18	21	5.5	1	5.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	3	I7	F	19	22	3.15	0.55	5.727272727	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	3	I7	F	20	23	3	0.5	6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	3	I9	F	21	24	10.75	0.85	12.64705882	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00806	Not QA	3	I9	F	22	25	5	0.25	20	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00842	Not QA	1	H6	ND									SRC	E. Kelly	
P2-00842	Not QA	1	H8	ND									SRC	E. Kelly	
P2-00842	Not QA	1	H10	ND									SRC	E. Kelly	
P2-00842	Not QA	1	F6	ND									SRC	E. Kelly	
P2-00842	Not QA	1	F8	ND									SRC	E. Kelly	
P2-00842	Not QA	1	F10	ND									SRC	E. Kelly	
P2-00842	Not QA	1	E7	ND									SRC	E. Kelly	
P2-00842	Not QA	1	E9	ND									SRC	E. Kelly	
P2-00842	Not QA	1	D6	ND									SRC	E. Kelly	
P2-00842	Not QA	1	D8	ND									SRC	E. Kelly	
P2-00842	Not QA	1	D10	ND									SRC	E. Kelly	
P2-00842	Not QA	2	H6	ND									SRC	E. Kelly	
P2-00842	Not QA	2	H8	ND									SRC	E. Kelly	
P2-00842	Not QA	2	F6	ND									SRC	E. Kelly	
P2-00842	Not QA	2	F8	ND									SRC	E. Kelly	
P2-00842	Not QA	2	F10	ND									SRC	E. Kelly	
P2-00842	Not QA	3	I8	ND									SRC	E. Kelly	
P2-00842	Not QA	3	I10	ND									SRC	E. Kelly	
P2-00842	Not QA	3	G8	ND									SRC	E. Kelly	
P2-00842	Not QA	3	G10	ND									SRC	E. Kelly	
P2-00844	Not QA	1	H6	ND									SRC	E. Kelly	
P2-00844	Not QA	1	H8	ND									SRC	E. Kelly	
P2-00844	Not QA	1	H10	ND									SRC	E. Kelly	
P2-00844	Not QA	1	G7	ND									SRC	E. Kelly	
P2-00844	Not QA	1	G9	ND									SRC	E. Kelly	
P2-00844	Not QA	1	F6	ND									SRC	E. Kelly	
P2-00844	Not QA	1	F8	ND									SRC	E. Kelly	
P2-00844	Not QA	1	F10	ND									SRC	E. Kelly	
P2-00844	Not QA	1	E7	ND									SRC	E. Kelly	
P2-00844	Not QA	1	E9	ND									SRC	E. Kelly	
P2-00844	Not QA	2	I8	ND									SRC	E. Kelly	
P2-00844	Not QA	2	I10	ND									SRC	E. Kelly	
P2-00844	Not QA	2	H7	ND									SRC	E. Kelly	
P2-00844	Not QA	2	H9	ND									SRC	E. Kelly	
P2-00844	Not QA	2	G8	ND									SRC	E. Kelly	
P2-00844	Not QA	2	G10	ND									SRC	E. Kelly	
P2-00844	Not QA	3	I7	ND									SRC	E. Kelly	
P2-00844	Not QA	3	I9	ND									SRC	E. Kelly	
P2-00844	Not QA	3	F8	ND									SRC	E. Kelly	
P2-00844	Not QA	3	F10	ND									SRC	E. Kelly	
P2-00885	Not QA	1	I8	ND									SRC	E. Kelly	
P2-00885	Not QA	1	I10	ND									SRC	E. Kelly	
P2-00885	Not QA	1	H7	ND									SRC	E. Kelly	
P2-00885	Not QA	1	H9	F	1	1	5.75	0.2	28.75	ADX	LA	WRTA;NaK;Photo#24125,24126	SRC	E. Kelly	
P2-00885	Not QA	1	F6	F	2	2	2.75	0.35	7.857142857	ADX	LA	WRTA;NaK;Photo#24127	SRC	E. Kelly	
P2-00885	Not QA	1	F6	F	3	3	29	0.75	38.66666667	ADX	LA	WRTA;NaK;Photo#24128	SRC	E. Kelly	
P2-00885	Not QA	1	F8	F	4	4	18.5	0.35	52.85714286	ADX	LA	WRTA;NaK;Photo#24129	SRC	E. Kelly	
P2-00885	Not QA	1	F10	MD11	5								SRC	E. Kelly	
P2-00885	Not QA	1	F10	MF		5	10	1	10	ADX	LA	WRTA;NaK;Photo#24130	SRC	E. Kelly	
P2-00885	Not QA	1	F10	F	6	6	2.8	0.25	11.2	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	1	E7	F	7	7	12.75	0.5	25.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	1	E9	ND									SRC	E. Kelly	
P2-00885	Not QA	1	D10	F	8	8	10	0.5	20	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	H6	ND									SRC	E. Kelly	
P2-00885	Not QA	2	H8	F	9	9	6.5	0.2	32.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	H8	F	10	10	4.85	0.15	32.33333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	H10	F	11	11	17.5	1.85	9.459459459	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	H10	MD53	12								SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00885	Not QA	2	H10	MF		12	13.5	0.75	18	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	H10	MF		13	10	0.2	50	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	H10	MF		14	8.7	0.35	24.85714286	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	H10	MF		15	2.2	0.2	11	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	H10	MF		16	3.5	0.75	4.666666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	G7	F	13	17	10	0.4	25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	G7	F	14	18	7	0.25	28	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	G9	F	15	19	15.75	0.75	21	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	2	G9	F	16	20	51.5	2.6	19.80769231	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	3	I6	F	17	21	5.25	0.2	26.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	3	I8	F	18	22	8.25	1	8.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	3	I10	ND									SRC	E. Kelly	
P2-00885	Not QA	3	F8	F	19	23	4.25	0.4	10.625	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	3	F8	F	20	24	4.75	0.4	11.875	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	3	F8	CD21	21								SRC	E. Kelly	
P2-00885	Not QA	3	F8	CF		25	8	0.4	20	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00885	Not QA	3	F8	CF		26	4.8	0.25	19.2	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00890	Not QA	1	H4	ND									SRC	E. Kelly	
P2-00890	Not QA	1	H6	ND									SRC	E. Kelly	
P2-00890	Not QA	1	H8	ND									SRC	E. Kelly	
P2-00890	Not QA	1	H10	ND									SRC	E. Kelly	
P2-00890	Not QA	1	G5	ND									SRC	E. Kelly	
P2-00890	Not QA	1	G7	ND									SRC	E. Kelly	
P2-00890	Not QA	1	G9	ND									SRC	E. Kelly	
P2-00890	Not QA	1	E4	ND									SRC	E. Kelly	
P2-00890	Not QA	1	E6	ND									SRC	E. Kelly	
P2-00890	Not QA	1	E8	ND									SRC	E. Kelly	
P2-00890	Not QA	1	E10	ND									SRC	E. Kelly	
P2-00890	Not QA	2	I4	ND									SRC	E. Kelly	
P2-00890	Not QA	2	I6	ND									SRC	E. Kelly	
P2-00890	Not QA	2	I8	ND									SRC	E. Kelly	
P2-00890	Not QA	2	I10	ND									SRC	E. Kelly	
P2-00890	Not QA	2	E8	ND									SRC	E. Kelly	
P2-00890	Not QA	2	E10	ND									SRC	E. Kelly	
P2-00890	Not QA	3	D6	ND									SRC	E. Kelly	
P2-00890	Not QA	3	D8	ND									SRC	E. Kelly	
P2-00890	Not QA	3	D10	ND									SRC	E. Kelly	
P2-00892	Not QA	1	H6	ND									SRC	E. Kelly	
P2-00892	Not QA	1	H8	ND									SRC	E. Kelly	
P2-00892	Not QA	1	H10	ND									SRC	E. Kelly	
P2-00892	Not QA	1	F6	ND									SRC	E. Kelly	
P2-00892	Not QA	1	F8	ND									SRC	E. Kelly	
P2-00892	Not QA	1	F10	ND									SRC	E. Kelly	
P2-00892	Not QA	1	D6	ND									SRC	E. Kelly	
P2-00892	Not QA	1	D8	ND									SRC	E. Kelly	
P2-00892	Not QA	1	D10	ND									SRC	E. Kelly	
P2-00892	Not QA	1	B6	ND									SRC	E. Kelly	
P2-00892	Not QA	2	G5	ND									SRC	E. Kelly	
P2-00892	Not QA	2	G7	ND									SRC	E. Kelly	
P2-00892	Not QA	2	G9	ND									SRC	E. Kelly	
P2-00892	Not QA	2	C6	ND									SRC	E. Kelly	
P2-00892	Not QA	2	C8	ND									SRC	E. Kelly	
P2-00892	Not QA	3	F3	ND									SRC	E. Kelly	
P2-00892	Not QA	3	F5	ND									SRC	E. Kelly	
P2-00892	Not QA	3	F7	ND									SRC	E. Kelly	
P2-00892	Not QA	3	E4	ND									SRC	E. Kelly	
P2-00892	Not QA	3	E6	ND									SRC	E. Kelly	
P2-00896	Not QA	1	I5	ND									SRC	E. Kelly	
P2-00896	Not QA	1	I7	ND									SRC	E. Kelly	
P2-00896	Not QA	1	I9	ND									SRC	E. Kelly	
P2-00896	Not QA	1	H8	ND									SRC	E. Kelly	
P2-00896	Not QA	1	H10	ND									SRC	E. Kelly	
P2-00896	Not QA	1	G9	ND									SRC	E. Kelly	
P2-00896	Not QA	1	F6	ND									SRC	E. Kelly	
P2-00896	Not QA	1	F8	ND									SRC	E. Kelly	
P2-00896	Not QA	1	F10	ND									SRC	E. Kelly	
P2-00896	Not QA	1	E7	ND									SRC	E. Kelly	
P2-00896	Not QA	1	E9	ND									SRC	E. Kelly	
P2-00896	Not QA	2	E6	ND									SRC	E. Kelly	
P2-00896	Not QA	2	E8	ND									SRC	E. Kelly	
P2-00896	Not QA	2	E10	ND									SRC	E. Kelly	
P2-00896	Not QA	2	D7	ND									SRC	E. Kelly	
P2-00896	Not QA	2	D9	ND									SRC	E. Kelly	
P2-00896	Not QA	3	H5	ND									SRC	E. Kelly	
P2-00896	Not QA	3	H7	ND									SRC	E. Kelly	
P2-00896	Not QA	3	G4	ND									SRC	E. Kelly	
P2-00896	Not QA	3	G6	ND									SRC	E. Kelly	
P2-00906	Not QA	1	H10	MD11	1								SRC	E. Kelly	
P2-00906	Not QA	1	H10	MF		1	6.35	1	6.35	ADX	LA	WRTA;NaK;Photo#05113,05114	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	2	2	10.5	0.45	23.33333333	ADX	LA	WRTA;NaK;Photo#05115	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	3	3	4.4	0.25	17.6	ADX	LA	WRTA;NaK;Photo#05116	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	4	4	6.7	0.65	10.30769231	ADX	LA	WRTA;NaK;Photo#05117	SRC	E. Kelly	
P2-00906	Not QA	1	H10	B	5	5	10	0.8	12.5	ADX	LA	WRTA;NaK;Photo#05118	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	6	6	2.4	0.3	8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	7	7	1.5	0.2	7.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	8	8	3.25	0.25	13	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	9	9	1.8	0.25	7.2	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	MD21	10								SRC	E. Kelly	
P2-00906	Not QA	1	H10	MF		10	7.1	0.2	35.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	MF		11	4	0.25	16	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	11	12	2.45	0.3	8.166666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	12	13	4.5	0.35	12.85714286	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	CD43	13								SRC	E. Kelly	
P2-00906	Not QA	1	H10	CB		14	22.1	1.4	15.78571429	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	CF		15	11.5	0.25	46	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	CF		16	5.5	0.35	15.71428571	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	CF		17	2	0.25	8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	14	18	9.8	1	9.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	15	19	7	0.75	9.333333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	MD21	16								SRC	E. Kelly	
P2-00906	Not QA	1	H10	MF		20	6.25	0.2	31.25	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	MF		21	2.75	0.4	6.875	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	17	22	4.5	0.3	15	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	18	23	2.35	0.5	4.7	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	MD11	19								SRC	E. Kelly	
P2-00906	Not QA	1	H10	MF		24	12.75	0.4	31.875	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	20	25	9.5	0.8	11.875	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00906	Not QA	1	H10	F	21	26	3.5	0.25	14	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00907	Not QA	1	J7	ND									SRC	E. Kelly	
P2-00907	Not QA	1	J9	ND									SRC	E. Kelly	
P2-00907	Not QA	1	I8	ND									SRC	E. Kelly	
P2-00907	Not QA	1	H6	ND									SRC	E. Kelly	
P2-00907	Not QA	1	H8	ND									SRC	E. Kelly	
P2-00907	Not QA	1	G7	ND									SRC	E. Kelly	
P2-00907	Not QA	1	E6	ND									SRC	E. Kelly	
P2-00907	Not QA	1	E8	ND									SRC	E. Kelly	
P2-00907	Not QA	1	C7	ND									SRC	E. Kelly	
P2-00907	Not QA	1	C9	ND									SRC	E. Kelly	
P2-00907	Not QA	2	I6	ND									SRC	E. Kelly	
P2-00907	Not QA	2	F4	ND									SRC	E. Kelly	
P2-00907	Not QA	2	F6	ND									SRC	E. Kelly	
P2-00907	Not QA	2	B8	ND									SRC	E. Kelly	
P2-00907	Not QA	2	B10	ND									SRC	E. Kelly	
P2-00907	Not QA	3	J2	ND									SRC	E. Kelly	
P2-00907	Not QA	3	J4	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE II SURFACE WATER

Index ID	Lab QC Type	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Identification	Mineral Class	Structure Comments	Verifier's Company	Verifier	Comments
P2-00907	Not QA	3	J6	ND									SRC	E. Kelly	
P2-00907	Not QA	3	G7	ND									SRC	E. Kelly	
P2-00907	Not QA	3	E10	ND									SRC	E. Kelly	
P2-00909	Not QA	1	A4	F	1	1	5.4	0.45	12	ADX	LA	WRTA;NaK;Photo#24219,24220	SRC	E. Kelly	
P2-00909	Not QA	1	A4	F	2	2	3.4	0.4	8.5	ADX	LA	WRTA;NaK;Photo#24221	SRC	E. Kelly	
P2-00909	Not QA	1	A4	F	3	3	4	0.2	20	ADX	LA	WRTA;NaK;Photo#24222	SRC	E. Kelly	
P2-00909	Not QA	1	A4	F	4	4	2.7	0.5	5.4	ADX	LA	WRTA;NaK;Photo#24223	SRC	E. Kelly	
P2-00909	Not QA	1	A4	F	5	5	3.2	0.35	9.142857143	ADX	LA	WRTA;NaK;Photo#24224	SRC	E. Kelly	
P2-00909	Not QA	1	A4	F	6	6	3.9	0.2	19.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	1	A4	F	7	7	2.9	0.2	14.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	1	A4	F	8	8	13.6	0.6	22.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	1	A4	F	9	9	14.2	0.2	71	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	10	10	2.5	0.3	8.333333333	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	11	11	9	0.4	22.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	12	12	1	0.15	6.666666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	13	13	7	0.35	20	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	14	14	25.5	1.8	14.16666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	15	15	12	0.35	34.28571429	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	16	16	2.1	0.15	14	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	17	17	1.9	0.15	12.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	18	18	2.2	0.2	11	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	19	19	7	0.2	35	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	20	20	1.3	0.2	6.5	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	21	21	2.8	0.5	5.6	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	2	C5	F	22	22	2.6	0.2	13	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	3	B6	F	23	23	5.2	0.25	20.8	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	3	B6	F	24	24	2	0.1	20	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	3	B6	F	25	25	3.6	0.1	36	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	3	B6	F	26	26	4.1	0.3	13.66666667	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	3	B6	F	27	27	6.5	0.5	13	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00909	Not QA	3	B6	F	28	28	2	0.2	10	ADX	LA	WRTA;NaK	SRC	E. Kelly	
P2-00910	Not QA	2	C6	F	17	17	1.2	0.1	12	ADX	LA	WRTA;NaK	SRC	E. Kelly-extra	"M" is not a valid structure type, benchsheet and EDD need revision
P2-00914	Not QA	1	A8	ND									SRC	E. Kelly	
P2-00914	Not QA	1	B1	ND									SRC	E. Kelly	
P2-00914	Not QA	1	B5	ND									SRC	E. Kelly	
P2-00914	Not QA	1	B10	ND									SRC	E. Kelly	
P2-00914	Not QA	1	D9	ND									SRC	E. Kelly	
P2-00914	Not QA	1	F10	ND									SRC	E. Kelly	
P2-00914	Not QA	1	H8	ND									SRC	E. Kelly	
P2-00914	Not QA	1	H10	ND									SRC	E. Kelly	
P2-00914	Not QA	1	J6	ND									SRC	E. Kelly	
P2-00914	Not QA	1	J8	ND									SRC	E. Kelly	
P2-00914	Not QA	2	A5	ND									SRC	E. Kelly	
P2-00914	Not QA	2	B1	ND									SRC	E. Kelly	
P2-00914	Not QA	2	B6	ND									SRC	E. Kelly	
P2-00914	Not QA	2	C7	ND									SRC	E. Kelly	
P2-00914	Not QA	2	C9	ND									SRC	E. Kelly	
P2-00914	Not QA	2	F10	ND									SRC	E. Kelly	
P2-00914	Not QA	3	A1	ND									SRC	E. Kelly	
P2-00914	Not QA	3	A3	ND									SRC	E. Kelly	
P2-00914	Not QA	3	D4	ND									SRC	E. Kelly	
P2-00914	Not QA	3	D8	ND									SRC	E. Kelly	
P2-00914	Not QA	3	D10	ND									SRC	E. Kelly	
P2-00933	Not QA	1	J5	ND									SRC	E. Kelly	
P2-00933	Not QA	1	J7	ND									SRC	E. Kelly	
P2-00933	Not QA	1	J9	ND									SRC	E. Kelly	
P2-00933	Not QA	1	I4	ND									SRC	E. Kelly	
P2-00933	Not QA	1	I6	ND									SRC	E. Kelly	
P2-00933	Not QA	1	I8	ND									SRC	E. Kelly	
P2-00933	Not QA	1	I10	ND									SRC	E. Kelly	
P2-00933	Not QA	1	G4	ND									SRC	E. Kelly	
P2-00933	Not QA	1	G6	ND									SRC	E. Kelly	
P2-00933	Not QA	1	G8	ND									SRC	E. Kelly	
P2-00933	Not QA	2	H7	ND									SRC	E. Kelly	
P2-00933	Not QA	2	H9	ND									SRC	E. Kelly	
P2-00933	Not QA	2	D5	ND									SRC	E. Kelly	
P2-00933	Not QA	2	D7	ND									SRC	E. Kelly	
P2-00933	Not QA	2	D9	ND									SRC	E. Kelly	
P2-00933	Not QA	3	I5	ND									SRC	E. Kelly	
P2-00933	Not QA	3	I7	ND									SRC	E. Kelly	
P2-00933	Not QA	3	I9	ND									SRC	E. Kelly	
P2-00933	Not QA	3	F6	ND									SRC	E. Kelly	
P2-00933	Not QA	3	F8	ND									SRC	E. Kelly	
P2-01060	Not QA	1	F6	ND									SRC	E. Kelly	
P2-01060	Not QA	1	F8	ND									SRC	E. Kelly	
P2-01060	Not QA	1	F10	ND									SRC	E. Kelly	
P2-01060	Not QA	1	D6	ND									SRC	E. Kelly	
P2-01060	Not QA	1	D8	ND									SRC	E. Kelly	
P2-01060	Not QA	1	D10	ND									SRC	E. Kelly	
P2-01060	Not QA	1	B6	ND									SRC	E. Kelly	
P2-01060	Not QA	1	B8	ND									SRC	E. Kelly	
P2-01060	Not QA	1	B10	ND									SRC	E. Kelly	
P2-01060	Not QA	2	H6	ND									SRC	E. Kelly	
P2-01060	Not QA	2	H8	ND									SRC	E. Kelly	
P2-01060	Not QA	2	H10	ND									SRC	E. Kelly	
P2-01060	Not QA	2	F6	ND									SRC	E. Kelly	
P2-01060	Not QA	2	F8	ND									SRC	E. Kelly	
P2-01060	Not QA	2	F10	ND									SRC	E. Kelly	
P2-01060	Not QA	2	C8	ND									SRC	E. Kelly	
P2-01060	Not QA	3	E8	ND									SRC	E. Kelly	
P2-01060	Not QA	3	E10	ND									SRC	E. Kelly	
P2-01060	Not QA	3	C6	ND									SRC	E. Kelly	
P2-01060	Not QA	3	C8	ND									SRC	E. Kelly	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00460	Hygeia	Not QA	C4	1	G2-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	2	F2-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	3	F2-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	4	C3-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	5	E3-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	6	F3-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	7	F3-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	8	G3-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	9	G3-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	10	H3-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	11	G3-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	12	G3-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	13	E3-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	14	E3-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	15	C3-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	16	C3-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	17	B4-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	18	C4-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	19	C4-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	20	E4-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	21	F4-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	22	F4-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	23	H4-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	24	H4-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	25	H4-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	26	H4-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	27	G4-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	28	E4-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	29	E4-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	30	C4-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	31	B4-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	32	B5-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	33	E5-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	34	E5-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	35	F5-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	36	G5-2	LA	F	1	1	4.4078965	1.184211	3.722222222	ADX	XX;AC	SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	37	H5-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	38	H5-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	39	G5-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	40	G5-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	41	F5-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	42	F5-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	43	C5-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	44	C5-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	45	F6-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C4	46	F6-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	47	F6-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	48	G6-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	49	G5-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	50	G5-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	51	F5-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	52	F5-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	53	E5-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	54	E5-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	55	C5-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	56	C5-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	57	E5-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	58	F5-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	59	F5-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	60	G5-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	61	H5-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	62	H5-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	63	H4-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	64	G4-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	65	F4-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	66	B4-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	67	B4-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	68	C4-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	69	C4-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	70	E4-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	71	E4-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	72	F4-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	73	G4-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	74	G4-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	75	H4-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	76	H4-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	77	H3-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	78	H3-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	79	G3-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	80	F3-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	81	E3-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	82	C3-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	83	C3-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	84	C3-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	85	E3-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	86	E3-2		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	87	F3-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	88	G3-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	89	H3-1		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	90	F2-3		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	91	F2-4		ND								SRC	N. Ross	
P3-00460	Hygeia	Not QA	C5	92	E2-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	1	H5-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	2	G5-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	3	G5-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	4	F5-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	5	F5-4		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00472	Hygeia	Not QA	C2	6	E5-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	7	E5-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	8	C5-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	9	C5-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	10	C5-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	11	C5-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	12	F5-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	13	F5-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	14	G5-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	15	G5-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	16	H5-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	17	H5-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	18	H4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	19	H4-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	20	G4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	21	G4-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	22	F4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	23	F4-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	24	E4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	25	E4-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	26	C4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	27	C4-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	28	B4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	29	B4-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	30	C4-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	31	C4-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	32	F4-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	33	F4-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	34	G4-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	35	G4-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	36	H4-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	37	H4-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	38	H3-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	39	H3-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	40	G3-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	41	G3-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	42	F3-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	43	F3-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	44	E3-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	45	C3-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C2	46	C3-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	47	E3-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	48	E3-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	49	F3-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	50	F3-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	51	G3-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	52	G3-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	53	H3-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	54	H3-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	55	G3-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	56	G3-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	57	F3-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	58	F3-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	59	E3-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	60	E3-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	61	C3-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	62	C3-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	63	C4-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	64	C4-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	65	E4-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	66	E4-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	67	F4-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	68	F4-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	69	G4-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	70	G4-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	71	H4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	72	H4-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	73	G4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	74	G4-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	75	F4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	76	E4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	77	E4-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	78	C4-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	79	C4-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	80	C5-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	81	C5-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	82	E5-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	83	E5-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	84	F5-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	85	G5-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	86	G5-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	87	H5-1		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	88	H5-2		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	89	H5-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	90	H5-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	91	G5-3		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	92	G5-4		ND								SRC	N. Ross	
P3-00472	Hygeia	Not QA	C3	93	F5-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	1	G2-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	2	F2-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	3	F2-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	4	E2-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	5	E2-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	6	C3-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	7	C3-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	8	E3-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	9	E3-2		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00496	Hygeia	Not QA	D7	10	F3-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	11	F3-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	12	G3-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	13	G3-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	14	H3-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	15	H3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	16	H3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	17	G3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	18	G3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	19	F3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	20	F3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	21	E3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	22	E3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	23	C3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	24	C3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	25	B3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	26	B4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	27	C4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	28	C4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	29	E4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	30	E4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	31	F4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	32	F4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	33	G4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	34	G4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	35	H4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	36	H4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	37	K4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	38	K4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	39	H4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	40	H4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	41	G4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	42	G4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	43	F4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	44	F4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	45	E4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	46	E4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	47	C4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	48	C5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	49	F5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	50	F5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	51	G5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	52	G5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	53	H5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D7	54	H5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	55	E6-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	56	E6-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	57	F6-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	58	F6-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	59	G6-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	60	G6-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	61	H5-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	62	G5-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	63	G5-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	64	F5-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	65	F5-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	66	E5-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	67	E5-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	68	C5-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	69	C5-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	70	B5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	71	C5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	72	C5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	73	E5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	74	E5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	75	F5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	76	F5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	77	G5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	78	G5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	79	H5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	80	H5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	81	H4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	82	H4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	83	G4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	84	G4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	85	F4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	86	F4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	87	E4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	88	E4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	89	C4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	90	C4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	91	B4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	92	B4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	93	C4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	94	C4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	95	E4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	96	E4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	97	F4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	98	F4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	99	G4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	100	G4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	101	H4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	102	H4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	103	H3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	104	G3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	105	G3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	106	F3-3		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00496	Hygeia	Not QA	D8	107	F3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D8	108	E3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	109	E3-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	110	E3-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	111	F3-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	112	F3-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	113	G3-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	114	G3-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	115	H3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	116	H3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	117	G3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	118	G3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	119	F3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	120	F3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	121	E3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	122	E3-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	123	C3-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	124	C3-4		MD22	1							SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	125	C3-4	LA	MF		1	9.21053	0.657895	14	ADX	NaK;WRTA;XEGB;DL	SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	126	C3-4	LA	MF		2	10.52632	0.3289475	32	ADX	NaK;WRTA;XEGB;DL	SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	127	C4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	128	C4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	129	E4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	130	E4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	131	F4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	132	F4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	133	G4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	134	G4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	135	H4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	136	H4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	137	G4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	138	G4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	139	F4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	140	F4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	141	E4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	142	E4-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	143	C4-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	144	C4-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	145	B4-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	146	B5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	147	C5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	148	C5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	149	E5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	150	E5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	151	F5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	152	F5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	153	G5-1		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	154	G5-2		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	155	H5-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	156	G5-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	157	G5-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	158	F5-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	159	F5-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	160	E5-3		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	161	E5-4		ND								SRC	N. Ross	
P3-00496	Hygeia	Not QA	D9	162	C5-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	1	C3-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	2	C3-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	3	E3-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	4	E3-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	5	F3-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	6	F3-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	7	G3-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	8	G3-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	9	H3-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	10	H3-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	11	H3-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	12	H3-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	13	G3-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	14	G3-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	15	F3-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	16	F3-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	17	E3-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	18	E3-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	19	C3-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	20	C4-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	21	C4-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	22	E4-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	23	E4-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	24	F4-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	25	F4-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	26	G4-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	27	H4-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	28	H4-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	29	H4-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	30	H4-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	31	G4-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	32	G4-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	33	F4-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	34	F4-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	35	E4-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	36	C4-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	37	C4-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	38	C5-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	39	C5-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E6	40	E5-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	41	H3-3		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00507	Hygeia	Not QA	E7	42	H3-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	43	G3-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	44	G3-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	45	F3-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	46	F3-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	47	E3-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	48	E3-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	49	C3-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	50	C3-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	51	C4-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	52	C4-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	53	E4-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	54	E4-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	55	F4-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	56	F4-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	57	G4-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	58	H4-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	59	H4-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	60	H4-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	61	H4-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	62	G4-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	63	G4-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	64	F4-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	65	F4-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	66	E4-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	67	E4-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	68	C4-3		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	69	C4-4		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	70	C5-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	71	C5-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	72	E5-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	73	E5-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	74	F5-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	75	F5-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	76	G5-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	77	G5-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	78	H5-1		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	79	H5-2		ND								SRC	N. Ross	
P3-00507	Hygeia	Not QA	E7	80	H5-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	1	E3-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	2	F3-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	3	F3-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	4	G3-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	5	G3-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	6	H3-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	7	H3-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	8	G3-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	9	G3-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	10	F3-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	11	F3-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	12	E3-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	13	E3-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	14	C3-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	15	C3-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	16	C4-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	17	C4-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	18	F4-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	19	F4-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	20	G4-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	21	H4-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	22	H4-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	23	H4-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	24	H4-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	25	G4-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	26	G4-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	27	F4-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	28	F4-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	29	E4-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	30	E4-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	31	C4-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	32	C4-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	33	C5-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	34	E5-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	35	E5-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	36	F5-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	37	H5-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	38	H5-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	39	H5-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	40	H5-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	41	G5-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	42	G5-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	43	F5-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	44	E5-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	45	C5-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A2	46	C5-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	47	C3-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	48	C3-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	49	E3-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	50	E3-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	51	F3-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	52	F3-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	53	G3-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	54	G3-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	55	H3-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	56	H3-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	57	H3-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	58	H3-4		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00516	Hygeia	Not QA	A3	59	G3-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	60	F3-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	61	E3-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	62	B3-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	63	B4-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	64	C4-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	65	E4-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	66	F4-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	67	F4-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	68	G4-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	69	G4-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	70	H4-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	71	H4-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	72	H4-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	73	H4-4	LA	F	1	1	14.47369	1.31579	11	ADX	XK;WRTA	SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	74	G4-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	75	G4-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	76	F4-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	77	F4-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	78	E4-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	79	E4-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	80	C4-3		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	81	C4-4		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	82	C5-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	83	C5-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	84	E5-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	85	E5-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	86	F5-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	87	F5-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	88	G5-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	89	G5-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	90	H5-1		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	91	H5-2		ND								SRC	N. Ross	
P3-00516	Hygeia	Not QA	A3	92	H5-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	1	C3-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	2	E3-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	3	E3-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	4	F3-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	5	G3-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	6	G3-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	7	H3-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	8	H3-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	9	G3-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	10	G3-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	11	F3-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	12	E3-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	13	E3-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	14	C3-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	15	C3-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	16	C4-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	17	E4-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	18	E4-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	19	F4-2	LA	F	1	1	3.2236855	0.526316	6.125	ADX	XX;TR	SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	20	G4-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	21	G4-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	22	H4-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	23	H4-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	24	H4-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	25	H4-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	26	G4-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	27	F4-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	28	F4-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	29	E4-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	30	C4-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	31	C4-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	32	C5-2	LA	F	2	2	2.8289485	0.5921055	4.777777778	ADX	XX;AC	SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	33	E5-1	LA	F	3	3	1.6447375	0.1973685	8.333333333	ADX	XX;AT	SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	34	E5-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	35	F5-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	36	F5-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	37	G5-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	38	G5-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	39	H5-1	LA	F	4	4	7.236845	1.6447375	4.4	ADX	NaK;WRTA	SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	40	H5-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A8	41	H5-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	42	C3-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	43	C3-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	44	E3-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	45	E3-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	46	F3-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	47	F3-2	LA	F	5	5	11.184215	2.500001	4.473684211	ADX	XX;AT	SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	48	G3-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	49	G3-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	50	H3-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	51	H3-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	52	H3-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	53	G3-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	54	G3-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	55	F3-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	56	F3-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	57	E3-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	58	C3-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	59	C3-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	60	E4-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	61	E4-2	LA	F	6	6	3.815791	0.3289475	11.6	ADX	XX;AC	SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	62	F4-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	63	F4-2		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00519	Hygeia	Not QA	A9	64	G4-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	65	G4-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	66	H4-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	67	H4-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	68	H4-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	69	G4-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	70	G4-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	71	F4-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	72	F4-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	73	E4-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	74	E4-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	75	C4-3		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	76	C4-4		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	77	C5-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	78	C5-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	79	E5-1		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	80	E5-2		ND								SRC	N. Ross	
P3-00519	Hygeia	Not QA	A9	81	F5-1		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B1	1	C3-3		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B1	2	E3-3		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B1	3	F3-3		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B1	4	G3-3		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B1	5	H4-4		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B1	6	G4-3		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B1	7	F5-2		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B1	8	E5-1		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B1	9	E4-3		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B1	10	C5-2		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B2	11	C5-1		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B2	12	E5-1		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B2	13	F5-1		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B2	14	G5-2	LA	F	1	1	2.8289485	0.789474	3.583333333	ADX	XX;TR	SRC	N. Ross	
P3-00523	Hygeia	Not QA	B2	15	H4-1		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B2	16	G3-3		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B2	17	F4-2		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B2	18	F3-3		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B2	19	E4-2		ND								SRC	N. Ross	
P3-00523	Hygeia	Not QA	B2	20	C4-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	1	H3-3		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	2	H3-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	3	G3-3		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	4	G3-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	5	F3-3		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	6	F3-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	7	E3-3		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	8	E3-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	9	C3-3		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	10	C3-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	11	C4-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	12	E4-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	13	E5-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	14	F5-1		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	15	F5-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	16	G5-1		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	17	G5-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	18	H5-1		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	19	H5-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	20	H4-3		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	21	H4-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B4	22	G4-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	23	C4-1		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	24	C4-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	25	E4-1		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	26	E4-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	27	F4-1		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	28	F4-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	29	G4-1		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	30	G4-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	31	H4-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	32	H4-3		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	33	H4-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	34	G4-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	35	F4-3		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	36	F4-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	37	E4-3		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	38	E4-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	39	C4-3		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	40	C4-4		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	41	C5-1		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	42	C5-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	43	E5-1		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	44	E5-2		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	45	F5-1		ND								SRC	N. Ross	
P3-00527	Hygeia	Not QA	B5	46	G5-1		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A1	1	C4-1		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A1	2	C4-2		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A1	3	E4-1		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A1	4	E4-2		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A1	5	F4-1		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A1	6	F4-2		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A1	7	G4-1		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A1	8	G4-2		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A1	9	G4-3		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A1	10	G4-4		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A2	11	C5-2		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A2	12	E5-1		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A2	13	E5-2		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00551	Hygeia	Not QA	A2	14	F5-1		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A2	15	F5-2		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A2	16	C4-2		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A2	17	E4-1		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A2	18	E4-2		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A2	19	F4-1		ND								SRC	N. Ross	
P3-00551	Hygeia	Not QA	A2	20	F4-2		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D9	1	C4-1		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D9	2	C4-2		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D9	3	E4-1		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D9	4	E4-2		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D9	5	F4-1		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D9	6	F4-2		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D9	7	G4-2		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D9	8	H4-2		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D9	9	H5-1		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D9	10	F5-1		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D10	11	C5-2		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D10	12	E5-2		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D10	13	G5-1		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D10	14	H5-1		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D10	15	G4-3		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D10	16	F4-3		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D10	17	E4-3		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D10	18	C4-2		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D10	19	E4-2		ND								SRC	N. Ross	
P3-00563	Hygeia	Not QA	D10	20	F3-3		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	1	H3-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	2	G3-3		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	3	G3-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	4	F3-3		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	5	F3-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	6	E3-3		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	7	E3-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	8	C3-3	LA	F	1	1	5.26316	0.4605265	11.42857143	ADX	NaK;WRTA	SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	9	C3-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	10	C4-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	11	C4-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	12	E4-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	13	E4-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	14	F4-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	15	F4-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	16	G4-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	17	G4-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	18	H4-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	19	H4-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	20	G4-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	21	F4-3		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	22	F4-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C1	23	E4-3		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	24	C5-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	25	C5-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	26	E5-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	27	E5-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	28	F5-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	29	F5-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	30	G5-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	31	G5-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	32	G4-3		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	33	G4-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	34	F4-3		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	35	F4-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	36	E4-3		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	37	E4-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	38	C4-3		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	39	C4-4		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	40	C4-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	41	C4-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	42	E4-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	43	E4-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	44	F4-1		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	45	F4-2		ND								SRC	N. Ross	
P3-00677	Hygeia	Not QA	C2	46	G4-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	1	C3-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	2	C3-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	3	E3-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	4	E3-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	5	F3-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	6	F3-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	7	G3-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	8	G3-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	9	H3-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	10	H3-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	11	H3-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	12	G3-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	13	G3-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	14	F3-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	15	F3-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	16	E3-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	17	E3-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	18	C3-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	19	C3-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	20	C4-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	21	E4-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	22	E4-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	23	F4-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	24	F4-2		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00730	Hygeia	Not QA	E8	25	G4-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	26	G4-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	27	H4-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	28	H4-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	29	H4-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	30	H4-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	31	G4-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	32	F4-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	33	F4-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	34	E4-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	35	C4-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	36	E5-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	37	E5-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	38	F5-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	39	F5-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	40	G5-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	41	G5-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	42	H5-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	43	H5-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	44	H5-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	45	H5-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E8	46	G5-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	47	G3-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	48	F3-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	49	E3-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	50	E3-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	51	C3-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	52	C4-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	53	C4-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	54	E4-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	55	E4-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	56	F4-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	57	F4-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	58	G4-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	59	G4-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	60	H4-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	61	H4-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	62	G4-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	63	G4-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	64	F4-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	65	F4-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	66	E4-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	67	E4-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	68	C4-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	69	C4-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	70	C5-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	71	C5-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	72	E5-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	73	F5-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	74	F5-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	75	G5-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	76	G5-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	77	H5-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	78	H5-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	79	G5-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	80	E5-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	81	E5-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	82	C5-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	83	C5-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	84	B5-3		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	85	B5-4		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	86	B6-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	87	C6-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	88	C6-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	89	E6-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	90	E6-2		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	91	F6-1		ND								SRC	N. Ross	
P3-00730	Hygeia	Not QA	E9	92	G6-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	1	G3-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	2	G3-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	3	F3-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	4	F3-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	5	E3-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	6	E3-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	7	C3-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	8	C3-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	9	C4-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	10	C4-2		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	11	E4-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	12	E4-2		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	13	F4-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	14	F4-2		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	15	G4-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	16	H4-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	17	H4-2		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	18	H4-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	19	H4-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	20	G4-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	21	F4-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	22	E4-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C2	23	E4-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	24	C4-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	25	C4-2		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	26	E4-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	27	E4-2		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	28	F4-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	29	F4-2		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00754	Hygeia	Not QA	C3	30	G4-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	31	H4-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	32	H4-2		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	33	H4-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	34	G4-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	35	F4-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	36	F4-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	37	E4-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	38	E4-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	39	C4-3		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	40	C4-4		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	41	E5-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	42	E5-2		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	43	F5-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	44	F5-2		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	45	G5-1		ND								SRC	N. Ross	
P3-00754	Hygeia	Not QA	C3	46	G5-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	1	H5-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	2	G5-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	3	G5-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	4	F5-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	5	F5-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	6	E5-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	7	C5-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	8	C5-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	9	E5-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	10	F5-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	11	F5-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	12	G5-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	13	G5-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	14	H5-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	15	H5-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	16	H4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	17	H4-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	18	G4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	19	G4-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	20	F4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	21	F4-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	22	E4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	23	E4-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	24	C4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	25	C4-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	26	C4-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	27	C4-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	28	E4-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	29	E4-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	30	F4-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	31	F4-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	32	G4-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	33	G4-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	34	H4-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	35	H4-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	36	G3-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	37	G3-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	38	F3-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	39	F3-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	40	E3-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	41	E3-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	42	E3-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	43	E3-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	44	F3-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	45	F3-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C7	46	G3-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	47	H3-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	48	H3-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	49	G3-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	50	G3-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	51	F3-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	52	F3-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	53	E3-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	54	E3-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	55	C3-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	56	C3-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	57	B4-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	58	C4-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	59	C4-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	60	E4-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	61	F4-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	62	H4-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	63	H4-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	64	H4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	65	H4-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	66	G4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	67	G4-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	68	F4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	69	F4-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	70	E4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	71	E4-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	72	C4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	73	C4-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	74	B4-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	75	C5-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	76	C5-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	77	E5-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	78	E5-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	79	F5-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	80	G5-1		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00805	Hygeia	Not QA	C8	81	G5-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	82	H5-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	83	H5-2		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	84	H5-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	85	G5-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	86	F5-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	87	F5-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	88	E5-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	89	E5-4		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	90	C5-3		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	91	E6-1		ND								SRC	N. Ross	
P3-00805	Hygeia	Not QA	C8	92	E6-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	1	C3-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	2	C3-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	3	E3-2		MD21	1							SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	4	E3-2	LA	MF		1	14.1447425	0.394737	35.83333333	ADX	NaK;WRTA	SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	5	E3-2	LA	MF		2	3.289475	0.7236845	4.545454545	ADX	NaK;WRTA	SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	6	E3-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	7	F3-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	8	F3-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	9	G3-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	10	G3-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	11	H3-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	12	H3-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	13	H3-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	14	H3-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	15	G3-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	16	G3-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	17	F3-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	18	F3-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	19	E3-3	LA	F	2	3	3.94737	0.3289475	12	ADX	NaK;WRTA	SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	20	E3-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	21	C3-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	22	C3-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	23	C4-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	24	C4-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	25	E4-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	26	E4-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	27	F4-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	28	F4-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	29	G4-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	30	H4-1		MD20	3							SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	31	H4-1	LA	MF		4	2.63158	0.2302633	11.42857143	ADX	NaK;WRTA	SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	32	H4-1	LA	MF		5	1.973685	0.263158	7.5	ADX	NaX;WRTA	SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	33	H4-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	34	H4-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	35	H4-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	36	G4-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	37	G4-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	38	F4-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	39	F4-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	40	E4-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	41	E4-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	42	C4-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	43	C4-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	44	C5-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	45	C5-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	46	E5-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	47	E5-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	48	F5-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	49	F5-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	50	G5-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	51	G5-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	52	H5-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C6	53	H5-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	54	C3-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	55	C3-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	56	E3-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	57	E3-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	58	F3-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	59	F3-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	60	G3-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	61	G3-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	62	H3-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	63	H3-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	64	H3-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	65	G3-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	66	G3-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	67	F3-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	68	F3-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	69	E3-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	70	E3-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	71	C3-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	72	C3-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	73	C4-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	74	C4-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	75	E4-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	76	E4-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	77	F4-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	78	F4-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	79	G4-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	80	G4-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	81	H4-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	82	H4-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	83	H4-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	84	H4-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	85	G4-3		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00898	Hygeia	Not QA	C7	86	G4-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	87	F4-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	88	F4-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	89	E4-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	90	E4-4		MD11	4							SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	91	E4-4	LA	MF		6	6.7763185	0.4934213	13.73333333	ADX	NaK;WRTA	SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	92	C4-3		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	93	C4-4		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	94	C5-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	95	C5-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	96	E5-1		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	97	E5-2		ND								SRC	N. Ross	
P3-00898	Hygeia	Not QA	C7	98	F5-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	1	E3-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	2	E3-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	3	F3-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	4	F3-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	5	G3-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	6	G3-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	7	H3-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	8	H3-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	9	G3-3	LA	F	1	1	4.2763175	0.3289475	13	ADX	NaK;WRTA	SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	10	G3-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	11	F3-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	12	F3-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	13	E3-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	14	C3-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	15	C3-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	16	C4-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	17	C4-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	18	E4-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	19	E4-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	20	F4-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	21	F4-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	22	G4-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	23	G4-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	24	H4-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	25	H4-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	26	H4-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	27	H4-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	28	G4-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	29	G4-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	30	F4-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	31	F4-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	32	E4-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	33	C4-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	34	C4-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	35	C5-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	36	C5-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	37	E5-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	38	E5-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	39	F5-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	40	F5-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	41	G5-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	42	G5-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	43	H5-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	44	H5-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	45	G5-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A3	46	G5-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	47	H5-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	48	G5-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	49	F5-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	50	F5-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	51	E5-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	52	E5-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	53	C5-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	54	C5-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	55	B5-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	56	C5-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	57	C5-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	58	E5-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	59	E5-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	60	G5-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	61	H5-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	62	H5-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	63	H4-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	64	H4-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	65	G4-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	66	F4-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	67	F4-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	68	E4-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	69	E4-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	70	C4-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	71	C4-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	72	B4-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	73	B4-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	74	C4-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	75	C4-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	76	E4-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	77	E4-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	78	F4-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	79	G4-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	80	G4-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	81	H4-1		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	82	H4-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	83	H3-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	84	G3-4		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-00966	Hygeia	Not QA	A4	85	F3-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	86	F3-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	87	E3-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	88	E3-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	89	C3-3		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	90	C3-4		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	91	C3-2		ND								SRC	N. Ross	
P3-00966	Hygeia	Not QA	A4	92	E3-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	1	G5-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	2	G5-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	3	F5-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	4	F5-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	5	E5-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	6	E5-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	7	C5-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	8	C5-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	9	C5-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	10	C5-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	11	E5-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	12	E5-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	13	F5-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	14	F5-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	15	G5-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	16	G5-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	17	H5-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	18	H5-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	19	H4-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	20	H4-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	21	G4-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	22	G4-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	23	F4-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	24	F4-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	25	E4-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	26	E4-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	27	C4-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	28	C4-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	29	C4-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	30	E4-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	31	E4-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	32	F4-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	33	F4-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	34	G4-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	35	G4-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	36	H4-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	37	H4-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	38	H3-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	39	G3-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	40	G3-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	41	F3-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	42	F3-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	43	E3-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	44	E3-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	45	C3-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D8	46	C3-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	47	H3-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	48	H3-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	49	G3-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	50	G3-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	51	F3-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	52	F3-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	53	E3-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	54	E3-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	55	C3-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	56	C4-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	57	C4-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	58	E4-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	59	E4-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	60	F4-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	61	F4-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	62	G4-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	63	H4-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	64	H4-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	65	H4-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	66	H4-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	67	G4-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	68	G4-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	69	F4-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	70	F4-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	71	E4-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	72	E4-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	73	C4-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	74	C4-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	75	C5-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	76	C5-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	77	E5-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	78	E5-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	79	F5-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	80	F5-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	81	G5-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	82	G5-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	83	H5-1		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	84	H5-2		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	85	H5-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	86	H5-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	87	G5-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	88	G5-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	89	F5-3		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-01120	Hygeia	Not QA	D9	90	F5-4		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	91	E5-3		ND								SRC	N. Ross	
P3-01120	Hygeia	Not QA	D9	92	E5-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	1	C3-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	2	C4-2		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	3	E4-1		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	4	E4-2		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	5	F4-1		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	6	F4-2		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	7	G4-1		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	8	G4-2		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	9	H4-1		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	10	H4-2		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	11	H4-3		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	12	H4-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	13	G4-3		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	14	G4-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	15	F4-3		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	16	F4-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	17	E4-3		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	18	E4-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	19	C4-3		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E2	20	C4-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	21	C5-1		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	22	E5-1		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	23	E5-2		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	24	F5-1		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	25	G5-1		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	26	G5-2		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	27	H5-1		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	28	H4-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	29	G4-3		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	30	G4-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	31	F4-3		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	32	F4-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	33	E4-3		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	34	C4-3		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	35	C4-4		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	36	C4-1	LA	F	1	1	6.57895	1.2500005	5.263157895	ADX	XX;AC	SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	37	C4-2		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	38	F4-1		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	39	F4-2		ND								SRC	N. Ross	
P3-01151	Hygeia	Not QA	E3	40	G4-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	1	H3-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	2	H3-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	3	G3-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	4	G3-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	5	F3-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	6	F3-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	7	E3-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	8	E3-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	9	C3-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	10	C3-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	11	C4-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	12	C4-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	13	E4-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	14	E4-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	15	F4-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	16	F4-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	17	G4-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	18	H4-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	19	H4-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	20	H4-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	21	H4-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	22	G4-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	23	G4-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	24	F4-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	25	F4-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	26	E4-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	27	E4-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	28	C4-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	29	C4-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	30	C5-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	31	C5-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	32	E5-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	33	E5-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	34	F5-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	35	F5-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	36	G5-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	37	G5-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	38	H5-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	39	H5-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A3	40	H5-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	41	C3-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	42	C3-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	43	E3-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	44	E3-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	45	F3-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	46	F3-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	47	G3-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	48	H3-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	49	H3-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	50	G3-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	51	G3-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	52	F3-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	53	F3-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	54	E3-3		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-01225	Hygeia	Not QA	A4	55	E3-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	56	C3-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	57	C3-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	58	C4-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	59	C4-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	60	E4-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	61	E4-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	62	F4-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	63	F4-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	64	G4-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	65	G4-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	66	G4-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	67	G4-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	68	F4-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	69	F4-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	70	E4-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	71	E4-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	72	C4-3		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	73	C4-4		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	74	C5-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	75	C5-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	76	E5-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	77	F5-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	78	F5-2		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	79	G5-1		ND								SRC	N. Ross	
P3-01225	Hygeia	Not QA	A4	80	G5-2		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	1	C4-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	2	C4-2		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	3	E4-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	4	E4-2		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	5	F4-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	6	F4-2		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	7	G4-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	8	G4-2		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	9	H4-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	10	H4-2		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	11	H4-3		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	12	H4-4		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	13	F4-3		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	14	F4-4		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	15	E4-3	LA	F	1	1	6.315792	0.3289475	19.2	ADX	NaK;WRTA	SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	16	C5-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	17	C5-2		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	18	E5-2		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	19	F5-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D1	20	G5-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	21	G3-3		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	22	G3-4		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	23	F3-3		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	24	F3-4		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	25	E3-3		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	26	E3-4		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	27	C3-3		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	28	C3-4		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	29	C4-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	30	C4-2		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	31	E4-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	32	E4-2		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	33	F4-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	34	G4-1		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	35	G4-3		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	36	G4-4		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	37	F4-3		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	38	F4-4		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	39	E4-4		ND								SRC	N. Ross	
P3-01325	Hygeia	Not QA	D2	40	C4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	1	H3-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	2	G3-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	3	G3-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	4	F3-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	5	F3-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	6	E3-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	7	E3-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	8	C3-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	9	C3-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	10	B4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	11	C4-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	12	C4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	13	E4-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	14	E4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	15	F4-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	16	F4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	17	G4-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	18	G4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	19	H4-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	20	H4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	21	H4-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	22	H4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	23	G4-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	24	G4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	25	F4-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	26	F4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	27	E4-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	28	E4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	29	C4-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	30	C4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	31	B4-3		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-01344	Hygeia	Not QA	A1	32	C5-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	33	C5-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	34	E5-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	35	E5-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	36	F5-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	37	F5-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	38	G5-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	39	G5-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A1	40	H5-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	41	H5-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	42	G5-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	43	G5-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	44	F5-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	45	F5-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	46	E5-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	47	E5-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	48	C5-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	49	C5-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	50	C5-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	51	C5-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	52	F5-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	53	F5-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	54	G5-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	55	G5-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	56	H5-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	57	H5-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	58	H4-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	59	H4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	60	G4-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	61	G4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	62	F4-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	63	F4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	64	E4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	65	C4-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	66	C4-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	67	B4-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	68	B4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	69	C4-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	70	C4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	71	E4-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	72	F4-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	73	F4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	74	G4-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	75	G4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	76	H4-1		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	77	H4-2		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	78	H3-4		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	79	G3-3		ND								SRC	N. Ross	
P3-01344	Hygeia	Not QA	A2	80	G3-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	1	E3-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	2	E3-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	3	F3-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	4	F3-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	5	G3-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	6	G3-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	7	H3-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	8	H3-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	9	G3-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	10	G3-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	11	F3-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	12	F3-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	13	E3-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	14	E3-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	15	C3-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	16	C3-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	17	B4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	18	C4-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	19	C4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	20	E4-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	21	E4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	22	F4-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	23	F4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	24	G4-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	25	G4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	26	H4-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	27	H4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	28	H4-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	29	G4-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	30	G4-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	31	F4-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	32	F4-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	33	E4-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	34	C4-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	35	C4-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	36	B4-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	37	C5-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	38	C5-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	39	E5-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	40	E5-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	41	F5-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	42	F5-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	43	G5-1	LA	F	1	1	11.84211	2.9605275	4	ADX	XX;TR	SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	44	G5-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	45	H5-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D3	46	G5-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	47	H5-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	48	G5-3		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-01378	Hygeia	Not QA	D4	49	G5-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	50	F5-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	51	F5-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	52	E5-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	53	E5-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	54	C5-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	55	C5-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	56	C5-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	57	C5-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	58	E5-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	59	E5-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	60	F5-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	61	F5-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	62	H5-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	63	H5-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	64	H4-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	65	H4-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	66	G4-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	67	G4-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	68	F4-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	69	F4-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	70	E4-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	71	E4-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	72	C4-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	73	C4-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	74	B4-3	LA	F	2	2	4.5394755	0.5921055	7.666666667	ADX	XK;WRTA	SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	75	B4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	76	C4-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	77	C4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	78	E4-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	79	E4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	80	F4-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	81	F4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	82	G4-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	83	G4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	84	H4-1		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	85	H4-2		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	86	H3-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	87	G3-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	88	G3-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	89	F3-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	90	F3-4		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	91	E3-3		ND								SRC	N. Ross	
P3-01378	Hygeia	Not QA	D4	92	E3-4		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	D10	1	G3-4		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	D10	2	F3-3		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	D10	3	F3-4		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	D10	4	E3-3		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	D10	5	E3-4		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	D10	6	E5-1		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	D10	7	E5-2		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	D10	8	F5-1		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	D10	9	F5-2		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	D10	10	G5-1		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	E1	11	F4-3		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	E1	12	F4-4		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	E1	13	E4-3		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	E1	14	E4-4		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	E1	15	C4-3		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	E1	16	C4-4		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	E1	17	F3-1		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	E1	18	F3-2		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	E1	19	G3-1		ND								SRC	N. Ross	
P3-01385	Hygeia	Not QA	E1	20	G3-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	1	G5-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	2	G5-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	3	F5-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	4	F5-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	5	E5-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	6	E5-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	7	C5-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	8	C5-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	9	B5-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	10	C5-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	11	C5-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	12	E5-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	13	E5-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	14	F5-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	15	F5-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	16	G5-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	17	G5-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	18	H5-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	19	H5-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	20	H4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	21	H4-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	22	G4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	23	G4-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	24	F4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	25	F4-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	26	E4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	27	E4-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	28	C4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	29	C4-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	30	B4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	31	B4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	32	C4-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	33	C4-2		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE III ABS AIR

Index ID	Analysis Lab	Lab QC Type	Grid	Sequence ID	Grid Opening	Mineral Class	Structure Type	Primary	Total	Length um	Width um	AR	Identification	Structure Comments	Verifier's Company	Verifier	Comment
P3-01426	Hygeia	Not QA	C4	34	E4-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	35	E4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	36	F4-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	37	F4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	38	G4-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	39	G4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	40	H4-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	41	H4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	42	H3-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	43	G3-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	44	G3-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	45	F3-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C4	46	F3-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	47	C3-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	48	E3-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	49	E3-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	50	F3-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	51	F3-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	52	G3-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	53	G3-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	54	H3-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	55	H3-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	56	G3-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	57	G3-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	58	F3-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	59	F3-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	60	E3-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	61	E3-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	62	C3-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	63	C3-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	64	B4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	65	C4-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	66	C4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	67	E4-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	68	E4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	69	F4-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	70	F4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	71	G4-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	72	G4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	73	H4-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	74	H4-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	75	H4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	76	H4-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	77	G4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	78	G4-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	79	F4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	80	F4-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	81	E4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	82	E4-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	83	C4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	84	C4-4		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	85	B4-3		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	86	C5-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	87	C5-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	88	E5-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	89	E5-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	90	F5-1		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	91	F5-2		ND								SRC	N. Ross	
P3-01426	Hygeia	Not QA	C5	92	G5-1		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D1	1	B4-2		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D1	2	C3-1		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D1	3	E3-2		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D1	4	F3-1		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D1	5	G3-1		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D1	6	G3-2		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D1	7	H4-4		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D1	8	G4-3		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D1	9	G4-4		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D1	10	F4-3		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D2	11	C5-1	LA	F	1	1	16.447375	0.263158	62.5	ADX	NaK;WRTA	SRC	N. Ross	
P3-01445	Hygeia	Not QA	D2	12	C5-2		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D2	13	E5-1	LA	F	2	2	7.5657925	1.184211	6.388888889	ADX	NaK;WRTA	SRC	N. Ross	
P3-01445	Hygeia	Not QA	D2	14	E5-2		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D2	15	F5-1		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D2	16	F5-2		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D2	17	G5-1		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D2	18	G5-2		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D2	19	H5-1		ND								SRC	N. Ross	
P3-01445	Hygeia	Not QA	D2	20	H5-2		ND								SRC	N. Ross	

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00066	57474	1	C4	G5-3	ND																CDM Smith	N. Ross		
P4-00066	57475	2	C4	G5-4	ND																CDM Smith	N. Ross		
P4-00066	57476	3	C4	F5-3	ND																CDM Smith	N. Ross		
P4-00066	57477	4	C4	F5-4	ND																CDM Smith	N. Ross		
P4-00066	57478	5	C4	E5-3	ND																CDM Smith	N. Ross		
P4-00066	57479	6	C4	E5-4	ND																CDM Smith	N. Ross		
P4-00066	57480	7	C4	C5-3	ND																CDM Smith	N. Ross		
P4-00066	57481	8	C4	C5-4	ND																CDM Smith	N. Ross		
P4-00066	57482	9	C4	B5-3	ND																CDM Smith	N. Ross		
P4-00066	57483	10	C4	B5-2	ND																CDM Smith	N. Ross		
P4-00066	57484	11	C4	E5-1	ND																CDM Smith	N. Ross		
P4-00066	57485	12	C4	E5-2	ND																CDM Smith	N. Ross		
P4-00066	57486	13	C4	F5-1	ND																CDM Smith	N. Ross		
P4-00066	57487	14	C4	F5-2	ND																CDM Smith	N. Ross		
P4-00066	57488	15	C4	G5-1	ND																CDM Smith	N. Ross		
P4-00066	57489	16	C4	G5-2	ND																CDM Smith	N. Ross		
P4-00066	57490	17	C4	H5-1	ND																CDM Smith	N. Ross		
P4-00066	57491	18	C4	H4-4	ND																CDM Smith	N. Ross		
P4-00066	57492	19	C4	G4-3	ND																CDM Smith	N. Ross		
P4-00066	57493	20	C4	G4-4	ND																CDM Smith	N. Ross		
P4-00066	57494	21	C4	F4-3	ND																CDM Smith	N. Ross		
P4-00066	57495	22	C4	F4-4	ND																CDM Smith	N. Ross		
P4-00066	57496	23	C4	E4-3	ND																CDM Smith	N. Ross		
P4-00066	57497	24	C4	E4-4	ND																CDM Smith	N. Ross		
P4-00066	57498	25	C4	C4-3	ND																CDM Smith	N. Ross		
P4-00066	57499	26	C4	C4-4	ND																CDM Smith	N. Ross		
P4-00066	57500	27	C4	B4-3	ND																CDM Smith	N. Ross		
P4-00066	57501	28	C4	B4-2	ND																CDM Smith	N. Ross		
P4-00066	57502	29	C4	C4-1	ND																CDM Smith	N. Ross		
P4-00066	57503	30	C4	C4-2	ND																CDM Smith	N. Ross		
P4-00066	57504	31	C4	E4-1	ND																CDM Smith	N. Ross		
P4-00066	57505	32	C4	E4-2	ND																CDM Smith	N. Ross		
P4-00066	57506	33	C4	F4-1	ND																CDM Smith	N. Ross		
P4-00066	57507	34	C4	F4-2	ND																CDM Smith	N. Ross		
P4-00066	57508	35	C4	G4-1	ND																CDM Smith	N. Ross		
P4-00066	57509	36	C4	G4-2	ND																CDM Smith	N. Ross		
P4-00066	57510	37	C4	H4-1	ND																CDM Smith	N. Ross		
P4-00066	57511	38	C4	G3-3	ND																CDM Smith	N. Ross		
P4-00066	57512	39	C4	G3-4	ND																CDM Smith	N. Ross		
P4-00066	57513	40	C4	F3-3	ND																CDM Smith	N. Ross		
P4-00066	57514	41	C4	F3-4	ND																CDM Smith	N. Ross		
P4-00066	57515	42	C4	E3-3	ND																CDM Smith	N. Ross		
P4-00066	57516	43	C4	E3-4	ND																CDM Smith	N. Ross		
P4-00066	57517	44	C4	C3-3	ND																CDM Smith	N. Ross		
P4-00066	57518	45	C4	C3-4	ND																CDM Smith	N. Ross		
P4-00066	57519	46	C4	B3-3	ND																CDM Smith	N. Ross		
P4-00066	57520	47	C4	C3-2	ND																CDM Smith	N. Ross		
P4-00066	57521	48	C4	E3-1	ND																CDM Smith	N. Ross		
P4-00066	57522	49	C4	E3-2	ND																CDM Smith	N. Ross		
P4-00066	57523	50	C4	F3-1	ND																CDM Smith	N. Ross		
P4-00066	57524	51	C5	E3-2	ND																CDM Smith	N. Ross		
P4-00066	57525	52	C5	F3-1	ND																CDM Smith	N. Ross		
P4-00066	57526	53	C5	G3-1	ND																CDM Smith	N. Ross		
P4-00066	57527	54	C5	G3-2	ND																CDM Smith	N. Ross		
P4-00066	57528	55	C5	H3-3	ND																CDM Smith	N. Ross		
P4-00066	57529	56	C5	H3-4	ND																CDM Smith	N. Ross		
P4-00066	57530	57	C5	G3-3	ND																CDM Smith	N. Ross		
P4-00066	57531	58	C5	G3-4	ND																CDM Smith	N. Ross		
P4-00066	57532	59	C5	F3-3	ND																CDM Smith	N. Ross		
P4-00066	57533	60	C5	F3-4	ND																CDM Smith	N. Ross		
P4-00066	57534	61	C5	E3-3	ND																CDM Smith	N. Ross		
P4-00066	57535	62	C5	E3-4	ND																CDM Smith	N. Ross		
P4-00066	57536	63	C5	C3-3	F	1	1	4.4078965	67	0.5592108	8.5	7.8824	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00066	57537	64	C5	C3-3	F	2	2	3.4868435	53	1.1184215	17	3.1176	LA		ADX	1		1		NaK;WRTA	CDM Smith	N. Ross		
P4-00066	57538	65	C5	C3-3	F	3	3	19.73685	300	0.4934213	7.5	40	LA		ADX	1		1		NaK;WRTA	CDM Smith	N. Ross		
P4-00066	57539	66	C5	C3-4	ND																CDM Smith	N. Ross		
P4-00066	57540	67	C5	B4-2	ND																CDM Smith	N. Ross		
P4-00066	57541	68	C5	C4-1	ND																CDM Smith	N. Ross		
P4-00066	57542	69	C5	C4-2	ND																CDM Smith	N. Ross		
P4-00066	57543	70	C5	E4-1	ND																CDM Smith	N. Ross		
P4-00066	57544	71	C5	E4-2	ND																CDM Smith	N. Ross		
P4-00066	57545	72	C5	F4-1	ND																CDM Smith	N. Ross		
P4-00066	57546	73	C5	F4-2	ND																CDM Smith	N. Ross		
P4-00066	57547	74	C5	G4-1	ND																CDM Smith	N. Ross		
P4-00066	57548	75	C5	H4-2	ND																CDM Smith	N. Ross		
P4-00066	57549	76	C5	H4-3	ND																CDM Smith	N. Ross		
P4-00066	57550	77	C5	H4-4	ND																CDM Smith	N. Ross		
P4-00066	57551	78	C5	G4-3	ND																CDM Smith	N. Ross		
P4-00066	57552	79	C5	G4-4	ND																CDM Smith	N. Ross		
P4-00066	57553	80	C5	F4-3	ND																CDM Smith	N. Ross		
P4-00066	57554	81	C5	F4-4	ND																CDM Smith	N. Ross		
P4-00066	57555	82	C5	E4-3	ND																CDM Smith	N. Ross		
P4-00066	57556	83	C5	E4-4	ND																CDM Smith	N. Ross		
P4-00066	57557	84	C5	C4-3	ND																CDM Smith	N. Ross		
P4-00066	57558	85	C5	C4-4	ND																CDM Smith	N. Ross		
P4-00066	57559	86	C5	B4-3	ND																CDM Smith	N. Ross		
P4-00066	57560	87	C5	B5-2	ND																CDM Smith	N. Ross		
P4-00066	57561	88	C5	C5-1	ND																CDM Smith	N. Ross		
P4-00066	57562	89	C5	E5-1	ND																CDM Smith	N. Ross		
P4-00066	57563	90	C5	E5-2	ND																CDM Smith	N. Ross		
P4-00066	57564	91	C5	F5-1	ND																CDM Smith	N. Ross		
P4-00066	57565	92	C5	F5-2	ND																CDM Smith	N. Ross		
P4-00066	57566	93	C5	G5-1	ND																CDM Smith	N. Ross		
P4-00066	57567	94	C5	G5-2	ND																CDM Smith	N. Ross		
P4-00066	57568	95	C5	H5-1	ND																CDM Smith	N. Ross		
P4-00066	57569	96	C5	H5-4	ND																CDM Smith	N. Ross		
P4-00066	57570	97	C5	G5-3	ND																CDM Smith	N. Ross		
P4-00066	57571	98	C5	G5-4	ND																CDM Smith	N. Ross		
P4-00066	57572	99	C5	F5-3	ND																CDM Smith	N. Ross		
P4-00066	57573	100	C5	F5-4	ND																CDM Smith	N. Ross		
P4-00066	57574	101	C5	E5-3	ND																CDM Smith	N. Ross		
P4-00066	57575	102	C5	E5-4	ND																CDM Smith	N. Ross		
P4-00076	57744	1	D3	H2-4	ND																CDM Smith	N. Ross		
P4-00076	57745	2	D3	G2-3	ND																CDM Smith	N. Ross		
P4-00076	57746	3	D3	G2-4	ND																CDM Smith	N. Ross		
P4-00076	57747	4	D3	F2-3	ND																CDM Smith	N. Ross		
P4-00076	57748	5	D3	F2-4	ND																CDM Smith	N. Ross		
P4-00076	57749	6	D3	E2-3	ND																CDM Smith	N. Ross		
P4-00076	57750	7	D3	E2-4	ND																CDM Smith	N. Ross		
P4-00076	57751	8	D3	C2-3	ND																CDM Smith	N. Ross		
P4-00076	57752	9	D3	C2-4	ND																CDM Smith	N. Ross		
P4-00076	57753	10	D3	C3-1	ND																CDM Smith	N. Ross		
P4-00076	57754	11	D3	C3-2	ND																CDM Smith	N. Ross		
P4-00076	57755	12	D3	E3-1	F	1	1	25.00001	380	2.4342115	37	10.27	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00076	57756	13	D3	E3-2	ND																CDM Smith	N. Ross		
P4-00076	57757	14	D3	F3-1	ND																CDM Smith	N. Ross		
P4-00076	57758	15	D3	F3-2	ND																CDM Smith	N. Ross		
P4-00076	57759	16	D3	G3-1	ND																CDM Smith	N. Ross		
P4-00076	57760	17	D3	G3-2	ND																CDM Smith	N. Ross		
P4-00076	57761	18	D3	H3-1	ND																CDM Smith	N. Ross		
P4-00076	57762	19	D3	H3-2	ND																CDM Smith	N. Ross		
P4-00076	57763	20	D3	H3-4	ND																CDM Smith	N. Ross		
P4-00076	57764	21	D3	G3-3	ND																CDM Smith	N. Ross		
P4-00076	57765	22	D3	G3-4	ND																CDM Smith	N. Ross		
P4-00076	57766	23	D3	F3-3	ND																CDM Smith	N. Ross		
P4-00076	57767	24	D3	F3-4	ND																CDM Smith	N. Ross		
P4-00076	57768	25	D3	E3-3	ND																CDM Smith	N. Ross		
P4-00076	57769	26	D3	B3-3	ND																CDM Smith	N. Ross		
P4-00076	57770	27	D3	B4-2	ND																CDM Smith	N. Ross		
P4-00076	57771	28	D3	C4-1	ND																CDM Smith	N. Ross		
P4-00076	57772	29	D3	C4-2	ND																CDM Smith	N. Ross		
P4-00076	57773	30	D3	E4-1	ND																CDM Smith	N. Ross		
P4-00076	57774	31	D3	E4-2	ND																CDM Smith	N. Ross		
P4-00076	57775	32	D3	F4-1	ND																CDM Smith	N. Ross		
P4-00076	57776	33	D3	F4-2	ND																CDM Smith	N. Ross		
P4-00076	57777	34	D3	G4-1	ND																CDM Smith	N. Ross		
P4-00076	57778	35	D3	G4-2	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00076	57779	36	D3	H4-1	ND																CDM Smith	N. Ross		
P4-00076	57780	37	D3	H4-2	ND																CDM Smith	N. Ross		
P4-00076	57781	38	D3	H4-3	ND																CDM Smith	N. Ross		
P4-00076	57782	39	D3	H4-4	ND																CDM Smith	N. Ross		
P4-00076	57783	40	D3	G4-3	ND																CDM Smith	N. Ross		
P4-00076	57784	41	D3	G4-4	ND																CDM Smith	N. Ross		
P4-00076	57785	42	D3	F4-3	ND																CDM Smith	N. Ross		
P4-00076	57786	43	D3	F4-4	ND																CDM Smith	N. Ross		
P4-00076	57787	44	D3	E4-3	ND																CDM Smith	N. Ross		
P4-00076	57788	45	D3	E4-4	ND																CDM Smith	N. Ross		
P4-00076	57789	46	D3	C4-3	ND																CDM Smith	N. Ross		
P4-00076	57790	47	D3	C4-4	ND																CDM Smith	N. Ross		
P4-00076	57791	48	D3	B4-3	ND																CDM Smith	N. Ross		
P4-00076	57792	49	D3	B5-2	ND																CDM Smith	N. Ross		
P4-00076	57793	50	D3	C5-1	MD10	2															CDM Smith	N. Ross		
P4-00076	57794	51	D3	C5-1	MF		2	1.6447375	25	0.1973685	3	8.3333	LA		ADX	1		1		NaK;WRTA	CDM Smith	N. Ross		
P4-00076	57795	52	D4	H2-4	ND																CDM Smith	N. Ross		
P4-00076	57796	53	D4	F2-3	ND																CDM Smith	N. Ross		
P4-00076	57797	54	D4	F2-4	ND																CDM Smith	N. Ross		
P4-00076	57798	55	D4	E2-4	ND																CDM Smith	N. Ross		
P4-00076	57799	56	D4	C2-3	ND																CDM Smith	N. Ross		
P4-00076	57800	57	D4	C2-4	ND																CDM Smith	N. Ross		
P4-00076	57801	58	D4	C3-1	ND																CDM Smith	N. Ross		
P4-00076	57802	59	D4	C3-2	ND																CDM Smith	N. Ross		
P4-00076	57803	60	D4	E3-1	ND																CDM Smith	N. Ross		
P4-00076	57804	61	D4	E3-2	ND																CDM Smith	N. Ross		
P4-00076	57805	62	D4	F3-2	ND																CDM Smith	N. Ross		
P4-00076	57806	63	D4	G3-1	ND																CDM Smith	N. Ross		
P4-00076	57807	64	D4	G3-2	ND																CDM Smith	N. Ross		
P4-00076	57808	65	D4	H3-1	ND																CDM Smith	N. Ross		
P4-00076	57809	66	D4	H3-2	ND																CDM Smith	N. Ross		
P4-00076	57810	67	D4	H3-3	ND																CDM Smith	N. Ross		
P4-00076	57811	68	D4	H3-4	F	3	3	6.9078975	105	1.1184215	17	6.1765	LA		ADX	1		1		NaK;WRTA	CDM Smith	N. Ross		
P4-00076	57812	69	D4	G3-3	MD21	4															CDM Smith	N. Ross		
P4-00076	57813	70	D4	G3-3	MF		4	12.8289525	195	1.1513163	17.4	11.143	LA		ADX	1		1		NaK;WRTA	CDM Smith	N. Ross		
P4-00076	57814	71	D4	G3-3	MF		5	4.078949	62	0.4934213	7.5	8.2667	LA		ADX	1		1		NaK;WRTA	CDM Smith	N. Ross		
P4-00076	57815	72	D4	G3-3	MD10	5															CDM Smith	N. Ross		
P4-00076	57816	73	D4	G3-3	MF		6	4.4078965	67	0.263158	4	16.75	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00076	57817	74	D4	G3-4	ND																CDM Smith	N. Ross		
P4-00076	57818	75	D4	F3-3	ND																CDM Smith	N. Ross		
P4-00076	57819	76	D4	F3-4	ND																CDM Smith	N. Ross		
P4-00076	57820	77	D4	E3-3	ND																CDM Smith	N. Ross		
P4-00076	57821	78	D4	E3-4	ND																CDM Smith	N. Ross		
P4-00076	57822	79	D4	C3-3	ND																CDM Smith	N. Ross		
P4-00076	57823	80	D4	C3-4	ND																CDM Smith	N. Ross		
P4-00076	57824	81	D4	C4-1	ND																CDM Smith	N. Ross		
P4-00076	57825	82	D4	C4-2	ND																CDM Smith	N. Ross		
P4-00076	57826	83	D4	E4-1	ND																CDM Smith	N. Ross		
P4-00076	57827	84	D4	E4-2	ND																CDM Smith	N. Ross		
P4-00076	57828	85	D4	F4-1	ND																CDM Smith	N. Ross		
P4-00076	57829	86	D4	F4-2	ND																CDM Smith	N. Ross		
P4-00076	57830	87	D4	G4-1	ND																CDM Smith	N. Ross		
P4-00076	57831	88	D4	G4-2	ND																CDM Smith	N. Ross		
P4-00076	57832	89	D4	H4-1	ND																CDM Smith	N. Ross		
P4-00076	57833	90	D4	H4-2	ND																CDM Smith	N. Ross		
P4-00076	57834	91	D4	H4-3	ND																CDM Smith	N. Ross		
P4-00076	57835	92	D4	H4-4	ND																CDM Smith	N. Ross		
P4-00076	57836	93	D4	G4-3	ND																CDM Smith	N. Ross		
P4-00076	57837	94	D4	G4-4	ND																CDM Smith	N. Ross		
P4-00076	57838	95	D4	F4-3	ND																CDM Smith	N. Ross		
P4-00076	57839	96	D4	F4-4	ND																CDM Smith	N. Ross		
P4-00076	57840	97	D4	E4-3	ND																CDM Smith	N. Ross		
P4-00076	57841	98	D4	E4-4	ND																CDM Smith	N. Ross		
P4-00076	57842	99	D4	C4-3	ND																CDM Smith	N. Ross		
P4-00076	57843	100	D4	C4-4	ND																CDM Smith	N. Ross		
P4-00076	57844	101	D4	B4-3	ND																CDM Smith	N. Ross		
P4-00076	57845	102	D4	B5-2	ND																CDM Smith	N. Ross		
P4-00076	57846	103	D4	C5-1	ND																CDM Smith	N. Ross		
P4-00076	57847	104	D4	C5-2	ND																CDM Smith	N. Ross		
P4-00076	57848	105	D4	F5-1	ND																CDM Smith	N. Ross		
P4-00077	57849	1	D9	F4-1	ND																CDM Smith	N. Ross		
P4-00077	57850	2	D9	G5-2	ND																CDM Smith	N. Ross		
P4-00077	57851	3	D10	G4-3	ND																CDM Smith	N. Ross		
P4-00077	57852	4	D10	E3-4	ND																CDM Smith	N. Ross		
P4-00083	70234	1	B1	B5-2	ND																CDM Smith	N. Ross		
P4-00083	70235	2	B1	C5-1	ND																CDM Smith	N. Ross		
P4-00083	70236	3	B1	C5-2	ND																CDM Smith	N. Ross		
P4-00083	70237	4	B1	F5-1	ND																CDM Smith	N. Ross		
P4-00083	70238	5	B1	F5-2	ND																CDM Smith	N. Ross		
P4-00083	70239	6	B1	G5-2	ND																CDM Smith	N. Ross		
P4-00083	70240	7	B1	H5-1	ND																CDM Smith	N. Ross		
P4-00083	70241	8	B1	H4-4	ND																CDM Smith	N. Ross		
P4-00083	70242	9	B1	G4-3	ND																CDM Smith	N. Ross		
P4-00083	70243	10	B1	G4-4	ND																CDM Smith	N. Ross		
P4-00083	70244	11	B1	F4-3	ND																CDM Smith	N. Ross		
P4-00083	70245	12	B1	F4-4	ND																CDM Smith	N. Ross		
P4-00083	70246	13	B1	E4-3	ND																CDM Smith	N. Ross		
P4-00083	70247	14	B1	E4-4	ND																CDM Smith	N. Ross		
P4-00083	70248	15	B1	C4-4	ND																CDM Smith	N. Ross		
P4-00083	70249	16	B1	B4-3	ND																CDM Smith	N. Ross		
P4-00083	70250	17	B1	B4-2	ND																CDM Smith	N. Ross		
P4-00083	70251	18	B1	C4-2	ND																CDM Smith	N. Ross		
P4-00083	70252	19	B1	E4-1	ND																CDM Smith	N. Ross		
P4-00083	70253	20	B1	E4-2	ND																CDM Smith	N. Ross		
P4-00083	70254	21	B1	F4-1	ND																CDM Smith	N. Ross		
P4-00083	70255	22	B1	F4-2	ND																CDM Smith	N. Ross		
P4-00083	70256	23	B1	G4-1	ND																CDM Smith	N. Ross		
P4-00083	70257	24	B1	G4-2	F	1	1	5.657897	86	0.3289475	5	17.2	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00083	70258	25	B1	H4-2	ND																CDM Smith	N. Ross		
P4-00083	70259	26	B2	G3-4	F	2	2	3.684212	56	0.263158	4	14	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00083	70260	27	B2	F3-3	ND																CDM Smith	N. Ross		
P4-00083	70261	28	B2	E3-3	ND																CDM Smith	N. Ross		
P4-00083	70262	29	B2	C3-4	ND																CDM Smith	N. Ross		
P4-00083	70263	30	B2	C4-1	ND																CDM Smith	N. Ross		
P4-00083	70264	31	B2	C4-2	ND																CDM Smith	N. Ross		
P4-00083	70265	32	B2	E4-1	ND																CDM Smith	N. Ross		
P4-00083	70266	33	B2	E4-2	ND																CDM Smith	N. Ross		
P4-00083	70267	34	B2	F4-1	ND																CDM Smith	N. Ross		
P4-00083	70268	35	B2	F4-2	ND																CDM Smith	N. Ross		
P4-00083	70269	36	B2	G4-1	ND																CDM Smith	N. Ross		
P4-00083	70270	37	B2	H4-1	ND																CDM Smith	N. Ross		
P4-00083	70271	38	B2	G4-4	ND																CDM Smith	N. Ross		
P4-00083	70272	39	B2	F4-3	ND																CDM Smith	N. Ross		
P4-00083	70273	40	B2	F4-4	ND																CDM Smith	N. Ross		
P4-00083	70274	41	B2	E4-3	ND																CDM Smith	N. Ross		
P4-00083	70275	42	B2	E4-4	ND																CDM Smith	N. Ross		
P4-00083	70276	43	B2	C4-3	ND																CDM Smith	N. Ross		
P4-00083	70277	44	B2	C4-4	ND																CDM Smith	N. Ross		
P4-00083	70278	45	B2	C5-1	ND																CDM Smith	N. Ross		
P4-00083	70279	46	B2	C5-2	ND																CDM Smith	N. Ross		
P4-00083	70280	47	B2	F5-1	ND																CDM Smith	N. Ross		
P4-00083	70281	48	B2	F5-2	ND																CDM Smith	N. Ross		
P4-00136	58675	1	A2	C6-2	ND																CDM Smith	N. Ross		
P4-00136	58676	2	A2	E6-1	ND																CDM Smith	N. Ross		
P4-00136	58677	3	A2	E6-2	ND																CDM Smith	N. Ross		
P4-00136	58678	4	A2	F6-2	ND																CDM Smith	N. Ross		
P4-00136	58679	5	A2	G6-1	ND																CDM Smith	N. Ross		
P4-00136	58680	6	A2	G6-2	ND																CDM Smith	N. Ross		
P4-00136	58681	7	A2	H5-4	ND																CDM Smith	N. Ross		
P4-00136	58682	8	A2	G5-3	ND																CDM Smith	N. Ross		
P4-00136	58683	9	A2	G5-4	ND																CDM Smith	N. Ross		
P4-00136	58684	10	A2	F5-3	ND																CDM Smith	N. Ross		
P4-00136	58685	11	A2	E5-3	ND																CDM Smith	N. Ross		
P4-00136	58686	12	A2	E5-4	ND																CDM Smith	N. Ross		
P4-00136	58687	13	A2	C5-3	ND																CDM Smith	N. Ross		
P4-00136	58688	14	A2	C5-4	ND																CDM Smith	N. Ross		
P4-00136	58689	15	A2	B5-2	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00136	58690	16	A2	C5-1	ND																CDM Smith	N. Ross		
P4-00136	58691	17	A2	C5-2	ND																CDM Smith	N. Ross		
P4-00136	58692	18	A2	E5-1	ND																CDM Smith	N. Ross		
P4-00136	58693	19	A2	E5-2	ND																CDM Smith	N. Ross		
P4-00136	58694	20	A2	F5-1	ND																CDM Smith	N. Ross		
P4-00136	58695	21	A2	G5-1	ND																CDM Smith	N. Ross		
P4-00136	58696	22	A2	G5-2	ND																CDM Smith	N. Ross		
P4-00136	58697	23	A2	H5-1	ND																CDM Smith	N. Ross		
P4-00136	58698	24	A2	H5-2	ND																CDM Smith	N. Ross		
P4-00136	58699	25	A2	H4-3	ND																CDM Smith	N. Ross		
P4-00136	58700	26	A2	H4-4	ND																CDM Smith	N. Ross		
P4-00136	58701	27	A2	G4-3	ND																CDM Smith	N. Ross		
P4-00136	58702	28	A2	F4-4	ND																CDM Smith	N. Ross		
P4-00136	58703	29	A2	E4-4	ND																CDM Smith	N. Ross		
P4-00136	58704	30	A2	C4-3	ND																CDM Smith	N. Ross		
P4-00136	58705	31	A2	C4-4	ND																CDM Smith	N. Ross		
P4-00136	58706	32	A2	B4-2	ND																CDM Smith	N. Ross		
P4-00136	58707	33	A2	C4-1	ND																CDM Smith	N. Ross		
P4-00136	58708	34	A2	E4-1	ND																CDM Smith	N. Ross		
P4-00136	58709	35	A2	E4-2	ND																CDM Smith	N. Ross		
P4-00136	58710	36	A2	F4-1	ND																CDM Smith	N. Ross		
P4-00136	58711	37	A2	H4-1	ND																CDM Smith	N. Ross		
P4-00136	58712	38	A2	H3-3	ND																CDM Smith	N. Ross		
P4-00136	58713	39	A2	G3-3	ND																CDM Smith	N. Ross		
P4-00136	58714	40	A2	G3-4	ND																CDM Smith	N. Ross		
P4-00136	58715	41	A2	E3-3	ND																CDM Smith	N. Ross		
P4-00136	58716	42	A2	E3-4	ND																CDM Smith	N. Ross		
P4-00136	58717	43	A2	C3-3	ND																CDM Smith	N. Ross		
P4-00136	58718	44	A2	C3-4	ND																CDM Smith	N. Ross		
P4-00136	58719	45	A2	B3-3	ND																CDM Smith	N. Ross		
P4-00136	58720	46	A2	C3-1	ND																CDM Smith	N. Ross		
P4-00136	58721	47	A2	C3-2	ND																CDM Smith	N. Ross		
P4-00136	58722	48	A2	E3-1	ND																CDM Smith	N. Ross		
P4-00136	58723	49	A2	E3-2	ND																CDM Smith	N. Ross		
P4-00136	58724	50	A2	F3-1	ND																CDM Smith	N. Ross		
P4-00136	58725	51	A3	C3-1	ND																CDM Smith	N. Ross		
P4-00136	58726	52	A3	C3-2	ND																CDM Smith	N. Ross		
P4-00136	58727	53	A3	E3-1	ND																CDM Smith	N. Ross		
P4-00136	58728	54	A3	F3-1	ND																CDM Smith	N. Ross		
P4-00136	58729	55	A3	F3-2	ND																CDM Smith	N. Ross		
P4-00136	58730	56	A3	G3-1	ND																CDM Smith	N. Ross		
P4-00136	58731	57	A3	G3-2	ND																CDM Smith	N. Ross		
P4-00136	58732	58	A3	H3-1	ND																CDM Smith	N. Ross		
P4-00136	58733	59	A3	H3-3	ND																CDM Smith	N. Ross		
P4-00136	58734	60	A3	H3-4	ND																CDM Smith	N. Ross		
P4-00136	58735	61	A3	G3-3	ND																CDM Smith	N. Ross		
P4-00136	58736	62	A3	G3-4	ND																CDM Smith	N. Ross		
P4-00136	58737	63	A3	F3-3	ND																CDM Smith	N. Ross		
P4-00136	58738	64	A3	F3-4	ND																CDM Smith	N. Ross		
P4-00136	58739	65	A3	E3-3	ND																CDM Smith	N. Ross		
P4-00136	58740	66	A3	E3-4	ND																CDM Smith	N. Ross		
P4-00136	58741	67	A3	C3-3	ND																CDM Smith	N. Ross		
P4-00136	58742	68	A3	C3-4	ND																CDM Smith	N. Ross		
P4-00136	58743	69	A3	B3-3	ND																CDM Smith	N. Ross		
P4-00136	58744	70	A3	B4-2	ND																CDM Smith	N. Ross		
P4-00136	58745	71	A3	C4-1	ND																CDM Smith	N. Ross		
P4-00136	58746	72	A3	C4-2	ND																CDM Smith	N. Ross		
P4-00136	58747	73	A3	E4-1	ND																CDM Smith	N. Ross		
P4-00136	58748	74	A3	E4-2	ND																CDM Smith	N. Ross		
P4-00136	58749	75	A3	F4-1	ND																CDM Smith	N. Ross		
P4-00136	58750	76	A3	F4-2	ND																CDM Smith	N. Ross		
P4-00136	58751	77	A3	G4-1	ND																CDM Smith	N. Ross		
P4-00136	58752	78	A3	G4-2	ND																CDM Smith	N. Ross		
P4-00136	58753	79	A3	H4-1	ND																CDM Smith	N. Ross		
P4-00136	58754	80	A3	H4-2	ND																CDM Smith	N. Ross		
P4-00136	58755	81	A3	H4-3	ND																CDM Smith	N. Ross		
P4-00136	58756	82	A3	H4-4	ND																CDM Smith	N. Ross		
P4-00136	58757	83	A3	G4-3	ND																CDM Smith	N. Ross		
P4-00136	58758	84	A3	G4-4	ND																CDM Smith	N. Ross		
P4-00136	58759	85	A3	F4-3	ND																CDM Smith	N. Ross		
P4-00136	58760	86	A3	F4-4	ND																CDM Smith	N. Ross		
P4-00136	58761	87	A3	E4-3	ND																CDM Smith	N. Ross		
P4-00136	58762	88	A3	E4-4	ND																CDM Smith	N. Ross		
P4-00136	58763	89	A3	C4-3	ND																CDM Smith	N. Ross		
P4-00136	58764	90	A3	B4-3	ND																CDM Smith	N. Ross		
P4-00136	58765	91	A3	B5-2	ND																CDM Smith	N. Ross		
P4-00136	58766	92	A3	C5-2	ND																CDM Smith	N. Ross		
P4-00136	58767	93	A3	E5-1	ND																CDM Smith	N. Ross		
P4-00136	58768	94	A3	E5-2	ND																CDM Smith	N. Ross		
P4-00136	58769	95	A3	F5-1	ND																CDM Smith	N. Ross		
P4-00136	58770	96	A3	G5-1	ND																CDM Smith	N. Ross		
P4-00136	58771	97	A3	G5-2	ND																CDM Smith	N. Ross		
P4-00136	58772	98	A3	H5-1	ND																CDM Smith	N. Ross		
P4-00136	58773	99	A3	H5-2	ND																CDM Smith	N. Ross		
P4-00136	58774	100	A3	H5-4	ND																CDM Smith	N. Ross		
P4-00163	71108	1	A6	C3-2	ND																CDM Smith	N. Ross		
P4-00163	71109	2	A6	E3-1	ND																CDM Smith	N. Ross		
P4-00163	71110	3	A6	E3-2	ND																CDM Smith	N. Ross		
P4-00163	71111	4	A6	F3-1	ND																CDM Smith	N. Ross		
P4-00163	71112	5	A6	F3-2	ND																CDM Smith	N. Ross		
P4-00163	71113	6	A6	G3-1	F	1	1	5.4605285	83	0.3289475	5	16.6	LA		ADX		1	1	1	NaK;WRTA	CDM Smith	N. Ross		
P4-00163	71114	7	A6	G3-2	ND																CDM Smith	N. Ross		
P4-00163	71115	8	A6	H3-1	ND																CDM Smith	N. Ross		
P4-00163	71116	9	A6	H3-2	ND																CDM Smith	N. Ross		
P4-00163	71117	10	A6	H3-3	ND																CDM Smith	N. Ross		
P4-00163	71118	11	A6	H3-4	ND																CDM Smith	N. Ross		
P4-00163	71119	12	A6	G3-3	ND																CDM Smith	N. Ross		
P4-00163	71120	13	A6	G3-4	ND																CDM Smith	N. Ross		
P4-00163	71121	14	A6	F3-3	ND																CDM Smith	N. Ross		
P4-00163	71122	15	A6	F3-4	ND																CDM Smith	N. Ross		
P4-00163	71123	16	A6	E3-3	ND																CDM Smith	N. Ross		
P4-00163	71124	17	A6	E3-4	ND																CDM Smith	N. Ross		
P4-00163	71125	18	A6	C3-4	ND																CDM Smith	N. Ross		
P4-00163	71126	19	A6	C4-1	ND																CDM Smith	N. Ross		
P4-00163	71127	20	A6	C4-2	ND																CDM Smith	N. Ross		
P4-00163	71128	21	A6	E4-1	ND																CDM Smith	N. Ross		
P4-00163	71129	22	A6	E4-2	ND																CDM Smith	N. Ross		
P4-00163	71130	23	A6	F4-1	ND																CDM Smith	N. Ross		
P4-00163	71131	24	A6	F4-2	ND																CDM Smith	N. Ross		
P4-00163	71132	25	A6	G4-1	ND																CDM Smith	N. Ross		
P4-00163	71133	26	A6	G4-2	ND																CDM Smith	N. Ross		
P4-00163	71134	27	A6	H4-1	ND																CDM Smith	N. Ross		
P4-00163	71135	28	A6	H4-2	ND																CDM Smith	N. Ross		
P4-00163	71136	29	A6	H4-3	ND																CDM Smith	N. Ross		
P4-00163	71137	30	A6	H4-4	ND																CDM Smith	N. Ross		
P4-00163	71138	31	A6	G4-3	ND																CDM Smith	N. Ross		
P4-00163	71139	32	A6	G4-4	ND																CDM Smith	N. Ross		
P4-00163	71140	33	A6	F4-3	ND																CDM Smith	N. Ross		
P4-00163	71141	34	A6	F4-4	ND																CDM Smith	N. Ross		
P4-00163	71142	35	A6	E4-3	ND																CDM Smith	N. Ross		
P4-00163	71143	36	A6	E4-4	ND																CDM Smith	N. Ross		
P4-00163	71144	37	A6	C4-3	ND																CDM Smith	N. Ross		
P4-00163	71145	38	A6	C4-4	ND																CDM Smith	N. Ross		
P4-00163	71146	39	A6	C5-1	ND																CDM Smith	N. Ross		
P4-00163	71147	40	A6	C5-2	ND																CDM Smith	N. Ross		
P4-00163	71148	41	A6	E5-1	ND																CDM Smith	N. Ross		
P4-00163	71149	42	A6	E5-2	ND																CDM Smith	N. Ross		
P4-00163	71150	43	A6	F5-1	ND																CDM Smith	N. Ross		
P4-00163	71151	44	A6	F5-2	ND																CDM Smith	N. Ross		
P4-00163	71152	45	A6	G5-1	ND																CDM Smith	N. Ross		
P4-00163	71153	46	A6	G5-2	ND																CDM Smith	N. Ross		
P4-00163	71154	47	A6	H5-1	ND																CDM Smith	N. Ross		
P4-00163	71155	48	A6	H5-2	ND																CDM Smith	N. Ross		
P4-00163	71156	49	A6	H5-3	ND																CDM Smith	N. Ross		
P4-00163	71157	50	A6	H5-4	ND																CDM Smith	N. Ross		
P4-00163	71158	51	A7	C3-1	ND																CDM Smith	N. Ross		
P4-00163	71159	52	A7	C3-2	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00163	71160	53	A7	E3-1	ND																CDM Smith	N. Ross		
P4-00163	71161	54	A7	F3-1	ND																CDM Smith	N. Ross		
P4-00163	71162	55	A7	F3-2	ND																CDM Smith	N. Ross		
P4-00163	71163	56	A7	G3-1	ND																CDM Smith	N. Ross		
P4-00163	71164	57	A7	G3-2	ND																CDM Smith	N. Ross		
P4-00163	71165	58	A7	H3-1	ND																CDM Smith	N. Ross		
P4-00163	71166	59	A7	H3-2	ND																CDM Smith	N. Ross		
P4-00163	71167	60	A7	H3-3	ND																CDM Smith	N. Ross		
P4-00163	71168	61	A7	H3-4	ND																CDM Smith	N. Ross		
P4-00163	71169	62	A7	G3-3	F	2	2	4.078949	62	0.3289475	5	12.4	LA		ADX		1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00163	71170	63	A7	G3-4	ND																CDM Smith	N. Ross		
P4-00163	71171	64	A7	F3-3	ND																CDM Smith	N. Ross		
P4-00163	71172	65	A7	F3-4	ND																CDM Smith	N. Ross		
P4-00163	71173	66	A7	E3-3	ND																CDM Smith	N. Ross		
P4-00163	71174	67	A7	E3-4	ND																CDM Smith	N. Ross		
P4-00163	71175	68	A7	C3-3	ND																CDM Smith	N. Ross		
P4-00163	71176	69	A7	C4-1	ND																CDM Smith	N. Ross		
P4-00163	71177	70	A7	C4-2	ND																CDM Smith	N. Ross		
P4-00163	71178	71	A7	E4-1	ND																CDM Smith	N. Ross		
P4-00163	71179	72	A7	E4-2	ND																CDM Smith	N. Ross		
P4-00163	71180	73	A7	F4-1	ND																CDM Smith	N. Ross		
P4-00163	71181	74	A7	F4-2	ND																CDM Smith	N. Ross		
P4-00163	71182	75	A7	G4-1	ND																CDM Smith	N. Ross		
P4-00163	71183	76	A7	G4-2	ND																CDM Smith	N. Ross		
P4-00163	71184	77	A7	H4-2	ND																CDM Smith	N. Ross		
P4-00163	71185	78	A7	H4-4	ND																CDM Smith	N. Ross		
P4-00163	71186	79	A7	G4-3	ND																CDM Smith	N. Ross		
P4-00163	71187	80	A7	G4-4	ND																CDM Smith	N. Ross		
P4-00163	71188	81	A7	F4-3	ND																CDM Smith	N. Ross		
P4-00163	71189	82	A7	F4-4	ND																CDM Smith	N. Ross		
P4-00163	71190	83	A7	E4-3	ND																CDM Smith	N. Ross		
P4-00163	71191	84	A7	E4-4	ND																CDM Smith	N. Ross		
P4-00163	71192	85	A7	C4-3	ND																CDM Smith	N. Ross		
P4-00163	71193	86	A7	C4-4	ND																CDM Smith	N. Ross		
P4-00163	71194	87	A7	C5-1	ND																CDM Smith	N. Ross		
P4-00163	71195	88	A7	C5-2	ND																CDM Smith	N. Ross		
P4-00163	71196	89	A7	E5-1	ND																CDM Smith	N. Ross		
P4-00163	71197	90	A7	E5-2	ND																CDM Smith	N. Ross		
P4-00163	71198	91	A7	F5-1	ND																CDM Smith	N. Ross		
P4-00163	71199	92	A7	F5-2	ND																CDM Smith	N. Ross		
P4-00163	71200	93	A7	G5-1	ND																CDM Smith	N. Ross		
P4-00163	71201	94	A7	G5-2	ND																CDM Smith	N. Ross		
P4-00163	71202	95	A7	H5-1	ND																CDM Smith	N. Ross		
P4-00163	71203	96	A7	H5-2	ND																CDM Smith	N. Ross		
P4-00163	71204	97	A7	H5-3	ND																CDM Smith	N. Ross		
P4-00163	71205	98	A7	F5-3	ND																CDM Smith	N. Ross		
P4-00163	71206	99	A7	F5-4	ND																CDM Smith	N. Ross		
P4-00163	71207	100	A7	E5-3	ND																CDM Smith	N. Ross		
P4-00244	60746	1	E8	C4-2	ND																CDM Smith	N. Ross		
P4-00244	60747	2	E8	E4-1	ND																CDM Smith	N. Ross		
P4-00244	60748	3	E8	E4-2	ND																CDM Smith	N. Ross		
P4-00244	60749	4	E9	F3-4	ND																CDM Smith	N. Ross		
P4-00244	60750	5	E9	E3-3	ND																CDM Smith	N. Ross		
P4-00247	72344	1	D4	C6-2	ND																CDM Smith	N. Ross		
P4-00247	72345	2	D4	E6-1	ND																CDM Smith	N. Ross		
P4-00247	72346	3	D4	E6-2	ND																CDM Smith	N. Ross		
P4-00247	72347	4	D4	F6-1	ND																CDM Smith	N. Ross		
P4-00247	72348	5	D4	F6-2	ND																CDM Smith	N. Ross		
P4-00247	72349	6	D4	G6-1	ND																CDM Smith	N. Ross		
P4-00247	72350	7	D4	H6-1	ND																CDM Smith	N. Ross		
P4-00247	72351	8	D4	H5-3	ND																CDM Smith	N. Ross		
P4-00247	72352	9	D4	H5-4	ND																CDM Smith	N. Ross		
P4-00247	72353	10	D4	G5-3	ND																CDM Smith	N. Ross		
P4-00247	72354	11	D4	F5-3	ND																CDM Smith	N. Ross		
P4-00247	72355	12	D4	F5-4	ND																CDM Smith	N. Ross		
P4-00247	72356	13	D4	E5-3	ND																CDM Smith	N. Ross		
P4-00247	72357	14	D4	E5-4	ND																CDM Smith	N. Ross		
P4-00247	72358	15	D4	C5-3	ND																CDM Smith	N. Ross		
P4-00247	72359	16	D4	C5-4	ND																CDM Smith	N. Ross		
P4-00247	72360	17	D4	B5-2	ND																CDM Smith	N. Ross		
P4-00247	72361	18	D4	C5-1	ND																CDM Smith	N. Ross		
P4-00247	72362	19	D4	C5-2	ND																CDM Smith	N. Ross		
P4-00247	72363	20	D4	E5-1	ND																CDM Smith	N. Ross		
P4-00247	72364	21	D4	E5-2	ND																CDM Smith	N. Ross		
P4-00247	72365	22	D4	F5-1	ND																CDM Smith	N. Ross		
P4-00247	72366	23	D4	F5-2	ND																CDM Smith	N. Ross		
P4-00247	72367	24	D4	G5-1	ND																CDM Smith	N. Ross		
P4-00247	72368	25	D4	G4-3	ND																CDM Smith	N. Ross		
P4-00247	72369	26	D4	G4-4	ND																CDM Smith	N. Ross		
P4-00247	72370	27	D4	F4-3	ND																CDM Smith	N. Ross		
P4-00247	72371	28	D4	F4-4	ND																CDM Smith	N. Ross		
P4-00247	72372	29	D4	E4-3	ND																CDM Smith	N. Ross		
P4-00247	72373	30	D4	E4-4	ND																CDM Smith	N. Ross		
P4-00247	72374	31	D4	C4-3	ND																CDM Smith	N. Ross		
P4-00247	72375	32	D4	C4-4	ND																CDM Smith	N. Ross		
P4-00247	72376	33	D4	B4-3	ND																CDM Smith	N. Ross		
P4-00247	72377	34	D4	B4-2	ND																CDM Smith	N. Ross		
P4-00247	72378	35	D4	C4-1	ND																CDM Smith	N. Ross		
P4-00247	72379	36	D4	C4-2	ND																CDM Smith	N. Ross		
P4-00247	72380	37	D4	E4-1	ND																CDM Smith	N. Ross		
P4-00247	72381	38	D4	F4-1	ND																CDM Smith	N. Ross		
P4-00247	72382	39	D4	F4-2	ND																CDM Smith	N. Ross		
P4-00247	72383	40	D4	G4-1	ND																CDM Smith	N. Ross		
P4-00247	72384	41	D4	G4-2	ND																CDM Smith	N. Ross		
P4-00247	72385	42	D4	H4-1	ND																CDM Smith	N. Ross		
P4-00247	72386	43	D4	H4-2	ND																CDM Smith	N. Ross		
P4-00247	72387	44	D4	H3-3	ND																CDM Smith	N. Ross		
P4-00247	72388	45	D4	H3-4	ND																CDM Smith	N. Ross		
P4-00247	72389	46	D4	G3-3	ND																CDM Smith	N. Ross		
P4-00247	72390	47	D4	G3-4	ND																CDM Smith	N. Ross		
P4-00247	72391	48	D4	F3-4	ND																CDM Smith	N. Ross		
P4-00247	72392	49	D4	E3-4	ND																CDM Smith	N. Ross		
P4-00247	72393	50	D4	C3-3	ND																CDM Smith	N. Ross		
P4-00247	72394	51	D5	F3-1	ND																CDM Smith	N. Ross		
P4-00247	72395	52	D5	F3-2	ND																CDM Smith	N. Ross		
P4-00247	72396	53	D5	G3-1	ND																CDM Smith	N. Ross		
P4-00247	72397	54	D5	G3-2	ND																CDM Smith	N. Ross		
P4-00247	72398	55	D5	H3-1	ND																CDM Smith	N. Ross		
P4-00247	72399	56	D5	H3-3	ND																CDM Smith	N. Ross		
P4-00247	72400	57	D5	H3-4	ND																CDM Smith	N. Ross		
P4-00247	72401	58	D5	G3-3	ND																CDM Smith	N. Ross		
P4-00247	72402	59	D5	G3-4	ND																CDM Smith	N. Ross		
P4-00247	72403	60	D5	F3-3	ND																CDM Smith	N. Ross		
P4-00247	72404	61	D5	F3-4	ND																CDM Smith	N. Ross		
P4-00247	72405	62	D5	E3-3	ND																CDM Smith	N. Ross		
P4-00247	72406	63	D5	E3-4	ND																CDM Smith	N. Ross		
P4-00247	72407	64	D5	C3-3	ND																CDM Smith	N. Ross		
P4-00247	72408	65	D5	C3-4	ND																CDM Smith	N. Ross		
P4-00247	72409	66	D5	B4-2	ND																CDM Smith	N. Ross		
P4-00247	72410	67	D5	C4-1	ND																CDM Smith	N. Ross		
P4-00247	72411	68	D5	C4-2	ND																CDM Smith	N. Ross		
P4-00247	72412	69	D5	E4-1	ND																CDM Smith	N. Ross		
P4-00247	72413	70	D5	E4-2	ND																CDM Smith	N. Ross		
P4-00247	72414	71	D5	F4-1	ND																CDM Smith	N. Ross		
P4-00247	72415	72	D5	G4-1	ND																CDM Smith	N. Ross		
P4-00247	72416	73	D5	G4-2	ND																CDM Smith	N. Ross		
P4-00247	72417	74	D5	H4-1	ND																CDM Smith	N. Ross		
P4-00247	72418	75	D5	H4-2	ND																CDM Smith	N. Ross		
P4-00247	72419	76	D5	H4-3	ND																CDM Smith	N. Ross		
P4-00247	72420	77	D5	H4-4	ND																CDM Smith	N. Ross		
P4-00247	72421	78	D5	G4-3	ND																CDM Smith	N. Ross		
P4-00247	72422	79	D5	G4-4	ND																CDM Smith	N. Ross		
P4-00247	72423	80	D5	F4-3	ND																CDM Smith	N. Ross		
P4-00247	72424	81	D5	F4-4	ND																CDM Smith	N. Ross		
P4-00247	72425	82	D5	E4-3	ND																CDM Smith	N. Ross		
P4-00247	72426	83	D5	E4-4	ND																CDM Smith	N. Ross		
P4-00247	72427	84	D5	C4-3	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00247	72428	85	D5	C4-4	ND																CDM Smith	N. Ross		
P4-00247	72429	86	D5	B4-3	ND																CDM Smith	N. Ross		
P4-00247	72430	87	D5	C5-1	ND																CDM Smith	N. Ross		
P4-00247	72431	88	D5	C5-2	ND																CDM Smith	N. Ross		
P4-00247	72432	89	D5	E5-1	ND																CDM Smith	N. Ross		
P4-00247	72433	90	D5	E5-2	ND																CDM Smith	N. Ross		
P4-00247	72434	91	D5	F5-1	ND																CDM Smith	N. Ross		
P4-00247	72435	92	D5	F5-2	ND																CDM Smith	N. Ross		
P4-00247	72436	93	D5	G5-1	ND																CDM Smith	N. Ross		
P4-00247	72437	94	D5	H5-1	ND																CDM Smith	N. Ross		
P4-00247	72438	95	D5	H5-2	ND																CDM Smith	N. Ross		
P4-00247	72439	96	D5	H5-3	ND																CDM Smith	N. Ross		
P4-00247	72440	97	D5	H5-4	ND																CDM Smith	N. Ross		
P4-00247	72441	98	D5	G5-3	ND																CDM Smith	N. Ross		
P4-00247	72442	99	D5	G5-4	ND																CDM Smith	N. Ross		
P4-00247	72443	100	D5	F5-3	ND																CDM Smith	N. Ross		
P4-00283	60121	1	C2	F5-1	ND																CDM Smith	N. Ross		
P4-00283	60122	2	C2	E5-1	ND																CDM Smith	N. Ross		
P4-00283	60123	3	C2	F4-2	ND																CDM Smith	N. Ross		
P4-00283	60124	4	C3	F4-2	ND																CDM Smith	N. Ross		
P4-00283	60125	5	C3	E5-2	ND																CDM Smith	N. Ross		
P4-00338	73879	1	E10	C3-1	ND																CDM Smith	N. Ross		
P4-00338	73880	2	E10	C3-2	ND																CDM Smith	N. Ross		
P4-00338	73881	3	E10	E3-1	ND																CDM Smith	N. Ross		
P4-00338	73882	4	E10	E3-2	ND																CDM Smith	N. Ross		
P4-00338	73883	5	E10	F3-1	ND																CDM Smith	N. Ross		
P4-00338	73884	6	E10	F3-2	ND																CDM Smith	N. Ross		
P4-00338	73885	7	E10	G3-1	ND																CDM Smith	N. Ross		
P4-00338	73886	8	E10	G3-2	ND																CDM Smith	N. Ross		
P4-00338	73887	9	E10	H3-1	ND																CDM Smith	N. Ross		
P4-00338	73888	10	E10	H3-2	F	1	1	2.763159	42	0.3289475	5	8.4	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00338	73889	11	E10	H3-3	ND																CDM Smith	N. Ross		
P4-00338	73890	12	E10	H3-4	ND																CDM Smith	N. Ross		
P4-00338	73891	13	E10	G3-3	ND																CDM Smith	N. Ross		
P4-00338	73892	14	E10	G3-4	ND																CDM Smith	N. Ross		
P4-00338	73893	15	E10	F3-3	ND																CDM Smith	N. Ross		
P4-00338	73894	16	E10	F3-4	ND																CDM Smith	N. Ross		
P4-00338	73895	17	E10	E3-3	ND																CDM Smith	N. Ross		
P4-00338	73896	18	E10	E3-4	ND																CDM Smith	N. Ross		
P4-00338	73897	19	E10	C3-4	ND																CDM Smith	N. Ross		
P4-00338	73898	20	E10	C4-1	ND																CDM Smith	N. Ross		
P4-00338	73899	21	E10	C4-2	ND																CDM Smith	N. Ross		
P4-00338	73900	22	E10	E4-1	ND																CDM Smith	N. Ross		
P4-00338	73901	23	E10	E4-2	ND																CDM Smith	N. Ross		
P4-00338	73902	24	E10	F4-1	ND																CDM Smith	N. Ross		
P4-00338	73903	25	E10	F4-2	ND																CDM Smith	N. Ross		
P4-00338	73904	26	E10	G4-1	ND																CDM Smith	N. Ross		
P4-00338	73905	27	E10	G4-2	ND																CDM Smith	N. Ross		
P4-00338	73906	28	E10	H4-1	F	2	2	7.89474	120	0.3289475	5	24	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00338	73907	29	E10	H4-2	ND																CDM Smith	N. Ross		
P4-00338	73908	30	E10	H4-3	F	3	3	7.105266	108	0.657895	10	10.8	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00338	73909	31	E10	H4-4	ND																CDM Smith	N. Ross		
P4-00338	73910	32	E10	G4-3	ND																CDM Smith	N. Ross		
P4-00338	73911	33	E10	F4-3	ND																CDM Smith	N. Ross		
P4-00338	73912	34	E10	F4-4	ND																CDM Smith	N. Ross		
P4-00338	73913	35	E10	E4-3	ND																CDM Smith	N. Ross		
P4-00338	73914	36	E10	C4-3	ND																CDM Smith	N. Ross		
P4-00338	73915	37	E10	C4-4	ND																CDM Smith	N. Ross		
P4-00338	73916	38	E10	C5-1	ND																CDM Smith	N. Ross		
P4-00338	73917	39	E10	C5-2	ND																CDM Smith	N. Ross		
P4-00338	73918	40	E10	E5-1	ND																CDM Smith	N. Ross		
P4-00338	73919	41	A1	C5-1	ND																CDM Smith	N. Ross		
P4-00338	73920	42	A1	E5-2	F	4	4	2.63158	40	0.3289475	5	8	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00338	73921	43	A1	F5-1	F	5	5	8.552635	130	0.263158	4	32.5	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00338	73922	44	A1	G5-1	ND																CDM Smith	N. Ross		
P4-00338	73923	45	A1	G5-2	ND																CDM Smith	N. Ross		
P4-00338	73924	46	A1	H5-1	ND																CDM Smith	N. Ross		
P4-00338	73925	47	A1	H5-2	ND																CDM Smith	N. Ross		
P4-00338	73926	48	A1	H4-3	ND																CDM Smith	N. Ross		
P4-00338	73927	49	A1	H4-4	ND																CDM Smith	N. Ross		
P4-00338	73928	50	A1	G4-3	MD11	0															CDM Smith	N. Ross		
P4-00338	73929	51	A1	G4-3	MF		0	14.47369	220	0.526316	8	27.5	LA		ADX	1				NaK;WRTA;XNGB;DL;Noncountable	CDM Smith	N. Ross		
P4-00338	73930	52	A1	G4-4	ND																CDM Smith	N. Ross		
P4-00338	73931	53	A1	F4-3	ND																CDM Smith	N. Ross		
P4-00338	73932	54	A1	F4-4	ND																CDM Smith	N. Ross		
P4-00338	73933	55	A1	E4-3	ND																CDM Smith	N. Ross		
P4-00338	73934	56	A1	E4-4	ND																CDM Smith	N. Ross		
P4-00338	73935	57	A1	C4-3	ND																CDM Smith	N. Ross		
P4-00338	73936	58	A1	C4-1	ND																CDM Smith	N. Ross		
P4-00338	73937	59	A1	C4-2	ND																CDM Smith	N. Ross		
P4-00338	73938	60	A1	E4-1	ND																CDM Smith	N. Ross		
P4-00338	73939	61	A1	E4-2	ND																CDM Smith	N. Ross		
P4-00338	73940	62	A1	F4-1	ND																CDM Smith	N. Ross		
P4-00338	73941	63	A1	F4-2	ND																CDM Smith	N. Ross		
P4-00338	73942	64	A1	G4-1	ND																CDM Smith	N. Ross		
P4-00338	73943	65	A1	G4-2	ND																CDM Smith	N. Ross		
P4-00338	73944	66	A1	H4-1	ND																CDM Smith	N. Ross		
P4-00338	73945	67	A1	H4-2	ND																CDM Smith	N. Ross		
P4-00338	73946	68	A1	H3-3	ND																CDM Smith	N. Ross		
P4-00338	73947	69	A1	H3-4	ND																CDM Smith	N. Ross		
P4-00338	73948	70	A1	G3-3	ND																CDM Smith	N. Ross		
P4-00338	73949	71	A1	G3-4	ND																CDM Smith	N. Ross		
P4-00338	73950	72	A1	F3-3	ND																CDM Smith	N. Ross		
P4-00338	73951	73	A1	F3-4	ND																CDM Smith	N. Ross		
P4-00338	73952	74	A1	E3-4	ND																CDM Smith	N. Ross		
P4-00338	73953	75	A1	C3-3	ND																CDM Smith	N. Ross		
P4-00338	73954	76	A1	C3-4	ND																CDM Smith	N. Ross		
P4-00338	73955	77	A1	B3-3	ND																CDM Smith	N. Ross		
P4-00338	73956	78	A1	C3-1	ND																CDM Smith	N. Ross		
P4-00338	73957	79	A1	E3-1	ND																CDM Smith	N. Ross		
P4-00338	73958	80	A1	E3-2	ND																CDM Smith	N. Ross		
P4-00338	73959	81	A1	F3-1	ND																CDM Smith	N. Ross		
P4-00365	67479	1	D8	C3-2	ND																CDM Smith	N. Ross		
P4-00365	67480	2	D8	E3-1	ND																CDM Smith	N. Ross		
P4-00365	67481	3	D8	E3-2	ND																CDM Smith	N. Ross		
P4-00365	67482	4	D8	F3-1	ND																CDM Smith	N. Ross		
P4-00365	67483	5	D8	F3-2	ND																CDM Smith	N. Ross		
P4-00365	67484	6	D8	G3-1	ND																CDM Smith	N. Ross		
P4-00365	67485	7	D8	G3-2	ND																CDM Smith	N. Ross		
P4-00365	67486	8	D8	H3-1	ND																CDM Smith	N. Ross		
P4-00365	67487	9	D8	H3-2	ND																CDM Smith	N. Ross		
P4-00365	67488	10	D8	H3-4	F	1	1	2.105264	32	0.657895	10	3.2	LA		ADX	1	1	1		XX;TR	CDM Smith	N. Ross		
P4-00365	67489	11	D8	H3-3	ND																CDM Smith	N. Ross		
P4-00365	67490	12	D8	G3-3	ND																CDM Smith	N. Ross		
P4-00365	67491	13	D8	F3-3	ND																CDM Smith	N. Ross		
P4-00365	67492	14	D8	F3-4	ND																CDM Smith	N. Ross		
P4-00365	67493	15	D8	E3-3	F	2	2	7.236845	110	0.3289475	5	22	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67494	16	D8	E3-4	ND																CDM Smith	N. Ross		
P4-00365	67495	17	D8	C3-3	ND																CDM Smith	N. Ross		
P4-00365	67496	18	D8	C3-4	F	3	3	8.8815825	135	0.526316	8	16.875	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67497	19	D8	C4-1	ND																CDM Smith	N. Ross		
P4-00365	67498	20	D8	C4-2	ND																CDM Smith	N. Ross		
P4-00365	67499	21	D8	E4-1	ND																CDM Smith	N. Ross		
P4-00365	67500	22	D8	E4-2	MD10	4															CDM Smith	N. Ross		
P4-00365	67501	23	D8	E4-2	MF		4	2.105264	32	0.1973685	3	10.667	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67502	24	D8	F4-2	ND																CDM Smith	N. Ross		
P4-00365	67503	25	D8	G4-1	ND																CDM Smith	N. Ross		
P4-00365	67504	26	D8	G4-2	ND																CDM Smith	N. Ross		
P4-00365	67505	27	D8	H4-1	ND																CDM Smith	N. Ross		
P4-00365	67506	28	D8	H4-2	ND																CDM Smith	N. Ross		
P4-00365	67507	29	D8	H4-3	MD10	5															CDM Smith	N. Ross		
P4-00365	67508	30	D8	H4-3	MF		5	3.94737	60	0.1644738	2.5	24	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67509	31	D8	H4-4	ND																CDM Smith	N. Ross		
P4-00365	67510	32	D8	G4-3	ND																CDM Smith	N. Ross		
P4-00365	67511	33	D8	G4-4	ND																CDM Smith	N. Ross		
P4-00365	67512	34	D8	F4-3	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00365	67513	35	D8	F4-4	ND																CDM Smith	N. Ross		
P4-00365	67514	36	D8	E4-3	ND																CDM Smith	N. Ross		
P4-00365	67515	37	D8	E4-4	ND																CDM Smith	N. Ross		
P4-00365	67516	38	D8	C4-3	ND																CDM Smith	N. Ross		
P4-00365	67517	39	D8	C5-1	ND																CDM Smith	N. Ross		
P4-00365	67518	40	D8	C5-2	F	6	6	5.000002	76	0.3289475	5	15.2	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67519	41	D8	E5-1	ND																CDM Smith	N. Ross		
P4-00365	67520	42	D8	E5-2	ND																CDM Smith	N. Ross		
P4-00365	67521	43	D8	F5-1	ND																CDM Smith	N. Ross		
P4-00365	67522	44	D8	F5-2	ND																CDM Smith	N. Ross		
P4-00365	67523	45	D8	G5-1	F	7	7	2.63158	40	0.263158	4	10	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67524	46	D8	G5-2	ND																CDM Smith	N. Ross		
P4-00365	67525	47	D8	H5-1	ND																CDM Smith	N. Ross		
P4-00365	67526	48	D8	H5-2	ND																CDM Smith	N. Ross		
P4-00365	67527	49	D8	H5-3	ND																CDM Smith	N. Ross		
P4-00365	67528	50	D8	G5-3	F	8	8	2.3026325	35	0.5921055	9	3.8889	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67529	51	D8	G5-3	F	9	9	10.52632	160	0.3289475	5	32	LA		ADX	1				NaK;WRTA;XEGB;DL	CDM Smith	N. Ross		
P4-00365	67530	52	D8	G5-4	ND																CDM Smith	N. Ross		
P4-00365	67531	53	D8	F5-3	ND																CDM Smith	N. Ross		
P4-00365	67532	54	D9	C3-1	ND																CDM Smith	N. Ross		
P4-00365	67533	55	D9	C3-2	ND																CDM Smith	N. Ross		
P4-00365	67534	56	D9	E3-1	ND																CDM Smith	N. Ross		
P4-00365	67535	57	D9	E3-2	ND																CDM Smith	N. Ross		
P4-00365	67536	58	D9	F3-1	ND																CDM Smith	N. Ross		
P4-00365	67537	59	D9	H3-1	ND																CDM Smith	N. Ross		
P4-00365	67538	60	D9	H3-2	F	10	10	2.8289485	43	0.263158	4	10.75	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67539	61	D9	H3-3	ND																CDM Smith	N. Ross		
P4-00365	67540	62	D9	H3-4	MD10	11															CDM Smith	N. Ross		
P4-00365	67541	63	D9	H3-4	MF		11	1.973685	30	0.4934213	7.5	4	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67542	64	D9	G3-3	ND																CDM Smith	N. Ross		
P4-00365	67543	65	D9	G3-4	F	12	12	3.6184225	55	0.3289475	5	11	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67544	66	D9	F3-3	ND																CDM Smith	N. Ross		
P4-00365	67545	67	D9	F3-4	ND																CDM Smith	N. Ross		
P4-00365	67546	68	D9	E3-3	ND																CDM Smith	N. Ross		
P4-00365	67547	69	D9	E3-4	ND																CDM Smith	N. Ross		
P4-00365	67548	70	D9	C3-3	F	13	13	5.789476	88	0.657895	10	8.8	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67549	71	D9	C3-4	ND																CDM Smith	N. Ross		
P4-00365	67550	72	D9	C4-2	ND																CDM Smith	N. Ross		
P4-00365	67551	73	D9	E4-1	ND																CDM Smith	N. Ross		
P4-00365	67552	74	D9	E4-2	F	14	14	9.342109	142	0.394737	6	23.667	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67553	75	D9	F4-1	ND																CDM Smith	N. Ross		
P4-00365	67554	76	D9	F4-2	ND																CDM Smith	N. Ross		
P4-00365	67555	77	D9	G4-1	F	0	0	9.21053	140	0.263158	4	35	LA		ADX	1				NaK;WRTA;XWGB;DL;Noncountable	CDM Smith	N. Ross		
P4-00365	67556	78	D9	G4-2	ND																CDM Smith	N. Ross		
P4-00365	67557	79	D9	H4-1	ND																CDM Smith	N. Ross		
P4-00365	67558	80	D9	H4-2	ND																CDM Smith	N. Ross		
P4-00365	67559	81	D9	H4-3	MD10	15															CDM Smith	N. Ross		
P4-00365	67560	82	D9	H4-3	MF		15	4.6710545	71	0.7236845	11	6.4545	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67561	83	D9	H4-4	ND																CDM Smith	N. Ross		
P4-00365	67562	84	D9	G4-3	F	16	16	2.9605275	45	0.5921055	9	5	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00365	67563	85	D9	G4-4	ND																CDM Smith	N. Ross		
P4-00365	67564	86	D9	F4-3	ND																CDM Smith	N. Ross		
P4-00365	67565	87	D9	F4-4	ND																CDM Smith	N. Ross		
P4-00365	67566	88	D9	E4-3	ND																CDM Smith	N. Ross		
P4-00365	67567	89	D9	E4-4	ND																CDM Smith	N. Ross		
P4-00365	67568	90	D9	C4-3	ND																CDM Smith	N. Ross		
P4-00365	67569	91	D9	C4-4	ND																CDM Smith	N. Ross		
P4-00365	67570	92	D9	E5-1	ND																CDM Smith	N. Ross		
P4-00365	67571	93	D9	E5-2	ND																CDM Smith	N. Ross		
P4-00365	67572	94	D9	F5-2	ND																CDM Smith	N. Ross		
P4-00365	67573	95	D9	G5-1	ND																CDM Smith	N. Ross		
P4-00365	67574	96	D9	G5-2	ND																CDM Smith	N. Ross		
P4-00365	67575	97	D9	H5-1	ND																CDM Smith	N. Ross		
P4-00365	67576	98	D9	H5-2	ND																CDM Smith	N. Ross		
P4-00365	67577	99	D9	H5-4	ND																CDM Smith	N. Ross		
P4-00365	67578	100	D9	G5-3	ND																CDM Smith	N. Ross		
P4-00365	67579	101	D9	G5-4	ND																CDM Smith	N. Ross		
P4-00365	67580	102	D9	F5-3	ND																CDM Smith	N. Ross		
P4-00365	67581	103	D9	F5-4	ND																CDM Smith	N. Ross		
P4-00365	67582	104	D9	E5-4	ND																CDM Smith	N. Ross		
P4-00365	67583	105	D9	C5-3	ND																CDM Smith	N. Ross		
P4-00377	74443	1	C1	C3-1	ND																CDM Smith	N. Ross		
P4-00377	74444	2	C1	C3-2	ND																CDM Smith	N. Ross		
P4-00377	74445	3	C1	E3-1	ND																CDM Smith	N. Ross		
P4-00377	74446	4	C1	E3-2	ND																CDM Smith	N. Ross		
P4-00377	74447	5	C1	F3-1	ND																CDM Smith	N. Ross		
P4-00377	74448	6	C1	F3-2	ND																CDM Smith	N. Ross		
P4-00377	74449	7	C1	G3-1	ND																CDM Smith	N. Ross		
P4-00377	74450	8	C1	G3-2	ND																CDM Smith	N. Ross		
P4-00377	74451	9	C1	H3-1	ND																CDM Smith	N. Ross		
P4-00377	74452	10	C1	H3-2	ND																CDM Smith	N. Ross		
P4-00377	74453	11	C1	H3-3	ND																CDM Smith	N. Ross		
P4-00377	74454	12	C1	H3-4	ND																CDM Smith	N. Ross		
P4-00377	74455	13	C1	F3-3	ND																CDM Smith	N. Ross		
P4-00377	74456	14	C1	F3-4	ND																CDM Smith	N. Ross		
P4-00377	74457	15	C1	E3-3	ND																CDM Smith	N. Ross		
P4-00377	74458	16	C1	E3-4	ND																CDM Smith	N. Ross		
P4-00377	74459	17	C1	C3-4	ND																CDM Smith	N. Ross		
P4-00377	74460	18	C1	C4-1	ND																CDM Smith	N. Ross		
P4-00377	74461	19	C1	C4-2	ND																CDM Smith	N. Ross		
P4-00377	74462	20	C1	E4-1	ND																CDM Smith	N. Ross		
P4-00377	74463	21	C1	E4-2	ND																CDM Smith	N. Ross		
P4-00377	74464	22	C1	F4-1	ND																CDM Smith	N. Ross		
P4-00377	74465	23	C1	G4-1	ND																CDM Smith	N. Ross		
P4-00377	74466	24	C1	G4-2	ND																CDM Smith	N. Ross		
P4-00377	74467	25	C1	H4-1	ND																CDM Smith	N. Ross		
P4-00377	74468	26	C1	H4-2	ND																CDM Smith	N. Ross		
P4-00377	74469	27	C1	H4-3	ND																CDM Smith	N. Ross		
P4-00377	74470	28	C1	H4-4	ND																CDM Smith	N. Ross		
P4-00377	74471	29	C1	G4-3	ND																CDM Smith	N. Ross		
P4-00377	74472	30	C1	G4-4	ND																CDM Smith	N. Ross		
P4-00377	74473	31	C1	F4-3	ND																CDM Smith	N. Ross		
P4-00377	74474	32	C1	F4-4	ND																CDM Smith	N. Ross		
P4-00377	74475	33	C1	E4-3	ND																CDM Smith	N. Ross		
P4-00377	74476	34	C1	E4-4	ND																CDM Smith	N. Ross		
P4-00377	74477	35	C1	C4-3	ND																CDM Smith	N. Ross		
P4-00377	74478	36	C1	C4-4	ND																CDM Smith	N. Ross		
P4-00377	74479	37	C1	C5-1	ND																CDM Smith	N. Ross		
P4-00377	74480	38	C1	C5-2	ND																CDM Smith	N. Ross		
P4-00377	74481	39	C1	E5-1	ND																CDM Smith	N. Ross		
P4-00377	74482	40	C1	E5-2	ND																CDM Smith	N. Ross		
P4-00377	74483	41	C1	G5-1	ND																CDM Smith	N. Ross		
P4-00377	74484	42	C1	G5-2	ND																CDM Smith	N. Ross		
P4-00377	74485	43	C1	H5-1	ND																CDM Smith	N. Ross		
P4-00377	74486	44	C1	H5-2	ND																CDM Smith	N. Ross		
P4-00377	74487	45	C1	H5-3	ND																CDM Smith	N. Ross		
P4-00377	74488	46	C1	H5-4	ND																CDM Smith	N. Ross		
P4-00377	74489	47	C1	G5-3	ND																CDM Smith	N. Ross		
P4-00377	74490	48	C1	G5-4	ND																CDM Smith	N. Ross		
P4-00377	74491	49	C1	F5-3	ND																CDM Smith	N. Ross		
P4-00377	74492	50	C1	F5-4	ND																CDM Smith	N. Ross		
P4-00377	74493	51	C2	C3-2	ND																CDM Smith	N. Ross		
P4-00377	74494	52	C2	E3-1	ND																CDM Smith	N. Ross		
P4-00377	74495	53	C2	E3-2	F	1	1	2.46710625	38	0.526316	8	4.6875	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00377	74496	54	C2	F3-1	ND																CDM Smith	N. Ross		
P4-00377	74497	55	C2	F3-2	ND																CDM Smith	N. Ross		
P4-00377	74498	56	C2	G3-1	ND																CDM Smith	N. Ross		
P4-00377	74499	57	C2	G3-2	ND																CDM Smith	N. Ross		
P4-00377	74500	58	C2	H3-1	ND																CDM Smith	N. Ross		
P4-00377	74501	59	C2	H3-2	ND																CDM Smith	N. Ross		
P4-00377	74502	60	C2	H3-3	ND																CDM Smith	N. Ross		
P4-00377	74503	61	C2	H3-4	ND																CDM Smith	N. Ross		
P4-00377	74504	62	C2	G3-3	ND																CDM Smith	N. Ross		
P4-00377	74505	63	C2	G3-4	ND																CDM Smith	N. Ross		
P4-00377	74506	64	C2	F3-3	ND																CDM Smith	N. Ross		
P4-00377	74507	65	C2	F3-4	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00377	74508	66	C2	E3-3	ND																CDM Smith	N. Ross		
P4-00377	74509	67	C2	E3-4	ND																CDM Smith	N. Ross		
P4-00377	74510	68	C2	C3-3	ND																CDM Smith	N. Ross		
P4-00377	74511	69	C2	C3-4	ND																CDM Smith	N. Ross		
P4-00377	74512	70	C2	C4-1	ND																CDM Smith	N. Ross		
P4-00377	74513	71	C2	C4-2	ND																CDM Smith	N. Ross		
P4-00377	74514	72	C2	E4-1	ND																CDM Smith	N. Ross		
P4-00377	74515	73	C2	E4-2	ND																CDM Smith	N. Ross		
P4-00377	74516	74	C2	F4-1	ND																CDM Smith	N. Ross		
P4-00377	74517	75	C2	F4-2	ND																CDM Smith	N. Ross		
P4-00377	74518	76	C2	G4-1	ND																CDM Smith	N. Ross		
P4-00377	74519	77	C2	G4-2	ND																CDM Smith	N. Ross		
P4-00377	74520	78	C2	H4-1	ND																CDM Smith	N. Ross		
P4-00377	74521	79	C2	H4-2	ND																CDM Smith	N. Ross		
P4-00377	74522	80	C2	H4-3	ND																CDM Smith	N. Ross		
P4-00377	74523	81	C2	H4-4	ND																CDM Smith	N. Ross		
P4-00377	74524	82	C2	G4-3	ND																CDM Smith	N. Ross		
P4-00377	74525	83	C2	G4-4	ND																CDM Smith	N. Ross		
P4-00377	74526	84	C2	F4-3	ND																CDM Smith	N. Ross		
P4-00377	74527	85	C2	F4-4	ND																CDM Smith	N. Ross		
P4-00377	74528	86	C2	E4-3	ND																CDM Smith	N. Ross		
P4-00377	74529	87	C2	E4-4	ND																CDM Smith	N. Ross		
P4-00377	74530	88	C2	C4-3	ND																CDM Smith	N. Ross		
P4-00377	74531	89	C2	C4-4	ND																CDM Smith	N. Ross		
P4-00377	74532	90	C2	C5-1	ND																CDM Smith	N. Ross		
P4-00377	74533	91	C2	C5-2	ND																CDM Smith	N. Ross		
P4-00377	74534	92	C2	E5-1	ND																CDM Smith	N. Ross		
P4-00377	74535	93	C2	E5-2	ND																CDM Smith	N. Ross		
P4-00377	74536	94	C2	F5-1	ND																CDM Smith	N. Ross		
P4-00377	74537	95	C2	F5-2	ND																CDM Smith	N. Ross		
P4-00377	74538	96	C2	G5-1	ND																CDM Smith	N. Ross		
P4-00377	74539	97	C2	G5-2	ND																CDM Smith	N. Ross		
P4-00377	74540	98	C2	H5-1	ND																CDM Smith	N. Ross		
P4-00377	74541	99	C2	H5-2	ND																CDM Smith	N. Ross		
P4-00377	74542	100	C2	H5-3	ND																CDM Smith	N. Ross		
P4-00391	61502	1	C3	F2-3	ND																CDM Smith	N. Ross		
P4-00391	61503	2	C3	F2-4	ND																CDM Smith	N. Ross		
P4-00391	61504	3	C3	E2-3	ND																CDM Smith	N. Ross		
P4-00391	61505	4	C3	E2-4	ND																CDM Smith	N. Ross		
P4-00391	61506	5	C3	C3-1	ND																CDM Smith	N. Ross		
P4-00391	61507	6	C3	C3-2	ND																CDM Smith	N. Ross		
P4-00391	61508	7	C3	E3-1	ND																CDM Smith	N. Ross		
P4-00391	61509	8	C3	E3-2	ND																CDM Smith	N. Ross		
P4-00391	61510	9	C3	F3-1	ND																CDM Smith	N. Ross		
P4-00391	61511	10	C3	F3-2	ND																CDM Smith	N. Ross		
P4-00391	61512	11	C3	H3-1	ND																CDM Smith	N. Ross		
P4-00391	61513	12	C3	H3-3	ND																CDM Smith	N. Ross		
P4-00391	61514	13	C3	E3-3	ND																CDM Smith	N. Ross		
P4-00391	61515	14	C3	E3-4	ND																CDM Smith	N. Ross		
P4-00391	61516	15	C3	C3-3	ND																CDM Smith	N. Ross		
P4-00391	61517	16	C3	B3-3	ND																CDM Smith	N. Ross		
P4-00391	61518	17	C3	B4-2	ND																CDM Smith	N. Ross		
P4-00391	61519	18	C3	C4-1	ND																CDM Smith	N. Ross		
P4-00391	61520	19	C3	C4-2	ND																CDM Smith	N. Ross		
P4-00391	61521	20	C3	E4-1	ND																CDM Smith	N. Ross		
P4-00391	61522	21	C3	F4-2	ND																CDM Smith	N. Ross		
P4-00391	61523	22	C3	G4-1	ND																CDM Smith	N. Ross		
P4-00391	61524	23	C3	H4-2	ND																CDM Smith	N. Ross		
P4-00391	61525	24	C3	K4-1	ND																CDM Smith	N. Ross		
P4-00391	61526	25	C3	K3-4	ND																CDM Smith	N. Ross		
P4-00391	61527	26	C3	K4-4	ND																CDM Smith	N. Ross		
P4-00391	61528	27	C3	H4-3	ND																CDM Smith	N. Ross		
P4-00391	61529	28	C3	H4-4	ND																CDM Smith	N. Ross		
P4-00391	61530	29	C3	G4-3	ND																CDM Smith	N. Ross		
P4-00391	61531	30	C3	G4-4	ND																CDM Smith	N. Ross		
P4-00391	61532	31	C3	F4-3	ND																CDM Smith	N. Ross		
P4-00391	61533	32	C3	F4-4	ND																CDM Smith	N. Ross		
P4-00391	61534	33	C3	E4-3	ND																CDM Smith	N. Ross		
P4-00391	61535	34	C3	E4-4	ND																CDM Smith	N. Ross		
P4-00391	61536	35	C3	C4-3	ND																CDM Smith	N. Ross		
P4-00391	61537	36	C3	C4-4	ND																CDM Smith	N. Ross		
P4-00391	61538	37	C3	B4-3	ND																CDM Smith	N. Ross		
P4-00391	61539	38	C3	B5-2	ND																CDM Smith	N. Ross		
P4-00391	61540	39	C3	C5-1	ND																CDM Smith	N. Ross		
P4-00391	61541	40	C3	C5-2	ND																CDM Smith	N. Ross		
P4-00391	61542	41	C3	E5-1	ND																CDM Smith	N. Ross		
P4-00391	61543	42	C3	E5-2	ND																CDM Smith	N. Ross		
P4-00391	61544	43	C3	F5-1	ND																CDM Smith	N. Ross		
P4-00391	61545	44	C3	F5-2	ND																CDM Smith	N. Ross		
P4-00391	61546	45	C3	G5-1	ND																CDM Smith	N. Ross		
P4-00391	61547	46	C3	G5-2	ND																CDM Smith	N. Ross		
P4-00391	61548	47	C3	H5-1	ND																CDM Smith	N. Ross		
P4-00391	61549	48	C3	H5-2	ND																CDM Smith	N. Ross		
P4-00391	61550	49	C3	H5-3	ND																CDM Smith	N. Ross		
P4-00391	61551	50	C3	H5-4	ND																CDM Smith	N. Ross		
P4-00391	61552	51	C4	G2-4	ND																CDM Smith	N. Ross		
P4-00391	61553	52	C4	F2-4	ND																CDM Smith	N. Ross		
P4-00391	61554	53	C4	C3-1	ND																CDM Smith	N. Ross		
P4-00391	61555	54	C4	C3-2	ND																CDM Smith	N. Ross		
P4-00391	61556	55	C4	E3-1	ND																CDM Smith	N. Ross		
P4-00391	61557	56	C4	E3-2	ND																CDM Smith	N. Ross		
P4-00391	61558	57	C4	F3-2	ND																CDM Smith	N. Ross		
P4-00391	61559	58	C4	G3-2	ND																CDM Smith	N. Ross		
P4-00391	61560	59	C4	H3-3	ND																CDM Smith	N. Ross		
P4-00391	61561	60	C4	H3-4	ND																CDM Smith	N. Ross		
P4-00391	61562	61	C4	G3-3	ND																CDM Smith	N. Ross		
P4-00391	61563	62	C4	G3-4	ND																CDM Smith	N. Ross		
P4-00391	61564	63	C4	F3-4	ND																CDM Smith	N. Ross		
P4-00391	61565	64	C4	E3-3	ND																CDM Smith	N. Ross		
P4-00391	61566	65	C4	C3-4	ND																CDM Smith	N. Ross		
P4-00391	61567	66	C4	B4-2	ND																CDM Smith	N. Ross		
P4-00391	61568	67	C4	C4-2	ND																CDM Smith	N. Ross		
P4-00391	61569	68	C4	E4-1	ND																CDM Smith	N. Ross		
P4-00391	61570	69	C4	E4-2	ND																CDM Smith	N. Ross		
P4-00391	61571	70	C4	F4-1	ND																CDM Smith	N. Ross		
P4-00391	61572	71	C4	F4-2	ND																CDM Smith	N. Ross		
P4-00391	61573	72	C4	G4-1	ND																CDM Smith	N. Ross		
P4-00391	61574	73	C4	K3-4	ND																CDM Smith	N. Ross		
P4-00391	61575	74	C4	K4-1	ND																CDM Smith	N. Ross		
P4-00391	61576	75	C4	H4-3	ND																CDM Smith	N. Ross		
P4-00391	61577	76	C4	H4-4	ND																CDM Smith	N. Ross		
P4-00391	61578	77	C4	G4-4	ND																CDM Smith	N. Ross		
P4-00391	61579	78	C4	F4-3	ND																CDM Smith	N. Ross		
P4-00391	61580	79	C4	F4-4	ND																CDM Smith	N. Ross		
P4-00391	61581	80	C4	E4-3	ND																CDM Smith	N. Ross		
P4-00391	61582	81	C4	C4-3	ND																CDM Smith	N. Ross		
P4-00391	61583	82	C4	B4-4	ND																CDM Smith	N. Ross		
P4-00391	61584	83	C4	B5-2	ND																CDM Smith	N. Ross		
P4-00391	61585	84	C4	C5-1	ND																CDM Smith	N. Ross		
P4-00391	61586	85	C4	E5-1	ND																CDM Smith	N. Ross		
P4-00391	61587	86	C4	E5-2	ND																CDM Smith	N. Ross		
P4-00391	61588	87	C4	H5-1	ND																CDM Smith	N. Ross		
P4-00391	61589	88	C4	H5-2	ND																CDM Smith	N. Ross		
P4-00391	61590	89	C4	G5-4	ND																CDM Smith	N. Ross		
P4-00391	61591	90	C4	F5-3	ND																CDM Smith	N. Ross		
P4-00391	61592	91	C4	F5-4	ND																CDM Smith	N. Ross		
P4-00391	61593	92	C4	E5-3	ND																CDM Smith	N. Ross		
P4-00391	61594	93	C4	E5-4	ND																CDM Smith	N. Ross		
P4-00391	61595	94	C4	C5-3	ND																CDM Smith	N. Ross		
P4-00391	61596	95	C4	C5-4	ND																CDM Smith	N. Ross		
P4-00391	61597	96	C4	B5-3	ND																CDM Smith	N. Ross		
P4-00391	61598	97	C4	G6-2	ND																CDM Smith	N. Ross		
P4-00391	61599	98	C4	H6-1	ND																CDM Smith	N. Ross		
P4-00391	61600	99	C4	B3-2	ND																CDM Smith	N. Ross		
P4-00391	61601	100	C4	B4-1	ND																CDM Smith	N. Ross		
P4-00412	62303	1	E7	F5-1	ND																CDM Smith	N. Ross		
P4-00412	62304	2	E7	E5-1	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00412	62305	3	E7	C4-2	ND																CDM Smith	N. Ross		
P4-00412	62306	4	E7	E3-3	ND																CDM Smith	N. Ross		
P4-00412	62307	5	E7	F4-2	ND																CDM Smith	N. Ross		
P4-00412	62308	6	E7	G4-2	ND																CDM Smith	N. Ross		
P4-00412	62309	7	E7	H4-2	ND																CDM Smith	N. Ross		
P4-00412	62310	8	E7	H5-1	ND																CDM Smith	N. Ross		
P4-00412	62311	9	E8	H4-3	ND																CDM Smith	N. Ross		
P4-00412	62312	10	E8	G4-3	ND																CDM Smith	N. Ross		
P4-00412	62313	11	E8	F4-3	ND																CDM Smith	N. Ross		
P4-00412	62314	12	E8	E4-3	ND																CDM Smith	N. Ross		
P4-00412	62315	13	E8	E4-1	ND																CDM Smith	N. Ross		
P4-00412	62316	14	E8	F3-4	ND																CDM Smith	N. Ross		
P4-00412	62317	15	E8	G3-4	ND																CDM Smith	N. Ross		
P4-00412	62318	16	E8	H3-4	ND																CDM Smith	N. Ross		
P4-00454	74923	1	D3	C3-1	ND																CDM Smith	N. Ross		
P4-00454	74924	2	D3	C3-2	ND																CDM Smith	N. Ross		
P4-00454	74925	3	D3	E3-1	ND																CDM Smith	N. Ross		
P4-00454	74926	4	D3	E3-2	ND																CDM Smith	N. Ross		
P4-00454	74927	5	D3	F3-1	ND																CDM Smith	N. Ross		
P4-00454	74928	6	D3	F3-2	ND																CDM Smith	N. Ross		
P4-00454	74929	7	D3	G3-1	ND																CDM Smith	N. Ross		
P4-00454	74930	8	D3	G3-2	ND																CDM Smith	N. Ross		
P4-00454	74931	9	D3	H3-1	ND																CDM Smith	N. Ross		
P4-00454	74932	10	D3	H3-2	ND																CDM Smith	N. Ross		
P4-00454	74933	11	D3	H3-3	ND																CDM Smith	N. Ross		
P4-00454	74934	12	D3	H3-4	ND																CDM Smith	N. Ross		
P4-00454	74935	13	D3	G3-3	ND																CDM Smith	N. Ross		
P4-00454	74936	14	D3	G3-4	ND																CDM Smith	N. Ross		
P4-00454	74937	15	D3	F3-3	ND																CDM Smith	N. Ross		
P4-00454	74938	16	D3	F3-4	ND																CDM Smith	N. Ross		
P4-00454	74939	17	D3	E3-3	ND																CDM Smith	N. Ross		
P4-00454	74940	18	D3	E3-4	ND																CDM Smith	N. Ross		
P4-00454	74941	19	D3	C3-3	ND																CDM Smith	N. Ross		
P4-00454	74942	20	D3	C3-4	ND																CDM Smith	N. Ross		
P4-00454	74943	21	D3	B3-3	ND																CDM Smith	N. Ross		
P4-00454	74944	22	D3	B3-4	ND																CDM Smith	N. Ross		
P4-00454	74945	23	D3	C4-1	ND																CDM Smith	N. Ross		
P4-00454	74946	24	D3	C4-2	ND																CDM Smith	N. Ross		
P4-00454	74947	25	D3	E4-1	ND																CDM Smith	N. Ross		
P4-00454	74948	26	D3	E4-2	ND																CDM Smith	N. Ross		
P4-00454	74949	27	D3	F4-1	ND																CDM Smith	N. Ross		
P4-00454	74950	28	D3	F4-2	ND																CDM Smith	N. Ross		
P4-00454	74951	29	D3	G4-1	ND																CDM Smith	N. Ross		
P4-00454	74952	30	D3	G4-2	ND																CDM Smith	N. Ross		
P4-00454	74953	31	D3	H4-1	ND																CDM Smith	N. Ross		
P4-00454	74954	32	D3	H4-2	ND																CDM Smith	N. Ross		
P4-00454	74955	33	D3	K4-1	ND																CDM Smith	N. Ross		
P4-00454	74956	34	D3	K4-4	ND																CDM Smith	N. Ross		
P4-00454	74957	35	D3	H4-3	ND																CDM Smith	N. Ross		
P4-00454	74958	36	D3	H4-4	ND																CDM Smith	N. Ross		
P4-00454	74959	37	D3	G4-3	ND																CDM Smith	N. Ross		
P4-00454	74960	38	D3	G4-4	ND																CDM Smith	N. Ross		
P4-00454	74961	39	D3	F4-4	ND																CDM Smith	N. Ross		
P4-00454	74962	40	D3	E4-3	ND																CDM Smith	N. Ross		
P4-00454	74963	41	D3	C5-1	ND																CDM Smith	N. Ross		
P4-00454	74964	42	D3	C5-2	ND																CDM Smith	N. Ross		
P4-00454	74965	43	D3	E4-4	ND																CDM Smith	N. Ross		
P4-00454	74966	44	D3	C4-3	ND																CDM Smith	N. Ross		
P4-00454	74967	45	D3	E5-1	ND																CDM Smith	N. Ross		
P4-00454	74968	46	D3	E5-2	ND																CDM Smith	N. Ross		
P4-00454	74969	47	D3	F5-1	ND																CDM Smith	N. Ross		
P4-00454	74970	48	D3	F5-2	ND																CDM Smith	N. Ross		
P4-00454	74971	49	D3	G5-1	ND																CDM Smith	N. Ross		
P4-00454	74972	50	D3	G5-2	ND																CDM Smith	N. Ross		
P4-00454	74973	51	D4	H5-3	ND																CDM Smith	N. Ross		
P4-00454	74974	52	D4	H5-4	ND																CDM Smith	N. Ross		
P4-00454	74975	53	D4	G5-3	ND																CDM Smith	N. Ross		
P4-00454	74976	54	D4	G5-4	ND																CDM Smith	N. Ross		
P4-00454	74977	55	D4	F5-3	ND																CDM Smith	N. Ross		
P4-00454	74978	56	D4	F5-4	ND																CDM Smith	N. Ross		
P4-00454	74979	57	D4	E5-3	ND																CDM Smith	N. Ross		
P4-00454	74980	58	D4	E5-4	ND																CDM Smith	N. Ross		
P4-00454	74981	59	D4	C5-3	ND																CDM Smith	N. Ross		
P4-00454	74982	60	D4	C5-4	ND																CDM Smith	N. Ross		
P4-00454	74983	61	D4	C5-1	ND																CDM Smith	N. Ross		
P4-00454	74984	62	D4	C5-2	ND																CDM Smith	N. Ross		
P4-00454	74985	63	D4	E5-1	ND																CDM Smith	N. Ross		
P4-00454	74986	64	D4	E5-2	ND																CDM Smith	N. Ross		
P4-00454	74987	65	D4	F5-1	ND																CDM Smith	N. Ross		
P4-00454	74988	66	D4	F5-2	ND																CDM Smith	N. Ross		
P4-00454	74989	67	D4	G5-1	ND																CDM Smith	N. Ross		
P4-00454	74990	68	D4	G5-2	ND																CDM Smith	N. Ross		
P4-00454	74991	69	D4	H5-1	ND																CDM Smith	N. Ross		
P4-00454	74992	70	D4	H5-2	ND																CDM Smith	N. Ross		
P4-00454	74993	71	D4	H4-3	ND																CDM Smith	N. Ross		
P4-00454	74994	72	D4	H4-4	ND																CDM Smith	N. Ross		
P4-00454	74995	73	D4	G4-3	ND																CDM Smith	N. Ross		
P4-00454	74996	74	D4	G4-4	ND																CDM Smith	N. Ross		
P4-00454	74997	75	D4	F4-3	ND																CDM Smith	N. Ross		
P4-00454	74998	76	D4	F4-4	ND																CDM Smith	N. Ross		
P4-00454	74999	77	D4	E4-3	ND																CDM Smith	N. Ross		
P4-00454	75000	78	D4	E4-4	ND																CDM Smith	N. Ross		
P4-00454	75001	79	D4	C4-3	ND																CDM Smith	N. Ross		
P4-00454	75002	80	D4	C4-4	ND																CDM Smith	N. Ross		
P4-00454	75003	81	D4	C4-1	ND																CDM Smith	N. Ross		
P4-00454	75004	82	D4	C4-2	ND																CDM Smith	N. Ross		
P4-00454	75005	83	D4	E4-1	ND																CDM Smith	N. Ross		
P4-00454	75006	84	D4	E4-2	ND																CDM Smith	N. Ross		
P4-00454	75007	85	D4	F4-2	ND																CDM Smith	N. Ross		
P4-00454	75008	86	D4	G4-1	ND																CDM Smith	N. Ross		
P4-00454	75009	87	D4	G4-2	ND																CDM Smith	N. Ross		
P4-00454	75010	88	D4	H4-1	ND																CDM Smith	N. Ross		
P4-00454	75011	89	D4	H4-2	ND																CDM Smith	N. Ross		
P4-00454	75012	90	D4	H3-3	ND																CDM Smith	N. Ross		
P4-00454	75013	91	D4	H3-4	ND																CDM Smith	N. Ross		
P4-00454	75014	92	D4	G3-3	ND																CDM Smith	N. Ross		
P4-00454	75015	93	D4	G3-4	ND																CDM Smith	N. Ross		
P4-00454	75016	94	D4	F3-3	ND																CDM Smith	N. Ross		
P4-00454	75017	95	D4	F3-4	ND																CDM Smith	N. Ross		
P4-00454	75018	96	D4	E3-3	ND																CDM Smith	N. Ross		
P4-00454	75019	97	D4	E3-4	ND																CDM Smith	N. Ross		
P4-00454	75020	98	D4	C3-3	ND																CDM Smith	N. Ross		
P4-00454	75021	99	D4	C3-4	ND																CDM Smith	N. Ross		
P4-00454	75022	100	D4	C3-1	ND																CDM Smith	N. Ross		
P4-00507	63770	1	B3	C6-2	ND																CDM Smith	N. Ross		
P4-00507	63771	2	B3	F6-1	ND																CDM Smith	N. Ross		
P4-00507	63772	3	B3	F6-2	ND																CDM Smith	N. Ross		
P4-00507	63773	4	B3	G6-1	ND																CDM Smith	N. Ross		
P4-00507	63774	5	B3	G5-3	ND																CDM Smith	N. Ross		
P4-00507	63775	6	B3	G5-4	ND																CDM Smith	N. Ross		
P4-00507	63776	7	B3	F5-3	ND																CDM Smith	N. Ross		
P4-00507	63777	8	B3	F5-4	ND																CDM Smith	N. Ross		
P4-00507	63778	9	B3	E5-3	ND																CDM Smith	N. Ross		
P4-00507	63779	10	B3	B5-3	ND																CDM Smith	N. Ross		
P4-00507	63780	11	B3	B5-4	ND																CDM Smith	N. Ross		
P4-00507	63781	12	B3	B5-1	ND																CDM Smith	N. Ross		
P4-00507	63782	13	B3	C5-2	ND																CDM Smith	N. Ross		
P4-00507	63783	14	B3	F5-1	ND																CDM Smith	N. Ross		
P4-00507	63784	15	B3	F5-2	ND																CDM Smith	N. Ross		
P4-00507	63785	16	B3	G5-1	ND																CDM Smith	N. Ross		
P4-00507	63786	17	B3	G5-2	ND																CDM Smith	N. Ross		
P4-00507	63787	18	B3	H5-1	ND																CDM Smith	N. Ross		
P4-00507	63788	19	B3	G4-3	ND																CDM Smith	N. Ross		
P4-00507	63789	20	B3	G4-4	ND																CDM Smith	N. Ross		
P4-00507	63790	21	B3	F4-3	ND																CDM Smith	N. Ross		
P4-00507	63791	22	B3	F4-4	ND																CDM Smith	N. Ross		
P4-00507	63792	23	B3	E4-3	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00507	63793	24	B3	E4-4	ND																CDM Smith	N. Ross		
P4-00507	63794	25	B3	C4-4	ND																CDM Smith	N. Ross		
P4-00507	63795	26	B3	C4-1	ND																CDM Smith	N. Ross		
P4-00507	63796	27	B3	C4-2	ND																CDM Smith	N. Ross		
P4-00507	63797	28	B3	G4-1	ND																CDM Smith	N. Ross		
P4-00507	63798	29	B3	G4-2	ND																CDM Smith	N. Ross		
P4-00507	63799	30	B3	H4-1	ND																CDM Smith	N. Ross		
P4-00507	63800	31	B3	G3-3	ND																CDM Smith	N. Ross		
P4-00507	63801	32	B3	G3-4	ND																CDM Smith	N. Ross		
P4-00507	63802	33	B3	F3-3	ND																CDM Smith	N. Ross		
P4-00507	63803	34	B3	F3-4	ND																CDM Smith	N. Ross		
P4-00507	63804	35	B3	E3-3	ND																CDM Smith	N. Ross		
P4-00507	63805	36	B3	E3-4	ND																CDM Smith	N. Ross		
P4-00507	63806	37	B3	C3-3	ND																CDM Smith	N. Ross		
P4-00507	63807	38	B3	C3-4	ND																CDM Smith	N. Ross		
P4-00507	63808	39	B3	E3-2	ND																CDM Smith	N. Ross		
P4-00507	63809	40	B3	F3-1	ND																CDM Smith	N. Ross		
P4-00507	63810	41	B3	G3-1	ND																CDM Smith	N. Ross		
P4-00507	63811	42	B3	G2-4	ND																CDM Smith	N. Ross		
P4-00507	63812	43	B3	F2-3	ND																CDM Smith	N. Ross		
P4-00507	63813	44	B3	F2-4	ND																CDM Smith	N. Ross		
P4-00507	63814	45	B3	E2-4	ND																CDM Smith	N. Ross		
P4-00507	63815	46	B4	G2-3	ND																CDM Smith	N. Ross		
P4-00507	63816	47	B4	G2-4	ND																CDM Smith	N. Ross		
P4-00507	63817	48	B4	F2-3	ND																CDM Smith	N. Ross		
P4-00507	63818	49	B4	F2-4	ND																CDM Smith	N. Ross		
P4-00507	63819	50	B4	E2-3	ND																CDM Smith	N. Ross		
P4-00507	63820	51	B4	E3-1	ND																CDM Smith	N. Ross		
P4-00507	63821	52	B4	E3-2	ND																CDM Smith	N. Ross		
P4-00507	63822	53	B4	F3-1	ND																CDM Smith	N. Ross		
P4-00507	63823	54	B4	F3-2	ND																CDM Smith	N. Ross		
P4-00507	63824	55	B4	G3-1	ND																CDM Smith	N. Ross		
P4-00507	63825	56	B4	G3-2	ND																CDM Smith	N. Ross		
P4-00507	63826	57	B4	H3-1	ND																CDM Smith	N. Ross		
P4-00507	63827	58	B4	H3-4	ND																CDM Smith	N. Ross		
P4-00507	63828	59	B4	G3-3	ND																CDM Smith	N. Ross		
P4-00507	63829	60	B4	G3-4	ND																CDM Smith	N. Ross		
P4-00507	63830	61	B4	F3-3	ND																CDM Smith	N. Ross		
P4-00507	63831	62	B4	F3-4	ND																CDM Smith	N. Ross		
P4-00507	63832	63	B4	E3-3	ND																CDM Smith	N. Ross		
P4-00507	63833	64	B4	C3-3	ND																CDM Smith	N. Ross		
P4-00507	63834	65	B4	B3-3	ND																CDM Smith	N. Ross		
P4-00507	63835	66	B4	B4-2	ND																CDM Smith	N. Ross		
P4-00507	63836	67	B4	C4-1	ND																CDM Smith	N. Ross		
P4-00507	63837	68	B4	C4-2	ND																CDM Smith	N. Ross		
P4-00507	63838	69	B4	E4-1	ND																CDM Smith	N. Ross		
P4-00507	63839	70	B4	E4-2	ND																CDM Smith	N. Ross		
P4-00507	63840	71	B4	F4-1	ND																CDM Smith	N. Ross		
P4-00507	63841	72	B4	F4-2	ND																CDM Smith	N. Ross		
P4-00507	63842	73	B4	G4-1	ND																CDM Smith	N. Ross		
P4-00507	63843	74	B4	G4-2	ND																CDM Smith	N. Ross		
P4-00507	63844	75	B4	H4-1	ND																CDM Smith	N. Ross		
P4-00507	63845	76	B4	H4-3	ND																CDM Smith	N. Ross		
P4-00507	63846	77	B4	H4-4	ND																CDM Smith	N. Ross		
P4-00507	63847	78	B4	G4-3	ND																CDM Smith	N. Ross		
P4-00507	63848	79	B4	G4-4	ND																CDM Smith	N. Ross		
P4-00507	63849	80	B4	F4-3	ND																CDM Smith	N. Ross		
P4-00507	63850	81	B4	F4-4	ND																CDM Smith	N. Ross		
P4-00507	63851	82	B4	E4-3	ND																CDM Smith	N. Ross		
P4-00507	63852	83	B4	E4-4	ND																CDM Smith	N. Ross		
P4-00507	63853	84	B4	C4-3	ND																CDM Smith	N. Ross		
P4-00507	63854	85	B4	C4-4	ND																CDM Smith	N. Ross		
P4-00507	63855	86	B4	C5-1	ND																CDM Smith	N. Ross		
P4-00507	63856	87	B4	C5-2	ND																CDM Smith	N. Ross		
P4-00507	63857	88	B4	E5-1	ND																CDM Smith	N. Ross		
P4-00507	63858	89	B4	E5-2	ND																CDM Smith	N. Ross		
P4-00507	63859	90	B4	F5-1	ND																CDM Smith	N. Ross		
P4-00507	63860	91	B4	F5-2	ND																CDM Smith	N. Ross		
P4-00507	63861	92	B4	G5-1	ND																CDM Smith	N. Ross		
P4-00507	63862	93	B4	G5-2	ND																CDM Smith	N. Ross		
P4-00507	63863	94	B4	H5-1	ND																CDM Smith	N. Ross		
P4-00507	63864	95	B4	H5-2	ND																CDM Smith	N. Ross		
P4-00507	63865	96	B4	H5-3	ND																CDM Smith	N. Ross		
P4-00507	63866	97	B4	H5-4	ND																CDM Smith	N. Ross		
P4-00507	63867	98	B4	G5-3	ND																CDM Smith	N. Ross		
P4-00507	63868	99	B4	G5-4	ND																CDM Smith	N. Ross		
P4-00507	63869	100	B4	F5-3	ND																CDM Smith	N. Ross		
P4-00508	67684	1	E7	C3-1	ND																CDM Smith	N. Ross		
P4-00508	67685	2	E7	C3-2	ND																CDM Smith	N. Ross		
P4-00508	67686	3	E7	E3-1	ND																CDM Smith	N. Ross		
P4-00508	67687	4	E7	E3-2	ND																CDM Smith	N. Ross		
P4-00508	67688	5	E7	F3-1	ND																CDM Smith	N. Ross		
P4-00508	67689	6	E7	F3-2	ND																CDM Smith	N. Ross		
P4-00508	67690	7	E7	G3-2	ND																CDM Smith	N. Ross		
P4-00508	67691	8	E7	H3-1	ND																CDM Smith	N. Ross		
P4-00508	67692	9	E7	H3-2	ND																CDM Smith	N. Ross		
P4-00508	67693	10	E7	H3-3	ND																CDM Smith	N. Ross		
P4-00508	67694	11	E7	H3-4	ND																CDM Smith	N. Ross		
P4-00508	67695	12	E7	G3-3	ND																CDM Smith	N. Ross		
P4-00508	67696	13	E7	G3-4	ND																CDM Smith	N. Ross		
P4-00508	67697	14	E7	F3-3	ND																CDM Smith	N. Ross		
P4-00508	67698	15	E7	F3-4	ND																CDM Smith	N. Ross		
P4-00508	67699	16	E7	E3-3	ND																CDM Smith	N. Ross		
P4-00508	67700	17	E7	E3-4	ND																CDM Smith	N. Ross		
P4-00508	67701	18	E7	C3-3	ND																CDM Smith	N. Ross		
P4-00508	67702	19	E7	C3-4	ND																CDM Smith	N. Ross		
P4-00508	67703	20	E7	C4-1	ND																CDM Smith	N. Ross		
P4-00508	67704	21	E7	C4-2	ND																CDM Smith	N. Ross		
P4-00508	67705	22	E7	E4-1	ND																CDM Smith	N. Ross		
P4-00508	67706	23	E7	E4-2	ND																CDM Smith	N. Ross		
P4-00508	67707	24	E7	F4-1	ND																CDM Smith	N. Ross		
P4-00508	67708	25	E7	F4-2	ND																CDM Smith	N. Ross		
P4-00508	67709	26	E7	G4-1	ND																CDM Smith	N. Ross		
P4-00508	67710	27	E7	G4-2	ND																CDM Smith	N. Ross		
P4-00508	67711	28	E7	H4-1	ND																CDM Smith	N. Ross		
P4-00508	67712	29	E7	H4-2	ND																CDM Smith	N. Ross		
P4-00508	67713	30	E7	H4-3	ND																CDM Smith	N. Ross		
P4-00508	67714	31	E7	H4-4	ND																CDM Smith	N. Ross		
P4-00508	67715	32	E7	G4-3	ND																CDM Smith	N. Ross		
P4-00508	67716	33	E7	G4-4	ND																CDM Smith	N. Ross		
P4-00508	67717	34	E7	F4-3	ND																CDM Smith	N. Ross		
P4-00508	67718	35	E7	E4-4	ND																CDM Smith	N. Ross		
P4-00508	67719	36	E7	C4-3	ND																CDM Smith	N. Ross		
P4-00508	67720	37	E7	C4-4	ND																CDM Smith	N. Ross		
P4-00508	67721	38	E7	C5-1	ND																CDM Smith	N. Ross		
P4-00508	67722	39	E7	C5-2	ND																CDM Smith	N. Ross		
P4-00508	67723	40	E7	E5-2	F	1	1	4.4078965	67	0.789474	12	5.5833	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00508	67724	41	E7	F5-2	ND																CDM Smith	N. Ross		
P4-00508	67725	42	E7	G5-1	ND																CDM Smith	N. Ross		
P4-00508	67726	43	E7	H5-1	ND																CDM Smith	N. Ross		
P4-00508	67727	44	E7	H5-2	ND																CDM Smith	N. Ross		
P4-00508	67728	45	E7	H5-3	ND																CDM Smith	N. Ross		
P4-00508	67729	46	E7	H5-4	ND																CDM Smith	N. Ross		
P4-00508	67730	47	E7	G5-3	ND																CDM Smith	N. Ross		
P4-00508	67731	48	E7	G5-4	ND																CDM Smith	N. Ross		
P4-00508	67732	49	E7	F5-3	ND																CDM Smith	N. Ross		
P4-00508	67733	50	E7	F5-4	ND																CDM Smith	N. Ross		
P4-00508	67734	51	E8	C3-1	ND																CDM Smith	N. Ross		
P4-00508	67735	52	E8	C3-2	ND																CDM Smith	N. Ross		
P4-00508	67736	53	E8	E3-1	ND																CDM Smith	N. Ross		
P4-00508	67737	54	E8	E3-2	ND																CDM Smith	N. Ross		
P4-00508	67738	55	E8	F3-1	ND																CDM Smith	N. Ross		
P4-00508	67739	56	E8	F3-2	ND																CDM Smith	N. Ross		
P4-00508	67740	57	E8	G3-1	ND																CDM Smith	N. Ross		
P4-00508	67741	58	E8	G3-2	ND																CDM Smith	N. Ross		
P4-00508	67742	59	E8	H3-1	ND																CDM Smith	N. Ross		
P4-00508	67743	60	E8	H3-2	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00508	67744	61	E8	H3-3	F	2	2	6.710529	102	0.9868425	15	6.8	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00508	67745	62	E8	H3-4	ND																CDM Smith	N. Ross		
P4-00508	67746	63	E8	G3-3	ND																CDM Smith	N. Ross		
P4-00508	67747	64	E8	G3-4	ND																CDM Smith	N. Ross		
P4-00508	67748	65	E8	F3-3	ND																CDM Smith	N. Ross		
P4-00508	67749	66	E8	F3-4	ND																CDM Smith	N. Ross		
P4-00508	67750	67	E8	E3-4	ND																CDM Smith	N. Ross		
P4-00508	67751	68	E8	C3-3	ND																CDM Smith	N. Ross		
P4-00508	67752	69	E8	C3-4	ND																CDM Smith	N. Ross		
P4-00508	67753	70	E8	C4-1	F	3	3	1.184211	18	0.1973685	3	6	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00508	67754	71	E8	C4-2	ND																CDM Smith	N. Ross		
P4-00508	67755	72	E8	E4-1	ND																CDM Smith	N. Ross		
P4-00508	67756	73	E8	E4-2	ND																CDM Smith	N. Ross		
P4-00508	67757	74	E8	F4-1	ND																CDM Smith	N. Ross		
P4-00508	67758	75	E8	F4-2	ND																CDM Smith	N. Ross		
P4-00508	67759	76	E8	H4-2	ND																CDM Smith	N. Ross		
P4-00508	67760	77	E8	H4-4	ND																CDM Smith	N. Ross		
P4-00508	67761	78	E8	G4-3	ND																CDM Smith	N. Ross		
P4-00508	67762	79	E8	G4-4	ND																CDM Smith	N. Ross		
P4-00508	67763	80	E8	F4-3	ND																CDM Smith	N. Ross		
P4-00508	67764	81	E8	F4-4	ND																CDM Smith	N. Ross		
P4-00508	67765	82	E8	E4-3	ND																CDM Smith	N. Ross		
P4-00508	67766	83	E8	E4-4	ND																CDM Smith	N. Ross		
P4-00508	67767	84	E8	C4-3	ND																CDM Smith	N. Ross		
P4-00508	67768	85	E8	C4-4	ND																CDM Smith	N. Ross		
P4-00508	67769	86	E8	B4-3	ND																CDM Smith	N. Ross		
P4-00508	67770	87	E8	C5-1	MD11	4															CDM Smith	N. Ross		
P4-00508	67771	88	E8	C5-1	MF		4	9.5394775	145	0.4934213	7.5	19.333	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00508	67772	89	E8	C5-2	ND																CDM Smith	N. Ross		
P4-00508	67773	90	E8	E5-1	ND																CDM Smith	N. Ross		
P4-00508	67774	91	E8	E5-2	ND																CDM Smith	N. Ross		
P4-00508	67775	92	E8	F5-1	ND																CDM Smith	N. Ross		
P4-00508	67776	93	E8	F5-2	ND																CDM Smith	N. Ross		
P4-00508	67777	94	E8	G5-1	ND																CDM Smith	N. Ross		
P4-00508	67778	95	E8	G5-2	ND																CDM Smith	N. Ross		
P4-00508	67779	96	E8	H5-1	ND																CDM Smith	N. Ross		
P4-00508	67780	97	E8	H5-2	ND																CDM Smith	N. Ross		
P4-00508	67781	98	E8	K5-1	F	5	5	7.236845	110	0.8223688	12.5	8.8	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00508	67782	99	E8	G5-4	ND																CDM Smith	N. Ross		
P4-00508	67783	100	E8	E5-3	ND																CDM Smith	N. Ross		
P4-00508	67784	101	E8	E5-4	ND																CDM Smith	N. Ross		
P4-00530	78922	1	B10	E6-2	ND																CDM Smith	N. Ross		
P4-00530	78923	2	B10	F6-1	ND																CDM Smith	N. Ross		
P4-00530	78924	3	B10	F6-2	ND																CDM Smith	N. Ross		
P4-00530	78925	4	B10	G6-1	ND																CDM Smith	N. Ross		
P4-00530	78926	5	B10	H6-1	ND																CDM Smith	N. Ross		
P4-00530	78927	6	B10	H6-2	F	1	1	3.6184225	55	0.7236845	11	5	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00530	78928	7	B10	H5-3	ND																CDM Smith	N. Ross		
P4-00530	78929	8	B10	H5-4	ND																CDM Smith	N. Ross		
P4-00530	78930	9	B10	G5-3	ND																CDM Smith	N. Ross		
P4-00530	78931	10	B10	G5-4	ND																CDM Smith	N. Ross		
P4-00530	78932	11	B10	F5-3	ND																CDM Smith	N. Ross		
P4-00530	78933	12	B10	F5-4	ND																CDM Smith	N. Ross		
P4-00530	78934	13	B10	C5-3	ND																CDM Smith	N. Ross		
P4-00530	78935	14	B10	B5-2	ND																CDM Smith	N. Ross		
P4-00530	78936	15	B10	C5-1	ND																CDM Smith	N. Ross		
P4-00530	78937	16	B10	C5-2	ND																CDM Smith	N. Ross		
P4-00530	78938	17	B10	E5-1	ND																CDM Smith	N. Ross		
P4-00530	78939	18	B10	E5-2	ND																CDM Smith	N. Ross		
P4-00530	78940	19	B10	F5-1	ND																CDM Smith	N. Ross		
P4-00530	78941	20	B10	F5-2	ND																CDM Smith	N. Ross		
P4-00530	78942	21	B10	G5-1	ND																CDM Smith	N. Ross		
P4-00530	78943	22	B10	G5-2	ND																CDM Smith	N. Ross		
P4-00530	78944	23	B10	H5-1	ND																CDM Smith	N. Ross		
P4-00530	78945	24	B10	H5-2	ND																CDM Smith	N. Ross		
P4-00530	78946	25	B10	K5-1	ND																CDM Smith	N. Ross		
P4-00530	78947	26	B10	K4-4	ND																CDM Smith	N. Ross		
P4-00530	78948	27	B10	G4-4	ND																CDM Smith	N. Ross		
P4-00530	78949	28	B10	E4-3	ND																CDM Smith	N. Ross		
P4-00530	78950	29	B10	E4-4	ND																CDM Smith	N. Ross		
P4-00530	78951	30	B10	C4-3	ND																CDM Smith	N. Ross		
P4-00530	78952	31	B10	B4-2	ND																CDM Smith	N. Ross		
P4-00530	78953	32	B10	C4-1	ND																CDM Smith	N. Ross		
P4-00530	78954	33	B10	C4-2	ND																CDM Smith	N. Ross		
P4-00530	78955	34	B10	E4-1	ND																CDM Smith	N. Ross		
P4-00530	78956	35	B10	E4-2	ND																CDM Smith	N. Ross		
P4-00530	78957	36	B10	F4-1	ND																CDM Smith	N. Ross		
P4-00530	78958	37	B10	F4-2	ND																CDM Smith	N. Ross		
P4-00530	78959	38	B10	G4-2	ND																CDM Smith	N. Ross		
P4-00530	78960	39	B10	H4-2	ND																CDM Smith	N. Ross		
P4-00530	78961	40	B10	K4-1	ND																CDM Smith	N. Ross		
P4-00530	78962	41	B10	K3-4	ND																CDM Smith	N. Ross		
P4-00530	78963	42	B10	H3-3	ND																CDM Smith	N. Ross		
P4-00530	78964	43	B10	F3-3	ND																CDM Smith	N. Ross		
P4-00530	78965	44	B10	F3-4	ND																CDM Smith	N. Ross		
P4-00530	78966	45	B10	E3-3	ND																CDM Smith	N. Ross		
P4-00530	78967	46	B10	E3-4	ND																CDM Smith	N. Ross		
P4-00530	78968	47	B10	C3-3	ND																CDM Smith	N. Ross		
P4-00530	78969	48	B10	C3-4	ND																CDM Smith	N. Ross		
P4-00530	78970	49	B10	C3-2	ND																CDM Smith	N. Ross		
P4-00530	78971	50	B10	E3-1	ND																CDM Smith	N. Ross		
P4-00530	78972	51	C1	G2-3	ND																CDM Smith	N. Ross		
P4-00530	78973	52	C1	G2-4	ND																CDM Smith	N. Ross		
P4-00530	78974	53	C1	F2-3	ND																CDM Smith	N. Ross		
P4-00530	78975	54	C1	F2-4	ND																CDM Smith	N. Ross		
P4-00530	78976	55	C1	E2-3	ND																CDM Smith	N. Ross		
P4-00530	78977	56	C1	E2-4	ND																CDM Smith	N. Ross		
P4-00530	78978	57	C1	C2-3	ND																CDM Smith	N. Ross		
P4-00530	78979	58	C1	C3-1	ND																CDM Smith	N. Ross		
P4-00530	78980	59	C1	C3-2	ND																CDM Smith	N. Ross		
P4-00530	78981	60	C1	E3-1	ND																CDM Smith	N. Ross		
P4-00530	78982	61	C1	E3-2	ND																CDM Smith	N. Ross		
P4-00530	78983	62	C1	F3-1	ND																CDM Smith	N. Ross		
P4-00530	78984	63	C1	G3-2	ND																CDM Smith	N. Ross		
P4-00530	78985	64	C1	H3-1	ND																CDM Smith	N. Ross		
P4-00530	78986	65	C1	H3-3	ND																CDM Smith	N. Ross		
P4-00530	78987	66	C1	H3-4	ND																CDM Smith	N. Ross		
P4-00530	78988	67	C1	G3-3	ND																CDM Smith	N. Ross		
P4-00530	78989	68	C1	F3-4	ND																CDM Smith	N. Ross		
P4-00530	78990	69	C1	C3-3	ND																CDM Smith	N. Ross		
P4-00530	78991	70	C1	B4-1	ND																CDM Smith	N. Ross		
P4-00530	78992	71	C1	B4-2	ND																CDM Smith	N. Ross		
P4-00530	78993	72	C1	C4-1	ND																CDM Smith	N. Ross		
P4-00530	78994	73	C1	C4-2	ND																CDM Smith	N. Ross		
P4-00530	78995	74	C1	E4-1	ND																CDM Smith	N. Ross		
P4-00530	78996	75	C1	E4-2	ND																CDM Smith	N. Ross		
P4-00530	78997	76	C1	F4-1	ND																CDM Smith	N. Ross		
P4-00530	78998	77	C1	H4-1	ND																CDM Smith	N. Ross		
P4-00530	78999	78	C1	K4-1	ND																CDM Smith	N. Ross		
P4-00530	79000	79	C1	K4-4	ND																CDM Smith	N. Ross		
P4-00530	79001	80	C1	H4-4	ND																CDM Smith	N. Ross		
P4-00530	79002	81	C1	G4-3	ND																CDM Smith	N. Ross		
P4-00530	79003	82	C1	G4-4	ND																CDM Smith	N. Ross		
P4-00530	79004	83	C1	F4-3	ND																CDM Smith	N. Ross		
P4-00530	79005	84	C1	F4-4	ND																CDM Smith	N. Ross		
P4-00530	79006	85	C1	E4-3	ND																CDM Smith	N. Ross		
P4-00530	79007	86	C1	E4-4	ND																CDM Smith	N. Ross		
P4-00530	79008	87	C1	C4-3	ND																CDM Smith	N. Ross		
P4-00530	79009	88	C1	C4-4	ND																CDM Smith	N. Ross		
P4-00530	79010	89	C1	C5-2	ND																CDM Smith	N. Ross		
P4-00530	79011	90	C1	E5-1	ND																CDM Smith	N. Ross		
P4-00530	79012	91	C1	F5-1	ND																CDM Smith	N. Ross		
P4-00530	79013	92	C1	G5-1	ND																CDM Smith	N. Ross		
P4-00530	79014	93	C1	G5-2	ND																CDM Smith	N. Ross		
P4-00530	79015	94	C1	H5-1	ND																CDM Smith	N. Ross		
P4-00530	79016	95	C1	H5-3	ND																CDM Smith	N. Ross		
P4-00530	79017	96	C1	H5-4	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00530	79018	97	C1	G5-4	ND																CDM Smith	N. Ross		
P4-00530	79019	98	C1	F5-3	ND																CDM Smith	N. Ross		
P4-00530	79020	99	C1	E5-4	ND																CDM Smith	N. Ross		
P4-00530	79021	100	C1	C5-3	ND																CDM Smith	N. Ross		
P4-00566	79640	1	A1	C6-2	ND																CDM Smith	N. Ross		
P4-00566	79641	2	A1	E6-1	ND																CDM Smith	N. Ross		
P4-00566	79642	3	A1	E6-2	ND																CDM Smith	N. Ross		
P4-00566	79643	4	A1	F6-1	ND																CDM Smith	N. Ross		
P4-00566	79644	5	A1	F6-2	ND																CDM Smith	N. Ross		
P4-00566	79645	6	A1	G6-1	ND																CDM Smith	N. Ross		
P4-00566	79646	7	A1	G6-2	ND																CDM Smith	N. Ross		
P4-00566	79647	8	A1	H5-4	ND																CDM Smith	N. Ross		
P4-00566	79648	9	A1	G5-3	ND																CDM Smith	N. Ross		
P4-00566	79649	10	A1	G5-4	ND																CDM Smith	N. Ross		
P4-00566	79650	11	A1	F5-3	ND																CDM Smith	N. Ross		
P4-00566	79651	12	A1	F5-4	ND																CDM Smith	N. Ross		
P4-00566	79652	13	A1	E5-4	ND																CDM Smith	N. Ross		
P4-00566	79653	14	A1	C5-3	ND																CDM Smith	N. Ross		
P4-00566	79654	15	A1	C5-4	ND																CDM Smith	N. Ross		
P4-00566	79655	16	A1	B5-2	ND																CDM Smith	N. Ross		
P4-00566	79656	17	A1	C5-1	ND																CDM Smith	N. Ross		
P4-00566	79657	18	A1	C5-2	ND																CDM Smith	N. Ross		
P4-00566	79658	19	A1	E5-1	ND																CDM Smith	N. Ross		
P4-00566	79659	20	A1	E5-2	ND																CDM Smith	N. Ross		
P4-00566	79660	21	A1	F5-1	ND																CDM Smith	N. Ross		
P4-00566	79661	22	A1	F5-2	ND																CDM Smith	N. Ross		
P4-00566	79662	23	A1	G5-1	ND																CDM Smith	N. Ross		
P4-00566	79663	24	A1	G5-2	ND																CDM Smith	N. Ross		
P4-00566	79664	25	A1	H5-2	ND																CDM Smith	N. Ross		
P4-00566	79665	26	A1	H4-3	ND																CDM Smith	N. Ross		
P4-00566	79666	27	A1	H4-4	ND																CDM Smith	N. Ross		
P4-00566	79667	28	A1	G4-3	ND																CDM Smith	N. Ross		
P4-00566	79668	29	A1	G4-4	ND																CDM Smith	N. Ross		
P4-00566	79669	30	A1	F4-3	ND																CDM Smith	N. Ross		
P4-00566	79670	31	A1	F4-4	ND																CDM Smith	N. Ross		
P4-00566	79671	32	A1	E4-3	ND																CDM Smith	N. Ross		
P4-00566	79672	33	A1	E4-4	ND																CDM Smith	N. Ross		
P4-00566	79673	34	A1	C4-3	ND																CDM Smith	N. Ross		
P4-00566	79674	35	A1	C4-4	ND																CDM Smith	N. Ross		
P4-00566	79605	36	A1	B4-3	ND																CDM Smith	N. Ross		
P4-00566	79606	37	A1	B4-2	ND																CDM Smith	N. Ross		
P4-00566	79607	38	A1	C4-1	ND																CDM Smith	N. Ross		
P4-00566	79608	39	A1	C4-2	ND																CDM Smith	N. Ross		
P4-00566	79609	40	A1	E4-1	ND																CDM Smith	N. Ross		
P4-00566	79610	41	A1	E4-2	ND																CDM Smith	N. Ross		
P4-00566	79611	42	A1	F4-1	ND																CDM Smith	N. Ross		
P4-00566	79612	43	A1	F4-2	ND																CDM Smith	N. Ross		
P4-00566	79613	44	A1	G4-1	ND																CDM Smith	N. Ross		
P4-00566	79614	45	A1	H4-1	ND																CDM Smith	N. Ross		
P4-00566	79615	46	A1	H4-2	ND																CDM Smith	N. Ross		
P4-00566	79616	47	A1	H3-4	ND																CDM Smith	N. Ross		
P4-00566	79617	48	A1	G3-4	ND																CDM Smith	N. Ross		
P4-00566	79618	49	A1	F3-4	ND																CDM Smith	N. Ross		
P4-00566	79619	50	A1	E3-3	ND																CDM Smith	N. Ross		
P4-00566	79620	51	A2	C3-1	ND																CDM Smith	N. Ross		
P4-00566	79621	52	A2	C3-2	ND																CDM Smith	N. Ross		
P4-00566	79622	53	A2	E3-1	ND																CDM Smith	N. Ross		
P4-00566	79623	54	A2	E3-2	ND																CDM Smith	N. Ross		
P4-00566	79624	55	A2	F3-1	ND																CDM Smith	N. Ross		
P4-00566	79625	56	A2	F3-2	ND																CDM Smith	N. Ross		
P4-00566	79626	57	A2	G3-1	ND																CDM Smith	N. Ross		
P4-00566	79627	58	A2	G3-2	ND																CDM Smith	N. Ross		
P4-00566	79628	59	A2	H3-3	ND																CDM Smith	N. Ross		
P4-00566	79629	60	A2	H3-4	ND																CDM Smith	N. Ross		
P4-00566	79630	61	A2	G3-3	ND																CDM Smith	N. Ross		
P4-00566	79631	62	A2	G3-4	ND																CDM Smith	N. Ross		
P4-00566	79632	63	A2	F3-3	ND																CDM Smith	N. Ross		
P4-00566	79633	64	A2	F3-4	ND																CDM Smith	N. Ross		
P4-00566	79634	65	A2	E3-3	ND																CDM Smith	N. Ross		
P4-00566	79635	66	A2	E3-4	ND																CDM Smith	N. Ross		
P4-00566	79636	67	A2	C3-3	ND																CDM Smith	N. Ross		
P4-00566	79637	68	A2	B3-3	ND																CDM Smith	N. Ross		
P4-00566	79638	69	A2	B4-2	ND																CDM Smith	N. Ross		
P4-00566	79639	70	A2	C4-1	ND																CDM Smith	N. Ross		
P4-00566	79675	71	A2	C4-2	ND																CDM Smith	N. Ross		
P4-00566	79676	72	A2	E4-1	ND																CDM Smith	N. Ross		
P4-00566	79677	73	A2	E4-2	ND																CDM Smith	N. Ross		
P4-00566	79678	74	A2	F4-1	ND																CDM Smith	N. Ross		
P4-00566	79679	75	A2	F4-2	ND																CDM Smith	N. Ross		
P4-00566	79680	76	A2	G4-1	ND																CDM Smith	N. Ross		
P4-00566	79681	77	A2	G4-2	ND																CDM Smith	N. Ross		
P4-00566	79682	78	A2	H4-1	ND																CDM Smith	N. Ross		
P4-00566	79683	79	A2	H4-2	ND																CDM Smith	N. Ross		
P4-00566	79684	80	A2	H4-3	ND																CDM Smith	N. Ross		
P4-00566	79685	81	A2	H4-4	ND																CDM Smith	N. Ross		
P4-00566	79686	82	A2	G4-3	ND																CDM Smith	N. Ross		
P4-00566	79687	83	A2	G4-4	ND																CDM Smith	N. Ross		
P4-00566	79688	84	A2	F4-3	ND																CDM Smith	N. Ross		
P4-00566	79689	85	A2	F4-4	ND																CDM Smith	N. Ross		
P4-00566	79690	86	A2	E4-3	ND																CDM Smith	N. Ross		
P4-00566	79691	87	A2	E4-4	ND																CDM Smith	N. Ross		
P4-00566	79692	88	A2	C4-3	ND																CDM Smith	N. Ross		
P4-00566	79693	89	A2	C4-4	ND																CDM Smith	N. Ross		
P4-00566	79694	90	A2	B4-3	ND																CDM Smith	N. Ross		
P4-00566	79695	91	A2	C5-1	ND																CDM Smith	N. Ross		
P4-00566	79696	92	A2	C5-2	ND																CDM Smith	N. Ross		
P4-00566	79697	93	A2	F5-1	ND																CDM Smith	N. Ross		
P4-00566	79698	94	A2	F5-2	ND																CDM Smith	N. Ross		
P4-00566	79699	95	A2	G5-1	ND																CDM Smith	N. Ross		
P4-00566	79700	96	A2	H5-1	ND																CDM Smith	N. Ross		
P4-00566	79701	97	A2	H5-2	ND																CDM Smith	N. Ross		
P4-00566	79702	98	A2	H5-4	ND																CDM Smith	N. Ross		
P4-00566	79703	99	A2	G5-3	ND																CDM Smith	N. Ross		
P4-00566	79704	100	A2	G5-4	ND																CDM Smith	N. Ross		
P4-00639	64964	1	E4	C6-2	ND																CDM Smith	N. Ross		
P4-00639	64965	2	E4	E6-1	ND																CDM Smith	N. Ross		
P4-00639	64966	3	E4	F6-1	ND																CDM Smith	N. Ross		
P4-00639	64967	4	E4	F6-2	ND																CDM Smith	N. Ross		
P4-00639	64968	5	E4	G6-1	ND																CDM Smith	N. Ross		
P4-00639	64969	6	E4	G6-2	ND																CDM Smith	N. Ross		
P4-00639	64970	7	E4	H5-4	ND																CDM Smith	N. Ross		
P4-00639	64971	8	E4	G5-3	ND																CDM Smith	N. Ross		
P4-00639	64972	9	E4	G5-4	ND																CDM Smith	N. Ross		
P4-00639	64973	10	E4	E5-4	ND																CDM Smith	N. Ross		
P4-00639	64974	11	E4	C5-3	ND																CDM Smith	N. Ross		
P4-00639	64975	12	E4	C5-4	ND																CDM Smith	N. Ross		
P4-00639	64976	13	E4	B5-2	ND																CDM Smith	N. Ross		
P4-00639	64977	14	E4	C5-1	ND																CDM Smith	N. Ross		
P4-00639	64978	15	E4	C5-2	ND																CDM Smith	N. Ross		
P4-00639	64979	16	E4	E5-1	ND																CDM Smith	N. Ross		
P4-00639	64980	17	E4	E5-2	ND																CDM Smith	N. Ross		
P4-00639	64981	18	E4	F5-1	ND																CDM Smith	N. Ross		
P4-00639	64982	19	E4	F5-2	ND																CDM Smith	N. Ross		
P4-00639	64983	20	E4	G5-1	ND																CDM Smith	N. Ross		
P4-00639	64984	21	E4	G5-2	ND																CDM Smith	N. Ross		
P4-00639	64985	22	E4	H5-1	ND																CDM Smith	N. Ross		
P4-00639	64986	23	E4	H5-2	ND																CDM Smith	N. Ross		
P4-00639	64987	24	E4	H4-3	ND																CDM Smith	N. Ross		
P4-00639	64988	25	E4	H4-4	ND																CDM Smith	N. Ross		
P4-00639	64989	26	E4	G4-3	ND																CDM Smith	N. Ross		
P4-00639	64990	27	E4	G4-4	ND																CDM Smith	N. Ross		
P4-00639	64991	28	E4	F4-3	ND																CDM Smith	N. Ross		
P4-00639	64992	29	E4	F4-4	ND																CDM Smith	N. Ross		
P4-00639	64993	30	E4	E4-3	ND																CDM Smith	N. Ross		
P4-00639	64994	31	E4	E4-4	ND																CDM Smith	N. Ross		
P4-00639	64995	32	E4	C4-3	ND																CDM Smith	N. Ross		
P4-00639	64996	33	E4	C4-4	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00639	64997	34	E4	B4-3	ND																CDM Smith	N. Ross		
P4-00639	64998	35	E4	B4-2	ND																CDM Smith	N. Ross		
P4-00639	64999	36	E4	C4-1	ND																CDM Smith	N. Ross		
P4-00639	65000	37	E4	C4-2	ND																CDM Smith	N. Ross		
P4-00639	65001	38	E4	E4-2	ND																CDM Smith	N. Ross		
P4-00639	65002	39	E4	F4-1	ND																CDM Smith	N. Ross		
P4-00639	65003	40	E4	F4-2	ND																CDM Smith	N. Ross		
P4-00639	65004	41	E4	G4-1	ND																CDM Smith	N. Ross		
P4-00639	65005	42	E4	G4-2	ND																CDM Smith	N. Ross		
P4-00639	65006	43	E4	H4-1	ND																CDM Smith	N. Ross		
P4-00639	65007	44	E4	H4-2	ND																CDM Smith	N. Ross		
P4-00639	65008	45	E4	H3-3	ND																CDM Smith	N. Ross		
P4-00639	65009	46	E4	H3-4	ND																CDM Smith	N. Ross		
P4-00639	65010	47	E4	G3-3	ND																CDM Smith	N. Ross		
P4-00639	65011	48	E4	G3-4	ND																CDM Smith	N. Ross		
P4-00639	65012	49	E4	F3-3	ND																CDM Smith	N. Ross		
P4-00639	65013	50	E4	F3-4	ND																CDM Smith	N. Ross		
P4-00639	65014	51	E5	C3-1	ND																CDM Smith	N. Ross		
P4-00639	65015	52	E5	C3-2	ND																CDM Smith	N. Ross		
P4-00639	65016	53	E5	E3-1	ND																CDM Smith	N. Ross		
P4-00639	65017	54	E5	E3-2	ND																CDM Smith	N. Ross		
P4-00639	65018	55	E5	F3-1	ND																CDM Smith	N. Ross		
P4-00639	65019	56	E5	F3-2	ND																CDM Smith	N. Ross		
P4-00639	65020	57	E5	G3-1	ND																CDM Smith	N. Ross		
P4-00639	65021	58	E5	G3-2	ND																CDM Smith	N. Ross		
P4-00639	65022	59	E5	H3-1	ND																CDM Smith	N. Ross		
P4-00639	65023	60	E5	H3-3	ND																CDM Smith	N. Ross		
P4-00639	65024	61	E5	H3-4	ND																CDM Smith	N. Ross		
P4-00639	65025	62	E5	G3-3	ND																CDM Smith	N. Ross		
P4-00639	65026	63	E5	G3-4	ND																CDM Smith	N. Ross		
P4-00639	65027	64	E5	F3-4	ND																CDM Smith	N. Ross		
P4-00639	65028	65	E5	E3-3	ND																CDM Smith	N. Ross		
P4-00639	65029	66	E5	B4-2	ND																CDM Smith	N. Ross		
P4-00639	65030	67	E5	E4-1	ND																CDM Smith	N. Ross		
P4-00639	65031	68	E5	E4-2	ND																CDM Smith	N. Ross		
P4-00639	65032	69	E5	F4-1	ND																CDM Smith	N. Ross		
P4-00639	65033	70	E5	F4-2	ND																CDM Smith	N. Ross		
P4-00639	65034	71	E5	G4-1	ND																CDM Smith	N. Ross		
P4-00639	65035	72	E5	G4-2	ND																CDM Smith	N. Ross		
P4-00639	65036	73	E5	H4-1	ND																CDM Smith	N. Ross		
P4-00639	65037	74	E5	H4-2	ND																CDM Smith	N. Ross		
P4-00639	65038	75	E5	H4-3	ND																CDM Smith	N. Ross		
P4-00639	65039	76	E5	H4-4	ND																CDM Smith	N. Ross		
P4-00639	65040	77	E5	G4-3	ND																CDM Smith	N. Ross		
P4-00639	65041	78	E5	G4-4	ND																CDM Smith	N. Ross		
P4-00639	65042	79	E5	F4-3	ND																CDM Smith	N. Ross		
P4-00639	65043	80	E5	E4-3	ND																CDM Smith	N. Ross		
P4-00639	65044	81	E5	E4-4	ND																CDM Smith	N. Ross		
P4-00639	65045	82	E5	C4-3	ND																CDM Smith	N. Ross		
P4-00639	65046	83	E5	C4-4	ND																CDM Smith	N. Ross		
P4-00639	65047	84	E5	B4-3	ND																CDM Smith	N. Ross		
P4-00639	65048	85	E5	C5-1	ND																CDM Smith	N. Ross		
P4-00639	65049	86	E5	C5-2	ND																CDM Smith	N. Ross		
P4-00639	65050	87	E5	E5-1	ND																CDM Smith	N. Ross		
P4-00639	65051	88	E5	E5-2	ND																CDM Smith	N. Ross		
P4-00639	65052	89	E5	F5-2	ND																CDM Smith	N. Ross		
P4-00639	65053	90	E5	G5-1	ND																CDM Smith	N. Ross		
P4-00639	65054	91	E5	G5-2	ND																CDM Smith	N. Ross		
P4-00639	65055	92	E5	H5-1	ND																CDM Smith	N. Ross		
P4-00639	65056	93	E5	H5-2	ND																CDM Smith	N. Ross		
P4-00639	65057	94	E5	H5-4	ND																CDM Smith	N. Ross		
P4-00639	65058	95	E5	G5-3	ND																CDM Smith	N. Ross		
P4-00639	65059	96	E5	F5-4	ND																CDM Smith	N. Ross		
P4-00639	65060	97	E5	E5-3	ND																CDM Smith	N. Ross		
P4-00639	65061	98	E5	E5-4	ND																CDM Smith	N. Ross		
P4-00639	65062	99	E5	C5-3	ND																CDM Smith	N. Ross		
P4-00639	65063	100	E5	C6-2	ND																CDM Smith	N. Ross		
P4-00665	80683	1	C8	C3-1	F	1	1	2.500001	38	0.1644738	2.5	15.2	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80684	2	C8	C3-2	F	2	2	6.184213	94	0.526316	8	11.75	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80685	3	C8	E3-1	ND																CDM Smith	N. Ross		
P4-00665	80686	4	C8	E3-2	ND																CDM Smith	N. Ross		
P4-00665	80687	5	C8	F3-1	F	3	3	2.8289485	43	0.2302633	3.5	12.286	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80688	6	C8	F3-2	ND																CDM Smith	N. Ross		
P4-00665	80689	7	C8	G3-1	ND																CDM Smith	N. Ross		
P4-00665	80690	8	C8	H3-1	ND																CDM Smith	N. Ross		
P4-00665	80691	9	C8	H3-3	ND																CDM Smith	N. Ross		
P4-00665	80692	10	C8	H3-4	ND																CDM Smith	N. Ross		
P4-00665	80693	11	C8	G3-3	F	4	4	1.842106	28	0.394737	6	4.6667	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80694	12	C8	G3-4	ND																CDM Smith	N. Ross		
P4-00665	80695	13	C8	F3-3	ND																CDM Smith	N. Ross		
P4-00665	80696	14	C8	F3-4	ND																CDM Smith	N. Ross		
P4-00665	80697	15	C8	E3-3	ND																CDM Smith	N. Ross		
P4-00665	80698	16	C8	E3-4	ND																CDM Smith	N. Ross		
P4-00665	80699	17	C8	C3-3	F	5	5	1.5131585	23	0.4934213	7.5	3.0667	LA		ADX	1	1	1		XX;AC	CDM Smith	N. Ross		
P4-00665	80700	18	C8	B3-3	ND																CDM Smith	N. Ross		
P4-00665	80701	19	C8	B4-1	ND																CDM Smith	N. Ross		
P4-00665	80702	20	C8	B4-2	ND																CDM Smith	N. Ross		
P4-00665	80703	21	C8	C4-1	ND																CDM Smith	N. Ross		
P4-00665	80704	22	C8	C4-2	ND																CDM Smith	N. Ross		
P4-00665	80705	23	C8	E4-1	ND																CDM Smith	N. Ross		
P4-00665	80706	24	C8	E4-2	F	6	6	3.289475	50	0.394737	6	8.3333	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80707	25	C8	F4-1	ND																CDM Smith	N. Ross		
P4-00665	80708	26	C8	F4-2	F	7	7	19.9342185	303	0.8223688	12.5	24.24	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80709	27	C8	G4-1	ND																CDM Smith	N. Ross		
P4-00665	80710	28	C8	G4-2	MD11	8															CDM Smith	N. Ross		
P4-00665	80711	29	C8	G4-2	MF		8	18.42106	280	1.447369	22	12.727	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80712	30	C8	H4-1	F	9	9	3.94737	60	1.184211	18	3.3333	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80713	31	C8	H4-1	F	10	10	4.4078965	67	0.131579	2	33.5	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80714	32	C8	H4-2	F	11	11	2.763159	42	0.263158	4	10.5	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80715	33	C8	H4-4	ND																CDM Smith	N. Ross		
P4-00665	80716	34	C8	G4-3	ND																CDM Smith	N. Ross		
P4-00665	80717	35	C8	G4-4	ND																CDM Smith	N. Ross		
P4-00665	80718	36	C8	F4-3	F	12	12	1.973685	30	0.2302633	3.5	8.5714	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80719	37	C8	F4-4	ND																CDM Smith	N. Ross		
P4-00665	80720	38	C8	E4-3	ND																CDM Smith	N. Ross		
P4-00665	80721	39	C8	E4-4	ND																CDM Smith	N. Ross		
P4-00665	80722	40	C8	C4-3	F	13	13	3.157896	48	0.1973685	3	16	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80723	41	C8	C4-4	ND																CDM Smith	N. Ross		
P4-00665	80724	42	C8	B4-3	MD10	14															CDM Smith	N. Ross		
P4-00665	80725	43	C8	B4-3	MF		14	3.6184225	55	0.5592108	8.5	6.4706	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80726	44	C8	B4-4	ND																CDM Smith	N. Ross		
P4-00665	80727	45	C8	B5-2	F	15	15	1.447369	22	0.263158	4	5.5	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80728	46	C8	C5-1	ND																CDM Smith	N. Ross		
P4-00665	80729	47	C8	C5-2	ND																CDM Smith	N. Ross		
P4-00665	80730	48	C8	E5-1	ND																CDM Smith	N. Ross		
P4-00665	80731	49	C8	E5-2	MD10	16															CDM Smith	N. Ross		
P4-00665	80732	50	C8	E5-2	MF		16	2.500001	38	0.1644738	2.5	15.2	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80733	51	C8	E5-2	F	17	17	1.31579	20	0.3289475	5	4	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80734	52	C8	F5-1	ND																CDM Smith	N. Ross		
P4-00665	80735	53	C8	F5-2	ND																CDM Smith	N. Ross		
P4-00665	80736	54	C8	G5-1	F	18	18	6.3815815	97	0.921053	14	6.9286	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80737	55	C8	G5-2	ND																CDM Smith	N. Ross		
P4-00665	80738	56	C9	G5-4	ND																CDM Smith	N. Ross		
P4-00665	80739	57	C9	F5-3	B	19	19	3.684212	56	0.3289475	5	11.2	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80740	58	C9	F5-3	MD10	20															CDM Smith	N. Ross		
P4-00665	80741	59	C9	F5-3	MF		20	3.4868435	53	0.394737	6	8.8333	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80742	60	C9	F5-4	ND																CDM Smith	N. Ross		
P4-00665	80743	61	C9	E5-3	ND																CDM Smith	N. Ross		
P4-00665	80744	62	C9	E5-4	ND																CDM Smith	N. Ross		
P4-00665	80745	63	C9	C5-3	ND																CDM Smith	N. Ross		
P4-00665	80746	64	C9	C5-4	ND																CDM Smith	N. Ross		
P4-00665	80747	65	C9	B5-1	ND																CDM Smith	N. Ross		
P4-00665	80748	66	C9	B5-2	ND																CDM Smith	N. Ross		
P4-00665	80749	67	C9	C5-1	ND																CDM Smith	N. Ross		
P4-00665	80750	68	C9	C5-2	ND																CDM Smith	N. Ross		
P4-00665	80751	69	C9	E5-1	F	21	21	4.342107	66	0.526316	8	8.25	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80752	70	C9	E5-1	MD10	22															CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00665	80753	71	C9	E5-1	MF		22	2.4342115	37	0.1973685	3	12.333	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80754	72	C9	E5-2	F	23	23	1.973685	30	0.2302633	3.5	8.5714	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80755	73	C9	F5-1	F	24	24	12.6973735	193	0.921053	14	13.786	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80756	74	C9	F5-2	ND																CDM Smith	N. Ross		
P4-00665	80757	75	C9	G5-1	ND																CDM Smith	N. Ross		
P4-00665	80758	76	C9	G5-2	ND																CDM Smith	N. Ross		
P4-00665	80759	77	C9	H5-1	F	25	25	6.710529	102	0.526316	8	12.75	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80760	78	C9	H4-3	ND																CDM Smith	N. Ross		
P4-00665	80761	79	C9	H4-4	ND																CDM Smith	N. Ross		
P4-00665	80762	80	C9	G4-3	ND																CDM Smith	N. Ross		
P4-00665	80763	81	C9	G4-4	ND																CDM Smith	N. Ross		
P4-00665	80764	82	C9	F4-3	ND																CDM Smith	N. Ross		
P4-00665	80765	83	C9	F4-4	ND																CDM Smith	N. Ross		
P4-00665	80766	84	C9	E4-3	F	26	26	2.9605275	45	0.5921055	9	5	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80767	85	C9	E4-4	ND																CDM Smith	N. Ross		
P4-00665	80768	86	C9	C4-3	ND																CDM Smith	N. Ross		
P4-00665	80769	87	C9	B4-3	ND																CDM Smith	N. Ross		
P4-00665	80770	88	C9	B4-4	ND																CDM Smith	N. Ross		
P4-00665	80771	89	C9	B4-1	ND																CDM Smith	N. Ross		
P4-00665	80772	90	C9	B4-2	ND																CDM Smith	N. Ross		
P4-00665	80773	91	C9	C4-1	ND																CDM Smith	N. Ross		
P4-00665	80774	92	C9	C4-2	ND																CDM Smith	N. Ross		
P4-00665	80775	93	C9	E4-1	ND																CDM Smith	N. Ross		
P4-00665	80776	94	C9	E4-2	ND																CDM Smith	N. Ross		
P4-00665	80777	95	C9	G4-1	MD10	27															CDM Smith	N. Ross		
P4-00665	80778	96	C9	G4-1	MF		27	3.0921065	47	0.1973685	3	15.667	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80779	97	C9	G4-2	ND																CDM Smith	N. Ross		
P4-00665	80780	98	C9	H4-1	F	28	28	8.947372	136	0.4605265	7	19.429	LA		ADX	1				NaK;WRTA;XSGB;DL	CDM Smith	N. Ross		
P4-00665	80781	99	C9	H4-2	F	29	29	2.3026325	35	0.1644738	2.5	14	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80782	100	C9	H3-3	ND																CDM Smith	N. Ross		
P4-00665	80783	101	C9	H3-4	ND																CDM Smith	N. Ross		
P4-00665	80784	102	C9	G3-3	ND																CDM Smith	N. Ross		
P4-00665	80785	103	C9	G3-4	ND																CDM Smith	N. Ross		
P4-00665	80786	104	C9	F3-3	ND																CDM Smith	N. Ross		
P4-00665	80787	105	C9	F3-4	ND																CDM Smith	N. Ross		
P4-00665	80788	106	C9	E3-4	ND																CDM Smith	N. Ross		
P4-00665	80789	107	C9	C3-3	F	30	30	4.078949	62	0.3289475	5	12.4	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00665	80790	108	C9	C3-4	ND																CDM Smith	N. Ross		
P4-00665	80791	109	C9	C3-1	ND																CDM Smith	N. Ross		
P4-00665	80792	110	C9	C3-2	ND																CDM Smith	N. Ross		
P4-00683	68832	1	E5	E3-1	ND																CDM Smith	N. Ross		
P4-00683	68833	2	E5	E3-2	ND																CDM Smith	N. Ross		
P4-00683	68834	3	E5	F3-1	ND																CDM Smith	N. Ross		
P4-00683	68835	4	E5	G3-2	ND																CDM Smith	N. Ross		
P4-00683	68836	5	E5	H3-1	ND																CDM Smith	N. Ross		
P4-00683	68837	6	E5	H3-4	ND																CDM Smith	N. Ross		
P4-00683	68838	7	E5	G3-3	ND																CDM Smith	N. Ross		
P4-00683	68839	8	E5	G3-4	ND																CDM Smith	N. Ross		
P4-00683	68840	9	E5	F3-4	ND																CDM Smith	N. Ross		
P4-00683	68841	10	E5	E3-3	ND																CDM Smith	N. Ross		
P4-00683	68842	11	E5	E3-4	ND																CDM Smith	N. Ross		
P4-00683	68843	12	E5	E4-1	ND																CDM Smith	N. Ross		
P4-00683	68844	13	E5	E4-2	ND																CDM Smith	N. Ross		
P4-00683	68845	14	E5	F4-1	ND																CDM Smith	N. Ross		
P4-00683	68846	15	E5	F4-2	ND																CDM Smith	N. Ross		
P4-00683	68847	16	E5	G4-1	ND																CDM Smith	N. Ross		
P4-00683	68848	17	E5	G4-2	ND																CDM Smith	N. Ross		
P4-00683	68849	18	E5	H4-1	ND																CDM Smith	N. Ross		
P4-00683	68850	19	E5	H4-2	ND																CDM Smith	N. Ross		
P4-00683	68851	20	E5	H4-4	ND																CDM Smith	N. Ross		
P4-00683	68852	21	E5	G4-4	ND																CDM Smith	N. Ross		
P4-00683	68853	22	E5	F4-3	ND																CDM Smith	N. Ross		
P4-00683	68854	23	E5	F4-4	ND																CDM Smith	N. Ross		
P4-00683	68855	24	E5	E4-3	ND																CDM Smith	N. Ross		
P4-00683	68856	25	E5	E4-4	ND																CDM Smith	N. Ross		
P4-00683	68857	26	E5	C4-3	ND																CDM Smith	N. Ross		
P4-00683	68858	27	E5	C4-4	ND																CDM Smith	N. Ross		
P4-00683	68859	28	E5	B5-2	ND																CDM Smith	N. Ross		
P4-00683	68860	29	E5	C5-2	ND																CDM Smith	N. Ross		
P4-00683	68861	30	E5	F5-1	ND																CDM Smith	N. Ross		
P4-00683	68862	31	E5	F5-2	ND																CDM Smith	N. Ross		
P4-00683	68863	32	E5	G5-1	ND																CDM Smith	N. Ross		
P4-00683	68864	33	E5	G5-2	ND																CDM Smith	N. Ross		
P4-00683	68865	34	E5	H5-2	ND																CDM Smith	N. Ross		
P4-00683	68866	35	E5	H5-4	ND																CDM Smith	N. Ross		
P4-00683	68867	36	E5	G5-3	ND																CDM Smith	N. Ross		
P4-00683	68868	37	E5	G5-4	ND																CDM Smith	N. Ross		
P4-00683	68869	38	E5	F5-3	ND																CDM Smith	N. Ross		
P4-00683	68870	39	E5	F5-4	ND																CDM Smith	N. Ross		
P4-00683	68871	40	E5	E5-3	ND																CDM Smith	N. Ross		
P4-00683	68872	41	E6	C6-2	ND																CDM Smith	N. Ross		
P4-00683	68873	42	E6	E6-1	ND																CDM Smith	N. Ross		
P4-00683	68874	43	E6	F6-1	ND																CDM Smith	N. Ross		
P4-00683	68875	44	E6	G6-2	ND																CDM Smith	N. Ross		
P4-00683	68876	45	E6	H6-1	ND																CDM Smith	N. Ross		
P4-00683	68877	46	E6	H5-4	ND																CDM Smith	N. Ross		
P4-00683	68878	47	E6	G5-3	ND																CDM Smith	N. Ross		
P4-00683	68879	48	E6	E5-4	ND																CDM Smith	N. Ross		
P4-00683	68880	49	E6	C5-3	ND																CDM Smith	N. Ross		
P4-00683	68881	50	E6	C5-4	ND																CDM Smith	N. Ross		
P4-00683	68882	51	E6	C5-1	ND																CDM Smith	N. Ross		
P4-00683	68883	52	E6	C5-2	ND																CDM Smith	N. Ross		
P4-00683	68884	53	E6	G5-2	ND																CDM Smith	N. Ross		
P4-00683	68885	54	E6	H5-1	ND																CDM Smith	N. Ross		
P4-00683	68886	55	E6	H5-2	ND																CDM Smith	N. Ross		
P4-00683	68887	56	E6	H4-4	ND																CDM Smith	N. Ross		
P4-00683	68888	57	E6	G4-3	ND																CDM Smith	N. Ross		
P4-00683	68889	58	E6	F4-4	ND																CDM Smith	N. Ross		
P4-00683	68890	59	E6	E4-4	ND																CDM Smith	N. Ross		
P4-00683	68891	60	E6	C4-4	ND																CDM Smith	N. Ross		
P4-00683	68892	61	E6	C4-2	ND																CDM Smith	N. Ross		
P4-00683	68893	62	E6	E4-2	ND																CDM Smith	N. Ross		
P4-00683	68894	63	E6	E3-4	ND																CDM Smith	N. Ross		
P4-00683	68895	64	E6	B3-3	ND																CDM Smith	N. Ross		
P4-00683	68896	65	E6	B4-2	ND																CDM Smith	N. Ross		
P4-00683	68897	66	E6	C3-2	ND																CDM Smith	N. Ross		
P4-00683	68898	67	E6	E3-1	ND																CDM Smith	N. Ross		
P4-00683	68899	68	E6	K3-1	ND																CDM Smith	N. Ross		
P4-00683	68900	69	E6	E2-3	ND																CDM Smith	N. Ross		
P4-00683	68901	70	E5	E5-4	ND																CDM Smith	N. Ross		
P4-00683	68902	71	E5	C5-3	ND																CDM Smith	N. Ross		
P4-00683	68903	72	E5	B5-3	ND																CDM Smith	N. Ross		
P4-00683	68904	73	E5	C6-1	ND																CDM Smith	N. Ross		
P4-00683	68905	74	E5	C6-2	ND																CDM Smith	N. Ross		
P4-00683	68906	75	E5	E6-1	ND																CDM Smith	N. Ross		
P4-00683	68907	76	E5	E6-2	ND																CDM Smith	N. Ross		
P4-00683	68908	77	E5	F6-1	F	1	1	4.0131595	61	0.3289475	5	12.2	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00683	68909	78	E5	F6-2	ND																CDM Smith	N. Ross		
P4-00683	68910	79	E5	G6-1	ND																CDM Smith	N. Ross		
P4-00683	68911	80	E5	G6-2	ND																CDM Smith	N. Ross		
P4-00683	68912	81	E5	H6-1	ND																CDM Smith	N. Ross		
P4-00720	69422	1	B9	C3-2	ND																CDM Smith	N. Ross		
P4-00720	69423	2	B9	E3-1	MD11	1															CDM Smith	N. Ross		
P4-00720	69424	3	B9	E3-1	MF		1	5.5921075	85	0.4934213	7.5	11.333	OA		ADX	1	1	1		XX;AN	CDM Smith	N. Ross		
P4-00720	69425	4	B9	E3-1	F	2	2	2.9605275	45	0.3289475	5	9	LA		ADX	1	1	1		XK;WRTA	CDM Smith	N. Ross		
P4-00720	69426	5	B9	E3-2	ND																CDM Smith	N. Ross		
P4-00720	69427	6	B9	F3-1	ND																CDM Smith	N. Ross		
P4-00720	69428	7	B9	F3-2	ND																CDM Smith	N. Ross		
P4-00720	69429	8	B9	G3-1	ND																CDM Smith	N. Ross		
P4-00720	69430	9	B9	G3-2	F	3	3	1.80921125	28	0.131579	2	13.75	LA		ADX	1	1	1		NaX;WRTA	CDM Smith	N. Ross		
P4-00720	69431	10	B9	H3-1	ND																CDM Smith	N. Ross		
P4-00720	69432	11	B9	G3-3	ND																CDM Smith	N. Ross		
P4-00720	69433	12	B9	G3-4	ND																CDM Smith	N. Ross		
P4-00720	69434	13	B9	F3-3	ND																CDM Smith	N. Ross		
P4-00720	69435	14	B9	F3-4	ND																CDM Smith	N. Ross		
P4-00720	69436	15	B9	E3-3	ND																CDM Smith	N. Ross		
P4-00720	69437	16	B9	E3-4	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00720	69438	17	B9	C3-3	ND																CDM Smith	N. Ross		
P4-00720	69439	18	B9	F4-2	ND																CDM Smith	N. Ross		
P4-00720	69440	19	B9	H4-1	ND																CDM Smith	N. Ross		
P4-00720	69441	20	B9	H4-2	ND																CDM Smith	N. Ross		
P4-00720	69442	21	B9	K4-1	ND																CDM Smith	N. Ross		
P4-00720	69443	22	B9	K4-4	ND																CDM Smith	N. Ross		
P4-00720	69444	23	B9	H4-3	ND																CDM Smith	N. Ross		
P4-00720	69445	24	B9	G4-3	MD10	4															CDM Smith	N. Ross		
P4-00720	69446	25	B9	G4-3	MF		4	3.289475	50	0.263158	4	12.5	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00720	69447	26	B9	G4-4	ND																CDM Smith	N. Ross		
P4-00720	69448	27	B9	F4-4	ND																CDM Smith	N. Ross		
P4-00720	69449	28	B9	C4-3	ND																CDM Smith	N. Ross		
P4-00720	69450	29	B9	C5-2	F	5	5	2.5657905	39	0.4605265	7	5.5714	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00720	69451	30	B9	E5-2	ND																CDM Smith	N. Ross		
P4-00720	69452	31	B9	F5-2	ND																CDM Smith	N. Ross		
P4-00720	69453	32	B9	G5-2	ND																CDM Smith	N. Ross		
P4-00720	69454	33	B9	H5-2	ND																CDM Smith	N. Ross		
P4-00720	69455	34	B9	G5-3	ND																CDM Smith	N. Ross		
P4-00720	69456	35	B9	G5-4	ND																CDM Smith	N. Ross		
P4-00720	69457	36	B9	F5-3	ND																CDM Smith	N. Ross		
P4-00720	69458	37	B9	F5-4	ND																CDM Smith	N. Ross		
P4-00720	69459	38	B9	E5-3	ND																CDM Smith	N. Ross		
P4-00720	69460	39	B9	E5-4	ND																CDM Smith	N. Ross		
P4-00720	69461	40	B9	F6-2	ND																CDM Smith	N. Ross		
P4-00720	69462	41	B9	G6-1	ND																CDM Smith	N. Ross		
P4-00720	69463	42	B9	G6-2	ND																CDM Smith	N. Ross		
P4-00720	69464	43	B10	H5-4	ND																CDM Smith	N. Ross		
P4-00720	69465	44	B10	G5-3	ND																CDM Smith	N. Ross		
P4-00720	69466	45	B10	G5-4	ND																CDM Smith	N. Ross		
P4-00720	69467	46	B10	F5-3	ND																CDM Smith	N. Ross		
P4-00720	69468	47	B10	E5-3	ND																CDM Smith	N. Ross		
P4-00720	69469	48	B10	C5-3	ND																CDM Smith	N. Ross		
P4-00720	69470	49	B10	B5-3	ND																CDM Smith	N. Ross		
P4-00720	69471	50	B10	B5-1	F	6	6	3.552633	54	0.263158	4	13.5	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00720	69472	51	B10	C5-1	ND																CDM Smith	N. Ross		
P4-00720	69473	52	B10	C5-2	ND																CDM Smith	N. Ross		
P4-00720	69474	53	B10	E5-1	ND																CDM Smith	N. Ross		
P4-00720	69475	54	B10	E5-2	ND																CDM Smith	N. Ross		
P4-00720	69476	55	B10	F5-1	ND																CDM Smith	N. Ross		
P4-00720	69477	56	B10	G5-1	ND																CDM Smith	N. Ross		
P4-00720	69478	57	B10	G5-2	ND																CDM Smith	N. Ross		
P4-00720	69479	58	B10	H5-1	ND																CDM Smith	N. Ross		
P4-00720	69480	59	B10	H5-2	ND																CDM Smith	N. Ross		
P4-00720	69481	60	B10	H4-3	ND																CDM Smith	N. Ross		
P4-00720	69482	61	B10	G4-4	ND																CDM Smith	N. Ross		
P4-00720	69483	62	B10	F4-3	ND																CDM Smith	N. Ross		
P4-00720	69484	63	B10	F4-4	ND																CDM Smith	N. Ross		
P4-00720	69485	64	B10	E4-3	ND																CDM Smith	N. Ross		
P4-00720	69486	65	B10	E4-4	ND																CDM Smith	N. Ross		
P4-00720	69487	66	B10	C4-3	ND																CDM Smith	N. Ross		
P4-00720	69488	67	B10	C4-4	F	7	7	3.4868435	53	0.394737	6	8.8333	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00720	69489	68	B10	B4-3	ND																CDM Smith	N. Ross		
P4-00720	69490	69	B10	B4-4	ND																CDM Smith	N. Ross		
P4-00720	69491	70	B10	C4-1	ND																CDM Smith	N. Ross		
P4-00720	69492	71	B10	C4-2	ND																CDM Smith	N. Ross		
P4-00720	69493	72	B10	E4-1	ND																CDM Smith	N. Ross		
P4-00720	69494	73	B10	E4-2	ND																CDM Smith	N. Ross		
P4-00720	69495	74	B10	F4-1	ND																CDM Smith	N. Ross		
P4-00720	69496	75	B10	F4-2	F	8	8	2.763159	42	0.263158	4	10.5	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00720	69497	76	B10	G4-1	ND																CDM Smith	N. Ross		
P4-00720	69498	77	B10	G4-2	ND																CDM Smith	N. Ross		
P4-00720	69499	78	B10	H4-1	ND																CDM Smith	N. Ross		
P4-00720	69500	79	B10	H4-2	F	9	9	4.605265	70	0.1973685	3	23.333	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00720	69501	80	B10	H3-3	ND																CDM Smith	N. Ross		
P4-00720	69502	81	B10	G3-3	ND																CDM Smith	N. Ross		
P4-00720	69503	82	B10	G3-4	ND																CDM Smith	N. Ross		
P4-00720	69504	83	B10	F3-3	ND																CDM Smith	N. Ross		
P4-00720	69505	84	B10	F3-4	ND																CDM Smith	N. Ross		
P4-00734	65974	49	D3	E6-1	ND																CDM Smith	N. Ross		
P4-00734	65975	50	D3	E6-2	ND																CDM Smith	N. Ross		
P4-00734	65976	51	D4	G2-4	ND																CDM Smith	N. Ross		
P4-00734	65977	52	D4	F2-3	ND																CDM Smith	N. Ross		
P4-00734	65978	53	D4	F2-4	ND																CDM Smith	N. Ross		
P4-00734	65979	54	D4	C2-3	ND																CDM Smith	N. Ross		
P4-00734	65980	55	D4	E3-2	ND																CDM Smith	N. Ross		
P4-00734	65981	56	D4	F3-1	ND																CDM Smith	N. Ross		
P4-00734	65982	57	D4	G3-2	ND																CDM Smith	N. Ross		
P4-00734	65983	58	D4	H3-1	ND																CDM Smith	N. Ross		
P4-00734	65984	59	D4	G3-3	ND																CDM Smith	N. Ross		
P4-00734	65985	60	D4	G3-4	ND																CDM Smith	N. Ross		
P4-00734	65986	61	D4	F3-3	ND																CDM Smith	N. Ross		
P4-00734	65987	62	D4	E3-3	ND																CDM Smith	N. Ross		
P4-00734	65988	63	D4	E3-4	ND																CDM Smith	N. Ross		
P4-00734	65989	64	D4	C3-3	ND																CDM Smith	N. Ross		
P4-00734	65990	65	D4	B3-3	ND																CDM Smith	N. Ross		
P4-00734	65991	66	D4	B4-2	ND																CDM Smith	N. Ross		
P4-00734	65992	67	D4	C4-1	ND																CDM Smith	N. Ross		
P4-00734	65993	68	D4	F4-1	ND																CDM Smith	N. Ross		
P4-00734	65994	69	D4	F4-2	ND																CDM Smith	N. Ross		
P4-00734	65995	70	D4	G4-1	ND																CDM Smith	N. Ross		
P4-00734	65996	71	D4	G4-2	ND																CDM Smith	N. Ross		
P4-00734	65997	72	D4	H4-3	ND																CDM Smith	N. Ross		
P4-00734	65998	73	D4	H4-4	ND																CDM Smith	N. Ross		
P4-00734	65999	74	D4	G4-3	ND																CDM Smith	N. Ross		
P4-00734	66000	75	D4	G4-4	ND																CDM Smith	N. Ross		
P4-00734	66001	76	D4	F4-3	ND																CDM Smith	N. Ross		
P4-00734	66002	77	D4	E4-3	ND																CDM Smith	N. Ross		
P4-00734	66003	78	D4	E4-4	ND																CDM Smith	N. Ross		
P4-00734	66004	79	D4	C4-3	ND																CDM Smith	N. Ross		
P4-00734	66005	80	D4	C4-4	ND																CDM Smith	N. Ross		
P4-00734	66006	81	D4	B4-3	ND																CDM Smith	N. Ross		
P4-00734	66007	82	D4	B5-2	ND																CDM Smith	N. Ross		
P4-00734	66008	83	D4	C5-1	ND																CDM Smith	N. Ross		
P4-00734	66009	84	D4	E5-2	ND																CDM Smith	N. Ross		
P4-00734	66010	85	D4	F5-2	ND																CDM Smith	N. Ross		
P4-00734	66011	86	D4	G5-1	ND																CDM Smith	N. Ross		
P4-00734	66012	87	D4	G5-2	ND																CDM Smith	N. Ross		
P4-00734	66013	88	D4	H5-1	ND																CDM Smith	N. Ross		
P4-00734	66014	89	D4	H5-2	ND																CDM Smith	N. Ross		
P4-00734	66015	90	D4	H5-4	ND																CDM Smith	N. Ross		
P4-00734	66016	91	D4	G5-3	ND																CDM Smith	N. Ross		
P4-00734	66017	92	D4	G5-4	ND																CDM Smith	N. Ross		
P4-00734	66018	93	D4	F5-3	ND																CDM Smith	N. Ross		
P4-00734	66019	94	D4	F5-4	ND																CDM Smith	N. Ross		
P4-00734	66020	95	D4	E5-3	ND																CDM Smith	N. Ross		
P4-00734	66021	96	D4	E5-4	ND																CDM Smith	N. Ross		
P4-00734	66022	1	D3	G2-3	ND																CDM Smith	N. Ross		
P4-00734	66023	2	D3	G2-4	ND																CDM Smith	N. Ross		
P4-00734	66024	3	D3	F2-3	ND																CDM Smith	N. Ross		
P4-00734	66025	4	D3	C3-1	ND																CDM Smith	N. Ross		
P4-00734	66026	5	D3	C3-2	ND																CDM Smith	N. Ross		
P4-00734	66027	6	D3	E3-2	ND																CDM Smith	N. Ross		
P4-00734	66028	7	D3	F3-2	ND																CDM Smith	N. Ross		
P4-00734	66029	8	D3	G3-1	ND																CDM Smith	N. Ross		
P4-00734	66030	9	D3	G3-2	ND																CDM Smith	N. Ross		
P4-00734	66031	10	D3	H3-3	ND																CDM Smith	N. Ross		
P4-00734	66032	11	D3	H3-4	ND																CDM Smith	N. Ross		
P4-00734	66033	12	D3	G3-3	ND																CDM Smith	N. Ross		
P4-00734	66034	13	D3	G3-4	ND																CDM Smith	N. Ross		
P4-00734	66035	14	D3	F3-4	ND																CDM Smith	N. Ross		
P4-00734	66036	15	D3	E3-4	ND																CDM Smith	N. Ross		
P4-00734	66037	16	D3	C3-3	ND																CDM Smith	N. Ross		
P4-00734	66038	17	D3	C3-4	ND																CDM Smith	N. Ross		
P4-00734	66039	18	D3	C4-1	ND																CDM Smith	N. Ross		
P4-00734	66040	19	D3	C4-2	ND																CDM Smith	N. Ross		
P4-00734	66041	20	D3	F4-2	ND																CDM Smith	N. Ross		
P4-00734	66042	21	D3	G4-1	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00734	66043	22	D3	G4-2	ND																CDM Smith	N. Ross		
P4-00734	66044	23	D3	H4-1	ND																CDM Smith	N. Ross		
P4-00734	66045	24	D3	H4-3	ND																CDM Smith	N. Ross		
P4-00734	66046	25	D3	H4-4	ND																CDM Smith	N. Ross		
P4-00734	66047	26	D3	G4-4	ND																CDM Smith	N. Ross		
P4-00734	66048	27	D3	F4-3	ND																CDM Smith	N. Ross		
P4-00734	66049	28	D3	F4-4	ND																CDM Smith	N. Ross		
P4-00734	66050	29	D3	E4-3	ND																CDM Smith	N. Ross		
P4-00734	66051	30	D3	C4-4	ND																CDM Smith	N. Ross		
P4-00734	66052	31	D3	B4-3	ND																CDM Smith	N. Ross		
P4-00734	66053	32	D3	B5-2	ND																CDM Smith	N. Ross		
P4-00734	66054	33	D3	E5-1	ND																CDM Smith	N. Ross		
P4-00734	66055	34	D3	E5-2	ND																CDM Smith	N. Ross		
P4-00734	66056	35	D3	F5-2	ND																CDM Smith	N. Ross		
P4-00734	66057	36	D3	G5-1	ND																CDM Smith	N. Ross		
P4-00734	66058	37	D3	G5-2	ND																CDM Smith	N. Ross		
P4-00734	66059	38	D3	H5-1	ND																CDM Smith	N. Ross		
P4-00734	66060	39	D3	H5-2	ND																CDM Smith	N. Ross		
P4-00734	66061	40	D3	H5-4	ND																CDM Smith	N. Ross		
P4-00734	66062	41	D3	G5-3	ND																CDM Smith	N. Ross		
P4-00734	66063	42	D3	G5-4	ND																CDM Smith	N. Ross		
P4-00734	66064	43	D3	E5-4	ND																CDM Smith	N. Ross		
P4-00734	66065	44	D3	C5-3	ND																CDM Smith	N. Ross		
P4-00734	66066	45	D3	C5-4	ND																CDM Smith	N. Ross		
P4-00734	66067	46	D3	B5-3	ND																CDM Smith	N. Ross		
P4-00734	66068	47	D3	C6-1	ND																CDM Smith	N. Ross		
P4-00734	66069	48	D3	C6-2	ND																CDM Smith	N. Ross		
P4-00734	66070	97	D4	C5-3	ND																CDM Smith	N. Ross		
P4-00734	66071	98	D4	C5-4	ND																CDM Smith	N. Ross		
P4-00734	66072	99	D4	C6-1	ND																CDM Smith	N. Ross		
P4-00734	66073	100	D4	C6-2	ND																CDM Smith	N. Ross		
P4-00766	71363	1	C5	H5-3	ND																CDM Smith	N. Ross		
P4-00766	71364	2	C5	H5-4	ND																CDM Smith	N. Ross		
P4-00766	71365	3	C5	G5-3	ND																CDM Smith	N. Ross		
P4-00766	71366	4	C5	G5-4	ND																CDM Smith	N. Ross		
P4-00766	71367	5	C5	F5-3	MD11	1															CDM Smith	N. Ross		
P4-00766	71368	6	C5	F5-3	MF		1	6.315792	96	0.263158	4	24	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00766	71369	7	C5	F5-3	F	2	2	3.289475	50	0.1644738	2.5	20	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00766	71370	8	C5	F5-4	ND																CDM Smith	N. Ross		
P4-00766	71371	9	C5	E5-4	ND																CDM Smith	N. Ross		
P4-00766	71372	10	C5	C5-3	ND																CDM Smith	N. Ross		
P4-00766	71373	11	C5	C5-1	F	3	3	4.1447385	63	0.3289475	5	12.6	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00766	71374	12	C5	E5-1	ND																CDM Smith	N. Ross		
P4-00766	71375	13	C5	E5-2	ND																CDM Smith	N. Ross		
P4-00766	71376	14	C5	F5-1	ND																CDM Smith	N. Ross		
P4-00766	71377	15	C5	F5-2	ND																CDM Smith	N. Ross		
P4-00766	71378	16	C5	G5-1	ND																CDM Smith	N. Ross		
P4-00766	71379	17	C5	H5-2	ND																CDM Smith	N. Ross		
P4-00766	71380	18	C5	G4-3	ND																CDM Smith	N. Ross		
P4-00766	71381	19	C5	G4-4	ND																CDM Smith	N. Ross		
P4-00766	71382	20	C5	F4-3	ND																CDM Smith	N. Ross		
P4-00766	71383	21	C5	F4-4	ND																CDM Smith	N. Ross		
P4-00766	71384	22	C5	E4-3	ND																CDM Smith	N. Ross		
P4-00766	71385	23	C5	E4-4	ND																CDM Smith	N. Ross		
P4-00766	71386	24	C5	C4-3	ND																CDM Smith	N. Ross		
P4-00766	71387	25	C5	C4-4	F	4	4	8.7500035	133	0.263158	4	33.25	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00766	71388	26	C5	C4-1	ND																CDM Smith	N. Ross		
P4-00766	71389	27	C5	C4-2	ND																CDM Smith	N. Ross		
P4-00766	71390	28	C5	E4-1	F	5	5	1.973685	30	0.131579	2	15	LA		ADX	1	1		1	[1]; XX;TR	CDM Smith	N. Ross		
P4-00766	71391	29	C5	E4-2	ND																CDM Smith	N. Ross		
P4-00766	71392	30	C5	F4-1	ND																CDM Smith	N. Ross		
P4-00766	71393	31	C5	F4-2	ND																CDM Smith	N. Ross		
P4-00766	71394	32	C5	G4-1	ND																CDM Smith	N. Ross		
P4-00766	71395	33	C5	G4-2	F	6	6	4.0131595	61	0.2302633	3.5	17.429	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00766	71396	34	C5	H4-1	ND																CDM Smith	N. Ross		
P4-00766	71397	35	C5	H4-2	ND																CDM Smith	N. Ross		
P4-00766	71398	36	C5	H3-3	ND																CDM Smith	N. Ross		
P4-00766	71399	37	C5	H3-4	ND																CDM Smith	N. Ross		
P4-00766	71400	38	C5	G3-3	F	7	7	6.1184235	93	1.3815795	21	4.4286	LA		ADX	1				XK;WRTA	CDM Smith	N. Ross		
P4-00766	71401	39	C5	G3-4	ND																CDM Smith	N. Ross		
P4-00766	71402	40	C5	F3-3	ND																CDM Smith	N. Ross		
P4-00766	71403	41	C6	E3-1	ND																CDM Smith	N. Ross		
P4-00766	71404	42	C6	E3-2	ND																CDM Smith	N. Ross		
P4-00766	71405	43	C6	F3-1	ND																CDM Smith	N. Ross		
P4-00766	71406	44	C6	F3-2	ND																CDM Smith	N. Ross		
P4-00766	71407	45	C6	G3-1	ND																CDM Smith	N. Ross		
P4-00766	71408	46	C6	G3-2	ND																CDM Smith	N. Ross		
P4-00766	71409	47	C6	H3-1	ND																CDM Smith	N. Ross		
P4-00766	71410	48	C6	H3-3	ND																CDM Smith	N. Ross		
P4-00766	71411	49	C6	G3-3	ND																CDM Smith	N. Ross		
P4-00766	71412	50	C6	F3-4	ND																CDM Smith	N. Ross		
P4-00766	71413	51	C6	E3-3	ND																CDM Smith	N. Ross		
P4-00766	71414	52	C6	E3-4	F	0	0	4.078949	62	0.394737	6	10.333	LA		ADX	1				NaK;WRTA;XWGB;DL;Noncountable	CDM Smith	N. Ross		
P4-00766	71415	53	C6	C3-3	F	8	8	2.368422	36	0.2302633	3.5	10.286	LA		ADX	1				XK;WRTA	CDM Smith	N. Ross		
P4-00766	71416	54	C6	C4-1	ND																CDM Smith	N. Ross		
P4-00766	71417	55	C6	C4-2	ND																CDM Smith	N. Ross		
P4-00766	71418	56	C6	E4-1	ND																CDM Smith	N. Ross		
P4-00766	71419	57	C6	E4-2	F	9	9	2.1710535	33	0.394737	6	5.5	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00766	71420	58	C6	F4-1	ND																CDM Smith	N. Ross		
P4-00766	71421	59	C6	F4-2	ND																CDM Smith	N. Ross		
P4-00766	71422	60	C6	G4-1	ND																CDM Smith	N. Ross		
P4-00766	71423	61	C6	H4-2	ND																CDM Smith	N. Ross		
P4-00766	71424	62	C6	H4-3	ND																CDM Smith	N. Ross		
P4-00766	71425	63	C6	H4-4	ND																CDM Smith	N. Ross		
P4-00766	71426	64	C6	G4-3	F	10	10	35.8552775	545	1.3815795	21	25.952	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00766	71427	65	C6	G4-4	ND																CDM Smith	N. Ross		
P4-00766	71428	66	C6	F4-3	ND																CDM Smith	N. Ross		
P4-00766	71429	67	C6	F4-4	ND																CDM Smith	N. Ross		
P4-00766	71430	68	C6	C4-3	ND																CDM Smith	N. Ross		
P4-00766	71431	69	C6	C4-4	ND																CDM Smith	N. Ross		
P4-00766	71432	70	C6	C5-2	ND																CDM Smith	N. Ross		
P4-00766	71433	71	C6	E5-1	ND																CDM Smith	N. Ross		
P4-00766	71434	72	C6	E5-2	ND																CDM Smith	N. Ross		
P4-00766	71435	73	C6	F5-1	ND																CDM Smith	N. Ross		
P4-00766	71436	74	C6	F5-2	ND																CDM Smith	N. Ross		
P4-00766	71437	75	C6	G5-1	ND																CDM Smith	N. Ross		
P4-00766	71438	76	C6	G5-2	F	11	11	4.5394755	69	0.3289475	5	13.8	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00766	71439	77	C6	H5-1	ND																CDM Smith	N. Ross		
P4-00766	71440	78	C6	H5-2	ND																CDM Smith	N. Ross		
P4-00766	71441	79	C6	H5-4	ND																CDM Smith	N. Ross		
P4-00766	71442	80	C6	G5-3	F	12	12	1.7763165	27	0.263158	4	6.75	LA		ADX	1				XK;WRTA	CDM Smith	N. Ross		
P4-00769	81259	1	E6	C3-1	ND																CDM Smith	N. Ross		
P4-00769	81260	2	E6	C3-2	ND																CDM Smith	N. Ross		
P4-00769	81261	3	E6	E3-1	F	0	0	10.789478	164	0.9868425	15	10.933	LA		ADX	1				NaK;WRTA;XWGB;DL;Noncountable	CDM Smith	N. Ross		
P4-00769	81262	4	E6	E3-2	ND																CDM Smith	N. Ross		
P4-00769	81263	5	E6	F3-1	ND																CDM Smith	N. Ross		
P4-00769	81264	6	E6	G3-2	ND																CDM Smith	N. Ross		
P4-00769	81265	7	E6	H3-1	F	1	1	3.157896	48	0.263158	4	12	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81266	8	E6	H3-2	ND																CDM Smith	N. Ross		
P4-00769	81267	9	E6	H3-3	F	2	2	2.63158	40	0.394737	6	6.6667	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81268	10	E6	H3-4	F	3	3	3.157896	48	0.1644738	2.5	19.2	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81269	11	E6	G3-3	MD10	4															CDM Smith	N. Ross		
P4-00769	81270	12	E6	G3-3	MF		4	3.0921065	47	0.263158	4	11.75	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81271	13	E6	F3-4	ND																CDM Smith	N. Ross		
P4-00769	81272	14	E6	E3-3	ND																CDM Smith	N. Ross		
P4-00769	81273	15	E6	E3-4	ND																CDM Smith	N. Ross		
P4-00769	81274	16	E6	C3-3	ND																CDM Smith	N. Ross		
P4-00769	81275	17	E6	C3-4	ND																CDM Smith	N. Ross		
P4-00769	81276	18	E6	B3-3	ND																CDM Smith	N. Ross		
P4-00769	81277	19	E6	B4-2	ND																CDM Smith	N. Ross		
P4-00769	81278	20	E6	C4-1	ND																CDM Smith	N. Ross		
P4-00769	81279	21	E6	C4-2	ND																CDM Smith	N. Ross		
P4-00769	81280	22	E6	E4-1	ND																CDM Smith	N. Ross		
P4-00769	81281	23	E6	E4-2	F	0	0	6.052634	92	0.526316	8	11.5	LA		ADX	1				NaK;WRTA;XNGB;DL;Noncountable	CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE IVA ABS AIR

Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length - Check	Width	Width - Check	AR	Mineral Class	Mineral Desc	Identification	Sketch	Photo	EDS	CH Not Counted	StrucComments	Verifier's Company	Verifier's Name	Comment	Correction Date
P4-00769	81282	24	E6	E4-2	F	5	5	7.105266	108	0.3289475	5	21.6	LA		ADX	1	1	1		NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81283	25	E6	F4-1	ND																CDM Smith	N. Ross		
P4-00769	81284	26	E6	F4-2	ND																CDM Smith	N. Ross		
P4-00769	81285	27	E6	K4-1	F	6	6	6.973687	106	0.4934213	7.5	14.133	LA		ADX	1				NaK;WRTA;XSGB;DL	CDM Smith	N. Ross		
P4-00769	81286	28	E6	K4-4	ND																CDM Smith	N. Ross		
P4-00769	81287	29	E6	H4-3	ND																CDM Smith	N. Ross		
P4-00769	81288	30	E6	H4-4	ND																CDM Smith	N. Ross		
P4-00769	81289	31	E6	G4-3	ND																CDM Smith	N. Ross		
P4-00769	81290	32	E6	G4-4	ND																CDM Smith	N. Ross		
P4-00769	81291	33	E6	F4-3	ND																CDM Smith	N. Ross		
P4-00769	81292	34	E6	E4-3	ND																CDM Smith	N. Ross		
P4-00769	81293	35	E6	E4-4	ND																CDM Smith	N. Ross		
P4-00769	81294	36	E6	C4-4	MD22	7															CDM Smith	N. Ross		
P4-00769	81295	37	E6	C4-4	MF		7	7.5657925	115	0.4934213	7.5	15.333	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81296	38	E6	C4-4	MF		8	7.5657925	115	0.4934213	7.5	15.333	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81297	39	E6	E5-1	MD10	8															CDM Smith	N. Ross		
P4-00769	81298	40	E6	E5-1	MF		9	3.94737	60	0.394737	6	10	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81299	41	E6	E5-2	ND																CDM Smith	N. Ross		
P4-00769	81300	42	E6	F5-1	ND																CDM Smith	N. Ross		
P4-00769	81301	43	E6	F5-2	F	9	10	3.157896	48	0.657895	10	4.8	LA		ADX	1	1	1		XX;AC	CDM Smith	N. Ross		
P4-00769	81302	44	E6	G5-2	ND																CDM Smith	N. Ross		
P4-00769	81303	45	E6	H5-2	F	10	11	1.6447375	25	0.131579	2	12.5	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81304	46	E6	H5-3	ND																CDM Smith	N. Ross		
P4-00769	81305	47	E6	H5-4	MD20	11															CDM Smith	N. Ross		
P4-00769	81306	48	E6	H5-4	MF		12	4.8026335	73	0.1973685	3	24.333	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81307	49	E6	H5-4	MF		13	1.184211	18	0.3289475	5	3.6	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81308	50	E6	G5-4	ND																CDM Smith	N. Ross		
P4-00769	81309	51	E6	F5-4	F	12	14	5.26316	80	0.921053	14	5.7143	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81310	52	E6	F5-4	F	13	15	5.131581	78	0.3289475	5	15.6	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81311	53	E6	F5-4	F	14	16	6.57895	100	0.789474	12	8.3333	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81312	54	E6	E5-3	ND																CDM Smith	N. Ross		
P4-00769	81313	55	E6	E5-4	F	15	17	3.289475	50	0.263158	4	12.5	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81314	56	E6	C5-3	ND																CDM Smith	N. Ross		
P4-00769	81315	57	E6	C6-1	ND																CDM Smith	N. Ross		
P4-00769	81316	58	E6	C6-2	F	16	18	2.368422	36	0.4605265	7	5.1429	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81317	59	E6	E6-1	ND																CDM Smith	N. Ross		
P4-00769	81318	60	E7	C3-1	ND																CDM Smith	N. Ross		
P4-00769	81319	61	E7	C3-2	F	17	19	6.2500025	95	0.394737	6	15.833	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81320	62	E7	E3-1	ND																CDM Smith	N. Ross		
P4-00769	81321	63	E7	E3-2	ND																CDM Smith	N. Ross		
P4-00769	81322	64	E7	F3-1	ND																CDM Smith	N. Ross		
P4-00769	81323	65	E7	F3-2	F	18	20	4.342107	66	0.4934213	7.5	8.8	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81324	66	E7	G3-1	F	19	21	1.973685	30	0.657895	10	3	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81325	67	E7	G3-2	F	20	22	4.6710545	71	0.1973685	3	23.667	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81326	68	E7	H3-1	ND																CDM Smith	N. Ross		
P4-00769	81327	69	E7	H3-2	ND																CDM Smith	N. Ross		
P4-00769	81328	70	E7	H3-3	ND																CDM Smith	N. Ross		
P4-00769	81329	71	E7	H3-4	ND																CDM Smith	N. Ross		
P4-00769	81330	72	E7	G3-3	ND																CDM Smith	N. Ross		
P4-00769	81331	73	E7	G3-4	MD11	21															CDM Smith	N. Ross		
P4-00769	81332	74	E7	G3-4	MF		23	6.052634	92	0.1973685	3	30.667	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81333	75	E7	F3-3	F	22	24	2.63158	40	0.1644738	2.5	16	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81334	76	E7	F3-4	F	23	25	5.921055	90	0.1644738	2.5	36	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81335	77	E7	E3-3	F	24	26	2.63158	40	0.3289475	5	8	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81336	78	E7	E3-3	F	25	27	2.63158	40	0.3289475	5	8	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81337	79	E7	E3-4	ND																CDM Smith	N. Ross		
P4-00769	81338	80	E7	C3-3	ND																CDM Smith	N. Ross		
P4-00769	81339	81	E7	C3-4	ND																CDM Smith	N. Ross		
P4-00769	81340	82	E7	B3-3	ND																CDM Smith	N. Ross		
P4-00769	81341	83	E7	B4-2	ND																CDM Smith	N. Ross		
P4-00769	81342	84	E7	C4-1	ND																CDM Smith	N. Ross		
P4-00769	81343	85	E7	C4-2	ND																CDM Smith	N. Ross		
P4-00769	81344	86	E7	E4-1	ND																CDM Smith	N. Ross		
P4-00769	81345	87	E7	E4-2	ND																CDM Smith	N. Ross		
P4-00769	81346	88	E7	F4-1	ND																CDM Smith	N. Ross		
P4-00769	81347	89	E7	F4-2	ND																CDM Smith	N. Ross		
P4-00769	81348	90	E7	G4-1	F	26	28	8.7500035	133	0.3289475	5	26.6	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81349	91	E7	G4-2	ND																CDM Smith	N. Ross		
P4-00769	81350	92	E7	H4-1	ND																CDM Smith	N. Ross		
P4-00769	81351	93	E7	H4-2	ND																CDM Smith	N. Ross		
P4-00769	81352	94	E7	K4-4	ND																CDM Smith	N. Ross		
P4-00769	81353	95	E7	H4-3	F	27	29	1.6447375	25	0.263158	4	6.25	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81354	96	E7	H4-4	MD10	28															CDM Smith	N. Ross		
P4-00769	81355	97	E7	H4-4	MF		30	4.605265	70	0.3289475	5	14	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81356	98	E7	G4-3	ND																CDM Smith	N. Ross		
P4-00769	81357	99	E7	G4-4	ND																CDM Smith	N. Ross		
P4-00769	81358	100	E7	F4-3	ND																CDM Smith	N. Ross		
P4-00769	81359	101	E7	F4-4	MD11	29															CDM Smith	N. Ross		
P4-00769	81360	102	E7	F4-4	MF		31	13.815795	210	0.4934213	7.5	28	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81361	103	E7	E4-3	F	30	32	1.973685	30	0.1644738	2.5	12	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81362	104	E7	E4-4	MD10	31															CDM Smith	N. Ross		
P4-00769	81363	105	E7	E4-4	MF		33	3.421054	52	0.1973685	3	17.333	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81364	106	E7	E4-4	F	32	34	2.368422	36	0.1973685	3	12	LA		ADX	1	1	1		XX;TR	CDM Smith	N. Ross		
P4-00769	81365	107	E7	C4-3	ND																CDM Smith	N. Ross		
P4-00769	81366	108	E7	C4-4	ND																CDM Smith	N. Ross		
P4-00769	81367	109	E7	B4-3	ND																CDM Smith	N. Ross		
P4-00769	81368	110	E7	C5-1	ND																CDM Smith	N. Ross		
P4-00769	81369	111	E7	C5-2	F	33	35	1.31579	20	0.3289475	5	4	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81370	112	E7	E5-1	F	34	36	2.8289485	43	0.3289475	5	8.6	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81371	113	E7	E5-1	F	35	37	3.2236855	49	0.657895	10	4.9	LA		ADX	1				NaK;WRTA	CDM Smith	N. Ross		
P4-00769	81372	114	E7	E5-2	ND																CDM Smith	N. Ross		
P4-00769	81373	115	E7	F5-1	ND																CDM Smith	N. Ross		
P4-00769	81374	116	E7	F5-2	ND																CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A ABS AIR

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10097	195739	1	B2	A1	ND												1		CDM Smith	A. Coler		
	PS-10097	195740	2	B2	A3	ND												1		CDM Smith	A. Coler		
	PS-10097	195741	3	B2	A5	ND												1		CDM Smith	A. Coler		
	PS-10097	195742	4	B2	A7	ND												1		CDM Smith	A. Coler		
	PS-10097	195743	5	B2	A9	ND												1		CDM Smith	A. Coler		
	PS-10097	195744	6	B2	B2	ND												1		CDM Smith	A. Coler		
	PS-10097	195745	7	B2	B4	ND												1		CDM Smith	A. Coler		
	PS-10097	195746	8	B2	B6	ND												1		CDM Smith	A. Coler		
	PS-10097	195747	9	B2	B8	ND												1		CDM Smith	A. Coler		
	PS-10097	195748	10	B2	B10	ND												1		CDM Smith	A. Coler		
	PS-10097	195749	11	B2	C1	ND												1		CDM Smith	A. Coler		
	PS-10097	195750	12	B2	C3	ND												1		CDM Smith	A. Coler		
	PS-10097	195751	13	B2	C5	ND												1		CDM Smith	A. Coler		
	PS-10097	195752	14	B2	C7	ND												1		CDM Smith	A. Coler		
	PS-10097	195753	15	B2	C9	ND												1		CDM Smith	A. Coler		
	PS-10097	195754	16	B2	D2	ND												1		CDM Smith	A. Coler		
	PS-10097	195755	17	B2	D4	ND												1		CDM Smith	A. Coler		
	PS-10097	195756	18	B2	D6	ND												1		CDM Smith	A. Coler		
	PS-10097	195757	19	B2	D8	ND												1		CDM Smith	A. Coler		
	PS-10097	195758	20	B2	D10	ND												1		CDM Smith	A. Coler		
	PS-10097	195759	21	B2	E1	ND												1		CDM Smith	A. Coler		
	PS-10097	195760	22	B2	E3	ND												1		CDM Smith	A. Coler		
	PS-10097	195761	23	B2	E5	ND												1		CDM Smith	A. Coler		
	PS-10097	195762	24	B2	E7	ND												1		CDM Smith	A. Coler		
	PS-10097	195763	25	B2	E9	ND												1		CDM Smith	A. Coler		
	PS-10097	195764	26	B2	F2	ND												1		CDM Smith	A. Coler		
	PS-10097	195765	27	B2	F4	ND												1		CDM Smith	A. Coler		
	PS-10097	195766	28	B2	F6	ND												1		CDM Smith	A. Coler		
	PS-10097	195767	29	B2	F8	ND												1		CDM Smith	A. Coler		
	PS-10097	195768	30	B2	F10	ND												1		CDM Smith	A. Coler		
	PS-10097	195769	31	B2	G1	ND												1		CDM Smith	A. Coler		
	PS-10097	195770	32	B2	G3	ND												1		CDM Smith	A. Coler		
	PS-10097	195771	33	B2	G5	ND												1		CDM Smith	A. Coler		
	PS-10097	195772	34	B2	G7	ND												1		CDM Smith	A. Coler		
	PS-10097	195773	35	B2	G9	ND												1		CDM Smith	A. Coler		
	PS-10097	195774	36	B2	H2	ND												1		CDM Smith	A. Coler		
	PS-10097	195775	37	B2	H4	ND												1		CDM Smith	A. Coler		
	PS-10097	195776	38	B2	H6	ND												1		CDM Smith	A. Coler		
	PS-10097	195777	39	B2	H8	ND												1		CDM Smith	A. Coler		
	PS-10097	195778	40	B2	H10	ND												1		CDM Smith	A. Coler		
	PS-10097	195779	41	B2	I1	ND												1		CDM Smith	A. Coler		
	PS-10097	195780	42	B2	I3	ND												1		CDM Smith	A. Coler		
	PS-10097	195781	43	B2	I5	ND												1		CDM Smith	A. Coler		
	PS-10097	195782	44	B2	I7	ND												1		CDM Smith	A. Coler		
	PS-10097	195783	45	B2	I9	ND												1		CDM Smith	A. Coler		
	PS-10097	195784	46	B2	J2	ND												1		CDM Smith	A. Coler		
	PS-10097	195785	47	B2	J4	ND												1		CDM Smith	A. Coler		
	PS-10097	195786	48	B2	J6	ND												1		CDM Smith	A. Coler		
	PS-10097	195787	49	B2	J8	ND												1		CDM Smith	A. Coler		
	PS-10097	195788	50	B2	J10	ND												1		CDM Smith	A. Coler		
	PS-10097	195789	51	B4	A1	ND												1		CDM Smith	A. Coler		
	PS-10097	195790	52	B4	A3	ND												1		CDM Smith	A. Coler		
	PS-10097	195791	53	B4	A5	ND												1		CDM Smith	A. Coler		
	PS-10097	195792	54	B4	A7	ND												1		CDM Smith	A. Coler		
	PS-10097	195793	55	B4	A9	ND												1		CDM Smith	A. Coler		
	PS-10097	195794	56	B4	B2	ND												1		CDM Smith	A. Coler		
	PS-10097	195795	57	B4	B4	ND												1		CDM Smith	A. Coler		
	PS-10097	195796	58	B4	B6	ND												1		CDM Smith	A. Coler		
	PS-10097	195797	59	B4	B8	ND												1		CDM Smith	A. Coler		
	PS-10097	195798	60	B4	B10	ND												1		CDM Smith	A. Coler		
	PS-10097	195799	61	B4	C1	ND												1		CDM Smith	A. Coler		
	PS-10097	195800	62	B4	C3	ND												1		CDM Smith	A. Coler		
	PS-10097	195801	63	B4	C5	ND												1		CDM Smith	A. Coler		
	PS-10097	195802	64	B4	C7	ND												1		CDM Smith	A. Coler		
	PS-10097	195803	65	B4	C9	ND												1		CDM Smith	A. Coler		
	PS-10097	195804	66	B4	D2	ND												1		CDM Smith	A. Coler		
	PS-10097	195805	67	B4	D4	ND												1		CDM Smith	A. Coler		
	PS-10097	195806	68	B4	D6	ND												1		CDM Smith	A. Coler		
	PS-10097	195807	69	B4	D8	ND												1		CDM Smith	A. Coler		
	PS-10097	195808	70	B4	D10	ND												1		CDM Smith	A. Coler		
	PS-10097	195809	71	B4	E1	ND												1		CDM Smith	A. Coler		
	PS-10097	195810	72	B4	E3	ND												1		CDM Smith	A. Coler		
	PS-10097	195811	73	B4	E5	ND												1		CDM Smith	A. Coler		
	PS-10097	195812	74	B4	E7	ND												1		CDM Smith	A. Coler		
	PS-10097	195813	75	B4	E9	ND												1		CDM Smith	A. Coler		
	PS-10097	195814	76	B4	F2	ND												1		CDM Smith	A. Coler		
	PS-10097	195815	77	B4	F4	ND												1		CDM Smith	A. Coler		
	PS-10097	195816	78	B4	F6	ND												1		CDM Smith	A. Coler		
	PS-10097	195817	79	B4	F8	ND												1		CDM Smith	A. Coler		
	PS-10097	195818	80	B4	F10	ND												1		CDM Smith	A. Coler		
	PS-10097	195819	81	B4	G1	ND												1		CDM Smith	A. Coler		
	PS-10097	195820	82	B4	G3	ND												1		CDM Smith	A. Coler		
	PS-10097	195821	83	B4	G5	ND												1		CDM Smith	A. Coler		
	PS-10097	195822	84	B4	G7	ND												1		CDM Smith	A. Coler		
	PS-10097	195823	85	B4	G9	ND												1		CDM Smith	A. Coler		
	PS-10097	195824	86	B4	H2	ND												1		CDM Smith	A. Coler		
	PS-10097	195825	87	B4	H4	ND												1		CDM Smith	A. Coler		
	PS-10097	195826	88	B4	H6	ND												1		CDM Smith	A. Coler		
	PS-10097	195827	89	B4	H8	ND												1		CDM Smith	A. Coler		
	PS-10097	195828	90	B4	H10	ND												1		CDM Smith	A. Coler		
	PS-10097	195829	91	B4	I1	ND												1		CDM Smith	A. Coler		
	PS-10097	195830	92	B4	I3	ND												1		CDM Smith	A. Coler		
	PS-10097	195831	93	B4	I5	ND												1		CDM Smith	A. Coler		
	PS-10097	195832	94	B4	I7	ND												1		CDM Smith	A. Coler		
	PS-10097	195833	95	B4	I9	ND												1		CDM Smith	A. Coler		
	PS-10097	195834	96	B4	J2	ND												1		CDM Smith	A. Coler		
	PS-10097	195835	97	B4	J4	ND												1		CDM Smith	A. Coler		
	PS-10097	195836	98	B4	J6	ND												1		CDM Smith	A. Coler		
	PS-10097	195837	99	B4	J8	ND												1		CDM Smith	A. Coler		
	PS-10097	195838	100	B4	J10	ND												1		CDM Smith	A. Coler		
	PS-10097	195839	101	B6	A1	ND												1		CDM Smith	A. Coler		
	PS-10097	195840	102	B6	A3	ND												1		CDM Smith	A. Coler		
	PS-10097	195841	103	B6	A5	ND												1		CDM Smith	A. Coler		
	PS-10097	195842	104	B6	A7	ND												1		CDM Smith	A. Coler		
	PS-10097	195843	105	B6	A9	ND												1		CDM Smith	A. Coler		
	PS-10097	195844	106	B6	B2	ND												1		CDM Smith	A. Coler		
	PS-10097	195845	107	B6	B4	ND												1		CDM Smith	A. Coler		
	PS-10097	195846	108	B6	B6	ND												1		CDM Smith	A. Coler		
	PS-10097	195847	109	B6	B8	ND												1		CDM Smith	A. Coler		
	PS-10097	195848	110	B6	B10	ND												1		CDM Smith	A. Coler		
	PS-10097	195849	111	B6	C1	ND												1		CDM Smith	A. Coler		
	PS-10097	195850	112	B6	C3	ND												1		CDM Smith	A. Coler		
	PS-10097	195851	113	B6	C5	ND												1		CDM Smith	A. Coler		
	PS-10097	195852	114	B6	C7	ND												1		CDM Smith	A. Coler		
	PS-10097	195853	115	B6	C9	ND												1		CDM Smith	A. Coler		
	PS-10097	195854	116	B6	D2	ND												1		CDM Smith	A. Coler		
	PS-10097	195855	117	B6	D4	ND												1		CDM Smith	A. Coler		
	PS-10097	195856	118	B6	D6	ND												1		CDM Smith	A. Coler		
	PS-10097	195857	119	B6	D8	ND												1		CDM Smith	A. Coler		
	PS-10097	195858	120	B6	D10	ND												1		CDM Smith	A. Coler		
	PS-10097	195859	121	B6	E1	ND												1		CDM Smith	A. Coler		
	PS-10097	195860	122	B6	E3	ND												1		CDM Smith	A. Coler		
	PS-10097	195861	123	B6	E5	ND												1		CDM Smith	A. Coler		
	PS-10097	195862	124	B6	E7	ND												1		CDM Smith	A. Coler		
	PS-10097	195863	125	B6	E9	ND												1		CDM Smith	A. Coler		
	PS-10097	195864	126	B6	F2	ND												1		CDM Smith	A. Coler		
	PS-10097	195865	127	B6	F4	ND												1		CDM Smith	A. Coler		
	PS-10097	195866	128	B6	F6	ND												1		CDM Smith	A. Coler		
	PS-10097	195867	129	B6	F8	ND												1		CDM Smith	A. Coler		
	PS-10097	195868	130	B6	F10	ND												1		CDM Smith	A. Coler		
	PS-10097	195869	131	B6	G1	ND												1		CDM Smith	A. Coler		
	PS-10097	195870	132	B6	G3	ND												1		CDM Smith	A. Coler		
	PS-10097	195871	133	B6	G5	ND												1		CDM Smith	A. Coler		
	PS-10097	195872	134	B6	G7	ND												1		CDM Smith	A. Coler		
	PS-10097	195873	135	B6	G9	ND												1		CDM Smith	A. Coler		
	PS-10097	195874	136	B6	H2	ND												1		CDM Smith	A. Coler		
	PS-10097	195875	137	B6	H4	ND												1		CDM Smith	A. Coler		
	PS-10097	195876	138	B6	H6	ND												1		CDM Smith	A. Coler		
	PS-10097	195877	139	B6	H8	ND												1		CDM Smith	A. Coler		
	PS-10097	195878	140	B6	H10	ND												1		CDM Smith	A. Coler		
	PS-10097	195879	141	B6	I1	ND												1		CDM Smith	A. Coler		
	PS-10097	195880	142	B6	I3	ND												1		CDM Smith	A. Coler		
	PS-10097	195881	143	B6	I5	ND												1		CDM Smith	A. Coler		
	PS-10097	195882	144	B6	I7	ND												1		CDM Smith	A. Coler		
	PS-10097	195883	145	B6	I9	ND												1		CDM Smith	A. Coler		
	PS-10097	195884	146	B6	J2	ND												1		CDM Smith	A. Coler		
	PS-10097	195885	147	B6	J4	ND												1		CDM Smith	A. Coler		
	PS-10097	195886	148	B6	J6	ND												1		CDM Smith	A. Coler		
	PS-10097	195887	149	B6	J8	ND												1		CDM Smith	A. Coler		
	PS-10097	195888	150	B6	J10	ND												1		CDM Smith	A. Coler		
	PS-10097	195889	151	B8	A1	ND												1		CDM Smith	A. Coler		
	PS-10097	195890	152	B8	A3	ND												1		CDM Smith	A. Coler		
	PS-10097	195891	153	B8	A5	ND												1		CDM Smith	A. Coler		
	PS-10097	195892	154	B8	A7	ND												1		CDM Smith	A. Coler		
	PS-10097	195893	155	B8	A9	ND												1		CDM Smith	A. Coler		
	PS-10097	195894	156	B8	B2	ND												1		CDM Smith	A. Coler		
	PS-10097	195895	157	B8	B4	ND												1		CDM Smith	A. Coler		
	PS-10097	195896	158	B8	B6	ND												1		CDM Smith	A. Coler		
	PS-10097	195897	159	B8	B8	ND												1		CDM Smith	A. Coler		
	PS-10097	195898	160	B8	B10	ND												1		CDM Smith	A. Coler		
	PS-10097	195899	161	B8	C1	ND												1		CDM Smith	A. Coler		
	PS-10097	195900	162	B8	C3	ND												1		CDM Smith	A. Coler		
	PS-10097	195901	163	B8	C5	ND												1		CDM Smith	A. Coler		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A ABS AIR

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10097	195902	164	B8	C7	ND												1		CDM Smith	A. Coler		
	PS-10097	195903	165	B8	C9	ND												1		CDM Smith	A. Coler		
	PS-10097	195904	166	B8	D2	ND												1		CDM Smith	A. Coler		
	PS-10097	195905	167	B8	D4	ND												1		CDM Smith	A. Coler		
	PS-10097	195906	168	B8	D6	ND												1		CDM Smith	A. Coler		
	PS-10097	195907	169	B8	D8	ND												1		CDM Smith	A. Coler		
	PS-10097	195908	170	B8	D10	ND												1		CDM Smith	A. Coler		
	PS-10097	195909	171	B8	E1	ND												1		CDM Smith	A. Coler		
	PS-10097	195910	172	B8	E3	ND												1		CDM Smith	A. Coler		
	PS-10097	195911	173	B8	E5	ND												1		CDM Smith	A. Coler		
	PS-10097	195912	174	B8	E7	ND												1		CDM Smith	A. Coler		
	PS-10097	195913	175	B8	E9	ND												1		CDM Smith	A. Coler		
	PS-10097	195914	176	B8	F2	ND												1		CDM Smith	A. Coler		
	PS-10097	195915	177	B8	F4	ND												1		CDM Smith	A. Coler		
	PS-10097	195916	178	B8	F6	ND												1		CDM Smith	A. Coler		
	PS-10097	195917	179	B8	F8	ND												1		CDM Smith	A. Coler		
	PS-10097	195918	180	B8	F10	ND												1		CDM Smith	A. Coler		
	PS-10097	195919	181	B8	G1	ND												1		CDM Smith	A. Coler		
	PS-10097	195920	182	B8	G3	ND												1		CDM Smith	A. Coler		
	PS-10097	195921	183	B8	G5	ND												1		CDM Smith	A. Coler		
	PS-10097	195922	184	B8	G7	ND												1		CDM Smith	A. Coler		
	PS-10097	195923	185	B8	G9	ND												1		CDM Smith	A. Coler		
	PS-10097	195924	186	B8	H2	ND												1		CDM Smith	A. Coler		
	PS-10097	195925	187	B8	H4	ND												1		CDM Smith	A. Coler		
	PS-10097	195926	188	B8	H6	ND												1		CDM Smith	A. Coler		
	PS-10097	195927	189	B8	H8	ND												1		CDM Smith	A. Coler		
	PS-10097	195928	190	B8	H10	ND												1		CDM Smith	A. Coler		
	PS-10097	195929	191	B8	I1	ND												1		CDM Smith	A. Coler		
	PS-10097	195930	192	B8	I3	ND												1		CDM Smith	A. Coler		
	PS-10097	195931	193	B8	I5	ND												1		CDM Smith	A. Coler		
	PS-10097	195932	194	B8	I7	ND												1		CDM Smith	A. Coler		
	PS-10097	195933	195	B8	I9	ND												1		CDM Smith	A. Coler		
	PS-10097	195934	196	B8	J2	ND												1		CDM Smith	A. Coler		
	PS-10097	195935	197	B8	J4	ND												1		CDM Smith	A. Coler		
	PS-10097	195936	198	B8	J6	ND												1		CDM Smith	A. Coler		
	PS-10097	195937	199	B8	J8	ND												1		CDM Smith	A. Coler		
	PS-10097	195938	200	B8	J10	ND												1		CDM Smith	A. Coler		
	PS-10097	195939	201	B10	A1	ND												1		CDM Smith	A. Coler		
	PS-10097	195940	202	B10	A3	ND												1		CDM Smith	A. Coler		
	PS-10097	195941	203	B10	A5	ND												1		CDM Smith	A. Coler		
	PS-10097	195942	204	B10	A7	ND												1		CDM Smith	A. Coler		
	PS-10097	195943	205	B10	A9	ND												1		CDM Smith	A. Coler		
	PS-10097	195944	206	B10	B2	ND												1		CDM Smith	A. Coler		
	PS-10097	195945	207	B10	B4	ND												1		CDM Smith	A. Coler		
	PS-10097	195946	208	B10	B6	ND												1		CDM Smith	A. Coler		
	PS-10097	195947	209	B10	B8	ND												1		CDM Smith	A. Coler		
	PS-10097	195948	210	B10	B10	ND												1		CDM Smith	A. Coler		
	PS-10097	195949	211	B10	C1	ND												1		CDM Smith	A. Coler		
	PS-10097	195950	212	B10	C3	ND												1		CDM Smith	A. Coler		
	PS-10097	195951	213	B10	C5	ND												1		CDM Smith	A. Coler		
	PS-10097	195952	214	B10	C7	ND												1		CDM Smith	A. Coler		
	PS-10097	195953	215	B10	C9	ND												1		CDM Smith	A. Coler		
	PS-10097	195954	216	B10	D2	ND												1		CDM Smith	A. Coler		
	PS-10097	195955	217	B10	D4	ND												1		CDM Smith	A. Coler		
	PS-10097	195956	218	B10	D6	ND												1		CDM Smith	A. Coler		
	PS-10097	195957	219	B10	D8	ND												1		CDM Smith	A. Coler		
	PS-10097	195958	220	B10	D10	ND												1		CDM Smith	A. Coler		
	PS-10097	195959	221	B10	E1	ND												1		CDM Smith	A. Coler		
	PS-10097	195960	222	B10	E3	ND												1		CDM Smith	A. Coler		
	PS-10097	195961	223	B10	E5	ND												1		CDM Smith	A. Coler		
	PS-10097	195962	224	B10	E7	ND												1		CDM Smith	A. Coler		
	PS-10097	195963	225	B10	E9	ND												1		CDM Smith	A. Coler		
	PS-10097	195964	226	B10	F2	ND												1		CDM Smith	A. Coler		
	PS-10097	195965	227	B10	F4	ND												1		CDM Smith	A. Coler		
	PS-10097	195966	228	B10	F6	ND												1		CDM Smith	A. Coler		
	PS-10097	195967	229	B10	F8	ND												1		CDM Smith	A. Coler		
	PS-10097	195968	230	B10	F10	ND												1		CDM Smith	A. Coler		
	PS-10097	195969	231	B10	G1	ND												1		CDM Smith	A. Coler		
	PS-10097	195970	232	B10	G3	ND												1		CDM Smith	A. Coler		
	PS-10097	195971	233	B10	G5	ND												1		CDM Smith	A. Coler		
	PS-10097	195972	234	B10	G7	ND												1		CDM Smith	A. Coler		
	PS-10097	195973	235	B10	G9	ND												1		CDM Smith	A. Coler		
	PS-10097	195974	236	B10	H2	ND												1		CDM Smith	A. Coler		
	PS-10097	195975	237	B10	H4	ND												1		CDM Smith	A. Coler		
	PS-10097	195976	238	B10	H6	ND												1		CDM Smith	A. Coler		
	PS-10097	195977	239	B10	H8	ND												1		CDM Smith	A. Coler		
	PS-10097	195978	240	B10	H10	ND												1		CDM Smith	A. Coler		
	PS-10097	195979	241	B10	I1	ND												1		CDM Smith	A. Coler		
	PS-10097	195980	242	B10	I3	ND												1		CDM Smith	A. Coler		
	PS-10097	195981	243	B10	I5	ND												1		CDM Smith	A. Coler		
	PS-10097	195982	244	B10	I7	ND												1		CDM Smith	A. Coler		
	PS-10097	195983	245	B10	I9	ND												1		CDM Smith	A. Coler		
	PS-10097	195984	246	B10	J2	ND												1		CDM Smith	A. Coler		
	PS-10097	195985	247	B10	J4	ND												1		CDM Smith	A. Coler		
	PS-10097	195986	248	B10	J6	ND												1		CDM Smith	A. Coler		
	PS-10097	195987	249	B10	J8	ND												1		CDM Smith	A. Coler		
	PS-10097	195988	250	B10	J10	ND												1		CDM Smith	A. Coler		
	PS-10097	195989	251	F2	B1	ND												1		CDM Smith	A. Coler		
	PS-10097	195990	252	F2	B3	ND												1		CDM Smith	A. Coler		
	PS-10097	195991	253	F2	B5	ND												1		CDM Smith	A. Coler		
	PS-10097	195992	254	F2	B7	ND												1		CDM Smith	A. Coler		
	PS-10097	195993	255	F2	B9	ND												1		CDM Smith	A. Coler		
	PS-10097	195994	256	F2	C2	ND												1		CDM Smith	A. Coler		
	PS-10097	195995	257	F2	C4	ND												1		CDM Smith	A. Coler		
	PS-10097	195996	258	F2	C6	ND												1		CDM Smith	A. Coler		
	PS-10097	195997	259	F2	C8	ND												1		CDM Smith	A. Coler		
	PS-10097	195998	260	F2	C10	ND												1		CDM Smith	A. Coler		
	PS-10097	195999	261	F2	D1	ND												1		CDM Smith	A. Coler		
	PS-10097	196000	262	F2	D3	ND												1		CDM Smith	A. Coler		
	PS-10097	196001	263	F2	D5	ND												1		CDM Smith	A. Coler		
	PS-10097	196002	264	F2	D7	ND												1		CDM Smith	A. Coler		
	PS-10097	196003	265	F2	D9	ND												1		CDM Smith	A. Coler		
	PS-10097	196004	266	F2	E2	ND												1		CDM Smith	A. Coler		
	PS-10097	196005	267	F2	E4	ND												1		CDM Smith	A. Coler		
	PS-10097	196006	268	F2	E6	ND												1		CDM Smith	A. Coler		
	PS-10097	196007	269	F2	E8	ND												1		CDM Smith	A. Coler		
	PS-10097	196008	270	F2	E10	ND												1		CDM Smith	A. Coler		
	PS-10097	196009	271	F2	F1	ND												1		CDM Smith	A. Coler		
	PS-10097	196010	272	F2	F3	ND												1		CDM Smith	A. Coler		
	PS-10097	196011	273	F2	F5	ND												1		CDM Smith	A. Coler		
	PS-10097	196012	274	F2	F7	ND												1		CDM Smith	A. Coler		
	PS-10097	196013	275	F2	F9	ND												1		CDM Smith	A. Coler		
	PS-10097	196014	276	F2	G2	ND												1		CDM Smith	A. Coler		
	PS-10097	196015	277	F2	G4	ND												1		CDM Smith	A. Coler		
	PS-10097	196016	278	F2	G6	ND												1		CDM Smith	A. Coler		
	PS-10097	196017	279	F2	G8	ND												1		CDM Smith	A. Coler		
	PS-10097	196018	280	F2	G10	ND												1		CDM Smith	A. Coler		
	PS-10097	196019	281	F2	H1	ND												1		CDM Smith	A. Coler	Grid_Grid opening is F2_H1 not F2_H10, according to benchsheet (page 20).	2/4/2014
	PS-10097	196020	282	F2	H3	ND												1		CDM Smith	A. Coler		
	PS-10097	196021	283	F2	H5	ND												1		CDM Smith	A. Coler		
	PS-10097	196022	284	F2	H7	ND												1		CDM Smith	A. Coler		
	PS-10097	196023	285	F2	H9	ND												1		CDM Smith	A. Coler		
	PS-10097	196024	286	F2	I2	ND												1		CDM Smith	A. Coler		
	PS-10097	196025	287	F2	I4	ND												1		CDM Smith	A. Coler		
	PS-10097	196026	288	F2	I6	ND												1		CDM Smith	A. Coler		
	PS-10097	196027	289	F2	I8	ND												1		CDM Smith	A. Coler		
	PS-10097	196028	290	F2	I10	ND												1		CDM Smith	A. Coler		
	PS-10097	196029	291	F2	J1	ND												1		CDM Smith	A. Coler	Grid_Grid opening is F2_J1 not F2_J10, according to benchsheet (page 20).	2/4/2014
	PS-10097	196030	292	F2	J3	ND												1		CDM Smith	A. Coler		
	PS-10097	196031	293	F2	J5	ND												1		CDM Smith	A. Coler		
	PS-10097	196032	294	F2	J7	ND												1		CDM Smith	A. Coler		
	PS-10097	196033	295	F2	J9	ND												1		CDM Smith	A. Coler		
	PS-10097	196034	296	F4	A2	ND												1		CDM Smith	A. Coler		
	PS-10097	196035	297	F4	A4	ND												1		CDM Smith	A. Coler		
	PS-10097	196036	298	F4	A6	ND												1		CDM Smith	A. Coler		
	PS-10097	196037	299	F4	A8	ND												1		CDM Smith	A. Coler		
	PS-10097	196038	300	F4	A10	ND												1		CDM Smith	A. Coler		
	PS-10097	196039	301	F4	B1	ND												1		CDM Smith	A. Coler		
	PS-10097	196040	302	F4	B3	ND												1		CDM Smith	A. Coler		
	PS-10097	196041	303	F4	B5	ND												1		CDM Smith	A. Coler		
	PS-10097	196042	304	F4	B7	ND												1		CDM Smith	A. Coler		
	PS-10097	196043	305	F4	B9	ND												1		CDM Smith	A. Coler		
	PS-10097	196044	306	F4	C2	ND												1		CDM Smith	A. Coler		
	PS-10097	196045	307	F4	C4	ND												1		CDM Smith	A. Coler		
	PS-10097	196046	308	F4	C6	ND												1		CDM Smith	A. Coler		
	PS-10097	196047	309	F4	C8	ND												1		CDM Smith	A. Coler		
	PS-10097	196048	310	F4	C10	ND												1		CDM Smith	A. Coler		
	PS-10097	196049	311	F4	D1	ND												1		CDM Smith	A. Coler		
	PS-10097	196050	312	F4	D3	ND												1		CDM Smith	A. Coler		
	PS-10097	196051	313	F4	D5	ND												1		CDM Smith	A. Coler		
	PS-10097	196052	314	F4	D7	ND												1		CDM Smith	A. Coler		
	PS-10097	196053	315	F4	D9	ND												1		CDM Smith	A. Coler		
	PS-10097	196054	316	F4	E2	ND												1		CDM Smith	A. Coler		
	PS-10097	196055	317	F4	E4	ND												1		CDM Smith	A. Coler		
	PS-10097	196056	318	F4	E6	ND												1		CDM Smith	A. Coler		
	PS-10097	196057	319	F4	E8	ND												1		CDM Smith	A. Coler		
	PS-10097	196058	320	F4	E10	ND												1		CDM Smith	A. Coler		
	PS-10097	196059	321	F4	F1	ND												1		CDM Smith	A. Coler		
	PS-10097	196060	322	F4	F3	ND												1		CDM Smith	A. Coler		
	PS-10097	196061	323	F4	F5	ND												1		CDM Smith	A. Coler		
	PS-10097	196062	324	F4	F7	ND												1		CDM Smith	A. Coler		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A ABS AIR

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10097	196063	325	F4	F9	ND												1		CDM Smith	A. Coler		
	PS-10097	196064	326	F4	G2	ND												1		CDM Smith	A. Coler		
	PS-10097	196065	327	F4	G4	ND												1		CDM Smith	A. Coler		
	PS-10097	196066	328	F4	G6	ND												1		CDM Smith	A. Coler		
	PS-10097	196067	329	F4	G8	ND												1		CDM Smith	A. Coler		
	PS-10097	196068	330	F4	G10	ND												1		CDM Smith	A. Coler		
	PS-10097	196069	331	F4	H1	ND												1		CDM Smith	A. Coler	Grid_Grid opening is F4_H1 not F4_H10, according to benchsheet (page 23).	2/4/2014
	PS-10097	196070	332	F4	H3	ND												1		CDM Smith	A. Coler		
	PS-10097	196071	333	F4	H5	ND												1		CDM Smith	A. Coler		
	PS-10097	196072	334	F4	H7	ND												1		CDM Smith	A. Coler		
	PS-10097	196073	335	F4	H9	ND												1		CDM Smith	A. Coler		
	PS-10097	196074	336	F4	I2	ND												1		CDM Smith	A. Coler		
	PS-10097	196075	337	F4	I4	ND												1		CDM Smith	A. Coler		
	PS-10097	196076	338	F4	I6	ND												1		CDM Smith	A. Coler		
	PS-10097	196077	339	F4	I8	ND												1		CDM Smith	A. Coler		
	PS-10097	196078	340	F4	I10	ND												1		CDM Smith	A. Coler		
	PS-10097	196079	341	F4	J1	ND												1		CDM Smith	A. Coler		
	PS-10097	196080	342	F4	J3	ND												1		CDM Smith	A. Coler		
	PS-10097	196081	343	F4	J5	ND												1		CDM Smith	A. Coler		
	PS-10097	196082	344	F4	J7	ND												1		CDM Smith	A. Coler		
	PS-10097	196083	345	F4	J9	ND												1		CDM Smith	A. Coler		
	PS-10097	196084	346	F6	A1	ND												1		CDM Smith	A. Coler		
	PS-10097	196085	347	F6	A3	ND												1		CDM Smith	A. Coler		
	PS-10097	196086	348	F6	A5	ND												1		CDM Smith	A. Coler		
	PS-10097	196087	349	F6	A7	ND												1		CDM Smith	A. Coler		
	PS-10097	196088	350	F6	A9	ND												1		CDM Smith	A. Coler		
	PS-10097	196089	351	F6	B2	ND												1		CDM Smith	A. Coler		
	PS-10097	196090	352	F6	B4	ND												1		CDM Smith	A. Coler		
	PS-10097	196091	353	F6	B6	ND												1		CDM Smith	A. Coler		
	PS-10097	196092	354	F6	B8	ND												1		CDM Smith	A. Coler		
	PS-10097	196093	355	F6	B10	ND												1		CDM Smith	A. Coler		
	PS-10097	196094	356	F6	C1	ND												1		CDM Smith	A. Coler		
	PS-10097	196095	357	F6	C3	ND												1		CDM Smith	A. Coler		
	PS-10097	196096	358	F6	C5	ND												1		CDM Smith	A. Coler		
	PS-10097	196097	359	F6	C7	ND												1		CDM Smith	A. Coler		
	PS-10097	196098	360	F6	C9	ND												1		CDM Smith	A. Coler		
	PS-10097	196099	361	F6	D2	ND												1		CDM Smith	A. Coler		
	PS-10097	196100	362	F6	D4	ND												1		CDM Smith	A. Coler		
	PS-10097	196101	363	F6	D6	ND												1		CDM Smith	A. Coler		
	PS-10097	196102	364	F6	D8	ND												1		CDM Smith	A. Coler		
	PS-10097	196103	365	F6	D10	ND												1		CDM Smith	A. Coler		
	PS-10097	196104	366	F6	E1	ND												1		CDM Smith	A. Coler		
	PS-10097	196105	367	F6	E3	ND												1		CDM Smith	A. Coler		
	PS-10097	196106	368	F6	E5	ND												1		CDM Smith	A. Coler		
	PS-10097	196107	369	F6	E7	ND												1		CDM Smith	A. Coler		
	PS-10097	196108	370	F6	E9	ND												1		CDM Smith	A. Coler		
	PS-10097	196109	371	F6	F2	ND												1		CDM Smith	A. Coler		
	PS-10097	196110	372	F6	F4	ND												1		CDM Smith	A. Coler		
	PS-10097	196111	373	F6	F6	ND												1		CDM Smith	A. Coler		
	PS-10097	196112	374	F6	F8	ND												1		CDM Smith	A. Coler		
	PS-10097	196113	375	F6	F10	ND												1		CDM Smith	A. Coler		
	PS-10097	196114	376	F6	G1	ND												1		CDM Smith	A. Coler		
	PS-10097	196115	377	F6	G3	ND												1		CDM Smith	A. Coler		
	PS-10097	196116	378	F6	G5	ND												1		CDM Smith	A. Coler		
	PS-10097	196117	379	F6	G7	ND												1		CDM Smith	A. Coler		
	PS-10097	196118	380	F6	G9	ND												1		CDM Smith	A. Coler		
	PS-10097	196119	381	F6	H2	ND												1		CDM Smith	A. Coler		
	PS-10097	196120	382	F6	H4	ND												1		CDM Smith	A. Coler		
	PS-10097	196121	383	F6	H6	ND												1		CDM Smith	A. Coler		
	PS-10097	196122	384	F6	H8	ND												1		CDM Smith	A. Coler		
	PS-10097	196123	385	F6	H10	ND												1		CDM Smith	A. Coler		
	PS-10097	196124	386	F6	I1	ND												1		CDM Smith	A. Coler		
	PS-10097	196125	387	F6	I3	ND												1		CDM Smith	A. Coler		
	PS-10097	196126	388	F6	I5	ND												1		CDM Smith	A. Coler		
	PS-10097	196127	389	F6	I7	ND												1		CDM Smith	A. Coler		
	PS-10097	196128	390	F6	I9	ND												1		CDM Smith	A. Coler		
	PS-10097	196129	391	F6	J2	ND												1		CDM Smith	A. Coler		
	PS-10097	196130	392	F6	J4	ND												1		CDM Smith	A. Coler		
	PS-10097	196131	393	F6	J6	ND												1		CDM Smith	A. Coler		
	PS-10097	196132	394	F6	J8	ND												1		CDM Smith	A. Coler		
	PS-10097	196133	395	F6	J10	ND												1		CDM Smith	A. Coler		
	PS-10099	196134	1	C1	A1	ND												1		CDM Smith	A. Coler		
	PS-10099	196135	2	C1	A3	ND												1		CDM Smith	A. Coler		
	PS-10099	196136	3	C1	A5	ND												1		CDM Smith	A. Coler		
	PS-10099	196137	4	C1	A7	ND												1		CDM Smith	A. Coler		
	PS-10099	196138	5	C1	A9	ND												1		CDM Smith	A. Coler		
	PS-10099	196139	6	C1	B2	ND												1		CDM Smith	A. Coler		
	PS-10099	196140	7	C1	B4	ND												1		CDM Smith	A. Coler		
	PS-10099	196141	8	C1	B6	ND												1		CDM Smith	A. Coler		
	PS-10099	196142	9	C1	B8	ND												1		CDM Smith	A. Coler		
	PS-10099	196143	10	C1	B10	ND												1		CDM Smith	A. Coler		
	PS-10099	196144	11	C1	C1	ND												1		CDM Smith	A. Coler		
	PS-10099	196145	12	C1	C3	ND												1		CDM Smith	A. Coler		
	PS-10099	196146	13	C1	C5	ND												1		CDM Smith	A. Coler		
	PS-10099	196147	14	C1	C7	ND												1		CDM Smith	A. Coler		
	PS-10099	196148	15	C1	C9	ND												1		CDM Smith	A. Coler		
	PS-10099	196149	16	C1	D2	ND												1		CDM Smith	A. Coler		
	PS-10099	196150	17	C1	D4	ND												1		CDM Smith	A. Coler		
	PS-10099	196151	18	C1	D6	ND												1		CDM Smith	A. Coler		
	PS-10099	196152	19	C1	D8	ND												1		CDM Smith	A. Coler		
	PS-10099	196153	20	C1	D10	ND												1		CDM Smith	A. Coler		
	PS-10099	196154	21	C1	E1	ND												1		CDM Smith	A. Coler		
	PS-10099	196155	22	C1	E3	ND												1		CDM Smith	A. Coler		
	PS-10099	196156	23	C1	E5	ND												1		CDM Smith	A. Coler		
	PS-10099	196157	24	C1	E7	ND												1		CDM Smith	A. Coler		
	PS-10099	196158	25	C1	E9	ND												1		CDM Smith	A. Coler		
	PS-10099	196159	26	C1	F2	ND												1		CDM Smith	A. Coler		
	PS-10099	196160	27	C1	F4	ND												1		CDM Smith	A. Coler		
	PS-10099	196161	28	C1	F6	ND												1		CDM Smith	A. Coler		
	PS-10099	196162	29	C1	F8	ND												1		CDM Smith	A. Coler		
	PS-10099	196163	30	C1	F10	ND												1		CDM Smith	A. Coler		
	PS-10099	196164	31	C1	G1	ND												1		CDM Smith	A. Coler		
	PS-10099	196165	32	C1	G3	ND												1		CDM Smith	A. Coler		
	PS-10099	196166	33	C1	G5	ND												1		CDM Smith	A. Coler		
	PS-10099	196167	34	C1	G7	ND												1		CDM Smith	A. Coler		
	PS-10099	196168	35	C1	G9	ND												1		CDM Smith	A. Coler		
	PS-10099	196169	36	C1	H2	ND												1		CDM Smith	A. Coler		
	PS-10099	196170	37	C1	H4	ND												1		CDM Smith	A. Coler		
	PS-10099	196171	38	C1	H6	ND												1		CDM Smith	A. Coler		
	PS-10099	196172	39	C1	H8	ND												1		CDM Smith	A. Coler		
	PS-10099	196173	40	C1	H10	ND												1		CDM Smith	A. Coler		
	PS-10099	196174	41	C1	I1	ND												1		CDM Smith	A. Coler		
	PS-10099	196175	42	C1	I3	ND												1		CDM Smith	A. Coler		
	PS-10099	196176	43	C1	I5	ND												1		CDM Smith	A. Coler		
	PS-10099	196177	44	C1	I7	ND												1		CDM Smith	A. Coler		
	PS-10099	196178	45	C1	I9	ND												1		CDM Smith	A. Coler		
	PS-10099	196179	46	C1	J2	ND												1		CDM Smith	A. Coler		
	PS-10099	196180	47	C1	J4	ND												1		CDM Smith	A. Coler		
	PS-10099	196181	48	C1	J6	ND												1		CDM Smith	A. Coler		
	PS-10099	196182	49	C1	J8	ND												1		CDM Smith	A. Coler		
	PS-10099	196183	50	C1	J10	ND												1		CDM Smith	A. Coler		
	PS-10099	196184	51	C3	A2	ND												1		CDM Smith	A. Coler		
	PS-10099	196185	52	C3	A4	ND												1		CDM Smith	A. Coler		
	PS-10099	196186	53	C3	A6	ND												1		CDM Smith	A. Coler		
	PS-10099	196187	54	C3	A8	ND												1		CDM Smith	A. Coler		
	PS-10099	196188	55	C3	A10	ND												1		CDM Smith	A. Coler		
	PS-10099	196189	56	C3	B1	ND												1		CDM Smith	A. Coler		
	PS-10099	196190	57	C3	B3	ND												1		CDM Smith	A. Coler		
	PS-10099	196191	58	C3	B5	ND												1		CDM Smith	A. Coler		
	PS-10099	196192	59	C3	B7	ND												1		CDM Smith	A. Coler		
	PS-10099	196193	60	C3	B9	ND												1		CDM Smith	A. Coler		
	PS-10099	196194	61	C3	C2	ND												1		CDM Smith	A. Coler		
	PS-10099	196195	62	C3	C4	ND												1		CDM Smith	A. Coler		
	PS-10099	196196	63	C3	C6	ND												1		CDM Smith	A. Coler		
	PS-10099	196197	64	C3	C8	ND												1		CDM Smith	A. Coler		
	PS-10099	196198	65	C3	C10	ND												1		CDM Smith	A. Coler		
	PS-10099	196199	66	C3	D1	ND												1		CDM Smith	A. Coler		
	PS-10099	196200	67	C3	D3	ND												1		CDM Smith	A. Coler		
	PS-10099	196201	68	C3	D5	ND												1		CDM Smith	A. Coler		
	PS-10099	196202	69	C3	D7	ND												1		CDM Smith	A. Coler		
	PS-10099	196203	70	C3	D9	ND												1		CDM Smith	A. Coler		
	PS-10099	196204	71	C3	E2	ND												1		CDM Smith	A. Coler		
	PS-10099	196205	72	C3	E4	ND												1		CDM Smith	A. Coler		
	PS-10099	196206	73	C3	E6	ND												1		CDM Smith	A. Coler		
	PS-10099	196207	74	C3	E8	ND												1		CDM Smith	A. Coler		
	PS-10099	196208	75	C3	E10	ND												1		CDM Smith	A. Coler		
	PS-10099	196209	76	C3	F1	ND												1		CDM Smith	A. Coler		
	PS-10099	196210	77	C3	F3	ND												1		CDM Smith	A. Coler		
	PS-10099	196211	78	C3	F5	ND												1		CDM Smith	A. Coler		
	PS-10099	196212	79	C3	F7	ND												1		CDM Smith	A. Coler		
	PS-10099	196213	80	C3	F9	ND												1		CDM Smith	A. Coler		
	PS-10099	196214	81	C3	G2	ND												1		CDM Smith	A. Coler		
	PS-10099	196215	82	C3	G4	ND												1		CDM Smith	A. Coler		
	PS-10099	196216	83	C3	G6	ND												1		CDM Smith	A. Coler		
	PS-10099	196217	84	C3	G8	ND												1		CDM Smith	A. Coler		
	PS-10099	196218	85	C3	G10	ND												1		CDM Smith	A. Coler		
	PS-10099	196219	86	C3	H1	ND												1		CDM Smith	A. Coler		
	PS-10099	196220	87	C3	H3	ND												1		CDM Smith	A. Coler		
	PS-10099	196221	88	C3	H5	ND												1		CDM Smith	A. Coler		
	PS-10099	196222	89	C3	H7	ND												1		CDM Smith	A. Coler		
	PS-10099	196223	90	C3	H9	ND												1		CDM Smith	A. Coler		
	PS-10099	196224	91	C3	I2	ND												1		CDM Smith	A. Coler		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A ABS AIR

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10099	196225	92	C3	I4	ND												1		CDM Smith	A. Coler		
	PS-10099	196226	93	C3	I6	ND												1		CDM Smith	A. Coler		
	PS-10099	196227	94	C3	I8	ND												1		CDM Smith	A. Coler		
	PS-10099	196228	95	C3	I10	ND												1		CDM Smith	A. Coler		
	PS-10099	196229	96	C3	J1	ND												1		CDM Smith	A. Coler	Grid_Grid opening is C3_J1 not C3_J10, according to benchsheet (page 7).	2/4/2014
	PS-10099	196230	97	C3	J3	ND												1		CDM Smith	A. Coler		
	PS-10099	196231	98	C3	J5	ND												1		CDM Smith	A. Coler		
	PS-10099	196232	99	C3	J7	ND												1		CDM Smith	A. Coler		
	PS-10099	196233	100	C3	J9	ND												1		CDM Smith	A. Coler		
	PS-10099	196234	101	C5	A1	ND												1		CDM Smith	A. Coler		
	PS-10099	196235	102	C5	A3	ND												1		CDM Smith	A. Coler		
	PS-10099	196236	103	C5	A5	ND												1		CDM Smith	A. Coler		
	PS-10099	196237	104	C5	A7	ND												1		CDM Smith	A. Coler		
	PS-10099	196238	105	C5	A9	ND												1		CDM Smith	A. Coler		
	PS-10099	196239	106	C5	B2	ND												1		CDM Smith	A. Coler		
	PS-10099	196240	107	C5	B4	ND												1		CDM Smith	A. Coler		
	PS-10099	196241	108	C5	B6	ND												1		CDM Smith	A. Coler		
	PS-10099	196242	109	C5	B8	ND												1		CDM Smith	A. Coler		
	PS-10099	196243	110	C5	B10	ND												1		CDM Smith	A. Coler		
	PS-10099	196244	111	C5	C1	ND												1		CDM Smith	A. Coler		
	PS-10099	196245	112	C5	C3	ND												1		CDM Smith	A. Coler		
	PS-10099	196246	113	C5	C5	ND												1		CDM Smith	A. Coler		
	PS-10099	196247	114	C5	C7	ND												1		CDM Smith	A. Coler		
	PS-10099	196248	115	C5	C9	ND												1		CDM Smith	A. Coler		
	PS-10099	196249	116	C5	D2	ND												1		CDM Smith	A. Coler		
	PS-10099	196250	117	C5	D4	ND												1		CDM Smith	A. Coler		
	PS-10099	196251	118	C5	D6	ND												1		CDM Smith	A. Coler		
	PS-10099	196252	119	C5	D8	ND												1		CDM Smith	A. Coler		
	PS-10099	196253	120	C5	D10	ND												1		CDM Smith	A. Coler		
	PS-10099	196254	121	C5	E1	ND												1		CDM Smith	A. Coler		
	PS-10099	196255	122	C5	E3	ND												1		CDM Smith	A. Coler		
	PS-10099	196256	123	C5	E5	ND												1		CDM Smith	A. Coler		
	PS-10099	196257	124	C5	E7	ND												1		CDM Smith	A. Coler		
	PS-10099	196258	125	C5	E9	ND												1		CDM Smith	A. Coler		
	PS-10099	196259	126	C5	F2	ND												1		CDM Smith	A. Coler		
	PS-10099	196260	127	C5	F4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196261	128	C5	F6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196262	129	C5	F8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196263	130	C5	F10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196264	131	C5	G1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196265	132	C5	G3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196266	133	C5	G5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196267	134	C5	G7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196268	135	C5	G9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196269	136	C5	H2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196270	137	C5	H4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196271	138	C5	H6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196272	139	C5	H8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196273	140	C5	H10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196274	141	C5	I1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196275	142	C5	I3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196276	143	C5	I5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196277	144	C5	I7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196278	145	C5	I9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196279	146	C5	J2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196280	147	C5	J4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196281	148	C5	J6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196282	149	C5	J8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196283	150	C5	J10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196284	151	C7	A2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196285	152	C7	A4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196286	153	C7	A6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196287	154	C7	A8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196288	155	C7	A10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196289	156	C7	B1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196290	157	C7	B3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196291	158	C7	B5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196292	159	C7	B7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196293	160	C7	B9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196294	161	C7	C2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196295	162	C7	C4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196296	163	C7	C6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196297	164	C7	C8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196298	165	C7	C10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196299	166	C7	D1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196300	167	C7	D3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196301	168	C7	D5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196302	169	C7	D7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196303	170	C7	D9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196304	171	C7	E2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196305	172	C7	E4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196306	173	C7	E6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196307	174	C7	E8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196308	175	C7	E10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196309	176	C7	F1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196310	177	C7	F3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196311	178	C7	F5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196312	179	C7	F7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196313	180	C7	F9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196314	181	C7	G2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196315	182	C7	G4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196316	183	C7	G6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196317	184	C7	G8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196318	185	C7	G10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196319	186	C7	H1	ND												1		CDM Smith	A. Coler	Grid_Grid opening is C7_H1 not C7_H10, according to benchsheet (page 13).	2/4/2014
x-NR	PS-10099	196320	187	C7	H3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196321	188	C7	H5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196322	189	C7	H7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196323	190	C7	H9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196324	191	C7	I2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196325	192	C7	I4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196326	193	C7	I6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196327	194	C7	I8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196328	195	C7	I10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196329	196	C7	J1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196330	197	C7	J3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196331	198	C7	J5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196332	199	C7	J7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196333	200	C7	J9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196334	201	C9	A1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196335	202	C9	A3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196336	203	C9	A5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196337	204	C9	A7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196338	205	C9	A9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196339	206	C9	B2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196340	207	C9	B4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196341	208	C9	B6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196342	209	C9	B8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196343	210	C9	B10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196344	211	C9	C1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196345	212	C9	C3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196346	213	C9	C5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196347	214	C9	C7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196348	215	C9	C9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196349	216	C9	D2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196350	217	C9	D4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196351	218	C9	D6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196352	219	C9	D8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196353	220	C9	D10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196354	221	C9	E1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196355	222	C9	E3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196356	223	C9	E5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196357	224	C9	E7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196358	225	C9	E9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196359	226	C9	F2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196360	227	C9	F4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196361	228	C9	F6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196362	229	C9	F8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196363	230	C9	F10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196364	231	C9	G1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196365	232	C9	G3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196366	233	C9	G5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196367	234	C9	G7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196368	235	C9	G9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196369	236	C9	H2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196370	237	C9	H4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196371	238	C9	H6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196372	239	C9	H8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196373	240	C9	H10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196374	241	C9	I1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196375	242	C9	I3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196376	243	C9	I5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196377	244	C9	I7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196378	245	C9	I9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196379	246	C9	J2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196380	247	C9	J4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196381	248	C9	J6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196382	249	C9	J8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196383	250	C9	J10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196384	251	G1	A2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196385	252	G1	A4	ND												1		CDM Smith	A. Coler		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A ABS AIR

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
x-NR	PS-10099	196386	253	G1	A6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196387	254	G1	A8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196388	255	G1	A10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196389	256	G1	B1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196390	257	G1	B3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196391	258	G1	B5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196392	259	G1	B7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196393	260	G1	B9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196394	261	G1	C2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196395	262	G1	C4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196396	263	G1	C6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196397	264	G1	C8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196398	265	G1	C10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196399	266	G1	D1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196400	267	G1	D3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196401	268	G1	D5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196402	269	G1	D7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196403	270	G1	D9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196404	271	G1	E2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196405	272	G1	E4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196406	273	G1	E6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196407	274	G1	E8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196408	275	G1	E10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196409	276	G1	F1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196410	277	G1	F3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196411	278	G1	F5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196412	279	G1	F7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196413	280	G1	F9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196414	281	G1	G2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196415	282	G1	G4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196416	283	G1	G6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196417	284	G1	G8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196418	285	G1	G10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196419	286	G1	H1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196420	287	G1	H3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196421	288	G1	H5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196422	289	G1	H7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196423	290	G1	H9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196424	291	G1	I2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196425	292	G1	I4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196426	293	G1	I6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196427	294	G1	I8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196428	295	G1	I10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196429	296	G1	J1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196430	297	G1	J3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196431	298	G1	J5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196432	299	G1	J7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196433	300	G1	J9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196434	301	G3	A1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196435	302	G3	A3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196436	303	G3	A5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196437	304	G3	A7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196438	305	G3	A9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196439	306	G3	B2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196440	307	G3	B4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196441	308	G3	B6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196442	309	G3	B8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196443	310	G3	B10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196444	311	G3	C1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196445	312	G3	C3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196446	313	G3	C5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196447	314	G3	C7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196448	315	G3	C9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196449	316	G3	D2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196450	317	G3	D4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196451	318	G3	D6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196452	319	G3	D8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196453	320	G3	D10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196454	321	G3	E1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196455	322	G3	E3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196456	323	G3	E5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196457	324	G3	E7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196458	325	G3	E9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196459	326	G3	F2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196460	327	G3	F4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196461	328	G3	F6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196462	329	G3	F8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196463	330	G3	F10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196464	331	G3	G1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196465	332	G3	G3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196466	333	G3	G5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196467	334	G3	G7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196468	335	G3	G9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196469	336	G3	H2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196470	337	G3	H4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196471	338	G3	H6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196472	339	G3	H8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196473	340	G3	H10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196474	341	G3	I1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196475	342	G3	I3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196476	343	G3	I5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196477	344	G3	I7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196478	345	G3	I9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196479	346	G3	J2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196480	347	G3	J4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196481	348	G3	J6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196482	349	G3	J8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196483	350	G3	J10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196484	351	G5	B1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196485	352	G5	B3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196486	353	G5	B5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196487	354	G5	B7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196488	355	G5	B9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196489	356	G5	C2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196490	357	G5	C4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196491	358	G5	C6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196492	359	G5	C8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196493	360	G5	C10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196494	361	G5	D1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196495	362	G5	D3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196496	363	G5	D5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196497	364	G5	D7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196498	365	G5	D9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196499	366	G5	E2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196500	367	G5	E4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196501	368	G5	E6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196502	369	G5	E8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196503	370	G5	E10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196504	371	G5	F1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196505	372	G5	F3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196506	373	G5	F5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196507	374	G5	F7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196508	375	G5	F9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196509	376	G5	G2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196510	377	G5	G4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196511	378	G5	G6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196512	379	G5	G8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196513	380	G5	G10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196514	381	G5	H1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196515	382	G5	H3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196516	383	G5	H5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196517	384	G5	H7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196518	385	G5	H9	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196519	386	G5	I2	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196520	387	G5	I4	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196521	388	G5	I6	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196522	389	G5	I8	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196523	390	G5	I10	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196524	391	G5	J1	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196525	392	G5	J3	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196526	393	G5	J5	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196527	394	G5	J7	ND												1		CDM Smith	A. Coler		
x-NR	PS-10099	196528	395	G5	J9	ND												1		CDM Smith	A. Coler		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A SURFACE WATER

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10002	168245	1	R1	G9	ND														CDM Smith	N. Ross		
	PS-10002	168246	2	R1	G7	ND														CDM Smith	N. Ross		
	PS-10002	168247	3	R1	G5	ND														CDM Smith	N. Ross		
	PS-10002	168248	4	R1	G3	ND														CDM Smith	N. Ross		
	PS-10002	168249	5	R1	G1	ND														CDM Smith	N. Ross		
	PS-10002	168250	6	R1	F10	ND														CDM Smith	N. Ross		
	PS-10002	168251	7	R1	F8	ND														CDM Smith	N. Ross		
	PS-10002	168252	8	R1	F6	ND														CDM Smith	N. Ross		
	PS-10002	168253	9	R1	F4	ND														CDM Smith	N. Ross		
	PS-10002	168254	10	R1	F2	ND														CDM Smith	N. Ross		
	PS-10002	168255	11	R1	E9	ND														CDM Smith	N. Ross		
	PS-10002	168256	12	R1	E7	ND														CDM Smith	N. Ross		
	PS-10002	168257	13	R1	E5	ND														CDM Smith	N. Ross		
	PS-10002	168258	14	R1	E3	ND														CDM Smith	N. Ross		
	PS-10002	168259	15	R1	E1	ND														CDM Smith	N. Ross		
	PS-10002	168260	16	R1	D10	ND														CDM Smith	N. Ross		
	PS-10002	168261	17	R1	D8	ND														CDM Smith	N. Ross		
	PS-10002	168262	18	R1	D6	ND														CDM Smith	N. Ross		
	PS-10002	168263	19	R1	D4	ND														CDM Smith	N. Ross		
	PS-10002	168264	20	R1	D2	ND														CDM Smith	N. Ross		
	PS-10002	168265	21	R1	C9	ND														CDM Smith	N. Ross		
	PS-10002	168266	22	R1	C7	ND														CDM Smith	N. Ross		
	PS-10002	168267	23	R1	C5	ND														CDM Smith	N. Ross		
	PS-10002	168268	24	R1	C3	ND														CDM Smith	N. Ross		
	PS-10002	168269	25	R1	C1	ND														CDM Smith	N. Ross		
	PS-10002	168270	26	R2	H9	ND														CDM Smith	N. Ross		
	PS-10002	168271	27	R2	H7	ND														CDM Smith	N. Ross		
	PS-10002	168272	28	R2	H5	ND														CDM Smith	N. Ross		
	PS-10002	168273	29	R2	H3	ND														CDM Smith	N. Ross		
	PS-10002	168274	30	R2	H1	ND														CDM Smith	N. Ross		
	PS-10002	168275	31	R2	G10	ND														CDM Smith	N. Ross		
	PS-10002	168276	32	R2	G8	ND														CDM Smith	N. Ross		
	PS-10002	168277	33	R2	G6	ND														CDM Smith	N. Ross		
	PS-10002	168278	34	R2	G4	ND														CDM Smith	N. Ross		
	PS-10002	168279	35	R2	G2	ND														CDM Smith	N. Ross		
	PS-10002	168280	36	R2	F9	ND														CDM Smith	N. Ross		
	PS-10002	168281	37	R2	F7	ND														CDM Smith	N. Ross		
	PS-10002	168282	38	R2	F5	ND														CDM Smith	N. Ross		
	PS-10002	168283	39	R2	F3	ND														CDM Smith	N. Ross		
	PS-10002	168284	40	R2	F1	ND														CDM Smith	N. Ross		
	PS-10002	168285	41	R2	E10	ND														CDM Smith	N. Ross		
	PS-10002	168286	42	R2	E8	ND														CDM Smith	N. Ross		
	PS-10002	168287	43	R2	E6	ND														CDM Smith	N. Ross		
	PS-10002	168288	44	R2	E4	ND														CDM Smith	N. Ross		
	PS-10002	168289	45	R2	E2	ND														CDM Smith	N. Ross		
	PS-10002	168290	46	R2	D9	ND														CDM Smith	N. Ross		
	PS-10002	168291	47	R2	D7	ND														CDM Smith	N. Ross		
	PS-10002	168292	48	R2	D5	ND														CDM Smith	N. Ross		
	PS-10002	168293	49	R2	D3	ND														CDM Smith	N. Ross		
	PS-10002	168294	50	R2	D1	ND														CDM Smith	N. Ross		
	PS-10002	168295	51	R2	C10	ND														CDM Smith	N. Ross		
	PS-10002	168296	52	R2	C8	ND														CDM Smith	N. Ross		
	PS-10002	168297	53	R2	C6	ND														CDM Smith	N. Ross		
	PS-10002	168298	54	R2	C4	ND														CDM Smith	N. Ross		
	PS-10002	168299	55	R2	C2	ND														CDM Smith	N. Ross		
	PS-10002	168300	56	R2	B9	ND														CDM Smith	N. Ross		
	PS-10002	168301	57	R2	B7	ND														CDM Smith	N. Ross		
	PS-10002	168302	58	R2	B5	ND														CDM Smith	N. Ross		
	PS-10002	168303	59	R2	B3	ND														CDM Smith	N. Ross		
	PS-10002	168304	60	R2	B1	ND														CDM Smith	N. Ross		
	PS-10002	168305	61	R3	I9	ND														CDM Smith	N. Ross		
	PS-10002	168306	62	R3	I7	ND														CDM Smith	N. Ross		
	PS-10002	168307	63	R3	I5	ND														CDM Smith	N. Ross		
	PS-10002	168308	64	R3	I3	ND														CDM Smith	N. Ross		
	PS-10002	168309	65	R3	I1	ND														CDM Smith	N. Ross		
	PS-10002	168310	66	R3	H10	ND														CDM Smith	N. Ross		
	PS-10002	168311	67	R3	H8	ND														CDM Smith	N. Ross		
	PS-10002	168312	68	R3	H6	ND														CDM Smith	N. Ross		
	PS-10002	168313	69	R3	H4	ND														CDM Smith	N. Ross		
	PS-10002	168314	70	R3	H2	ND														CDM Smith	N. Ross		
	PS-10002	168315	71	R3	G9	ND														CDM Smith	N. Ross		
	PS-10002	168316	72	R3	G7	ND														CDM Smith	N. Ross		
	PS-10002	168317	73	R3	G5	ND														CDM Smith	N. Ross		
	PS-10002	168318	74	R3	G3	ND														CDM Smith	N. Ross		
	PS-10002	168319	75	R3	G1	ND														CDM Smith	N. Ross		
	PS-10002	168320	76	R3	F10	ND														CDM Smith	N. Ross		
	PS-10002	168321	77	R3	F8	ND														CDM Smith	N. Ross		
	PS-10005	169918	1	L1	A1	ND														CDM Smith	N. Ross		
	PS-10005	169919	2	L1	A3	ND														CDM Smith	N. Ross		
	PS-10005	169920	3	L1	A5	ND														CDM Smith	N. Ross		
	PS-10005	169921	4	L1	A7	ND														CDM Smith	N. Ross		
	PS-10005	169922	5	L1	A9	ND														CDM Smith	N. Ross		
	PS-10005	169923	6	L1	B2	ND														CDM Smith	N. Ross		
	PS-10005	169924	7	L1	B4	ND														CDM Smith	N. Ross		
	PS-10005	169925	8	L1	B6	ND														CDM Smith	N. Ross		
	PS-10005	169926	9	L1	B8	ND														CDM Smith	N. Ross		
	PS-10005	169927	10	L1	B10	ND														CDM Smith	N. Ross		
	PS-10005	169928	11	L1	C1	ND														CDM Smith	N. Ross		
	PS-10005	169929	12	L1	C3	ND														CDM Smith	N. Ross		
	PS-10005	169930	13	L1	C5	ND														CDM Smith	N. Ross		
	PS-10005	169931	14	L1	C7	ND														CDM Smith	N. Ross		
	PS-10005	169932	15	L1	C9	ND														CDM Smith	N. Ross		
	PS-10005	169933	16	L1	D2	ND														CDM Smith	N. Ross		
	PS-10005	169934	17	L1	D6	ND														CDM Smith	N. Ross		
	PS-10005	169935	18	L1	D8	ND														CDM Smith	N. Ross		
	PS-10005	169936	19	L1	D10	ND														CDM Smith	N. Ross		
	PS-10005	169937	20	L1	E1	ND														CDM Smith	N. Ross		
	PS-10005	169938	21	L1	E3	ND														CDM Smith	N. Ross		
	PS-10005	169939	22	L1	E5	ND														CDM Smith	N. Ross		
	PS-10005	169940	23	L1	E7	ND														CDM Smith	N. Ross		
	PS-10005	169941	24	L1	E9	ND														CDM Smith	N. Ross		
	PS-10005	169942	25	L1	F2	ND														CDM Smith	N. Ross		
	PS-10005	169943	26	L1	F4	ND														CDM Smith	N. Ross		
	PS-10005	169944	27	L1	F6	ND														CDM Smith	N. Ross		
	PS-10005	169945	28	L1	F8	ND														CDM Smith	N. Ross		
	PS-10005	169946	29	L1	F10	ND														CDM Smith	N. Ross		
	PS-10005	169947	30	L1	G3	ND														CDM Smith	N. Ross		
	PS-10005	169948	31	L1	G5	ND														CDM Smith	N. Ross		
	PS-10005	169949	32	L1	G7	ND														CDM Smith	N. Ross		
	PS-10005	169950	33	L1	G9	ND														CDM Smith	N. Ross		
	PS-10005	169951	34	L1	H2	ND														CDM Smith	N. Ross		
	PS-10005	169952	35	L1	H4	ND														CDM Smith	N. Ross		
	PS-10005	169953	36	L1	H6	ND														CDM Smith	N. Ross		
	PS-10005	169954	37	L1	H8	ND														CDM Smith	N. Ross		
	PS-10005	169955	38	L1	H10	ND														CDM Smith	N. Ross		
	PS-10005	169956	39	L1	I1	F	1	1	8.1	0.5	16.2	LA		ADX	1	1	1		NaK, WRTA; Ph	CDM Smith	N. Ross		
	PS-10005	169957	40	L1	I3	ND														CDM Smith	N. Ross		
	PS-10005	169958	41	L1	I5	ND														CDM Smith	N. Ross		
	PS-10005	169959	42	L1	I7	ND														CDM Smith	N. Ross		
	PS-10005	169960	43	L1	J2	ND														CDM Smith	N. Ross		
	PS-10005	169961	44	L1	J4	F	2	2	5.7	0.6	9.5	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
	PS-10005	169962	45	L1	J6	ND														CDM Smith	N. Ross		
	PS-10005	169963	46	L1	J8	ND														CDM Smith	N. Ross		
	PS-10005	169964	47	L1	J10	ND														CDM Smith	N. Ross		
	PS-10005	169965	48	L2	A1	ND														CDM Smith	N. Ross		
	PS-10005	169966	49	L2	A3	ND														CDM Smith	N. Ross		
	PS-10005	169967	50	L2	A5	ND														CDM Smith	N. Ross		
	PS-10005	169968	51	L2	A7	ND														CDM Smith	N. Ross		
	PS-10005	169969	52	L2	A9	ND														CDM Smith	N. Ross		
	PS-10005	169970	53	L2	B2	ND														CDM Smith	N. Ross		
	PS-10005	169971	54	L2	B4	ND														CDM Smith	N. Ross		
	PS-10005	169972	55	L2	B6	ND														CDM Smith	N. Ross		
	PS-10005	169973	56	L2	B8	ND														CDM Smith	N. Ross		
	PS-10005	169974	57	L2	B10	ND														CDM Smith	N. Ross		
	PS-10005	169975	58	L2	C5	ND														CDM Smith	N. Ross		
	PS-10005	169976	59	L2	C9	ND														CDM Smith	N. Ross		
	PS-10005	169977	60	L2	D2	ND														CDM Smith	N. Ross		
	PS-10005	169978	61	L2	D10	ND														CDM Smith	N. Ross		
	PS-10005	169979	62	L2	E1	ND														CDM Smith	N. Ross		
	PS-10005	169980	63	L2	E9	ND														CDM Smith	N. Ross		
	PS-10005	169981	64	L2	F8	ND														CDM Smith	N. Ross		
	PS-10005	169982	65	L2	F10	ND														CDM Smith	N. Ross		
	PS-10005	169983	66	L2	G1	ND														CDM Smith	N. Ross		
	PS-10005	169984	67	L2	G7	ND														CDM Smith	N. Ross		
	PS-10005	169985	68	L2	G9	ND														CDM Smith	N. Ross		
	PS-10005	169986	69	L2	H8	ND														CDM Smith	N. Ross		
	PS-10005	169987	70	L2	H10	ND														CDM Smith	N. Ross		
	PS-10005	169988	71	L2	I5	ND														CDM Smith	N. Ross		
	PS-10005	169989	72	L2	J2	ND														CDM Smith	N. Ross		
	PS-10005	169990	73	L2	J4	ND														CDM Smith	N. Ross		
	PS-10005	169991	74	L2	J6	ND														CDM Smith	N. Ross		
	PS-10005	169992	75	L2	J10	ND														CDM Smith	N. Ross		
	PS-10005	169993	76	L3	J10	ND														CDM Smith	N. Ross		
	PS-10005	169994	77	L3	J8	ND														CDM Smith	N. Ross		
	PS-10005	169995	78	L3	J6	ND														CDM Smith	N. Ross		
	PS-10005	169996	79	L3	J4	ND														CDM Smith	N. Ross		
	PS-10005	169997	80	L3	J2	ND														CDM Smith	N. Ross		
	PS-10005	169998	81	L3	I9	ND														CDM Smith	N. Ross		
	PS-10005	169999	82	L3	I7	ND														CDM Smith	N. Ross		
	PS-10005	170000	83	L3	I5	ND														CDM Smith	N. Ross		
	PS-10005	170001	84	L3	I3	ND														CDM Smith	N. Ross		
	PS-10005	170002	85	L3	H2	ND														CDM Smith	N. Ross		
	PS-10006	168476	1	U1	F3	F	1	1	7.9	0.2	39.5	LA		ADX	1	1	1		; WRTA/NaK; Ph	CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A SURFACE WATER

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10006	168477	2	U1	F3	F	2	2	16.35	0.2	81.75	LA		ADX	1	1	1		; WRTA/NaK; PI	CDM Smith	N. Ross		
	PS-10006	168478	3	U1	F3	F	3	3	1.35	0.15	9	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168479	4	U1	F3	MD22	4													CDM Smith	N. Ross		
	PS-10006	168480	5	U1	F3	MF		4	17.75	0.15	118.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168481	6	U1	F3	MB		5	12.5	1.15	10.87	LA		ADX	1	1	1		; WRTA/NaK; PI	CDM Smith	N. Ross		
	PS-10006	168482	7	U1	F3	B	5	6	4.8	0.4	12	LA		ADX	1	1	1		; WRTA/NaK; PI	CDM Smith	N. Ross		
	PS-10006	168483	8	U1	F3	B	6	7	7	0.75	9.33	LA		ADX	1	1	1		; WRTA/NaK; PI	CDM Smith	N. Ross		
	PS-10006	168484	9	U1	F3	F	7	8	2	0.15	13.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168485	10	U1	F3	B	8	9	0.65	0.3	2.17	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168486	11	U1	F3	MD10	9													CDM Smith	N. Ross		
	PS-10006	168487	12	U1	F3	MF		10	1.85	0.15	12.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168488	13	U1	F3	F	10	11	3.4	0.2	17	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168489	14	U1	F3	F	11	12	2	0.25	8	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168490	15	U1	F3	F	12	13	7.8	0.65	12	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168491	16	U1	F3	F	13	14	4.75	0.15	31.67	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168492	17	U1	F3	B	14	15	8.85	0.35	25.29	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168493	18	U1	F3	F	15	16	2.3	0.1	23	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168494	19	U1	F3	F	16	17	3.1	0.15	20.67	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168495	20	U1	F3	F	17	18	1.2	0.25	4.8	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168496	21	U1	F3	F	18	19	7.85	0.2	39.25	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168497	22	U1	F3	F	19	20	4	0.25	16	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168498	23	U1	F3	F	20	21	1.4	0.15	9.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168499	24	U1	F3	B	21	22	15.75	0.35	45	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168500	25	U1	F3	F	22	23	2.25	0.25	9	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168501	26	U1	F3	B	23	24	1.3	6.2	0.21	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168502	27	U1	F3	B	24	25	0.9	0.15	6	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168503	28	U1	F3	F	25	26	1.25	0.15	8.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168504	29	U1	F3	MD22	26													CDM Smith	N. Ross		
	PS-10006	168505	30	U1	F3	MF		27	16.15	0.75	21.53	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168506	31	U1	F3	MF		28	5.25	0.2	26.25	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168507	32	U1	F3	B	27	29	7.75	0.8	9.69	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168508	33	U1	F3	F	28	30	3.2	0.5	6.4	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168509	34	U1	F3	F	29	31	5.65	0.15	37.67	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168510	35	U1	F3	F	30	32	5	0.15	33.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168511	36	U1	F3	F	31	33	3.25	0.2	16.25	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168512	37	U1	F3	F	32	34	3	0.1	30	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168513	38	U1	F3	B	33	35	1.7	0.25	6.8	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168514	39	U1	F3	B	34	36	10.6	0.75	14.13	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168515	40	U1	F3	F	35	37	1.2	0.15	8	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168516	41	U1	F3	MD11	36													CDM Smith	N. Ross		
	PS-10006	168517	42	U1	F3	MB		38	5.75	0.7	8.21	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168518	43	U1	F3	B	37	39	3.3	0.2	16.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168519	44	U1	C1	F	38	40	2.9	0.15	19.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168520	45	U1	C1	F	39	41	4.5	0.35	12.86	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168521	46	U1	C1	MD10	40													CDM Smith	N. Ross		
	PS-10006	168522	47	U1	C1	MF		42	1.15	0.2	5.75	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168523	48	U1	C1	B	41	43	4.5	0.35	12.86	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168524	49	U1	C1	F	42	44	6.75	0.35	19.29	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168525	50	U1	C1	MD32	43													CDM Smith	N. Ross		
	PS-10006	168526	51	U1	C1	MF		45	15	0.5	30	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168527	52	U1	C1	MF		46	13.8	0.5	27.6	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168528	53	U1	C1	MB		47	4.5	0.35	12.86	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168529	54	U1	C1	F	44	48	5.85	0.5	11.7	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168530	55	U1	C1	B	45	49	6.6	0.75	8.8	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168531	56	U1	C1	F	46	50	3.5	0.3	11.67	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168532	57	U1	C1	F	47	51	2.65	0.2	13.25	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168533	58	U1	C1	F	48	52	7.5	0.25	30	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168534	59	U1	C1	B	49	53	5	0.3	16.67	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168535	60	U1	C1	B	50	54	6	0.5	12	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168536	61	U1	C1	B	51	55	7.25	0.35	20.71	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168537	62	U1	C1	F	52	56	5.75	0.15	38.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168538	63	U1	C1	F	53	57	5.2	0.2	26	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168539	64	U1	C1	B	54	58	2.4	0.35	6.86	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168540	65	U1	C1	F	55	59	1.75	0.2	8.75	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168541	66	U1	C1	MD22	56													CDM Smith	N. Ross		
	PS-10006	168542	67	U1	C1	MF		60	15.7	0.2	78.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168543	68	U1	C1	MF		61	12.1	0.6	20.17	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168544	69	U1	C1	F	57	62	10.3	0.6	17.17	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168545	70	U2	E8	F	58	63	2.7	0.3	9	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168546	71	U2	E8	F	59	64	12.75	0.1	127.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168547	72	U2	E8	F	60	65	1.6	0.25	6.4	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168548	73	U2	E8	F	61	66	6.3	0.4	15.75	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168549	74	U2	E8	F	62	67	1.2	0.25	4.8	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168550	75	U2	E8	F	63	68	1.85	0.5	3.7	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168551	76	U2	E8	F	64	69	1.35	0.15	9	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168552	77	U2	E8	F	65	70	3.7	0.1	37	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168553	78	U2	E8	F	66	71	2.6	0.2	13	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168554	79	U2	E8	F	67	72	4.8	0.15	32	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168555	80	U2	E8	F	68	73	10.85	0.75	14.47	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168556	81	U2	E8	B	69	74	1.6	0.3	5.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168557	82	U2	E8	B	70	75	1.2	0.25	4.8	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168558	83	U2	E8	F	71	76	3.7	0.2	18.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168559	84	U2	E8	F	72	77	6.5	0.1	65	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168560	85	U2	E8	F	73	78	2.3	0.15	15.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168561	86	U2	E8	MD21	74													CDM Smith	N. Ross		
	PS-10006	168562	87	U2	E8	MF		79	8	0.2	40	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168563	88	U2	E8	MB		80	5.4	1.2	4.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168564	89	U2	E8	F	75	81	9	0.5	18	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168565	90	U2	E8	F	76	82	17.85	0.9	19.83	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168566	91	U2	E8	F	77	83	10.75	0.3	35.83	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168567	92	U2	E8	F	78	84	2	0.15	13.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168568	93	U2	E8	F	79	85	1.4	0.1	14	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168569	94	U2	E8	F	80	86	3.7	0.25	14.8	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168570	95	U2	E8	F	81	87	1.7	0.2	8.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168571	96	U2	E8	F	82	88	3	0.2	15	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168572	97	U2	E8	F	83	89	3.7	0.2	18.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168573	98	U2	E8	B	84	90	5	0.9	5.56	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168574	99	U2	E8	F	85	91	8.6	0.15	57.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168575	100	U2	G9	F	86	92	2.85	0.35	8.14	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168576	101	U2	G9	F	87	93	8.65	0.25	34.6	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168577	102	U2	G9	F	88	94	0.9	0.1	9	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168578	103	U2	G9	B	89	95	5.8	0.3	19.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168579	104	U2	G9	F	90	96	1.25	0.2	6.25	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168580	105	U2	G9	F	91	97	1.25	0.25	5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168581	106	U2	G9	F	92	98	2.75	0.25	11	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168582	107	U2	G9	F	93	99	3	0.2	15	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168583	108	U2	G9	MD21	94								1					CDM Smith	N. Ross		
	PS-10006	168584	109	U2	G9	MF		100	13.4	0.15	89.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168585	110	U2	G9	MF		101	3.65	0.5	7.3	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168586	111	U2	G9	F	95	102	8	0.85	9.41	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168587	112	U2	G9	F	96	103	20.15	0.65	31	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168588	113	U2	G9	F	97	104	2.25	0.15	15	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168589	114	U2	G9	F	98	105	5.7	0.2	28.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168590	115	U2	G9	F	99	106	3.75	0.25	15	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168591	116	U2	G9	F	100	107	1.5	0.3	5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168592	117	U2	G9	MD10	101								1					CDM Smith	N. Ross		
	PS-10006	168593	118	U2	G9	MF		108	2.1	0.3	7	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168594	119	U2	G9	F	102	109	4.75	0.7	6.79	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168595	120	U2	G9	MD22	103								1					CDM Smith	N. Ross		
	PS-10006	168596	121	U2	G9	MF		110	27.85	0.4	69.63	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168597	122	U2	G9	MF		111	14.75	0.2	73.75	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168598	123	U2	G9	F	104	112	3.6	0.15	24	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168599	124	U2	G9	F	105	113	5.25	0.15	35	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168600	125	U2	G9	F	106	114	5.25	0.2	26.25	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168601	126	U2	G9	F	107	115	5.85	0.15	39	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168602	127	U2	G9	F	108	116	2.55	0.35	7.29	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168603	128	U2	G9	F	109	117	3	0.25	12	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168604	129	U2	G9	MD11	110								1					CDM Smith	N. Ross		
	PS-10006	168605	130	U2	G9	MF		118	5.4	0.85	6.35	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168606	131	U2	G9	F	111	119	3.65	0.3	12.17	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168607	132	U2	G9	F	112	120	9.5	0.35	27.14	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10006	168608	133	U2	G9	F	113	121	1.5	0.3	5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
EF	PS-10012	169310	1	T1	A1	F	1	1	15.7	0.4	39.25	LA		ADX	1	1	1		NaK, WRTA; PH	CDM Smith	N. Ross		
EF	PS-10012	169311	2	T1	A1	F	2	2	5.7	0.35	16.29	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169312	3	T1	A3	ND														CDM Smith	N. Ross		
EF	PS-10012	169313	4	T1	A5	ND														CDM Smith	N. Ross		
EF	PS-10012	169314	5	T1	A7	F	3	3	8.2	0.3	27.33	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169315	6	T1	A7	F	4	4	31	1.1	28.18	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169316	7	T1	A9	F	5	5	1.8	0.25	7.2	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169317	8	T1	A9	MD22	6													CDM Smith	N. Ross		
EF	PS-10012	169318	9	T1	A9	MF		6	13.1	0.22	59.55	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169319	10	T1	A9	MF		7	5.5	0.4	13.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169320	11	T1	A9	F	7	8	5.7	0.5	11.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169321	12	T1	B2	F	8	9	29.3	1	29.3	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169322	13	T1	B2	F	9	10	2.5	0.5	5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169323	14	T1	B4	F	10	11	1.7	0.18	9.44	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169324	15	T1	B4	F	11	12	5.6	0.24	23.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169325	16	T1	B4	F	12	13	2.1	0.23	9.13	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169326	17	T1	B4	F	13	14	1.7	0.35	4.86	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169327	18	T1	B4	F	14	15	3.7	0.2	18.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169328	19	T1	B4	F	15	16	7.7	0.7	11	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169329	20	T1	B4	F	16	17	4.4	0.5	8.8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169330	21	T1	B4	F	17	18	20.5	1.4	14.64	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169331	22	T2	H9	F	18	19	10.2	0.23	44.35	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169332	23	T2	H9	F	19	20	5.9	0.35	16.86	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169333	24	T2	H9	F	20	21	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169334	25	T2	H7	F	21	22	5.15	0.3	17.17	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169335	26	T2	H7	F	22	23	2.3	0.1	23	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169336	27	T2	H7	F	23	24	7.2	0.5	14.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169337	28	T2	H7	F	24	25	5.6	0.8	7	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169338	29	T2	H7	F	25	26	8.2	0.25	32.8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
EF	PS-10012	169339	30	T2	H7	F	26	27	6.2	1.2	5.17	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10015	160783	1	F1	H2	ND														CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A SURFACE WATER

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10015	160784	2	F1	H4	ND														CDM Smith	N. Ross		
	PS-10015	160785	3	F1	H6	ND														CDM Smith	N. Ross		
	PS-10015	160786	4	F1	H8	ND														CDM Smith	N. Ross		
	PS-10015	160787	5	F1	H10	ND														CDM Smith	N. Ross		
	PS-10015	160788	6	F1	G9	ND														CDM Smith	N. Ross		
	PS-10015	160789	7	F1	G7	ND														CDM Smith	N. Ross		
	PS-10015	160790	8	F1	G5	ND														CDM Smith	N. Ross		
	PS-10015	160791	9	F1	G3	ND														CDM Smith	N. Ross		
	PS-10015	160792	10	F1	G1	ND														CDM Smith	N. Ross		
	PS-10015	160793	11	F1	F2	ND														CDM Smith	N. Ross		
	PS-10015	160794	12	F1	F4	ND														CDM Smith	N. Ross		
	PS-10015	160795	13	F1	F6	ND														CDM Smith	N. Ross		
	PS-10015	160796	14	F1	F8	ND														CDM Smith	N. Ross		
	PS-10015	160797	15	F1	F10	ND														CDM Smith	N. Ross		
	PS-10015	160798	16	F1	E9	ND														CDM Smith	N. Ross		
	PS-10015	160799	17	F1	E7	ND														CDM Smith	N. Ross		
	PS-10015	160800	18	F1	E5	ND														CDM Smith	N. Ross		
	PS-10015	160801	19	F1	E3	ND														CDM Smith	N. Ross		
	PS-10015	160802	20	F1	E1	ND														CDM Smith	N. Ross		
	PS-10015	160803	21	F1	D2	ND														CDM Smith	N. Ross		
	PS-10015	160804	22	F1	D4	ND														CDM Smith	N. Ross		
	PS-10015	160805	23	F1	D6	ND														CDM Smith	N. Ross		
	PS-10015	160806	24	F1	D8	ND														CDM Smith	N. Ross		
	PS-10015	160807	25	F1	D10	ND														CDM Smith	N. Ross		
	PS-10015	160808	26	F1	C9	ND														CDM Smith	N. Ross		
	PS-10015	160809	27	F1	C7	ND														CDM Smith	N. Ross		
	PS-10015	160810	28	F1	C5	ND														CDM Smith	N. Ross		
	PS-10015	160811	29	F1	C3	ND														CDM Smith	N. Ross		
	PS-10015	160812	30	F1	C1	ND														CDM Smith	N. Ross		
	PS-10015	160813	31	F1	B2	ND														CDM Smith	N. Ross		
	PS-10015	160814	32	F1	B4	ND														CDM Smith	N. Ross		
	PS-10015	160815	33	F1	B6	ND														CDM Smith	N. Ross		
	PS-10015	160816	34	F1	B8	ND														CDM Smith	N. Ross		
	PS-10015	160817	35	F1	B10	ND														CDM Smith	N. Ross		
	PS-10015	160818	36	F1	A9	ND														CDM Smith	N. Ross		
	PS-10015	160819	37	F1	A7	ND														CDM Smith	N. Ross		
	PS-10015	160820	38	F1	A5	ND														CDM Smith	N. Ross		
	PS-10015	160821	39	F1	A3	ND														CDM Smith	N. Ross		
	PS-10015	160822	40	F1	A1	ND														CDM Smith	N. Ross		
	PS-10015	160823	41	F2	J10	ND														CDM Smith	N. Ross		
	PS-10015	160824	42	F2	J8	ND														CDM Smith	N. Ross		
	PS-10015	160825	43	F2	J6	ND														CDM Smith	N. Ross		
	PS-10015	160826	44	F2	J4	ND														CDM Smith	N. Ross		
	PS-10015	160827	45	F2	J2	ND														CDM Smith	N. Ross		
	PS-10015	160828	46	F2	I1	ND														CDM Smith	N. Ross		
	PS-10015	160829	47	F2	I3	ND														CDM Smith	N. Ross		
	PS-10015	160830	48	F2	I5	ND														CDM Smith	N. Ross		
	PS-10015	160831	49	F2	I7	ND														CDM Smith	N. Ross		
	PS-10015	160832	50	F2	I9	ND														CDM Smith	N. Ross		
	PS-10015	160833	51	F2	H10	ND														CDM Smith	N. Ross		
	PS-10015	160834	52	F2	H8	ND														CDM Smith	N. Ross		
	PS-10015	160835	53	F2	H6	ND														CDM Smith	N. Ross		
	PS-10015	160836	54	F2	H4	ND														CDM Smith	N. Ross		
	PS-10015	160837	55	F2	H2	ND														CDM Smith	N. Ross		
	PS-10015	160838	56	F2	G1	ND														CDM Smith	N. Ross		
	PS-10015	160839	57	F2	G3	ND														CDM Smith	N. Ross		
	PS-10015	160840	58	F2	G5	ND														CDM Smith	N. Ross		
	PS-10015	160841	59	F2	G7	ND														CDM Smith	N. Ross		
	PS-10015	160842	60	F2	G9	ND														CDM Smith	N. Ross		
	PS-10015	160843	61	F2	F10	ND														CDM Smith	N. Ross		
	PS-10015	160844	62	F2	F8	ND														CDM Smith	N. Ross		
	PS-10015	160845	63	F2	F6	ND														CDM Smith	N. Ross		
	PS-10015	160846	64	F2	F4	ND														CDM Smith	N. Ross		
	PS-10015	160847	65	F2	F2	ND														CDM Smith	N. Ross		
	PS-10015	160848	66	F2	E1	ND														CDM Smith	N. Ross		
	PS-10015	160849	67	F2	E3	ND														CDM Smith	N. Ross		
	PS-10015	160850	68	F2	E5	ND														CDM Smith	N. Ross		
	PS-10015	160851	69	F2	E7	ND														CDM Smith	N. Ross		
	PS-10015	160852	70	F2	E9	ND														CDM Smith	N. Ross		
	PS-10015	160853	71	F2	D10	ND														CDM Smith	N. Ross		
	PS-10015	160854	72	F2	D8	ND														CDM Smith	N. Ross		
	PS-10015	160855	73	F2	D6	ND														CDM Smith	N. Ross		
	PS-10015	160856	74	F2	D4	ND														CDM Smith	N. Ross		
	PS-10015	160857	75	F2	D2	ND														CDM Smith	N. Ross		
	PS-10015	160858	76	F2	C1	ND														CDM Smith	N. Ross		
	PS-10018	160935	1	J5	J4	ND														CDM Smith	N. Ross		
	PS-10018	160936	2	J5	J2	ND														CDM Smith	N. Ross		
	PS-10018	160937	3	J5	I1	ND														CDM Smith	N. Ross		
	PS-10018	160938	4	J5	I3	ND														CDM Smith	N. Ross		
	PS-10018	160939	5	J5	H4	ND														CDM Smith	N. Ross		
	PS-10018	160940	6	J5	H2	ND														CDM Smith	N. Ross		
	PS-10018	160941	7	J5	G1	ND														CDM Smith	N. Ross		
	PS-10018	160942	8	J5	G3	ND														CDM Smith	N. Ross		
	PS-10018	160943	9	J5	F4	ND														CDM Smith	N. Ross		
	PS-10018	160944	10	J5	F2	ND														CDM Smith	N. Ross		
	PS-10018	160945	11	J5	E3	ND														CDM Smith	N. Ross		
	PS-10018	160946	12	J5	E1	ND														CDM Smith	N. Ross		
	PS-10018	160947	13	J5	D4	ND														CDM Smith	N. Ross		
	PS-10018	160948	14	J5	D2	ND														CDM Smith	N. Ross		
	PS-10018	160949	15	J5	C3	ND														CDM Smith	N. Ross		
	PS-10018	160950	16	J5	C1	ND														CDM Smith	N. Ross		
	PS-10018	160951	17	J6	J4	ND														CDM Smith	N. Ross		
	PS-10018	160952	18	J6	J2	ND														CDM Smith	N. Ross		
	PS-10018	160953	19	J6	H4	ND														CDM Smith	N. Ross		
	PS-10018	160954	20	J6	H2	ND														CDM Smith	N. Ross		
	PS-10018	160955	21	J6	G5	ND														CDM Smith	N. Ross		
	PS-10018	160956	22	J6	G3	ND														CDM Smith	N. Ross		
	PS-10018	160957	23	J6	G1	ND														CDM Smith	N. Ross		
	PS-10018	160958	24	J6	F6	ND														CDM Smith	N. Ross		
	PS-10018	160959	25	J6	F4	ND														CDM Smith	N. Ross		
	PS-10018	160960	26	J6	F2	ND														CDM Smith	N. Ross		
	PS-10018	160961	27	J6	E9	ND														CDM Smith	N. Ross		
	PS-10018	160962	28	J6	E7	ND														CDM Smith	N. Ross		
	PS-10018	160963	29	J6	E5	ND														CDM Smith	N. Ross		
	PS-10018	160964	30	J6	E3	ND														CDM Smith	N. Ross		
	PS-10018	160965	31	J6	E1	ND														CDM Smith	N. Ross		
	PS-10018	160966	32	J6	D6	ND														CDM Smith	N. Ross		
	PS-10018	160967	33	J6	D4	ND														CDM Smith	N. Ross		
	PS-10018	160968	34	J6	D2	ND														CDM Smith	N. Ross		
	PS-10018	160969	35	J6	C5	ND														CDM Smith	N. Ross		
	PS-10018	160970	36	J6	C1	ND														CDM Smith	N. Ross		
	PS-10018	160971	37	J6	B2	ND														CDM Smith	N. Ross		
	PS-10018	160972	38	J6	A1	ND														CDM Smith	N. Ross		
	PS-10018	160973	39	J7	A7	ND														CDM Smith	N. Ross		
	PS-10018	160974	40	J7	A9	ND														CDM Smith	N. Ross		
	PS-10018	160975	41	J7	B6	ND														CDM Smith	N. Ross		
	PS-10018	160976	42	J7	B8	ND														CDM Smith	N. Ross		
	PS-10018	160977	43	J7	B10	ND														CDM Smith	N. Ross		
	PS-10018	160978	44	J7	C7	ND														CDM Smith	N. Ross		
	PS-10018	160979	45	J7	C9	ND														CDM Smith	N. Ross		
	PS-10018	160980	46	J7	D8	ND														CDM Smith	N. Ross		
	PS-10018	160981	47	J7	D10	ND														CDM Smith	N. Ross		
	PS-10018	160982	48	J7	E5	ND														CDM Smith	N. Ross		
	PS-10018	160983	49	J7	E7	ND														CDM Smith	N. Ross		
	PS-10018	160984	50	J7	E9	ND														CDM Smith	N. Ross		
	PS-10018	160985	51	J7	F6	ND														CDM Smith	N. Ross		
	PS-10018	160986	52	J7	F8	ND														CDM Smith	N. Ross		
	PS-10018	160987	53	J7	F10	ND														CDM Smith	N. Ross		
	PS-10018	160988	54	J7	G3	ND														CDM Smith	N. Ross		
	PS-10018	160989	55	J7	G5	ND														CDM Smith	N. Ross		
	PS-10018	160990	56	J7	G7	ND														CDM Smith	N. Ross		
	PS-10018	160991	57	J7	G9	ND														CDM Smith	N. Ross		
	PS-10018	160992	58	J7	H6	ND														CDM Smith	N. Ross		
	PS-10018	160993	59	J7	H8	ND														CDM Smith	N. Ross		
	PS-10018	160994	60	J7	H10	ND														CDM Smith	N. Ross		
	PS-10018	160995	61	J7	I3	ND														CDM Smith	N. Ross		
	PS-10018	160996	62	J7	I5	ND														CDM Smith	N. Ross		
	PS-10018	160997	63	J7	I7	ND														CDM Smith	N. Ross		
	PS-10018	160998	64	J7	I9	ND														CDM Smith	N. Ross		
	PS-10018	160999	65	J7	J10	ND														CDM Smith	N. Ross		
	PS-10018	161000	66	J8	J6	ND														CDM Smith	N. Ross		
	PS-10018	161001	67	J8	J4	ND														CDM Smith	N. Ross		
	PS-10018	161002	68	J8	J2	ND														CDM Smith	N. Ross		
	PS-10018	161003	69	J8	I7	ND														CDM Smith	N. Ross		
	PS-10018	161004	70	J8	I5	ND														CDM Smith	N. Ross		
	PS-10018	161005	71	J8	I3	ND														CDM Smith	N. Ross		
	PS-10018	161006	72	J8	I1	ND														CDM Smith	N. Ross		
	PS-10018	161007	73	J8	H8	ND														CDM Smith	N. Ross		
	PS-10018	161008	74	J8	H6	ND														CDM Smith	N. Ross		
	PS-10018	161009	75	J8	H4	ND														CDM Smith	N. Ross		
	PS-10018	161010	76	J8	H2	ND														CDM Smith	N. Ross		
	PS-10021	169011	1	F1	C2	F	1	1	3.15	0.2	15.75	LA		ADX	1	1	1		; WRTA/NaK; PA	CDM Smith	N. Ross		
	PS-10021	169012	2	F1	C4	ND														CDM Smith	N. Ross		
	PS-10021	169013	3	F1	C6	F	2	2	1.75	0.2	8.75	LA		ADX	1	1	1		; WRTA/NaK; PA	CDM Smith	N. Ross		
	PS-10021	169014	4	F1	C8	F	3	3	1.25	0.25	5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169015	5	F1	C8	F	4	4	0.85	0.2	4.25	LA		ADX	1	1	1		; WRTA/NaK; PA	CDM Smith	N. Ross		
	PS-10021	169016	6	F1	C8	F	5	5	3.5	0.15	23.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169017	7	F1	C10	ND														CDM Smith	N. Ross		
	PS-10021	169018	8	F1	D1	F	6	6	6.15	0.35	17.57	LA		ADX	1	1	1		; WRTA/NaK; PA	CDM Smith	N. Ross		
	PS-10021	169019	9	F1	D3	F	7	7	1.85	0.45	4.11	LA		ADX	1	1	1		; WRTA/NaK; PA	CDM Smith	N. Ross		
	PS-10021	169020	10	F1	D3	F	8	8	1	0.25	4	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169021	11	F1	D3	F	9	9	3.25	0.15	21.67	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169022	12	F1	D5	ND														CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A SURFACE WATER

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10021	169023	13	F1	D7	ND														CDM Smith	N. Ross		
	PS-10021	169024	14	F1	D9	ND														CDM Smith	N. Ross		
	PS-10021	169025	15	F1	E2	ND														CDM Smith	N. Ross		
	PS-10021	169026	16	F1	E4	F	10	10	7	0.25	28	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169027	17	F1	E4	F	11	11	1.1	0.2	5.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169028	18	F1	E4	F	12	12	1.8	0.2	9	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169029	19	F2	H9	F	13	13	1.4	0.1	14	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169030	20	F2	H7	ND														CDM Smith	N. Ross		
	PS-10021	169031	21	F2	H5	F	14	14	8.15	0.15	54.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169032	22	F2	H5	F	15	15	1.3	0.35	3.71	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169033	23	F2	H3	F	16	16	8.6	0.25	34.4	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169034	24	F2	H1	F	17	17	8.75	0.2	43.75	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169035	25	F2	G10	F	18	18	5.5	0.3	18.33	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169036	26	F2	G10	F	19	19	6.2	0.2	31	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169037	27	F2	G10	F	20	20	13.85	0.3	46.17	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169038	28	F2	G10	F	21	21	4.75	0.4	11.88	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169039	29	F2	G10	F	22	22	2.75	0.5	5.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169040	30	F2	G8	MD11	23								1					CDM Smith	N. Ross		
	PS-10021	169041	31	F2	G8	MF		23	2.7	0.6	4.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169042	32	F2	G8	F	24	24	3.5	0.1	35	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10021	169043	33	F2	G8	F	25	25	6.7	0.15	44.67	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169143	1	H1	H4	F	1	1	3.85	0.6	6.4166667	LA		ADX	1	1	1		; WRTA/NaK; P	CDM Smith	N. Ross		
	PS-10025	169144	2	H1	H4	F	2	2	2	0.3	6.6666667	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169145	3	H1	H4	F	3	3	1.5	0.2	7.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169146	4	H1	H4	F	4	4	2.25	0.35	6.4285714	LA		ADX	1	1	1		; WRTA/NaK; P	CDM Smith	N. Ross		
																						Structure comments not recorded on benchsheet for	
	PS-10025	169147	5	H1	H2	B	0	0	6.5	0.75	8.6666667	LA		ADX	1				; WRTA/NaK; St	CDM Smith	N. Ross	non-countable structure on page 1.	1/3/2014
	PS-10025	169148	6	H1	H2	F	5	5	16.8	1.3	12.923077	LA		ADX	1	1	1		; WRTA/NaK; P	CDM Smith	N. Ross		
	PS-10025	169149	7	H1	H2	F	6	6	1.85	0.25	7.4	LA		ADX	1	1	1		; WRTA/NaK; P	CDM Smith	N. Ross		
	PS-10025	169150	8	H1	H2	F	7	7	6.15	0.25	24.6	LA		ADX	1	1	1		; WRTA/NaK; P	CDM Smith	N. Ross		
	PS-10025	169151	9	H1	H2	F	8	8	3.75	0.25	15	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169152	10	H1	H2	F	9	9	8.75	0.35	25	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169153	11	H1	H2	F	10	10	6.35	0.25	25.4	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169154	12	H1	H2	F	11	11	8.25	0.2	41.25	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169155	13	H1	H2	B	12	12	4.75	1.5	3.1666667	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169156	14	H2	G7	F	13	13	2.65	0.35	7.5714286	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169157	15	H2	G7	F	14	14	2.85	0.15	19	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169158	16	H2	G7	F	15	15	0.85	0.1	8.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169159	17	H2	G7	B	16	16	29.1	1.75	16.628571	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169160	18	H2	G7	F	17	17	1.25	0.3	4.1666667	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169161	19	H2	G7	F	18	18	1.3	0.1	13	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169162	20	H2	G5	F	19	19	2.5	0.35	7.1428571	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169163	21	H2	G5	F	20	20	33.2	0.6	55.333333	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169164	22	H2	G5	F	21	21	3.75	0.2	18.75	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169165	23	H2	G5	F	22	22	8	0.6	13.333333	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169166	24	H2	G5	F	23	23	17.2	0.2	86	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169167	25	H2	G3	F	24	24	1	0.3	3.3333333	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169168	26	H2	G3	B	25	25	8.25	0.75	11	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169169	27	H2	G3	F	26	26	5.45	0.5	10.9	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10025	169170	28	H2	G3	F	27	27	7.25	0.3	24.166667	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross		
	PS-10030	169283	1	L9	B2	ND														CDM Smith	N. Ross		
	PS-10030	169284	2	L9	B4	ND														CDM Smith	N. Ross		
	PS-10030	169285	3	L9	B6	ND														CDM Smith	N. Ross		
	PS-10030	169286	4	L9	B8	ND														CDM Smith	N. Ross		
	PS-10030	169287	5	L9	B10	ND														CDM Smith	N. Ross		
	PS-10030	169288	6	L9	E1	ND														CDM Smith	N. Ross		
	PS-10030	169289	7	L9	E3	ND														CDM Smith	N. Ross		
	PS-10030	169290	8	L9	E5	ND														CDM Smith	N. Ross		
	PS-10030	169291	9	L9	E7	ND														CDM Smith	N. Ross		
	PS-10030	169292	10	L9	E9	ND														CDM Smith	N. Ross		
	PS-10030	169293	11	L9	I2	ND														CDM Smith	N. Ross		
	PS-10030	169294	12	L9	I4	ND														CDM Smith	N. Ross		
	PS-10030	169295	13	L9	I6	ND														CDM Smith	N. Ross		
	PS-10030	169296	14	L9	I8	ND														CDM Smith	N. Ross		
	PS-10030	169297	15	L9	I10	ND														CDM Smith	N. Ross		
	PS-10030	169298	16	M2	C2	ND														CDM Smith	N. Ross		
	PS-10030	169299	17	M2	C4	ND														CDM Smith	N. Ross		
	PS-10030	169300	18	M2	C6	ND														CDM Smith	N. Ross		
	PS-10030	169301	19	M2	C8	ND														CDM Smith	N. Ross		
	PS-10030	169302	20	M2	C10	ND														CDM Smith	N. Ross		
	PS-10030	169303	21	M2	E2	ND														CDM Smith	N. Ross		
	PS-10030	169304	22	M2	E4	F	1	1	11.6	0.25	46.4	LA		ADX	1	1	1		; WRTA/NaK; P	CDM Smith	N. Ross		
	PS-10030	169305	23	M2	E6	ND														CDM Smith	N. Ross		
	PS-10030	169306	24	M2	E8	MC10	2	2	1.4	0.2	7	LA		ADX	1	1	1		; WRTA/NaK; P	CDM Smith	N. Ross		
	PS-10030	169307	25	M2	E10	ND														CDM Smith	N. Ross		
	PS-10030	169308	26	M2	H2	ND														CDM Smith	N. Ross		
	PS-10030	169309	27	M2	H4	ND														CDM Smith	N. Ross		
	PS-10033	167984	1	N5	A1	ND														CDM Smith	N. Ross		
	PS-10033	167985	2	N5	A3	ND														CDM Smith	N. Ross		
	PS-10033	167986	3	N5	A5	ND														CDM Smith	N. Ross		
	PS-10033	167987	4	N5	A7	ND														CDM Smith	N. Ross		
	PS-10033	167988	5	N5	A9	ND														CDM Smith	N. Ross		
	PS-10033	167989	6	N5	C1	ND														CDM Smith	N. Ross		
	PS-10033	167990	7	N5	C3	ND														CDM Smith	N. Ross		
	PS-10033	167991	8	N5	C5	ND														CDM Smith	N. Ross		
	PS-10033	167992	9	N5	C7	ND														CDM Smith	N. Ross		
	PS-10033	167993	10	N5	C9	ND														CDM Smith	N. Ross		
	PS-10033	167994	11	N5	F1	ND														CDM Smith	N. Ross		
	PS-10033	167995	12	N5	F3	ND														CDM Smith	N. Ross		
	PS-10033	167996	13	N5	F5	ND														CDM Smith	N. Ross		
	PS-10033	167997	14	N5	H1	ND														CDM Smith	N. Ross		
	PS-10033	167998	15	N5	H3	ND														CDM Smith	N. Ross		
	PS-10033	167999	16	N5	H5	ND														CDM Smith	N. Ross		
	PS-10033	168000	17	N5	J1	ND														CDM Smith	N. Ross		
	PS-10033	168001	18	N5	J3	ND														CDM Smith	N. Ross		
	PS-10033	168002	19	N5	J5	ND														CDM Smith	N. Ross		
	PS-10033	168003	20	N7	A1	ND														CDM Smith	N. Ross		
	PS-10033	168004	21	N7	A3	ND														CDM Smith	N. Ross		
	PS-10033	168005	22	N7	A5	ND														CDM Smith	N. Ross		
	PS-10033	168006	23	N7	A7	ND														CDM Smith	N. Ross		
	PS-10033	168007	24	N7	A9	ND														CDM Smith	N. Ross		
	PS-10033	168008	25	N7	C1	ND														CDM Smith	N. Ross		
	PS-10033	168009	26	N7	C3	ND														CDM Smith	N. Ross		
	PS-10033	168010	27	N7	C5	ND														CDM Smith	N. Ross		
	PS-10033	168011	28	N7	C7	ND														CDM Smith	N. Ross		
	PS-10033	168012	29	N7	C9	ND														CDM Smith	N. Ross		
	PS-10033	168013	30	N7	F2	ND														CDM Smith	N. Ross		
	PS-10033	168014	31	N7	F4	ND														CDM Smith	N. Ross		
	PS-10033	168015	32	N7	F6	ND														CDM Smith	N. Ross		
	PS-10033	168016	33	N7	F8	ND														CDM Smith	N. Ross		
	PS-10033	168017	34	N7	F10	F	1	1	11	0.2	55	LA		ADX	1	1	1		; WRTA/NaK; P	CDM Smith	N. Ross		
	PS-10033	168018	35	N7	I1	ND														CDM Smith	N. Ross		
	PS-10033	168019	36	N7	I3	ND														CDM Smith	N. Ross		
	PS-10033	168020	37	N7	I5	ND														CDM Smith	N. Ross		
	PS-10033	168021	38	N7	I7	ND														CDM Smith	N. Ross		
	PS-10033	168022	39	N7	I9	ND														CDM Smith	N. Ross		
	PS-10033	168023	40	N9	A1	ND														CDM Smith	N. Ross		
	PS-10033	168024	41	N9	A3	ND														CDM Smith	N. Ross		
	PS-10033	168025	42	N9	A5	ND														CDM Smith	N. Ross		
	PS-10033	168026	43	N9	A7	ND														CDM Smith	N. Ross		
	PS-10033	168027	44	N9	A9	ND														CDM Smith	N. Ross		
	PS-10033	168028	45	N9	C5	ND														CDM Smith	N. Ross		
	PS-10039	110318	1	O5	B8	ND														CDM Smith	N. Ross		
	PS-10039	110319	2	O5	B10	ND														CDM Smith	N. Ross		
	PS-10039	110320	3	O5	C7	ND														CDM Smith	N. Ross		
	PS-10039	110321	4	O5	C5	ND														CDM Smith	N. Ross		
	PS-10039	110322	5	O5	C3	ND														CDM Smith	N. Ross		
	PS-10039	110323	6	O5	D4	ND														CDM Smith	N. Ross		
	PS-10039	110324	7	O5	D6	ND														CDM Smith	N. Ross		
	PS-10039	110325	8	O5	D8	ND														CDM Smith	N. Ross		
	PS-10039	110326	9	O5	E9	ND														CDM Smith	N. Ross		
	PS-10039	110327	10	O5	E7	ND														CDM Smith	N. Ross		
	PS-10039	110328	11	O5	E5	ND														CDM Smith	N. Ross		
	PS-10039	110329	12	O5	E3	ND														CDM Smith	N. Ross		
	PS-10039	110330	13	O5	F6	ND														CDM Smith	N. Ross		
	PS-10039	110331	14	O5	F8	ND														CDM Smith	N. Ross		
	PS-10039	110332	15	O5	G9	ND														CDM Smith	N. Ross		
	PS-10039	110333	16	O5	G7	ND														CDM Smith	N. Ross		
	PS-10039	110334	17	O5	G5	ND														CDM Smith	N. Ross		
	PS-10039	110335	18	O6	I7	ND														CDM Smith	N. Ross		
	PS-10039	110336	19	O6	I5	ND														CDM Smith	N. Ross		
	PS-10039	110337	20	O6	H2	ND														CDM Smith	N. Ross		
	PS-10039	110338	21	O6	H4	ND														CDM Smith	N. Ross		
	PS-10039	110339	22	O6	H6	ND														CDM Smith	N. Ross		
	PS-10039	110340	23	O6	H8	ND														CDM Smith	N. Ross		
	PS-10039	110341	24	O6	G9	ND														CDM Smith	N. Ross		
	PS-10039	110342	25	O6	G7	ND														CDM Smith	N. Ross		
	PS-10039	110343	26	O6	G5	ND														CDM Smith	N. Ross		
	PS-10039	110344	27	O6	F4	ND														CDM Smith	N. Ross		
	PS-10039	110345	28	O6	F6	ND														CDM Smith	N. Ross		
	PS-10039	110346	29	O6	F8	ND														CDM Smith	N. Ross		
	PS-10039	110347	30	O6	E9	ND														CDM Smith	N. Ross		
	PS-10039	110348	31	O6	E7	ND														CDM Smith	N. Ross		
	PS-10039	110349	32	O6	E5	ND														CDM Smith	N. Ross		
	PS-10039	110350	33	O6	E3	ND														CDM Smith	N. Ross		
	PS-10041	110417	1	P1	C8	ND														CDM Smith	N. Ross		
	PS-10041	110418	2	P1	D7	ND														CDM Smith	N. Ross		
	PS-10041	110419	3	P1	D9	ND														CDM Smith	N. Ross		
	PS-10041	110420	4	P1	E8	ND														CDM Smith	N. Ross		
	PS-10041	110421	5	P1	E6	ND														CDM Smith	N. Ross		
	PS-10041	110422	6	P1	F9	ND														CDM Smith	N. Ross		
	PS-10041	110423	7	P1	F7	ND														CDM Smith	N. Ross		
	PS-10041	110424	8	P1	F5	ND														CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A SURFACE WATER

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10041	110425	9	P1	F3	ND														CDM Smith	N. Ross		
	PS-10041	110426	10	P1	F1	ND														CDM Smith	N. Ross		
	PS-10041	110427	11	P1	G2	ND														CDM Smith	N. Ross		
	PS-10041	110428	12	P1	G4	ND														CDM Smith	N. Ross		
	PS-10041	110429	13	P1	G6	ND														CDM Smith	N. Ross		
	PS-10041	110430	14	P1	G8	ND														CDM Smith	N. Ross		
	PS-10041	110431	15	P1	H9	ND														CDM Smith	N. Ross		
	PS-10041	110432	16	P1	H7	ND														CDM Smith	N. Ross		
	PS-10041	110433	17	P1	H5	ND														CDM Smith	N. Ross		
	PS-10041	110434	18	P1	H3	ND														CDM Smith	N. Ross		
	PS-10041	110435	19	P1	H1	ND														CDM Smith	N. Ross		
	PS-10041	110436	20	P1	I2	ND														CDM Smith	N. Ross		
	PS-10041	110437	21	P2	A10	ND														CDM Smith	N. Ross		
	PS-10041	110438	22	P2	A8	ND														CDM Smith	N. Ross		
	PS-10041	110439	23	P2	B7	ND														CDM Smith	N. Ross		
	PS-10041	110440	24	P2	B9	ND														CDM Smith	N. Ross		
	PS-10041	110441	25	P2	C10	ND														CDM Smith	N. Ross		
	PS-10041	110442	26	P2	C8	ND														CDM Smith	N. Ross		
	PS-10041	110443	27	P2	D7	ND														CDM Smith	N. Ross		
	PS-10041	110444	28	P2	D9	ND														CDM Smith	N. Ross		
	PS-10041	110445	29	P2	E10	ND														CDM Smith	N. Ross		
	PS-10041	110446	30	P2	E8	ND														CDM Smith	N. Ross		
	PS-10041	110447	31	P2	E6	ND														CDM Smith	N. Ross		
	PS-10041	110448	32	P2	E4	ND														CDM Smith	N. Ross		
	PS-10041	110449	33	P2	E2	ND														CDM Smith	N. Ross		
	PS-10041	110450	34	P2	F1	ND														CDM Smith	N. Ross		
	PS-10041	110451	35	P2	F3	ND														CDM Smith	N. Ross		
	PS-10041	110452	36	P2	F5	ND														CDM Smith	N. Ross		
	PS-10041	110453	37	P2	F7	ND														CDM Smith	N. Ross		
	PS-10041	110454	38	P2	F9	ND														CDM Smith	N. Ross		
	PS-10041	110455	39	P2	G10	ND														CDM Smith	N. Ross		
	PS-10041	110456	40	P2	G8	ND														CDM Smith	N. Ross		
EF	PS-10047	169605	1	F1	C5	ND														CDM Smith	N. Ross		
EF	PS-10047	169606	2	F1	B8	ND														CDM Smith	N. Ross		
EF	PS-10047	169607	3	F1	B10	ND														CDM Smith	N. Ross		
EF	PS-10047	169608	4	F1	D8	ND														CDM Smith	N. Ross		
EF	PS-10047	169609	5	F1	D6	ND														CDM Smith	N. Ross		
EF	PS-10047	169610	6	F1	D4	ND														CDM Smith	N. Ross		
EF	PS-10047	169611	7	F1	E9	F	1	1	9.5	0.75	12.67	LA		ADX	1	1	1		NaK, WRTA; Ph	CDM Smith	N. Ross		
EF	PS-10047	169612	8	F1	E7	ND														CDM Smith	N. Ross		
EF	PS-10047	169613	9	F1	F10	ND														CDM Smith	N. Ross		
EF	PS-10047	169614	10	F1	F8	ND														CDM Smith	N. Ross		
EF	PS-10047	169615	11	F1	F6	ND														CDM Smith	N. Ross		
EF	PS-10047	169616	12	F1	G3	ND														CDM Smith	N. Ross		
EF	PS-10047	169617	13	F1	G5	ND														CDM Smith	N. Ross		
EF	PS-10047	169618	14	F1	G7	ND														CDM Smith	N. Ross		
EF	PS-10047	169619	15	F1	H8	ND														CDM Smith	N. Ross		
EF	PS-10047	169620	16	F1	H6	ND														CDM Smith	N. Ross		
EF	PS-10047	169621	17	F1	H4	ND														CDM Smith	N. Ross		
EF	PS-10047	169622	18	F1	I3	ND														CDM Smith	N. Ross		
EF	PS-10047	169623	19	F1	I1	F	2	2	2.25	0.75	3	LA		ADX	1	1	1		NaK, WRTA; Ph	CDM Smith	N. Ross		
EF	PS-10047	169624	20	F1	I5	ND														CDM Smith	N. Ross		
EF	PS-10047	169625	21	F2	I9	ND														CDM Smith	N. Ross		
EF	PS-10047	169626	22	F2	I7	ND														CDM Smith	N. Ross		
EF	PS-10047	169627	23	F2	I5	ND														CDM Smith	N. Ross		
EF	PS-10047	169628	24	F2	I1	ND														CDM Smith	N. Ross		
EF	PS-10047	169629	25	F2	G1	ND														CDM Smith	N. Ross		
EF	PS-10047	169630	26	F2	G5	ND														CDM Smith	N. Ross		
EF	PS-10047	169631	27	F2	G7	ND														CDM Smith	N. Ross		
EF	PS-10047	169632	28	F2	G9	ND														CDM Smith	N. Ross		
EF	PS-10047	169633	29	F2	E9	ND														CDM Smith	N. Ross		
EF	PS-10047	169634	30	F2	E7	ND														CDM Smith	N. Ross		
EF	PS-10047	169635	31	F2	E5	ND														CDM Smith	N. Ross		
EF	PS-10047	169636	32	F2	E3	ND														CDM Smith	N. Ross		
EF	PS-10047	169637	33	F2	E1	ND														CDM Smith	N. Ross		
EF	PS-10047	169638	34	F2	D6	ND														CDM Smith	N. Ross		
EF	PS-10047	169639	35	F2	D8	ND														CDM Smith	N. Ross		
EF	PS-10047	169640	36	F2	D10	ND														CDM Smith	N. Ross		
EF	PS-10047	169641	37	F2	B10	ND														CDM Smith	N. Ross		
EF	PS-10047	169642	38	F2	B8	ND														CDM Smith	N. Ross		
EF	PS-10047	169643	39	F2	B6	ND														CDM Smith	N. Ross		
EF	PS-10047	169644	40	F2	B2	ND														CDM Smith	N. Ross		
	PS-10054	110979	1	T4	B8	ND														CDM Smith	N. Ross		
	PS-10054	110980	2	T4	D9	ND														CDM Smith	N. Ross		
	PS-10054	110981	3	T4	C5	ND														CDM Smith	N. Ross		
	PS-10054	110982	4	T4	F2	ND														CDM Smith	N. Ross		
	PS-10054	110983	5	T4	F6	ND														CDM Smith	N. Ross		
	PS-10054	110984	6	T4	G9	ND														CDM Smith	N. Ross		
	PS-10054	110985	7	T4	I10	ND														CDM Smith	N. Ross		
	PS-10054	110986	8	T4	H7	ND														CDM Smith	N. Ross		
	PS-10054	110987	9	T4	H5	ND														CDM Smith	N. Ross		
	PS-10054	110988	10	T4	H2	ND														CDM Smith	N. Ross		
	PS-10054	110989	11	T5	C7	ND														CDM Smith	N. Ross		
	PS-10054	110990	12	T5	E7	ND														CDM Smith	N. Ross		
	PS-10054	110991	13	T5	E5	ND														CDM Smith	N. Ross		
	PS-10054	110992	14	T5	E3	ND														CDM Smith	N. Ross		
	PS-10054	110993	15	T5	G2	ND														CDM Smith	N. Ross		
	PS-10054	110994	16	T5	G6	ND														CDM Smith	N. Ross		
	PS-10054	110995	17	T5	I7	ND														CDM Smith	N. Ross		
	PS-10054	110996	18	T5	I5	ND														CDM Smith	N. Ross		
	PS-10054	110997	19	T5	I2	ND														CDM Smith	N. Ross		
	PS-10054	110998	20	T5	J1	ND														CDM Smith	N. Ross		
	PS-10056	187540	1	U3	A9	F	1	1	11.8	0.5	23.6	LA		ADX	1				NaK, WRTA; an	CDM Smith	N. Ross		
	PS-10056	187541	2	U3	A9	MD10	2													CDM Smith	N. Ross		
	PS-10056	187542	3	U3	A9	MF		2	4	0.1	40	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187543	4	U3	A9	MD10	3													CDM Smith	N. Ross		
	PS-10056	187544	5	U3	A9	MF		3	2.9	0.4	7.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187545	6	U3	A9	MD11	4													CDM Smith	N. Ross		
	PS-10056	187546	7	U3	A9	MF		4	10	0.3	33.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187547	8	U3	A9	F	5	5	15.8	2.3	6.87	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187548	9	U3	A9	MD10	6													CDM Smith	N. Ross		
	PS-10056	187549	10	U3	A9	MF		6	4.2	0.2	21	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187550	11	U3	A9	F	7	7	2	0.3	6.67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187551	12	U3	A9	MD10	8													CDM Smith	N. Ross		
	PS-10056	187552	13	U3	A9	MF		8	3.6	0.2	18	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187553	14	U3	A9	MD10	9													CDM Smith	N. Ross		
	PS-10056	187554	15	U3	A9	MF		9	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187555	16	U3	A9	F	10	10	2.2	0.5	4.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187556	17	U3	A9	F	11	11	2.8	0.6	4.67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187557	18	U3	A9	F	12	12	6.2	0.1	62	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187558	19	U3	A9	F	13	13	2.7	0.3	9	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187559	20	U3	C7	F	14	14	9.2	0.4	23	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187560	21	U3	C7	F	15	15	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187561	22	U3	C7	F	16	16	10.5	1	10.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187562	23	U3	C7	F	17	17	3.8	0.4	9.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187563	24	U3	C7	F	18	18	18.6	1.2	15.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187564	25	U3	C7	F	19	19	2.7	0.4	6.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187565	26	U3	C7	CD22	20													CDM Smith	N. Ross		
	PS-10056	187566	27	U3	C7	CB		20	14.3	0.7	20.43	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187567	28	U3	C7	CF		21	7.2	0.3	24	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187568	29	U3	C7	MD10	21													CDM Smith	N. Ross		
	PS-10056	187569	30	U3	C7	MF		22	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187570	31	U3	C7	F	22	23	4	0.4	10	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187571	32	U3	C7	MD11	23													CDM Smith	N. Ross		
	PS-10056	187572	33	U3	C7	MF		24	7.7	0.7	11	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187573	34	U3	C7	MD10	24													CDM Smith	N. Ross		
	PS-10056	187574	35	U3	C7	MF		25	4.9	0.5	9.8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187575	36	U3	C7	MD10	25													CDM Smith	N. Ross		
	PS-10056	187576	37	U3	C7	MF		26	3.7	0.2	18.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187577	38	U3	C7	F	26	27	4	0.3	13.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187578	39	U3	C7	F	27	28	3.9	0.2	19.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187579	40	U3	C7	F	28	29	5.7	0.8	7.13	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187580	41	U3	C7	MD22	29													CDM Smith	N. Ross		
	PS-10056	187581	42	U3	C7	MF		30	10.9	1.1	9.91	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187582	43	U3	C7	MF		31	8	0.3	26.67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187583	44	E1	A7	F	0	0	1.1	0.2	5.5	LA		ADX	1				NaK, WRTA; an	CDM Smith	N. Ross		
	PS-10056	187584	45	E1	A7	MD10	30													CDM Smith	N. Ross		
	PS-10056	187585	46	E1	A7	MF		32	2	0.2	10	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187586	47	E1	A7	F	31	33	9.3	0.5	18.6	LA		ADX	1	1	1		NaK, WRTA; Ph	CDM Smith	N. Ross		
	PS-10056	187587	48	E1	A7	MD10	32													CDM Smith	N. Ross		
	PS-10056	187588	49	E1	A7	MF		34	3.4	0.2	17	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187589	50	E1	A7	F	33	35	5	0.7	7.14	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187590	51	E1	A7	F	34	36	1.6	0.4	4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187591	52	E1	A7	F	35	37	2.2	0.1	22	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187592	53	E1	A7	F	36	38	11	0.5	22	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187593	54	E1	A7	F	37	39	1.4	0.2	7	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187594	55	E1	A7	F	38	40	5.5	0.3	18.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187595	56	E1	A7	F	39	41	2.2	0.2	11	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187596	57	E1	A7	MD11	40													CDM Smith	N. Ross		
	PS-10056	187597	58	E1	A7	MF		42	6	0.3	20	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187598	59	E1	A7	F	41	43	3.3	0.3	11	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187599	60	E1	A7	MD11	42													CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A SURFACE WATER

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10056	187600	61	E1	A7	MF		44	6	0.4	15	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187601	62	E1	A7	F	43	45	15.8	0.6	26.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187602	63	E1	A7	F	44	46	6.5	0.1	65	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187603	64	E1	A7	MD11	45													CDM Smith	N. Ross		
	PS-10056	187604	65	E1	A7	MF		47	14.5	0.2	72.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187605	66	E1	A7	F	46	48	13.5	0.3	45	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187606	67	E1	A7	F	47	49	3	0.4	7.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187607	68	E1	A7	F	48	50	5.7	0.2	28.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187608	69	E1	A7	F	49	51	15	0.6	50	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	Width for total structure #51 is 0.6, not 0.3 according to benchsheet (page 5).	1/21/2014
	PS-10056	187609	70	E1	I8	F	50	52	4.2	0.5	8.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187610	71	E1	I8	MD11	51													CDM Smith	N. Ross		
	PS-10056	187611	72	E1	I8	MF		53	11	0.2	55	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187612	73	E1	I8	F	52	54	4.6	0.2	23	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187613	74	E1	I8	F	53	55	2.6	0.2	13	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187614	75	E1	I8	MD11	54													CDM Smith	N. Ross		
	PS-10056	187615	76	E1	I8	MF		56	6.5	0.2	32.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187616	77	E1	I8	F	55	57	4.5	0.3	15	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187617	78	E1	I8	F	0	0	3.9	0.1	39	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187618	79	E1	I8	F	56	58	1.7	0.2	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187619	80	E1	I8	MD10	57													CDM Smith	N. Ross		
	PS-10056	187620	81	E1	I8	MF		59	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187621	82	E1	I8	F	58	60	2.7	0.1	27	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187622	83	E1	I8	F	59	61	2.5	0.5	5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187623	84	E1	I8	F	60	62	1.5	0.4	3.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187624	85	E1	I8	F	61	63	9	0.4	22.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187625	86	E1	I8	F	62	64	42	0.5	84	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187626	87	E1	I8	F	63	65	4.3	0.6	7.17	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10056	187627	88	E1	I8	F	64	66	11.6	0.5	23.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10065	111153	1	J2	A6	ND														CDM Smith	N. Ross		
	PS-10065	111154	2	J2	A8	ND														CDM Smith	N. Ross		
	PS-10065	111155	3	J2	A10	ND														CDM Smith	N. Ross		
	PS-10065	111156	4	J4	D6	ND														CDM Smith	N. Ross		
	PS-10065	111157	5	J4	D8	ND														CDM Smith	N. Ross		
	PS-10065	111158	6	J4	D10	ND														CDM Smith	N. Ross		
	PS-10065	111159	7	J6	D2	ND													; Additional and	CDM Smith	N. Ross		
	PS-10065	111160	8	J6	D4	ND														CDM Smith	N. Ross		
	PS-10065	111161	9	J6	D6	ND														CDM Smith	N. Ross		
	PS-10065	111162	10	J6	D8	ND														CDM Smith	N. Ross		
	PS-10065	111163	11	J6	D10	ND														CDM Smith	N. Ross		
	PS-10065	111164	12	J6	F1	ND														CDM Smith	N. Ross		
	PS-10065	111165	13	J6	F3	ND														CDM Smith	N. Ross		
	PS-10065	111166	14	J6	F5	ND														CDM Smith	N. Ross		
	PS-10065	111167	15	J6	F7	ND														CDM Smith	N. Ross		
	PS-10065	111168	16	J6	F9	ND														CDM Smith	N. Ross		
	PS-10065	111169	17	J6	G2	ND														CDM Smith	N. Ross		
	PS-10065	111170	18	J6	G4	ND														CDM Smith	N. Ross		
	PS-10065	111171	19	J8	G2	ND														CDM Smith	N. Ross		
	PS-10065	111172	20	J8	G4	ND														CDM Smith	N. Ross		
	PS-10065	111173	21	J8	G6	ND														CDM Smith	N. Ross		
	PS-10065	111174	22	J8	G8	ND														CDM Smith	N. Ross		
	PS-10065	111175	23	J8	G10	ND														CDM Smith	N. Ross		
	PS-10065	111176	24	J8	H1	ND														CDM Smith	N. Ross		
	PS-10065	111177	25	J8	H3	ND														CDM Smith	N. Ross		
	PS-10065	111178	26	J8	H5	ND														CDM Smith	N. Ross		
	PS-10065	111179	27	J8	H7	ND														CDM Smith	N. Ross		
	PS-10065	111180	28	J8	H9	ND														CDM Smith	N. Ross		
	PS-10067	169780	1	L1	B6	F	1	1	3.75	0.2	18.75	LA		ADX	1	1	1		NaK, WRTA; Ph	CDM Smith	N. Ross		
	PS-10067	169781	2	L1	B8	ND														CDM Smith	N. Ross		
	PS-10067	169782	3	L1	B10	F	2	2	2.7	0.25	10.8	LA		ADX	1	1	1		NaK, WRTA; Ph	CDM Smith	N. Ross		
	PS-10067	169783	4	L3	F6	F	3	3	1.75	0.45	3.89	LA		ADX	1	1	1		NaK, WRTA; Ph	CDM Smith	N. Ross		
	PS-10067	169784	5	L3	F8	ND														CDM Smith	N. Ross		
	PS-10067	169785	6	L3	F10	ND														CDM Smith	N. Ross		
	PS-10067	169786	7	L5	A6	ND													; Additional and	CDM Smith	N. Ross		
	PS-10067	169787	8	L5	A8	ND														CDM Smith	N. Ross		
	PS-10067	169788	9	L5	A10	ND														CDM Smith	N. Ross		
	PS-10067	169789	10	L5	B5	ND														CDM Smith	N. Ross		
	PS-10067	169790	11	L5	B7	F	4	4	8.75	0.25	35	LA		ADX	1	1	1		NaK, WRTA; Ph	CDM Smith	N. Ross		
	PS-10067	169791	12	L5	B9	ND														CDM Smith	N. Ross		
	PS-10067	169792	13	L5	C8	F	5	5	6.5	0.35	18.57	LA		ADX	1	1	1		NaK, WRTA; Ph	CDM Smith	N. Ross		
	PS-10067	169793	14	L5	C10	B	6	6	1.7	0.5	3.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169794	15	L5	C10	F	7	7	3.25	0.5	6.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169795	16	L5	C10	F	8	8	1.25	0.15	8.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169796	17	L5	C10	F	9	9	1.8	0.25	7.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169797	18	L5	D7	F	10	10	2.4	0.25	9.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169798	19	L5	D9	F	11	11	2.95	0.2	14.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169799	20	L5	E4	F	12	12	3.15	0.2	15.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169800	21	L5	E4	F	13	13	1.25	0.2	6.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169801	22	L5	E4	F	14	14	3	0.3	10	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169802	23	L5	E6	F	15	15	3.5	0.25	14	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169803	24	L5	E8	F	16	16	2.5	0.3	8.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169804	25	L5	E10	F	17	17	2	0.45	4.44	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169805	26	L7	A5	F	18	18	7.1	0.2	35.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169806	27	L7	A7	F	19	19	5.5	0.75	7.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169807	28	L7	A7	F	20	20	2.4	0.15	16	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169808	29	L7	A9	F	21	21	3.3	0.15	22	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169809	30	L7	B6	F	22	22	2	0.2	10	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169810	31	L7	B6	F	23	23	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169811	32	L7	B8	ND														CDM Smith	N. Ross		
	PS-10067	169812	33	L7	B10	F	24	24	3.8	0.25	15.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10067	169813	34	L7	B10	F	25	25	3.15	0.2	15.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10073	187805	1	F1	E5	ND														CDM Smith	N. Ross		
	PS-10073	187806	2	F1	E7	ND														CDM Smith	N. Ross		
	PS-10073	187807	3	F1	E9	ND														CDM Smith	N. Ross		
	PS-10073	187808	4	F2	G6	ND														CDM Smith	N. Ross		
	PS-10073	187809	5	F2	G8	ND														CDM Smith	N. Ross		
	PS-10073	187810	6	F2	G10	ND														CDM Smith	N. Ross		
	PS-10073	187811	7	F2	B1	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187812	8	F2	B3	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187813	9	F2	B5	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187814	10	F2	B7	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187815	11	F2	B9	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187816	12	F2	C2	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187817	13	F2	C4	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187818	14	F2	C6	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187819	15	F2	C8	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187820	16	F2	C10	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187821	17	F2	D1	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187822	18	F2	D3	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187823	19	F2	D5	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187824	20	F2	D7	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187825	21	F2	D9	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187826	22	F3	E2	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187827	23	F3	E4	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187828	24	F3	E6	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187829	25	F3	E8	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187830	26	F3	E10	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187831	27	F3	F1	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187832	28	F3	F3	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187833	29	F3	F5	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187834	30	F3	F7	ND													; additional grid	CDM Smith	N. Ross		
	PS-10073	187835	31	F3	F9	ND													; additional grid	CDM Smith	N. Ross		
	PS-10083	126781	1	C4	J10	ND														CDM Smith	N. Ross		
	PS-10083	126782	2	C4	J8	ND														CDM Smith	N. Ross		
	PS-10083	126783	3	C4	J6	ND														CDM Smith	N. Ross		
	PS-10083	126784	4	C4	J4	ND														CDM Smith	N. Ross		
	PS-10083	126785	5	C4	J2	ND														CDM Smith	N. Ross		
	PS-10083	126786	6	C4	I9	ND														CDM Smith	N. Ross		
	PS-10083	126787	7	C4	I7	ND														CDM Smith	N. Ross		
	PS-10083	126788	8	C4	I5	ND														CDM Smith	N. Ross		
	PS-10083	126789	9	C4	I3	ND														CDM Smith	N. Ross		
	PS-10083	126790	10	C4	I1	ND														CDM Smith	N. Ross		
	PS-10083	126791	11	C4	H10	ND														CDM Smith	N. Ross		
	PS-10083	126792	12	C4	H8	ND														CDM Smith	N. Ross		
	PS-10083	126793	13	C4	H6	ND														CDM Smith	N. Ross		
	PS-10083	126794	14	C4	H4	ND														CDM Smith	N. Ross		
	PS-10083	126795	15	C4	H2	ND														CDM Smith	N. Ross		
	PS-10083	126796	16	C4	G9	ND														CDM Smith	N. Ross		
	PS-10083	126797	17	C4	G7	ND														CDM Smith	N. Ross		
	PS-10083	126798	18	C4	G5	ND														CDM Smith	N. Ross		
	PS-10083	126799	19	C4	G3	ND														CDM Smith	N. Ross		
	PS-10083	126800	20	C4	G1	ND														CDM Smith	N. Ross		
	PS-10083	126801	21	C4	F10	ND														CDM Smith	N. Ross		
	PS-10083	126802	22	C4	F8	ND														CDM Smith	N. Ross		
	PS-10083	126803	23	C4	F6	ND														CDM Smith	N. Ross		
	PS-10083	126804	24	C4	F4	ND														CDM Smith	N. Ross		
	PS-10083	126805	25	C4	F2	ND														CDM Smith	N. Ross		
	PS-10083	126806	26	C4	E9	ND														CDM Smith	N. Ross		
	PS-10083	126807	27	C4	E7	ND														CDM Smith	N. Ross		
	PS-10083	126808	28	C4	E5	ND														CDM Smith	N. Ross		
	PS-10083	126809	29	C4	E3	ND														CDM Smith	N. Ross		
	PS-10083	126810	30	C4	E1	ND														CDM Smith	N. Ross		
	PS-10083	126811	31	C4	D10	ND														CDM Smith	N. Ross		
	PS-10083	126812	32	C4	D8	ND														CDM Smith	N. Ross		
	PS-10083	126813	33	C4	D6	ND														CDM Smith	N. Ross		
	PS-10083	126814	34	C4	D4	ND														CDM Smith	N. Ross		
	PS-10083	126815	35	C4	D2	ND														CDM Smith	N. Ross		
	PS-10083	126816	36	C4	C9	ND														CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A SURFACE WATER

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10083	126817	37	C4	C7	ND														CDM Smith	N. Ross		
	PS-10083	126818	38	C4	C5	ND														CDM Smith	N. Ross		
	PS-10083	126819	39	C4	C3	ND														CDM Smith	N. Ross		
	PS-10083	126820	40	C4	C1	ND														CDM Smith	N. Ross		
	PS-10083	126821	41	C5	I10	ND														CDM Smith	N. Ross		
	PS-10083	126822	42	C5	I8	ND														CDM Smith	N. Ross		
	PS-10083	126823	43	C5	I6	ND														CDM Smith	N. Ross		
	PS-10083	126824	44	C5	I4	ND														CDM Smith	N. Ross		
	PS-10083	126825	45	C5	I2	ND														CDM Smith	N. Ross		
	PS-10083	126826	46	C5	H9	ND														CDM Smith	N. Ross		
	PS-10083	126827	47	C5	H7	ND														CDM Smith	N. Ross		
	PS-10083	126828	48	C5	H5	ND														CDM Smith	N. Ross		
	PS-10083	126829	49	C5	H3	ND														CDM Smith	N. Ross		
	PS-10083	126830	50	C5	H1	ND														CDM Smith	N. Ross		
	PS-10083	126831	51	C5	G10	ND														CDM Smith	N. Ross		
	PS-10083	126832	52	C5	G8	ND														CDM Smith	N. Ross		
	PS-10083	126833	53	C5	G6	ND														CDM Smith	N. Ross		
	PS-10083	126834	54	C5	G4	ND														CDM Smith	N. Ross		
	PS-10083	126835	55	C5	G2	ND														CDM Smith	N. Ross		
	PS-10083	126836	56	C5	F9	ND														CDM Smith	N. Ross		
	PS-10083	126837	57	C5	F7	ND														CDM Smith	N. Ross		
	PS-10083	126838	58	C5	F5	ND														CDM Smith	N. Ross		
	PS-10083	126839	59	C5	F3	ND														CDM Smith	N. Ross		
	PS-10083	126840	60	C5	F1	ND														CDM Smith	N. Ross		
	PS-10083	126841	61	C5	E10	ND														CDM Smith	N. Ross		
	PS-10083	126842	62	C5	E8	ND														CDM Smith	N. Ross		
	PS-10083	126843	63	C5	E6	ND														CDM Smith	N. Ross		
	PS-10083	126844	64	C5	E4	ND														CDM Smith	N. Ross		
	PS-10083	126845	65	C5	E2	ND														CDM Smith	N. Ross		
	PS-10083	126846	66	C5	D9	ND														CDM Smith	N. Ross		
	PS-10083	126847	67	C5	D7	ND														CDM Smith	N. Ross		
	PS-10083	126848	68	C5	D5	ND														CDM Smith	N. Ross		
	PS-10083	126849	69	C5	D3	ND														CDM Smith	N. Ross		
	PS-10083	126850	70	C5	D1	ND														CDM Smith	N. Ross		
	PS-10083	126851	71	C5	C10	ND														CDM Smith	N. Ross		
	PS-10083	126852	72	C5	C8	ND														CDM Smith	N. Ross		
	PS-10083	126853	73	C5	C6	ND														CDM Smith	N. Ross		
	PS-10083	126854	74	C5	C4	ND														CDM Smith	N. Ross		
	PS-10083	126855	75	C5	C2	ND														CDM Smith	N. Ross		
	PS-10083	126856	76	C5	B9	ND														CDM Smith	N. Ross		
	PS-10083	126857	77	C5	B7	ND														CDM Smith	N. Ross		
	PS-10083	126858	78	C5	B5	ND														CDM Smith	N. Ross		
	PS-10083	126859	79	C5	B3	ND														CDM Smith	N. Ross		
	PS-10083	126860	80	C5	B1	ND														CDM Smith	N. Ross		
	PS-10092	127341	1	G4	J9	ND														CDM Smith	N. Ross		
	PS-10092	127342	2	G4	J7	ND														CDM Smith	N. Ross		
	PS-10092	127343	3	G4	J5	ND														CDM Smith	N. Ross		
	PS-10092	127344	4	G4	J3	ND														CDM Smith	N. Ross		
	PS-10092	127345	5	G4	J1	ND														CDM Smith	N. Ross		
	PS-10092	127346	6	G4	I10	ND														CDM Smith	N. Ross		
	PS-10092	127347	7	G4	I8	ND														CDM Smith	N. Ross		
	PS-10092	127348	8	G4	I6	ND														CDM Smith	N. Ross		
	PS-10092	127349	9	G4	I4	ND														CDM Smith	N. Ross		
	PS-10092	127350	10	G4	I2	ND														CDM Smith	N. Ross		
	PS-10092	127351	11	G4	H9	ND														CDM Smith	N. Ross		
	PS-10092	127352	12	G4	H7	ND														CDM Smith	N. Ross		
	PS-10092	127353	13	G4	H5	ND														CDM Smith	N. Ross		
	PS-10092	127354	14	G4	H3	ND														CDM Smith	N. Ross		
	PS-10092	127355	15	G4	H1	ND														CDM Smith	N. Ross		
	PS-10092	127356	16	G4	G10	ND														CDM Smith	N. Ross		
	PS-10092	127357	17	G4	G8	ND														CDM Smith	N. Ross		
	PS-10092	127358	18	G4	G6	ND														CDM Smith	N. Ross		
	PS-10092	127359	19	G4	G4	ND														CDM Smith	N. Ross		
	PS-10092	127360	20	G4	G2	ND														CDM Smith	N. Ross		
	PS-10092	127361	21	G4	F9	ND														CDM Smith	N. Ross		
	PS-10092	127362	22	G4	F7	ND														CDM Smith	N. Ross		
	PS-10092	127363	23	G4	F5	ND														CDM Smith	N. Ross		
	PS-10092	127364	24	G4	F3	ND														CDM Smith	N. Ross		
	PS-10092	127365	25	G4	F1	ND														CDM Smith	N. Ross		
	PS-10092	127366	26	G4	E10	ND														CDM Smith	N. Ross		
	PS-10092	127367	27	G4	E8	ND														CDM Smith	N. Ross		
	PS-10092	127368	28	G4	E6	ND														CDM Smith	N. Ross		
	PS-10092	127369	29	G4	E4	ND														CDM Smith	N. Ross		
	PS-10092	127370	30	G4	E2	ND														CDM Smith	N. Ross		
	PS-10092	127371	31	G4	D9	ND														CDM Smith	N. Ross		
	PS-10092	127372	32	G4	D7	ND														CDM Smith	N. Ross		
	PS-10092	127373	33	G4	D5	ND														CDM Smith	N. Ross		
	PS-10092	127374	34	G4	D3	ND														CDM Smith	N. Ross		
	PS-10092	127375	35	G4	D1	ND														CDM Smith	N. Ross		
	PS-10092	127376	36	G4	C10	ND														CDM Smith	N. Ross		
	PS-10092	127377	37	G4	C8	ND														CDM Smith	N. Ross		
	PS-10092	127378	38	G4	C6	ND														CDM Smith	N. Ross		
	PS-10092	127379	39	G4	C4	ND														CDM Smith	N. Ross		
	PS-10092	127380	40	G4	C2	ND														CDM Smith	N. Ross		
	PS-10092	127381	41	G5	J9	ND														CDM Smith	N. Ross		
	PS-10092	127382	42	G5	J7	F	0	0	40	1.25	32	LA		ADX	1		1		NaK, WRTA; Str	CDM Smith	N. Ross		
	PS-10092	127383	43	G5	J5	ND														CDM Smith	N. Ross		
	PS-10092	127384	44	G5	J3	ND														CDM Smith	N. Ross		
	PS-10092	127385	45	G5	J1	ND														CDM Smith	N. Ross		
	PS-10092	127386	46	G5	I10	ND														CDM Smith	N. Ross		
	PS-10092	127387	47	G5	I8	ND														CDM Smith	N. Ross		
	PS-10092	127388	48	G5	I6	ND														CDM Smith	N. Ross		
	PS-10092	127389	49	G5	I4	ND														CDM Smith	N. Ross		
	PS-10092	127390	50	G5	I2	ND														CDM Smith	N. Ross		
	PS-10092	127391	51	G5	H9	ND														CDM Smith	N. Ross		
	PS-10092	127392	52	G5	H7	ND														CDM Smith	N. Ross		
	PS-10092	127393	53	G5	H5	ND														CDM Smith	N. Ross		
	PS-10092	127394	54	G5	H3	ND														CDM Smith	N. Ross		
	PS-10092	127395	55	G5	H1	ND														CDM Smith	N. Ross		
	PS-10092	127396	56	G5	G10	ND														CDM Smith	N. Ross		
	PS-10092	127397	57	G5	G8	ND														CDM Smith	N. Ross		
	PS-10092	127398	58	G5	G6	ND														CDM Smith	N. Ross		
	PS-10092	127399	59	G5	G4	ND														CDM Smith	N. Ross		
	PS-10092	127400	60	G5	G2	ND														CDM Smith	N. Ross		
	PS-10092	127401	61	G5	F9	ND														CDM Smith	N. Ross		
	PS-10092	127402	62	G5	F7	ND														CDM Smith	N. Ross		
	PS-10092	127403	63	G5	F5	ND														CDM Smith	N. Ross		
	PS-10092	127404	64	G5	F3	ND														CDM Smith	N. Ross		
	PS-10092	127405	65	G5	F1	ND														CDM Smith	N. Ross		
	PS-10092	127406	66	G5	E10	ND														CDM Smith	N. Ross		
	PS-10092	127407	67	G5	E8	ND														CDM Smith	N. Ross		
	PS-10092	127408	68	G5	E6	ND														CDM Smith	N. Ross		
	PS-10092	127409	69	G5	E4	ND														CDM Smith	N. Ross		
	PS-10092	127410	70	G5	E2	ND														CDM Smith	N. Ross		
	PS-10092	127411	71	G5	D9	ND														CDM Smith	N. Ross		
	PS-10092	127412	72	G5	D7	ND														CDM Smith	N. Ross		
	PS-10092	127413	73	G5	D5	ND														CDM Smith	N. Ross		
	PS-10092	127414	74	G5	D3	ND														CDM Smith	N. Ross		
	PS-10092	127415	75	G5	D1	ND														CDM Smith	N. Ross		
	PS-10092	127416	76	G5	C10	ND														CDM Smith	N. Ross		
	PS-10092	127417	77	G5	C8	ND														CDM Smith	N. Ross		
	PS-10092	127418	78	G5	C6	ND														CDM Smith	N. Ross		
	PS-10092	127419	79	G5	C4	ND														CDM Smith	N. Ross		
	PS-10092	127420	80	G5	C2	ND														CDM Smith	N. Ross		
	PS-10108	179938	1	K1	G1	B	1	1	10.1	0.75	13.466667	LA		ADX	1	1	1		NaX, WRTA; Ph	CDM Smith	N. Ross		
	PS-10108	179939	2	K1	G1	B	2	2	13.5	0.25	54	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179940	3	K1	G1	F	3	3	7.5	0.45	16.666667	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179941	4	K1	G1	F	4	4	3.5	0.2	17.5	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179942	5	K1	G1	B	5	5	2.25	0.4	5.625	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179943	6	K1	G1	F	6	6	6.6	0.45	14.666667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179944	7	K1	G1	B	7	7	5.75	0.2	28.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179945	8	K1	G1	B	8	8	5.2	0.9	5.7777778	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179946	9	K1	G1	B	9	9	1.2	0.7	1.7142857	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179947	10	K1	G1	B	10	10	10.7	0.45	23.777778	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179948	11	K1	G1	F	11	11	7.6	0.25	30.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179949	12	K1	G1	F	12	12	3.3	0.3	11	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179950	13	K1	G1	F	13	13	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179951	14	K1	G1	F	14	14	2	0.25	8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179952	15	K1	H3	B	15	15	5.3	0.6	8.8333333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179953	16	K1	H3	F	16	16	8	0.5	16	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179954	17	K1	H3	F	17	17	10.5	0.3	35	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179955	18	K1	H3	B	18	18	18.8	2.75	6.8363636	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179956	19	K1	H3	F	19	19	3.2	0.3	10.666667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179957	20	K1	H3	F	20	20	8.15	0.2	40.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179958	21	K1	H3	B	21	21	3.9	0.3	13	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179959	22	K1	H3	B	22	22	51.25	1.15	44.565217	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179960	23	K2	B2	F	23	23	1.9	0.3	6.3333333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179961	24	K2	B2	B	24	24	11.25	0.5	22.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179962	25	K2	B2	F	25	25	9	0.4	22.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179963	26	K2	B2	B	26	26	15.35	0.85	18.058824	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179964	27	K2	B2	F	27	27	9.5	0.4	23.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179965	28	K2	B2	B	28	28	1.8	0.5	3.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179966	29	K2	B2	F	29	29	2.9	0.15	19.333333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179967	30	K2	B2	F	30	30	18.6	0.25	74.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179968	31	K2	B2	F	31	31	3.5	0.1	35	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179969	32	K2	B2	B	32	32	36.8	0.6	61.333333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179970	33	K2	B2	F	33	33	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179971	34	K2	B2	F	34	34	7	0.2	35	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179972	35	K2	B2	F	35	35	3.6	0.25	14.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179973	36	K2	D5	B	36	36	11.75	0.3	39.166667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179974	37	K2	D5	F	37	37	4.8	0.2	24	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179975	38	K2	D5	F	38	38	10.15	0.15	67.666667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179976	39	K2	D5	B	39	39	3.5	0.25	14	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART A SURFACE WATER

DVC - 5%	Samp No	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date
	PS-10108	179977	40	K2	D5	F	40	40	3	0.3	10	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross		
	PS-10108	179978	41	K2	D5	F	41	41	1.75	0.2	8.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	Grid_grid opening is K2_D5, not K2_D4 according to benchsheet. Applies to all structures on page 4.	1/3/2014
	PS-10108	179979	42	K2	D5	CD21	42													CDM Smith	N. Ross	Grid_grid opening is K2_D5, not K2_D4 according to benchsheet. Applies to all structures on page 4.	1/3/2014
	PS-10108	179980	43	K2	D5	CB		42	12.75	1	12.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	Grid_grid opening is K2_D5, not K2_D4 according to benchsheet. Applies to all structures on page 4.	1/3/2014
	PS-10108	179981	44	K2	D5	CF		43	4.75	0.35	13.571429	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	Grid_grid opening is K2_D5, not K2_D4 according to benchsheet. Applies to all structures on page 4.	1/3/2014
	PS-10108	179982	45	K2	D5	B	43	44	11.5	10.75	1.0697674	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	Grid_grid opening is K2_D5, not K2_D4 according to benchsheet. Applies to all structures on page 4.	1/3/2014
	PS-10108	179983	46	K2	D5	F	44	45	13.8	0.15	92	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	Grid_grid opening is K2_D5, not K2_D4 according to benchsheet. Applies to all structures on page 4.	1/3/2014
	PS-10108	179984	47	K2	D5	B	45	46	3.5	0.75	4.6666667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	Grid_grid opening is K2_D5, not K2_D4 according to benchsheet. Applies to all structures on page 4.	1/3/2014
	PS-10108	179985	48	K2	D5	B	46	47	5.75	0.8	7.1875	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	Grid_grid opening is K2_D5, not K2_D4 according to benchsheet. Applies to all structures on page 4.	1/3/2014

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B SURFACE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
PS-20009	170543	1	J1	F7	F	1	1	1.35	0.25	5.4	LA		ADX	1	1	1	1	NaK, WRTA;	CDM Smith	N. Ross			
PS-20009	170544	2	J1	F7	F	2	2	6.1	0.3	20.33333333	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	N. Ross			
PS-20009	170545	3	J1	F7	F	3	3	1.6	0.15	10.66666667	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	N. Ross			
PS-20009	170546	4	J1	F7	F	4	4	5.2	0.15	34.66666667	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	N. Ross			
PS-20009	170547	5	J1	F7	F	5	5	3.25	0.25	13	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	N. Ross			
PS-20009	170548	6	J1	F7	F	6	6	17	0.25	68	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170549	7	J1	F7	F	7	7	10.6	0.25	42.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170550	8	J1	F7	F	8	8	6.25	0.3	20.83333333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170551	9	J1	F9	F	9	9	3.25	0.2	16.25	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170552	10	J1	F9	F	10	10	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170553	11	J1	F9	F	11	11	1.75	0.15	11.66666667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170554	12	J1	F9	F	12	12	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170555	13	J1	F9	F	13	13	3.4	0.35	9.714285714	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170556	14	J1	F9	F	14	14	0.9	0.25	3.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170557	15	J1	F9	F	15	15	3.7	0.5	7.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170558	16	J1	F9	F	16	16	3.75	0.6	6.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170559	17	J1	F9	F	17	17	7.35	0.2	36.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170560	18	J1	F9	F	18	18	2.15	0.25	8.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170561	19	J1	F9	F	19	19	2.25	0.25	9	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170562	20	J1	F9	F	20	20	7.2	0.25	28.8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170563	21	J2	D4	F	21	21	8.1	0.4	20.25	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170564	22	J2	D4	F	22	22	4	0.5	8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170565	23	J2	D4	F	23	23	3.5	0.5	7	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170566	24	J2	D4	F	24	24	2.45	0.2	12.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170567	25	J2	D4	F	25	25	1.2	0.3	4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170568	26	J2	D4	F	26	26	25.2	0.5	50.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170569	27	J2	D4	F	27	27	25.1	0.6	41.83333333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170570	28	J2	D4	F	28	28	7.8	0.15	52	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170571	29	J2	D4	F	29	29	7.5	0.6	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170572	30	J2	D4	F	30	30	5.2	0.2	26	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170573	31	J2	D4	F	31	31	1.25	0.3	4.166666667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170574	32	J2	D4	F	32	32	1.8	0.15	12	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170575	33	J2	D4	F	33	33	1.5	0.25	6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170576	34	J2	D4	F	34	34	3.8	0.25	15.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170577	35	J2	D4	F	35	35	15	0.35	42.85714286	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170578	36	J2	D2	F	36	36	4.9	0.2	24.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170579	37	J2	D2	F	37	37	1.2	0.15	8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170580	38	J2	D2	F	38	38	3.5	0.4	8.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170581	39	J2	D2	F	39	39	6	0.15	40	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20009	170582	40	J2	D2	F	40	40	3.3	0.25	13.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20011	170641	1	F1	B6	ND												1		CDM Smith	N. Ross			EF
PS-20011	170642	2	F1	B8	F	1	1	16.4	0.35	46.86	LA		ADX	1	1	1	1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170643	3	F1	B10	ND												1		CDM Smith	N. Ross			EF
PS-20011	170644	4	F1	C3	F	2	2	2.45	0.4	6.13	LA		ADX	1	1	1	1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170645	5	F1	C5	ND												1		CDM Smith	N. Ross			EF
PS-20011	170646	6	F1	C7	F	3	3	1.4	0.15	9.33	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170647	7	F1	C9	ND												1		CDM Smith	N. Ross			EF
PS-20011	170648	8	F1	D2	ND												1		CDM Smith	N. Ross			EF
PS-20011	170649	9	F1	D4	ND												1		CDM Smith	N. Ross			EF
PS-20011	170650	10	F1	D6	F	4	4	3.9	0.2	19.5	LA		ADX	1	1	1	1	NaK, WRTA;	CDM Smith	N. Ross			EF
PS-20011	170651	11	F1	D6	F	5	5	1.65	0.2	8.25	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	N. Ross			EF
PS-20011	170652	12	F1	D8	F	6	6	1.6	0.2	8	LA		ADX	1	1	1	1	NaK, WRTA;	CDM Smith	N. Ross			EF
PS-20011	170653	13	F1	D10	ND												1		CDM Smith	N. Ross			EF
PS-20011	170654	14	F1	E1	F	7	7	2	0.4	5	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170655	15	F1	E3	ND												1		CDM Smith	N. Ross			EF
PS-20011	170656	16	F1	E5	ND												1		CDM Smith	N. Ross			EF
PS-20011	170657	17	F1	E7	F	8	8	3.8	0.2	19	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170658	18	F1	E7	F	9	9	1.85	0.3	6.17	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170659	19	F1	E9	F	10	10	2.85	0.45	6.33	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170660	20	F1	E9	F	11	11	10.1	0.9	11.22	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170661	21	F3	B3	F	12	12	6.3	0.15	42	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170662	22	F3	B3	F	13	13	10.3	0.3	34.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170663	23	F3	B5	ND												1		CDM Smith	N. Ross			EF
PS-20011	170664	24	F3	B7	F	14	14	1.4	0.25	5.6	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170665	25	F3	B7	F	15	15	7.4	0.15	49.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170666	26	F3	B7	F	16	16	5.35	0.3	17.83	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170667	27	F3	B9	F	17	17	1	0.2	5	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170668	28	F3	C2	ND												1		CDM Smith	N. Ross			EF
PS-20011	170669	29	F3	C4	ND												1		CDM Smith	N. Ross			EF
PS-20011	170670	30	F3	C6	F	18	18	2.75	0.5	5.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170671	31	F3	C8	F	19	19	17.5	0.6	29.17	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170672	32	F3	C10	ND												1		CDM Smith	N. Ross			EF
PS-20011	170673	33	F3	D1	ND												1		CDM Smith	N. Ross			EF
PS-20011	170674	34	F3	D3	ND												1		CDM Smith	N. Ross			EF
PS-20011	170675	35	F3	D5	F	20	20	2	0.2	10	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170676	36	F3	D5	F	21	21	22.5	0.25	90	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170677	37	F3	D7	F	22	22	17.8	0.2	89	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170678	38	F3	D9	B	23	23	1.9	0.2	9.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170679	39	F3	E2	ND												1		CDM Smith	N. Ross			EF
PS-20011	170680	40	F3	E4	ND												1		CDM Smith	N. Ross			EF
PS-20011	170681	41	F3	E6	F	24	24	9.9	0.15	66	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20011	170682	42	F3	E8	F	25	25	3.5	0.5	7	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			EF
PS-20014	170861	1	A1	C10	MD11	1								1					CDM Smith	N. Ross			
PS-20014	170862	2	A1	C10	MF		1	5.2	0.2	26	LA		ADX	1	1	1		; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170863	3	A1	C10	F	2	2	3.9	0.4	9.75	LA		ADX	1	1	1		; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170864	4	A1	C10	F	3	3	6	1	6	LA		ADX	1	1	1		; WRTA/XK;	CDM Smith	N. Ross			
PS-20014	170865	5	A1	C10	MD10	4													CDM Smith	N. Ross			
PS-20014	170866	6	A1	C10	MF		4	2	0.25	8	LA		ADX	1	1	1		; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170867	7	A1	C10	F	5	5	4.6	0.4	11.5	LA		ADX	1	1	1		; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170868	8	A1	C10	F	6	6	3.3	0.4	8.25	LA		ADX	1		1		; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170869	9	A1	C10	B	7	7	7	0.4	17.5	LA		ADX	1		1		; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170870	10	A1	C10	F	8	8	3.7	0.25	14.8	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170871	11	A1	C10	F	9	9	1.7	0.2	8.5	LA		ADX	1				; WRTA/XK	CDM Smith	N. Ross			
PS-20014	170872	12	A1	C10	B	10	10	13.7	0.3	45.67	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170873	13	A1	C10	F	11	11	2.5	0.2	12.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170874	14	A1	G6	F	12	12	5.6	0.2	28	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170875	15	A1	G6	MD11	13								1					CDM Smith	N. Ross			
PS-20014	170876	16	A1	G6	MF		13	6.1	0.6	10.17	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170877	17	A1	G6	MD10	14								1					CDM Smith	N. Ross			
PS-20014	170878	18	A1	G6	MF		14	15.3	0.2	76.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170879	19	A1	G6	F	15	15	1.9	0.2	9.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170880	20	A1	G6	F	16	16	3	0.2	15	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170881	21	A1	G6	F	17	17	3.7	0.6	6.17	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170882	22	A1	G6	F	18	18	1.7	0.2	8.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170883	23	A1	G6	F	19	19	3.6	0.2	18	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170884	24	A1	G6	B	20	20	9.1	0.7	13	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170885	25	A1	G6	F	21	21	4.6	0.6	7.67	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170886	26	A2	A8	F	22	22	2.5	0.2	12.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170887	27	A2	A8	B	23	23	19.8	0.4	49.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170888	28	A2	A8	F	24	24	1.4	0.2	7	LA		ADX	1				; AC/XX	CDM Smith	N. Ross			
PS-20014	170889	29	A2	A8	B	25	25	8.5	0.4	21.25	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170890	30	A2	A8	MD10	26								1					CDM Smith	N. Ross			
PS-20014	170891	31	A2	A8	MB		26	4.7	0.3	15.67	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170892	32	A2	A8	B	27	27	5.6	0.4	14	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170893	33	A2	A8	F	28	28	2.5	0.2	12.5	LA		ADX	1				; AC/XX	CDM Smith	N. Ross			
PS-20014	170894	34	A2	A8	F	29	29	3.2	0.2	16	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170895	35	A2	A8	F	30	30	1.8	0.25	7.2	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170896	36	A2	A8	B	31	31	5.8	0.7	8.29	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170897	37	A2	H10	F	32	32	12.5	0.6	20.83	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170898	38	A2	H10	F	33	33	5.5	0.2	27.5	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170899	39	A2	H10	F	34	34	4.8	0.7	6.86	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170900	40	A2	H10	F	35	35	2	0.2	10	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20014	170901	41	A2	H10	B	36	36	5	0.7	7.14	LA		ADX	1				; WRTA/NaK	CDM Smith	N. Ross			
PS-20018	171063	1	B4	B10	ND														CDM Smith	N. Ross			
PS-20018	171064	2	B4	B8	ND														CDM Smith	N. Ross			
PS-20018	171065	3	B4	B6	ND														CDM Smith	N. Ross			
PS-20018	171066	4	B4	B4	ND														CDM Smith	N. Ross			
PS-20018	171067	5	B4	B2	ND														CDM Smith	N. Ross			
PS-20018	171068	6	B4	C3	ND														CDM Smith	N. Ross			
PS-20018	171069	7	B4	C5	ND														CDM Smith	N. Ross			
PS-20018	171070	8	B4	C7	ND														CDM Smith	N. Ross			
PS-20018	171071	9	B4	C9	ND														CDM Smith	N. Ross			
PS-20018	171072	10	B4	D10	ND														CDM Smith	N. Ross			
PS-20018	171073	11	B4	D8	ND														CDM Smith	N. Ross			
PS-20018	171074	12	B4	D6	ND														CDM Smith	N. Ross			
PS-20018	171075	13	B4	D4	ND														CDM Smith	N. Ross			
PS-20018	171076	14	B4	D2	ND														CDM Smith	N. Ross			
PS-20018	171077	15	B4	E3	ND														CDM Smith	N. Ross			
PS-20018	171078	16	B4	E5	ND														CDM Smith	N. Ross			
PS-20018	171079	17	B4	E7	ND														CDM Smith	N. Ross			
PS-20018	171080	18	B4	E9	ND														CDM Smith	N. Ross			
PS-20018	171081	19	B4	F8	ND														CDM Smith	N. Ross			
PS-20018	171082	20	B4	F6	ND														CDM Smith	N. Ross			
PS-20018	171083	21	B4	F4	ND														CDM Smith	N. Ross			
PS-20018	171084	22	B4	G3	ND														CDM Smith	N. Ross			
PS-20018	171085	23	B4	G5	ND														CDM Smith	N. Ross			
PS-20018	171086	24	B4	G7	ND														CDM Smith	N. Ross			
PS-20018	171087	25	B4	G9	ND														CDM Smith	N. Ross			
PS-20018	171088	26	B4	H10	ND														CDM Smith	N. Ross			
PS-20018	171089	27	B4	H8	ND														CDM Smith	N. Ross			
PS-20018	171090	28	B4	H6	ND														CDM Smith	N. Ross			
PS-20018	171091	29	B4	H4	ND														CDM Smith	N. Ross			
PS-20018	171092	30	B4	H2	ND														CDM Smith	N. Ross			
PS-20018	171093	31	B4	I1	ND														CDM Smith	N. Ross			
PS-20018	171094	32	B4	I3	ND														CDM Smith	N. Ross			
PS-20018	171095	33	B4	I5	ND														CDM Smith	N. Ross			
PS-20018	171096	34	B4	I7	ND														CDM Smith	N. Ross			
PS-20018	171097	35	B5	I1	ND														CDM Smith	N. Ross			
PS-20018	171098	36	B5	I3	ND														CDM Smith	N. Ross			
PS-20018	171099	37	B5	I5	ND														CDM Smith	N. Ross			
PS-20018	171100	38	B5	I7	ND														CDM Smith	N. Ross			
PS-20018	171101	39	B5	I9	ND														CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B SURFACE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
PS-20018	171102	40	B5	H8	ND														CDM Smith	N. Ross			
PS-20018	171103	41	B5	H6	ND														CDM Smith	N. Ross			
PS-20018	171104	42	B5	H4	ND														CDM Smith	N. Ross			
PS-20018	171105	43	B5	H2	ND														CDM Smith	N. Ross			
PS-20018	171106	44	B5	G1	ND														CDM Smith	N. Ross			
PS-20018	171107	45	B5	G3	ND														CDM Smith	N. Ross			
PS-20018	171108	46	B5	G5	ND														CDM Smith	N. Ross			
PS-20018	171109	47	B5	G7	ND														CDM Smith	N. Ross			
PS-20018	171110	48	B5	G9	ND														CDM Smith	N. Ross			
PS-20018	171111	49	B5	F8	ND														CDM Smith	N. Ross			
PS-20018	171112	50	B5	F6	ND														CDM Smith	N. Ross			
PS-20018	171113	51	B5	F4	ND														CDM Smith	N. Ross			
PS-20018	171114	52	B5	F2	ND														CDM Smith	N. Ross			
PS-20018	171115	53	B5	E1	ND														CDM Smith	N. Ross			
PS-20018	171116	54	B5	E3	ND														CDM Smith	N. Ross			
PS-20018	171117	55	B5	E5	ND														CDM Smith	N. Ross			
PS-20018	171118	56	B5	E7	ND														CDM Smith	N. Ross			
PS-20018	171119	57	B5	E9	ND														CDM Smith	N. Ross			
PS-20018	171120	58	B5	D8	ND														CDM Smith	N. Ross			
PS-20018	171121	59	B5	D6	ND														CDM Smith	N. Ross			
PS-20018	171122	60	B5	D4	ND														CDM Smith	N. Ross			
PS-20018	171123	61	B5	D2	ND														CDM Smith	N. Ross			
PS-20018	171124	62	B5	C1	ND														CDM Smith	N. Ross			
PS-20018	171125	63	B5	C3	ND														CDM Smith	N. Ross			
PS-20018	171126	64	B5	C5	ND														CDM Smith	N. Ross			
PS-20018	171127	65	B5	C7	ND														CDM Smith	N. Ross			
PS-20018	171128	66	B5	C9	ND														CDM Smith	N. Ross			
PS-20018	171129	67	B5	B10	ND														CDM Smith	N. Ross			
PS-20018	171130	68	B5	B8	ND														CDM Smith	N. Ross			
PS-20018	171131	69	B5	B6	ND														CDM Smith	N. Ross			
PS-20018	171132	70	B5	B4	ND														CDM Smith	N. Ross			
PS-20018	171133	71	B5	B2	ND														CDM Smith	N. Ross			
PS-20018	171134	72	B5	A1	ND														CDM Smith	N. Ross			
PS-20018	171135	73	B5	A3	ND														CDM Smith	N. Ross			
PS-20018	171136	74	B5	A5	ND														CDM Smith	N. Ross			
PS-20018	171137	75	B5	A7	ND														CDM Smith	N. Ross			
PS-20018	171138	76	B5	A9	ND														CDM Smith	N. Ross			
PS-20018	171139	77	B5	J4	ND														CDM Smith	N. Ross			
PS-20036	180107	1	I2	C7	F	1	1	2.5	0.25	10	LA			ADX	1	1	1		; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180108	2	I2	C7	F	2	2	1.5	0.2	7.5	LA			ADX	1	1	1		; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180109	3	I2	C7	F	3	3	6	0.25	24	LA			ADX	1	1	1		; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180110	4	I2	C7	F	0	0	51	1.2	42.5	LA			ADX	1	1	1		; WRTA/Nak	CDM Smith	N. Ross	Structure comments for non-countable structure on page 1 not recorded on benchsheet.	1/21/2014
PS-20036	180111	5	I2	C7	F	4	4	14	0.4	35	LA			ADX	1	1	1		; WRTA/NaX	CDM Smith	N. Ross		
PS-20036	180112	6	I2	E9	F	5	5	1.75	0.25	7	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180113	7	I2	E9	F	6	6	3	0.8	3.75	LA			ADX	1	1	1		; TRAC/XX/P	CDM Smith	N. Ross		
PS-20036	180114	8	I2	E7	F	7	7	2.75	0.3	9.166666667	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180115	9	I2	E7	F	8	8	5	0.6	8.333333333	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180116	10	I2	F10	F	9	9	13	0.8	16.25	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180117	11	I2	F10	MD10	10														CDM Smith	N. Ross		
PS-20036	180118	12	I2	F10	MF		10	5	0.12	41.66666667	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180119	13	I2	F8	F	0	0	3	0.75	4	LA			ADX					; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180120	14	I2	F8	MD10	11									1					CDM Smith	N. Ross		
PS-20036	180121	15	I2	F8	MF		11	5	0.4	12.5	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180122	16	I2	F6	F	12	12	10.5	1.25	8.4	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180123	17	I2	F6	F	13	13	2	0.25	8	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180124	18	I2	F6	MD11	14														CDM Smith	N. Ross		
PS-20036	180125	19	I2	F6	MFO		14	20	0.25	80	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross	Structure type is MFO, not MF0 (the letter O not the number zero) for total structure #14.	1/21/2014
PS-20036	180126	20	I2	G9	F	15	15	6.5	0.25	26	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180127	21	I2	G7	F	16	16	4	0.5	8	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180128	22	I2	G7	MD11	17														CDM Smith	N. Ross		
PS-20036	180129	23	I2	G7	MF		17	23	0.9	25.55555556	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180130	24	I3	I8	B	18	18	71	0.6	118.3333333	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180131	25	I3	I8	F	19	19	7	0.25	28	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180132	26	I3	I8	F	20	20	4	0.5	8	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180133	27	I3	I8	F	21	21	2	0.25	8	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180134	28	I3	D7	F	22	22	2.25	0.25	9	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180135	29	I3	C9	F	23	23	2	0.3	6.666666667	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180136	30	I3	C9	F	24	24	3	0.6	5	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180137	31	I3	E9	F	25	25	2.75	0.5	5.5	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180138	32	I3	E9	F	26	26	5	0.4	12.5	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20036	180139	33	I3	E9	F	27	27	85	0.75	113.3333333	LA			ADX	1				; WRTA/Nak	CDM Smith	N. Ross		
PS-20039	187175	1	Q4	D6	F	1	1	7.5	0.3	25	LA			ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187176	2	Q4	D6	MD10	2														CDM Smith	N. Ross		
PS-20039	187177	3	Q4	D6	MF		2	4.5	0.3	15	LA			ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187178	4	Q4	D6	F	0	0	3	0.25	12	LA			ADX	1				NaK, WRTA;	CDM Smith	N. Ross	Structure comments "structure crosses non-countable grid bar" not recorded on benchsheet.	1/21/2014
PS-20039	187179	5	Q4	D6	F	3	3	7.5	0.15	50	LA			ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187180	6	Q4	D6	F	4	4	2.25	0.3	7.5	LA			ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187181	7	Q4	D6	F	5	5	1.2	0.2	6	LA			ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187182	8	Q4	D6	F	6	6	12	0.4	30	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187183	9	Q4	D6	F	0	0	10	0.2	50	LA			ADX	1				NaK, WRTA;	CDM Smith	N. Ross	Structure comments "structure crosses non-countable grid bar" not recorded on benchsheet.	1/21/2014
PS-20039	187184	10	Q4	D6	MC+5	7	7	28	8	3.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187185	11	Q4	D6	F	8	8	0.75	0.2	3.75	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187186	12	Q4	D6	MC10	9	9	2.2	0.15	14.67	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187187	13	Q4	D6	MD21	10														CDM Smith	N. Ross		
PS-20039	187188	14	Q4	D6	MF		10	7.5	0.2	37.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187189	15	Q4	D6	MR10		11	2.2	0.25	8.8	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187190	16	Q4	D6	F	11	12	4	0.2	20	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187191	17	Q4	D6	F	12	13	2.75	0.1	27.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187192	18	Q4	D6	MD20	13														CDM Smith	N. Ross		
PS-20039	187193	19	Q4	D6	MF		14	2.75	0.1	27.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187194	20	Q4	D6	MR10		15	2.5	0.2	12.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187195	21	Q4	D6	F	14	16	3	0.1	30	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187196	22	Q4	D6	F	15	17	18	0.3	60	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187197	23	Q4	D6	MC40	16	18	2.9	0.2	14.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187198	24	Q4	D6	F	17	19	7.5	0.4	18.75	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187199	25	Q4	D6	F	18	20	22	0.4	55	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187200	26	Q4	D6	F	19	21	1.1	0.2	5.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187201	27	Q4	D6	MD10	20														CDM Smith	N. Ross		
PS-20039	187202	28	Q4	D6	MF		22	2.5	0.1	25	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187203	29	Q4	D6	B	21	23	9	0.25	36	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187204	30	Q4	D6	F	22	24	2	0.2	10	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187205	31	Q4	D6	MD10	23														CDM Smith	N. Ross		
PS-20039	187206	32	Q4	D6	MF		25	2	0.1	20	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187207	33	Q4	D6	F	24	26	12	0.4	30	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187208	34	Q4	D6	CD20	25														CDM Smith	N. Ross		
PS-20039	187209	35	Q4	D6	CF		27	2.5	0.15	16.67	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187210	36	Q4	D6	CF		28	2.3	0.3	7.67	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187211	37	Q4	D6	F	26	29	27.5	0.2	137.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187212	38	Q4	D6	F	27	30	4.5	0.25	18	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187213	39	Q4	D6	F	28	31	0.75	0.2	3.75	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187214	40	Q4	D6	F	29	32	1.25	0.25	5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187215	41	Q4	D6	F	30	33	7	0.4	17.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187216	42	Q4	D8	F	31	34	1.2	0.1	12	LA			ADX	1		1		NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187217	43	Q4	D8	F	0	0	1.5	0.2	7.5	LA			ADX	1				NaK, WRTA;	CDM Smith	N. Ross	Structure comments "structure crosses non-countable grid bar" not recorded on benchsheet.	1/21/2014
PS-20039	187218	44	Q4	D8	F	32	35	1.4	0.2	7	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187219	45	Q4	D8	MD52	33														CDM Smith	N. Ross		
PS-20039	187220	46	Q4	D8	MF		36	15	0.15	100	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187221	47	Q4	D8	MF		37	7	0.4	17.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187222	48	Q4	D8	MF		38	4	0.4	10	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187223	49	Q4	D8	MF		39	3.5	0.4	8.75	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187224	50	Q4	D8	MF		40	1	0.1	10	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187225	51	Q4	D8	F	34	41	5.5	0.1	55	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187226	52	Q4	D8	MD10	35														CDM Smith	N. Ross		
PS-20039	187227	53	Q4	D8	MF		42	2.5	0.15	16.67	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187228	54	Q4	D8	MC10	36	43	1.7	0.1	17	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187229	55	Q4	D8	F	37	44	3	0.25	12	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187230	56	Q4	D8	F	38	45	0.7	0.1	7	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187231	57	Q4	D8	F	39	46	2.5	0.2	12.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187232	58	Q4	D8	MD31	40														CDM Smith	N. Ross		
PS-20039	187233	59	Q4	D8	MF		47	12	0.25	48	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187234	60	Q4	D8	MF		48	3.5	0.3	11.67	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187235	61	Q4	D8	MF		49	3	0.25	12	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187236	62	Q4	D8	F	41	50	3.8	0.2	19	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187237	63	Q4	D8	F	42	51	2.5	0.2	12.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187238	64	Q4	D8	F	43	52	2.6	0.15	17.33	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187239	65	Q4	D8	F	44	53	4	0.1	40	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187240	66	Q4	D8	MD+2	45														CDM Smith	N. Ross		
PS-20039	187241	67	Q4	D8	MF		54	12.5	0.25	50	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 54-59 (page 5-6).	1/21/2014
PS-20039	187242	68	Q4	D8	MF		55	7.5	0.2	37.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 54-59 (page 5-6).	1/21/2014
PS-20039	187243	69	Q4	D8	MF		56	3.5	0.2	17.5	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 54-59 (page 5-6).	1/21/2014
PS-20039	187244	70	Q4	D8	MF		57	3.2	0.25	12.8	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 54-59 (page 5-6).	1/21/2014
PS-20039	187245	71	Q4	D8	MF		58	2.8	0.2	14	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 54-59 (page 5-6).	1/21/2014
PS-20039	187246	72	Q4	D8	MR+0		59	2	0.1	20	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187247	73	Q4	D8	B	46	60	8	0.2	40	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187248	74	Q4	D8	F	47	61	28	0.6	46.67	LA			ADX	1				NaK, WRTA	CDM Smith	N. Ross		
PS-20039	187249	75	Q6	B4	F	48	62	1.2	0.1	12	LA			ADX	1	1		1	NaK, WRTA;	CDM Smith	N. Ross		
PS-20039	187250	76	Q6	B4	F	49	63	1.2	0.1	120	LA			ADX	1	1			NaK, WRTA;	CDM Smith	N. Ross		
PS-20039	187251	77	Q6	B4	F	50	64	22.5	0.4	56.25	LA			ADX	1	1			NaK, WRTA;	CDM Smith	N. Ross		
PS-20039	187252	78	Q6	B4	F	0	0	14	0.3	46.67	LA			ADX	1	1			NaK, WRTA;	CDM Smith	N. Ross	Structure comments "structure crosses non-countable grid bar" not recorded on benchsheet.	1/21/2014
PS-20039	187253	79	Q6	B4	F	51	65	12	0.2	60	LA			ADX	1	1			NaK, WRTA;	CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B SURFACE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
PS-20039	187254	80	Q6	B4	F	52	66	9	0.25	36	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187255	81	Q6	B4	F	53	67	4.7	0.2	23.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187256	82	Q6	B4	F	54	68	4.8	0.2	24	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187257	83	Q6	B4	MD10	55													CDM Smith	N. Ross			
PS-20039	187258	84	Q6	B4	MF		69	2.5	0.15	16.67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187259	85	Q6	B4	F	56	70	7.5	0.25	30	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187260	86	Q6	B4	F	0	0	4.5	0.2	22.5	LA		ADX	1				NaK, WRTA;	CDM Smith	N. Ross	Structure comments "structure crosses non-countable grid bar" not recorded on benchsheet.	1/21/2014	
PS-20039	187261	87	Q6	B4	F	57	71	8	0.2	40	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187262	88	Q6	B4	MD20	58													CDM Smith	N. Ross			
PS-20039	187263	89	Q6	B4	MF		72	2.5	0.15	16.67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187264	90	Q6	B4	MR10		73	1.3	0.15	8.67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187265	91	Q6	B4	F	59	74	22.5	0.4	56.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187266	92	Q6	B4	F	60	75	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187267	93	Q6	B4	B	61	76	4.5	0.25	18	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187268	94	Q6	B4	F	62	77	1.4	0.15	9.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187269	95	Q6	B4	MD11	63													CDM Smith	N. Ross			
PS-20039	187270	96	Q6	B4	MF		78	11	0.2	55	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187271	97	Q6	B4	F	64	79	5.6	0.25	22.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187272	98	Q6	B4	MD52	65													CDM Smith	N. Ross			
PS-20039	187273	99	Q6	B4	MF		80	15	0.4	37.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 80-84 (page 7-8).	1/21/2014	
PS-20039	187274	100	Q6	B4	MF		81	7.5	0.2	37.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 80-84 (page 7-8).	1/21/2014	
PS-20039	187275	101	Q6	B4	MF		82	4.9	0.2	24.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 80-84 (page 7-8).	1/21/2014	
PS-20039	187276	102	Q6	B4	MF		83	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 80-84 (page 7-8).	1/21/2014	
PS-20039	187277	103	Q6	B4	MF		84	2.3	0.15	15.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 80-84 (page 7-8).	1/21/2014	
PS-20039	187278	104	Q6	B4	F	66	85	7.5	0.4	18.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187279	105	Q6	B7	F	0	0	7	0.35	20	LA		ADX	1			1	NaK, WRTA;	CDM Smith	N. Ross	No comment for non-countable structure on page 8 (grid_grid opening Q6_B7).	1/21/2014	
PS-20039	187280	106	Q6	B7	F	67	86	17.5	0.2	87.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187281	107	Q6	B7	MD21	68													CDM Smith	N. Ross			
PS-20039	187282	108	Q6	B7	MF		87	5.5	0.1	55	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 87-88 (page 8).	1/21/2014	
PS-20039	187283	109	Q6	B7	MF		88	2.6	0.1	26	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 87-88 (page 8).	1/21/2014	
PS-20039	187284	110	Q6	B7	F	69	89	2.5	0.3	8.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187285	111	Q6	B7	MD52	70													CDM Smith	N. Ross			
PS-20039	187286	112	Q6	B7	MF		90	17	0.2	85	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 90-94 (page 8-9).	1/21/2014	
PS-20039	187287	113	Q6	B7	MF		91	7	0.25	28	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 90-94 (page 8-9).	1/21/2014	
PS-20039	187288	114	Q6	B7	MF		92	2.6	0.15	17.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 90-94 (page 8-9).	1/21/2014	
PS-20039	187289	115	Q6	B7	MF		93	2.4	0.2	12	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 90-94 (page 8-9).	1/21/2014	
PS-20039	187290	116	Q6	B7	MF		94	1.4	0.1	14	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	NaK,WRTA not recorded on benchsheet for total structures 90-94 (page 8-9).	1/21/2014	
PS-20039	187291	117	Q6	B7	F	71	95	4.5	0.15	30	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20039	187292	118	Q6	B7	F	72	96	4.9	0.1	49	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187293	1	R5	E5	F	1	1	6.5	0.2	32.5	LA		ADX	1	1	1	1	NaK, WRTA;	CDM Smith	N. Ross			
PS-20041	187294	2	R5	E5	F	2	2	2.2	0.25	8.8	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	N. Ross			
PS-20041	187295	3	R5	E5	MD10	3													CDM Smith	N. Ross			
PS-20041	187296	4	R5	E5	MFO		3	1.1	0.1	11	LA		ADX	1				XX, WRTA	CDM Smith	N. Ross			
PS-20041	187297	5	R5	E5	F	4	4	2.75	0.2	13.75	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	N. Ross			
PS-20041	187298	6	R5	E5	F	5	5	0.55	0.15	3.67	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	N. Ross			
PS-20041	187299	7	R5	E5	F	6	6	1.6	0.25	6.4	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187300	8	R5	E5	F	7	7	1.5	0.2	7.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187301	9	R5	E5	MD10	8													CDM Smith	N. Ross			
PS-20041	187302	10	R5	E5	MF		8	3.1	0.1	31	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187303	11	R5	E5	F	9	9	2.5	0.5	5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187304	12	R5	E5	F	10	10	2.5	0.4	6.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187305	13	R5	E5	F	11	11	11.25	0.3	37.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187306	14	R5	E5	MD11	12													CDM Smith	N. Ross			
PS-20041	187307	15	R5	E5	MF		12	16.75	0.75	22.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187308	16	R5	E5	MD11	13													CDM Smith	N. Ross			
PS-20041	187309	17	R5	E5	MFO		13	5.25	0.25	21	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187310	18	R5	E5	MD20	14													CDM Smith	N. Ross			
PS-20041	187311	19	R5	E5	MF		14	3.8	0.1	38	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187312	20	R5	E5	MF		15	2.5	0.1	25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187313	21	R5	E5	MD11	15													CDM Smith	N. Ross			
PS-20041	187314	22	R5	E5	MF		16	5.25	0.2	26.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187315	23	R5	E5	MD11	16													CDM Smith	N. Ross			
PS-20041	187316	24	R5	E5	MF		17	5.25	0.6	8.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187317	25	R5	E5	MD30	17													CDM Smith	N. Ross			
PS-20041	187318	26	R5	E5	MFO		18	4.5	0.2	22.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187319	27	R5	E5	MFO		19	3.2	0.2	16	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187320	28	R5	E5	MFO		20	2	0.1	20	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187321	29	R5	E5	F	18	21	1	0.2	5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187322	30	R5	E5	F	19	22	6	0.2	30	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187323	31	R5	E5	F	20	23	13	0.4	32.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187324	32	R5	E5	MD31	21													CDM Smith	N. Ross			
PS-20041	187325	33	R5	E5	MFO		24	20	0.3	66.67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187326	34	R5	E5	MFO		25	2	0.2	10	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187327	35	R5	E5	MFO		26	1.7	0.2	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187328	36	R5	E5	MD10	22													CDM Smith	N. Ross			
PS-20041	187329	37	R5	E5	MF		27	1.5	0.25	6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187330	38	R5	E5	MD10	23													CDM Smith	N. Ross			
PS-20041	187331	39	R5	E5	MF		28	2.5	0.4	6.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187332	40	R5	E5	F	24	29	1.7	0.15	11.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187333	41	R5	E5	F	25	30	5.5	0.75	7.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187334	42	R5	E5	MD10	26													CDM Smith	N. Ross			
PS-20041	187335	43	R5	E5	MF		31	2.75	0.2	13.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187336	44	R5	E7	F	27	32	5	0.3	16.67	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187337	45	R5	E7	F	28	33	11.5	0.2	57.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187338	46	R5	E7	F	29	34	1.6	0.29	5.52	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187339	47	R5	E7	F	30	35	25.5	0.75	34	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187340	48	R5	E7	MD10	31													CDM Smith	N. Ross			
PS-20041	187341	49	R5	E7	MF		36	4.5	0.05	90	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187342	50	R5	E7	MD10	32													CDM Smith	N. Ross			
PS-20041	187343	51	R5	E7	MFO		37	4.5	0.2	22.5	LA		ADX	1				NaX, WRTA	CDM Smith	N. Ross			
PS-20041	187344	52	R5	E7	MD11	33													CDM Smith	N. Ross			
PS-20041	187345	53	R5	E7	MF		38	21.75	0.2	108.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187346	54	R5	E7	MD10	34													CDM Smith	N. Ross			
PS-20041	187347	55	R5	E7	MF		39	1.75	0.2	8.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187348	56	R5	E7	F	35	40	1.6	0.25	6.4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187349	57	R5	E7	MD21	36													CDM Smith	N. Ross			
PS-20041	187350	58	R5	E7	MFO		41	11.5	0.2	57.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187351	59	R5	E7	MFO		42	4.5	0.1	45	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187352	60	R5	E7	MD10	37													CDM Smith	N. Ross			
PS-20041	187353	61	R5	E7	MF		43	2.8	0.3	9.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187354	62	R5	E7	F	38	44	4.7	0.2	23.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187355	63	R5	E7	F	39	45	1.5	0.2	7.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187356	64	R5	E7	MD10	40													CDM Smith	N. Ross			
PS-20041	187357	65	R5	E7	MF		46	3.25	0.1	32.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187358	66	R5	E7	MD41	41													CDM Smith	N. Ross			
PS-20041	187359	67	R5	E7	MF		47	6	0.4	15	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187360	68	R5	E7	MR30		48	4.5	2.5	1.8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187361	69	R5	E7	F	42	49	1.6	0.4	4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187362	70	R5	E7	F	43	50	2.75	0.6	4.58	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187363	71	R5	E7	MD10	44													CDM Smith	N. Ross			
PS-20041	187364	72	R5	E7	MF		51	3.2	0.3	10.67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187365	73	R5	E7	MD32	45													CDM Smith	N. Ross			
PS-20041	187366	74	R5	E7	MFO		52	12	0.2	60	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187367	75	R5	E7	MFO		53	8.5	0.1	85	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187368	76	R5	E7	MFO		54	4.2	0.1	42	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187369	77	R5	E7	F	46	55	10.2	0.3	34	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187370	78	R5	E7	F	47	56	2.75	0.2	13.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187371	79	R5	E7	MD20	48													CDM Smith	N. Ross			
PS-20041	187372	80	R5	E7	MF		57	4.5	0.6	7.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187373	81	R5	E7	MR10		58	3	0.4	7.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187374	82	R5	E7	F	49	59	2.75	0.1	27.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187375	83	R7	G8	MD10	50											1	; Additional	CDM Smith	N. Ross			
PS-20041	187376	84	R7	G8	MFO		60	2.5	0.1	25	LA		ADX	1	1			NaK, WRTA;	CDM Smith	N. Ross			
PS-20041	187377	85	R7	G8	F	51	61	4.5	0.4	11.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187378	86	R7	G8	F	0	0	1.75	0.4	4.38	LA		ADX	1				NaK, WRTA;	CDM Smith	N. Ross	Structure comment (structure crosses non-countable grid_bar) not recorded on benchsheet (grid_grid opening R7_G8, page 6).	1/21/2014	
PS-20041	187379	87	R7	G8	MD10	52													CDM Smith	N. Ross			
PS-20041	187380	88	R7	G8	MFO		62	1.75	0.4	4.38	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187381	89	R7	G8	F	53	63	1.75	0.3	5.83	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187382	90	R7	G8	F	54	64	1.8	0.15	12	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187383	91	R7	G8	MD11	55													CDM Smith	N. Ross			
PS-20041	187384	92	R7	G8	MF		65	10.75	0.4	26.88	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187385	93	R7	G8	F	56	66	1.5	0.15	10	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187386	94	R7	G8	F	57	67	0.65	0.1	6.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187387	95	R7	G8	MD11	58													CDM Smith	N. Ross			
PS-20041	187388	96	R7	G8	MF		68	14.75	0.2	73.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187389	97	R7	G8	MD10	59													CDM Smith	N. Ross			
PS-20041	187390	98	R7	G8	MFO		69	3	0.75	4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187391	99	R7	G8	MD20	60													CDM Smith	N. Ross			
PS-20041	187392	100	R7	G8	MFO		70	4	0.75	5.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187393	101	R7	G8	MFO		71	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187394	102	R7	G8	MD10	61													CDM Smith	N. Ross			
PS-20041	187395	103	R7	G8	MF		72	3.75	0.25	15	LA		ADX	1				NaX, WRTA	CDM Smith	N. Ross			
PS-20041	187396	104	R7	G8	MD10	62													CDM Smith	N. Ross			
PS-20041	187397	105	R7	G8	MF		73	3	0.3	10	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187398	106	R7	G8	F	63	74	1.75	0.3	5.83	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187399	107	R7	G8	F	64	75	17.75	0.8	22.19	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B SURFACE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
PS-20041	187400	108	R7	G8	F	65	76	1.75	0.2	8.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187401	109	R7	G8	MD11	66													CDM Smith	N. Ross			
PS-20041	187402	110	R7	G8	MFO		77	6	0.25	24	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187403	111	R7	G8	F	67	78	10.75	0.25	3	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross	Length for total structure #78 is 10.75, not 0.75 according to benchsheet (page 8).	1/21/2014	
PS-20041	187404	112	R7	G8	F	68	79	1.25	0.2	6.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187405	113	R7	G8	MD11	69													CDM Smith	N. Ross			
PS-20041	187406	114	R7	G8	MF		80	6	0.5	12	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187407	115	R7	G8	F	70	81	1	0.1	10	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187408	116	R7	G8	F	71	82	2.8	0.2	14	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187409	117	R7	G8	F	72	83	0.9	0.2	4.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187410	118	R7	G8	MD10	73													CDM Smith	N. Ross			
PS-20041	187411	119	R7	G8	MF		84	2.9	0.1	29	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187412	120	R7	G8	F	0	0	7.5	0.4	18.75	LA		ADX	1				NaK, WRTA;	CDM Smith	N. Ross	Structure comment (structure crosses non-countable grid bar) not recorded on benchsheet (grid_grid opening R7_G8, page 9).	1/21/2014	
PS-20041	187413	121	R7	G8	F	74	85	1.5	0.1	15	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187414	122	R7	G8	F	75	86	1.4	0.2	7	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187415	123	R7	G8	F	76	87	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187416	124	R7	G8	F	77	88	1.2	0.15	8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187417	125	R7	G8	F	78	89	7.6	0.5	15.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187418	126	R7	G8	F	79	90	7.6	1	7.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187419	127	R7	G8	MD11	80													CDM Smith	N. Ross			
PS-20041	187420	128	R7	G8	MF		91	5.6	0.7	8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187421	129	R7	G8	MD10	81													CDM Smith	N. Ross			
PS-20041	187422	130	R7	G8	MFO		92	4.9	0.4	12.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187423	131	R7	G6	MD22	82											1		CDM Smith	N. Ross			
PS-20041	187424	132	R7	G6	MF		93	7	0.5	14	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187425	133	R7	G6	MR11		94	5.5	0.25	22	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187426	134	R7	G6	MD11	83													CDM Smith	N. Ross			
PS-20041	187427	135	R7	G6	MF		95	6	0.2	30	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187428	136	R7	G6	F	84	96	4.8	0.3	16	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187429	137	R7	G6	F	85	97	4.8	0.25	19.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187430	138	R7	G6	MD21	86													CDM Smith	N. Ross			
PS-20041	187431	139	R7	G6	MFO		98	10	0.5	20	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187432	140	R7	G6	MFO		99	4.5	0.2	22.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187433	141	R7	G6	MD11	87													CDM Smith	N. Ross			
PS-20041	187434	142	R7	G6	MFO		100	7	0.5	14	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187435	143	R7	G6	F	88	101	5.75	0.4	14.38	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187436	144	R7	G6	F	89	102	1.4	0.05	28	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187437	145	R7	G6	MD11	90													CDM Smith	N. Ross			
PS-20041	187438	146	R7	G6	MF		103	30	0.35	85.71	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187439	147	R7	G6	F	91	104	2.75	0.5	5.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187440	148	R7	G6	F	92	105	1.1	0.1	11	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187441	149	R7	G6	F	93	106	1.5	0.2	7.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187442	150	R7	G6	F	94	107	3.2	0.15	21.33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187443	151	R7	G6	F	95	108	4.5	0.4	11.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187444	152	R7	G6	F	96	109	4.8	0.2	24	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187445	153	R7	G6	MD11	97													CDM Smith	N. Ross			
PS-20041	187446	154	R7	G6	MF		110	8	0.5	16	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187447	155	R7	G6	MD22	98													CDM Smith	N. Ross			
PS-20041	187448	156	R7	G6	MF		111	25.5	0.2	127.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187449	157	R7	G6	MR21		112	7.5	1	7.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187450	158	R7	G6	MD20	99													CDM Smith	N. Ross			
PS-20041	187451	159	R7	G6	MFO		113	4.5	0.1	45	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187452	160	R7	G6	MFO		114	2	0.1	20	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187453	161	R7	G6	F	100	115	4.5	0.1	45	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187454	162	R7	G6	F	101	116	1.6	0.4	4	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187455	163	R7	G6	F	102	117	1.6	0.2	8	LA		ADX	1				NaX, WRTA	CDM Smith	N. Ross	EDXA observation for total structure #117 is NaX, not NaK according to benchsheet (page 12).	1/21/2014	
PS-20041	187456	164	R7	G6	F	103	118	7.6	0.4	19	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187457	165	R7	G6	F	104	119	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187458	166	R7	G6	F	105	120	1.2	0.1	12	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187459	167	R7	G6	F	106	121	3.5	0.3	11.67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187460	168	R7	G6	MD11	107													CDM Smith	N. Ross			
PS-20041	187461	169	R7	G6	MFO		122	5.5	0.2	27.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20041	187462	170	R7	G6	B	0	0	16.5	0.5	33	LA		ADX	1				NaK, WRTA;	CDM Smith	N. Ross	Structure comment (structure crosses non-countable grid bar) not recorded on benchsheet (grid_grid opening R7_G6, page 12).	1/21/2014	
PS-20045	173368	1	T9	J10	ND												1		CDM Smith	N. Ross			
PS-20045	173369	2	T9	J6	ND												1		CDM Smith	N. Ross			
PS-20045	173370	3	T9	J4	ND												1		CDM Smith	N. Ross			
PS-20045	173371	4	T9	J2	ND												1		CDM Smith	N. Ross			
PS-20045	173372	5	T9	H10	ND												1		CDM Smith	N. Ross			
PS-20045	173373	6	T9	H8	ND												1		CDM Smith	N. Ross			
PS-20045	173374	7	T9	H6	ND												1		CDM Smith	N. Ross			
PS-20045	173375	8	T9	H4	ND												1		CDM Smith	N. Ross			
PS-20045	173376	9	T9	H2	ND												1		CDM Smith	N. Ross			
PS-20045	173377	10	T9	F9	ND												1		CDM Smith	N. Ross			
PS-20045	173378	11	T9	F7	F	1	1	1.25	0.2	6.25	LA		ADX	1	1	1	1	NaK, WRTA;	CDM Smith	N. Ross			
PS-20045	173379	12	T9	F5	ND												1		CDM Smith	N. Ross			
PS-20045	173380	13	T9	D9	ND												1		CDM Smith	N. Ross			
PS-20045	173381	14	T9	D7	F	2	2	20.5	0.4	51.25	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
PS-20045	173382	15	T9	D5	ND												1		CDM Smith	N. Ross			
PS-20045	173383	16	T9	D3	ND												1		CDM Smith	N. Ross			
PS-20045	173384	17	T9	B10	ND												1		CDM Smith	N. Ross			
PS-20045	173385	18	T9	B8	ND												1		CDM Smith	N. Ross			
PS-20045	173386	19	T9	B6	ND												1		CDM Smith	N. Ross			
PS-20045	173387	20	T9	B4	ND												1		CDM Smith	N. Ross			
PS-20045	173388	21	T9	B2	ND												1		CDM Smith	N. Ross			
PS-20045	173389	22	T9	A9	ND												1		CDM Smith	N. Ross			
PS-20045	173390	23	T9	A7	ND												1		CDM Smith	N. Ross			
PS-20045	173391	24	T9	A5	ND												1		CDM Smith	N. Ross			
PS-20045	173392	25	T9	A3	ND												1		CDM Smith	N. Ross			
PS-20045	173393	26	T9	A1	ND												1		CDM Smith	N. Ross			
PS-20045	173394	27	T9	G10	ND												1		CDM Smith	N. Ross			
PS-20045	173395	28	T9	I10	ND												1		CDM Smith	N. Ross			
PS-20045	173396	29	T9	C8	ND												1		CDM Smith	N. Ross			
PS-20045	173397	30	T9	C7	ND												1		CDM Smith	N. Ross			
PS-20045	173398	31	T9	C2	ND												1		CDM Smith	N. Ross			
PS-20045	173399	32	T9	C1	ND												1		CDM Smith	N. Ross			
PS-20045	173400	33	A3	E10	ND												1		CDM Smith	N. Ross			
PS-20045	173401	34	A3	E8	ND												1		CDM Smith	N. Ross			
PS-20045	173402	35	A3	D9	ND												1		CDM Smith	N. Ross			
PS-20045	173403	36	A3	F9	ND												1		CDM Smith	N. Ross			
PS-20045	173404	37	A3	F7	ND												1		CDM Smith	N. Ross			
PS-20045	173405	38	A3	G10	ND												1		CDM Smith	N. Ross			
PS-20045	173406	39	A3	G8	ND												1		CDM Smith	N. Ross			
PS-20045	173407	40	A3	H9	ND												1		CDM Smith	N. Ross			
PS-20045	173408	41	A1	J10	ND												1		CDM Smith	N. Ross			
PS-20045	173409	42	A1	J8	ND												1		CDM Smith	N. Ross			
PS-20045	173410	43	A1	J6	ND												1		CDM Smith	N. Ross			
PS-20045	173411	44	A1	J4	ND												1		CDM Smith	N. Ross			
PS-20045	173412	45	A1	J2	ND												1		CDM Smith	N. Ross			
PS-20045	173413	46	A1	I1	ND												1		CDM Smith	N. Ross			
PS-20045	173414	47	A1	I3	ND												1		CDM Smith	N. Ross			
PS-20045	173415	48	A1	I5	ND												1		CDM Smith	N. Ross			
PS-20045	173416	49	A1	I7	ND												1		CDM Smith	N. Ross			
PS-20045	173417	50	A1	I9	ND												1		CDM Smith	N. Ross			
PS-20045	173418	51	A1	H8	ND												1		CDM Smith	N. Ross			
PS-20045	173419	52	A1	H6	ND												1		CDM Smith	N. Ross			
PS-20045	173420	53	A1	H4	ND												1		CDM Smith	N. Ross			
PS-20045	173421	54	A1	H2	ND												1		CDM Smith	N. Ross			
PS-20045	173422	55	A1	G7	ND												1		CDM Smith	N. Ross			
PS-20045	173423	56	A1	G5	ND												1		CDM Smith	N. Ross			
PS-20045	173424	57	A1	G3	ND												1		CDM Smith	N. Ross			
PS-20045	173425	58	A1	F6	ND												1		CDM Smith	N. Ross			
PS-20045	173426	59	A1	F4	ND												1		CDM Smith	N. Ross			
PS-20045	173427	60	A1	E7	ND												1		CDM Smith	N. Ross			
PS-20045	173428	61	A1	E5	ND												1		CDM Smith	N. Ross			
PS-20045	173429	62	A1	E3	ND												1		CDM Smith	N. Ross			
PS-20045	173430	63	A1	E1	ND												1		CDM Smith	N. Ross			
PS-20045	173431	64	A1	D10	ND												1		CDM Smith	N. Ross			
PS-20045	173432	65	A1	D8	ND												1		CDM Smith	N. Ross			
PS-20045	173433	66	A1	D2	ND												1		CDM Smith	N. Ross			
PS-20045	173434	67	A1	B10	ND												1		CDM Smith	N. Ross			
PS-20045	173435	68	A1	B8	ND												1		CDM Smith	N. Ross			
PS-20045	173436	69	A1	B6	F	0	0	2.25	0.5	4.5	NAM		NAM	1		1	1	NaK, Py	CDM Smith	N. Ross			
PS-20045	173437	70	A1	B4	ND												1		CDM Smith	N. Ross			
PS-20045	173438	71	A1	C1	ND												1		CDM Smith	N. Ross			
PS-20045	173439	72	A1	A3	ND												1		CDM Smith	N. Ross			
PS-20045	173440	73	A1	A1	ND												1		CDM Smith	N. Ross			
PS-20045	173441	74	A1	C9	ND												1		CDM Smith	N. Ross	The last four grid openings on page 6 appear to be crossed out; benchsheet requires revision.		
PS-20045	173442	75	A1	C7	ND												1		CDM Smith	N. Ross	The last four grid openings on page 6 appear to be crossed out; benchsheet requires revision.		
PS-20045	173443	76	A1	C5	ND												1		CDM Smith	N. Ross	The last four grid openings on page 6 appear to be crossed out; benchsheet requires revision.		
PS-20045	173444	77	A1	C3	ND												1		CDM Smith	N. Ross	The last four grid openings on page 6 appear to be crossed out; benchsheet requires revision.		
PS-20067	173972	1	B2	B7	ND												1		CDM Smith	N. Ross			
PS-20067	173973	2	B2	B9	ND												1		CDM Smith	N. Ross			
PS-20067	173974	3	B2	C6	ND												1		CDM Smith	N. Ross			
PS-20067	173975	4	B2	C8	ND												1		CDM Smith	N. Ross			
PS-20067	173976	5	B2	C10	ND												1		CDM Smith	N. Ross			
PS-20067	173977	6	B2	E1	ND												1		CDM Smith	N. Ross			
PS-20067	173978	7	B2	E3	ND												1		CDM Smith	N. Ross			
PS-20067	173979	8	B2	E5	ND												1		CDM Smith	N. Ross			
PS-20067	173980	9	B2	E7	ND												1		CDM Smith	N. Ross			
PS-20067	173981	10	B2	E9	ND												1		CDM Smith	N. Ross			
PS-20067	173982	11	B2	F2	ND												1		CDM Smith	N. Ross			
PS-20067	173983	12	B2	F4	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B SURFACE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificatio n	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
PS-20067	173984	13	B2	F6	ND												1		CDM Smith	N. Ross			
PS-20067	173985	14	B2	F8	ND												1		CDM Smith	N. Ross			
PS-20067	173986	15	B2	F10	ND												1		CDM Smith	N. Ross			
PS-20067	173987	16	B4	D1	ND												1		CDM Smith	N. Ross			
PS-20067	173988	17	B4	D3	ND												1		CDM Smith	N. Ross			
PS-20067	173989	18	B4	D5	ND												1		CDM Smith	N. Ross			
PS-20067	173990	19	B4	D7	ND												1		CDM Smith	N. Ross			
PS-20067	173991	20	B4	D9	ND												1		CDM Smith	N. Ross			
PS-20067	173992	21	B4	E2	ND												1		CDM Smith	N. Ross			
PS-20067	173993	22	B4	E4	ND												1		CDM Smith	N. Ross			
PS-20067	173994	23	B4	E6	ND												1		CDM Smith	N. Ross			
PS-20067	173995	24	B4	E8	ND												1		CDM Smith	N. Ross			
PS-20067	173996	25	B4	E10	ND												1		CDM Smith	N. Ross			
PS-20067	173997	26	B4	G1	ND												1		CDM Smith	N. Ross			
PS-20067	173998	27	B4	G3	ND												1		CDM Smith	N. Ross			
PS-20067	173999	28	B4	G5	ND												1		CDM Smith	N. Ross			
PS-20067	174000	29	B4	G7	ND												1		CDM Smith	N. Ross			
PS-20067	174001	30	B4	G9	ND												1		CDM Smith	N. Ross			
PS-20076	174590	1	S1	H4	ND												1		CDM Smith	N. Ross			
PS-20076	174591	2	S1	H2	ND												1		CDM Smith	N. Ross			
PS-20076	174592	3	S1	G6	ND												1		CDM Smith	N. Ross			
PS-20076	174593	4	S1	G4	ND												1		CDM Smith	N. Ross			
PS-20076	174594	5	S1	G2	ND												1		CDM Smith	N. Ross			
PS-20076	174595	6	S1	F9	ND												1		CDM Smith	N. Ross			
PS-20076	174596	7	S1	F7	ND												1		CDM Smith	N. Ross			
PS-20076	174597	8	S1	F5	ND												1		CDM Smith	N. Ross			
PS-20076	174598	9	S1	F3	ND												1		CDM Smith	N. Ross			
PS-20076	174599	10	S1	F1	ND												1		CDM Smith	N. Ross			
PS-20076	174600	11	S1	E10	ND												1		CDM Smith	N. Ross			
PS-20076	174601	12	S1	E8	ND												1		CDM Smith	N. Ross			
PS-20076	174602	13	S1	E6	ND												1		CDM Smith	N. Ross			
PS-20076	174603	14	S1	E4	ND												1		CDM Smith	N. Ross			
PS-20076	174604	15	S1	E2	ND												1		CDM Smith	N. Ross			
PS-20076	174605	16	S1	D9	ND												1		CDM Smith	N. Ross			
PS-20076	174606	17	S1	D7	ND												1		CDM Smith	N. Ross			
PS-20076	174607	18	S1	D5	ND												1		CDM Smith	N. Ross			
PS-20076	174608	19	S1	D3	ND												1		CDM Smith	N. Ross			
PS-20076	174609	20	S1	D1	ND												1		CDM Smith	N. Ross			
PS-20076	174610	21	S1	C10	ND												1		CDM Smith	N. Ross			
PS-20076	174611	22	S1	C8	ND												1		CDM Smith	N. Ross			
PS-20076	174612	23	S1	C6	ND												1		CDM Smith	N. Ross			
PS-20076	174613	24	S1	C4	ND												1		CDM Smith	N. Ross			
PS-20076	174614	25	S1	C2	ND												1		CDM Smith	N. Ross			
PS-20076	174615	26	S1	B9	ND												1		CDM Smith	N. Ross			
PS-20076	174616	27	S1	B7	ND												1		CDM Smith	N. Ross			
PS-20076	174617	28	S1	B5	ND												1		CDM Smith	N. Ross			
PS-20076	174618	29	S1	B3	ND												1		CDM Smith	N. Ross			
PS-20076	174619	30	S1	B1	ND												1		CDM Smith	N. Ross			
PS-20076	174620	31	S3	A2	ND												1		CDM Smith	N. Ross			
PS-20076	174621	32	S3	A4	ND												1		CDM Smith	N. Ross			
PS-20076	174622	33	S3	A6	ND												1		CDM Smith	N. Ross			
PS-20076	174623	34	S3	A8	ND												1		CDM Smith	N. Ross			
PS-20076	174624	35	S3	A10	ND												1		CDM Smith	N. Ross			
PS-20076	174625	36	S3	B1	ND												1		CDM Smith	N. Ross			
PS-20076	174626	37	S3	B3	ND												1		CDM Smith	N. Ross			
PS-20076	174627	38	S3	B5	ND												1		CDM Smith	N. Ross			
PS-20076	174628	39	S3	B7	ND												1		CDM Smith	N. Ross			
PS-20076	174629	40	S3	B9	ND												1		CDM Smith	N. Ross			
PS-20076	174630	41	S3	C2	ND												1		CDM Smith	N. Ross			
PS-20076	174631	42	S3	C4	ND												1		CDM Smith	N. Ross			
PS-20076	174632	43	S3	C6	ND												1		CDM Smith	N. Ross			
PS-20076	174633	44	S3	C8	ND												1		CDM Smith	N. Ross			
PS-20076	174634	45	S3	C10	ND												1		CDM Smith	N. Ross			
PS-20076	174635	46	S3	D1	ND												1		CDM Smith	N. Ross			
PS-20076	174636	47	S3	D3	ND												1		CDM Smith	N. Ross			
PS-20076	174637	48	S3	D5	ND												1		CDM Smith	N. Ross			
PS-20076	174638	49	S3	D7	ND												1		CDM Smith	N. Ross			
PS-20076	174639	50	S3	D9	ND												1		CDM Smith	N. Ross			
PS-20076	174640	51	S3	E2	ND												1		CDM Smith	N. Ross			
PS-20076	174641	52	S3	E4	ND												1		CDM Smith	N. Ross			
PS-20076	174642	53	S3	E6	ND												1		CDM Smith	N. Ross			
PS-20076	174643	54	S3	E8	ND												1		CDM Smith	N. Ross			
PS-20076	174644	55	S3	E10	ND												1		CDM Smith	N. Ross			
PS-20076	174645	56	S3	F1	ND												1		CDM Smith	N. Ross			
PS-20076	174646	57	S3	F3	ND												1		CDM Smith	N. Ross			
PS-20076	174647	58	S3	F5	ND												1		CDM Smith	N. Ross			
PS-20076	174648	59	S3	F7	ND												1		CDM Smith	N. Ross			
PS-20076	174649	60	S3	F9	ND												1		CDM Smith	N. Ross			
PS-20076	174650	61	S3	G2	ND												1		CDM Smith	N. Ross			
PS-20076	174651	62	S3	G4	ND												1		CDM Smith	N. Ross			
PS-20076	174652	63	S3	G6	ND												1		CDM Smith	N. Ross			
PS-20076	174653	64	S3	G8	ND												1		CDM Smith	N. Ross			
PS-20076	174654	65	S3	G10	ND												1		CDM Smith	N. Ross			
PS-20076	174655	66	S3	H1	ND												1		CDM Smith	N. Ross			
PS-20076	174656	67	S3	H3	ND												1		CDM Smith	N. Ross			
PS-20076	174657	68	S3	H5	ND												1		CDM Smith	N. Ross			
PS-20076	174658	69	S3	H7	ND												1		CDM Smith	N. Ross			
PS-20076	174659	70	S3	H9	ND												1		CDM Smith	N. Ross			
PS-20076	174660	71	S3	I2	ND												1		CDM Smith	N. Ross			
PS-20076	174661	72	S3	I4	ND												1		CDM Smith	N. Ross			
PS-20076	174662	73	S3	I6	ND												1		CDM Smith	N. Ross			
PS-20076	174663	74	S3	I8	ND												1		CDM Smith	N. Ross			
PS-20076	174664	75	S3	I10	ND												1		CDM Smith	N. Ross			
PS-20076	174665	76	S3	J1	ND												1		CDM Smith	N. Ross			
PS-20076	174666	77	S3	J3	ND												1		CDM Smith	N. Ross			
PS-20082	174988	1	L1	G7	F	1	1	2.35	0.2	11.75	LA		ADX	1	1	1	1		NaK, WRTA	CDM Smith	N. Ross		
PS-20082	174989	2	L1	G7	F	2	2	2.85	0.35	8.14	LA		ADX	1	1	1			NaK, WRTA	CDM Smith	N. Ross		
PS-20082	174990	3	L1	G7	F	3	3	2.35	0.15	15.67	LA		ADX	1	1	1			NaK, WRTA	CDM Smith	N. Ross		
PS-20082	174991	4	L1	G7	F	4	4	2.1	0.2	10.5	LA		ADX	1	1	1			NaK, WRTA	CDM Smith	N. Ross		
PS-20082	174992	5	L1	G7	F	5	5	8.5	0.45	18.89	LA		ADX	1	1	1			NaK, WRTA	CDM Smith	N. Ross		
PS-20082	174993	6	L1	G7	F	6	6	2.55	0.15	17	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	174994	7	L1	G7	F	7	7	1	0.15	6.67	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	174995	8	L1	G7	MD21	8														CDM Smith	N. Ross		
PS-20082	174996	9	L1	G7	MF		8	22.5	0.8	28.13	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	174997	10	L1	G7	MF		9	3	0.2	15	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	174998	11	L1	G7	F	9	10	5.3	0.25	21.2	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	174999	12	L1	G7	F	10	11	7	0.25	28	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175000	13	L1	G7	CD21	11														CDM Smith	N. Ross		
PS-20082	175001	14	L1	G7	CF		12	13.2	1.75	7.54	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175002	15	L1	G7	CF		13	4.8	1	4.8	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175003	16	L1	G9	F	12	14	24.5	0.35	70	LA		ADX	1			1		NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175004	17	L1	G9	F	13	15	5.2	0.7	7.43	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175005	18	L1	G9	F	14	16	2.95	0.5	5.9	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175006	19	L1	G9	F	15	17	13.8	0.25	55.2	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175007	20	L1	G9	F	16	18	15.6	0.65	24	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175008	21	L1	G9	CD22	17														CDM Smith	N. Ross		
PS-20082	175009	22	L1	G9	CF		19	6.25	0.35	17.86	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175010	23	L1	G9	CF		20	5.5	0.25	22	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175011	24	L1	G9	F	18	21	12.5	0.25	50	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175012	25	L1	G9	F	19	22	29.25	0.5	58.5	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175013	26	L1	G9	F	20	23	2.8	0.25	11.2	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175014	27	L1	G9	F	21	24	4.9	0.4	12.25	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175015	28	L1	G9	F	22	25	3.5	0.15	23.33	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175016	29	L1	G9	F	23	26	10.3	0.8	12.88	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175017	30	L2	F8	F	24	27	3.3	0.15	22	LA		ADX	1			1		NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175018	31	L2	F8	F	25	28	28	0.8	35	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175019	32	L2	F8	F	26	29	1.7	0.2	8.5	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175020	33	L2	F8	F	27	30	12.75	0.7	18.21	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175021	34	L2	F8	F	28	31	3.35	0.2	16.75	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175022	35	L2	F8	B	29	32	24.5	0.65	37.69	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175023	36	L2	F8	F	30	33	37.1	0.9	41.22	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175024	37	L2	F8	F	31	34	4.75	0.3	15.83	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175025	38	L2	F8	F	32	35	2.5	0.2	12.5	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175026	39	L2	F8	F	33	36	16.6	0.3	55.33	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175027	40	L2	F8	F	34	37	2.3	0.3	7.67	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175028	41	L2	F8	F	35	38	3.4	0.2	17	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175029	42	L2	F8	F	36	39	10.2	0.7	14.57	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175030	43	L2	F10	F	37	40	45.9	0.6	76.5	LA		ADX	1			1		NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175031	44	L2	F10	F	38	41	5.6	0.5	11.2	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175032	45	L2	F10	F	39	42	2.8	0.2	14	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175033	46	L2	F10	MD22	40														CDM Smith	N. Ross		
PS-20082	175034	47	L2	F10	MF		43	7.1	0.25	28.4	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175035	48	L2	F10	MF		44	6.25	0.3	20.83	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175036	49	L2	F10	F	41	45	30.85	1.4	22.04	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175037	50	L2	F10	MD33	42														CDM Smith	N. Ross		
PS-20082	175038	51	L2	F10	MB		46	49	0.35	140	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175039	52	L2	F10	MF		47	13	0.65	20	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175040	53	L2	F10	MF		48	6.3	0.25	25.2	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175041	54	L2	F10	F	43	49	4.75	0.15	31.67	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175042	55	L2	F10	F	44	50	3.25	0.2	16.25	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175043	56	L2	F10	CD32	45														CDM Smith	N. Ross		
PS-20082	175044	57	L2	F10	CF		51	36.6	0.5	73.2	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175045	58	L2	F10	CB		52	29.5	0.65	45.38	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175046	59	L2	F10	CF		53	3.7	0.25	14.8	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175047	60	L2	F10	CD22	46														CDM Smith	N. Ross		
PS-20082	175048	61	L2	F10	CF		54	27.25	0.25	109	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175049	62	L2	F10	CF		55	7.5	0.2	37.5	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175050	63	L2	F10	F	47	56	40.5	0.85	47.65	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20082	175051	64	L2	F10	F	48	57	16.5	1.25	13.2	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20108	175820	1	F2	C7	ND												1			CDM Smith	N. Ross		
PS-20108	175821	2	F2	C10	ND												1			CDM Smith	N. Ross		
PS-20108	175822	3	F2	F2	ND												1			CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B SURFACE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
PS-20108	175823	4	F2	F4	ND												1		CDM Smith	N. Ross			
PS-20108	175824	5	F2	F6	ND												1		CDM Smith	N. Ross			
PS-20108	175825	6	F2	H1	ND												1		CDM Smith	N. Ross			
PS-20108	175826	7	F2	H7	ND												1		CDM Smith	N. Ross			
PS-20108	175827	8	F2	H10	ND												1		CDM Smith	N. Ross			
PS-20108	175828	9	F2	I9	ND												1		CDM Smith	N. Ross			
PS-20108	175829	10	F4	B6	ND												1		CDM Smith	N. Ross			
PS-20108	175830	11	F4	C4	ND												1		CDM Smith	N. Ross			
PS-20108	175831	12	F4	C8	ND												1		CDM Smith	N. Ross			
PS-20108	175832	13	F4	D9	ND												1		CDM Smith	N. Ross			
PS-20108	175833	14	F4	E3	ND												1		CDM Smith	N. Ross			
PS-20108	175834	15	F4	E5	ND												1		CDM Smith	N. Ross			
PS-20108	175835	16	F4	E7	ND												1		CDM Smith	N. Ross			
PS-20108	175836	17	F4	F3	ND												1		CDM Smith	N. Ross			
PS-20108	175837	18	F4	F7	ND												1		CDM Smith	N. Ross			
PS-20108	175838	19	F4	F9	ND												1		CDM Smith	N. Ross			
PS-20108	175839	20	F4	H1	ND												1		CDM Smith	N. Ross			
PS-20108	175840	21	F4	J8	ND												1		CDM Smith	N. Ross			
PS-20108	175841	22	F6	A1	ND												1		CDM Smith	N. Ross			
PS-20108	175842	23	F6	A3	ND												1		CDM Smith	N. Ross			
PS-20108	175843	24	F6	A5	ND												1		CDM Smith	N. Ross			
PS-20108	175844	25	F6	A7	ND												1		CDM Smith	N. Ross			
PS-20108	175845	26	F6	B2	ND												1		CDM Smith	N. Ross			
PS-20108	175846	27	F6	B8	ND												1		CDM Smith	N. Ross			
PS-20108	175847	28	F6	B10	ND												1		CDM Smith	N. Ross			
PS-20108	175848	29	F6	C1	ND												1		CDM Smith	N. Ross			
PS-20108	175849	30	F6	C3	ND												1		CDM Smith	N. Ross			
PS-20108	175850	31	F6	C5	ND												1		CDM Smith	N. Ross			
PS-20108	175851	32	F6	D2	ND												1		CDM Smith	N. Ross			
PS-20108	175852	33	F6	D4	ND												1		CDM Smith	N. Ross			
PS-20108	175853	34	F6	D6	ND												1		CDM Smith	N. Ross			
PS-20108	175854	35	F6	E1	ND												1		CDM Smith	N. Ross			
PS-20108	175855	36	F6	E3	ND												1		CDM Smith	N. Ross			
PS-20108	175856	37	F6	E5	ND												1		CDM Smith	N. Ross			
PS-20108	175857	38	F6	G2	ND												1		CDM Smith	N. Ross			
PS-20108	175858	39	F6	G5	ND												1		CDM Smith	N. Ross			
PS-20108	175859	40	F6	G8	ND												1		CDM Smith	N. Ross			
PS-20112	175957	1	J2	C4	F	0	0	44	0.8	55	LA		ADX	1			1		NaK, WRTA;	CDM Smith	N. Ross		
PS-20112	175958	2	J2	C4	F	1	1	2.3	0.3	7.67	LA		ADX	1	1	1			NaK, WRTA;	CDM Smith	N. Ross		
PS-20112	175959	3	J2	C4	F	2	2	33.3	1.3	25.62	LA		ADX	1		1			NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175960	4	J2	C4	F	3	3	4.6	0.75	6.13	LA		ADX	1		1			NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175961	5	J2	C4	MD11	4														CDM Smith	N. Ross		
PS-20112	175962	6	J2	C4	MF		4	7.8	0.6	13	LA		ADX	1		1			NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175963	7	J2	C4	F	5	5	4.3	0.1	43	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175964	8	J2	C4	F	6	6	5.15	0.25	20.6	LA		ADX	1		1			NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175965	9	J2	C4	F	7	7	8.6	0.5	17.2	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175966	10	J2	C4	F	8	8	6	0.25	24	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175967	11	J2	C4	F	9	9	7.8	0.25	31.2	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175968	12	J2	C4	F	10	10	1.5	0.2	7.5	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175969	13	J2	C4	CD54	11														CDM Smith	N. Ross		
PS-20112	175970	14	J2	C4	CF		11	68	0.5	136	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175971	15	J2	C4	CF		12	22.2	0.11	201.82	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175972	16	J2	C4	CF		13	8.1	0.4	20.25	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175973	17	J2	C4	CF		14	5.9	0.09	65.56	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175974	18	J2	C4	CF		15	3.8	0.08	47.5	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175975	19	J2	C7	F	12	16	8.4	0.22	38.18	LA		ADX	1			1		NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175976	20	J2	C7	F	13	17	2.8	0.24	11.67	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175977	21	J2	C7	F	14	18	6.3	0.45	14	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175978	22	J2	C7	F	15	19	3.6	0.39	9.23	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175979	23	J2	C7	F	16	20	22.8	0.23	99.13	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175980	24	J2	C7	F	17	21	4	0.28	14.29	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175981	25	J2	C7	F	18	22	5	0.25	20	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175982	26	J2	C7	F	19	23	7.8	0.2	39	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175983	27	J2	C7	F	20	24	3.4	0.23	14.78	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175984	28	J2	C7	F	21	25	10.7	0.2	53.5	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175985	29	J2	C7	F	0	0	10.2	0.23	44.35	LA		ADX	1					NaK, WRTA;	CDM Smith	N. Ross		
PS-20112	175986	30	J2	C7	F	22	26	8.05	0.21	38.33	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175987	31	J4	C5	F	23	27	32.2	0.5	64.4	LA		ADX	1			1		NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175988	32	J4	C5	F	24	28	5.7	0.4	14.25	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175989	33	J4	C5	MD21	25														CDM Smith	N. Ross		
PS-20112	175990	34	J4	C5	MF		29	12	0.35	34.29	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175991	35	J4	C5	MF		30	4.7	0.2	23.5	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175992	36	J4	C5	F	26	31	24.5	0.25	98	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175993	37	J4	C5	F	27	32	5.7	0.4	14.25	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175994	38	J4	C5	CD21	28														CDM Smith	N. Ross		
PS-20112	175995	39	J4	C5	CF		33	6.2	0.22	28.18	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175996	40	J4	C5	CF		34	3.2	0.7	4.57	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175997	41	J4	G10	F	29	35	6.9	0.2	34.5	LA		ADX	1			1		NaK, WRTA	CDM Smith	N. Ross		
PS-20112	175998	42	J4	G10	F	30	36	18	0.19	94.74	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20209	176322	1	E4	B7	ND												1			CDM Smith	N. Ross		
PS-20209	176323	2	E4	B9	ND												1			CDM Smith	N. Ross		
PS-20209	176324	3	E4	C4	ND												1			CDM Smith	N. Ross		
PS-20209	176325	4	E4	C6	ND												1			CDM Smith	N. Ross		
PS-20209	176326	5	E4	C8	ND												1			CDM Smith	N. Ross		
PS-20209	176327	6	E4	C10	ND												1			CDM Smith	N. Ross		
PS-20209	176328	7	E5	H9	ND												1			CDM Smith	N. Ross		
PS-20209	176329	8	E5	H7	ND												1			CDM Smith	N. Ross		
PS-20209	176330	9	E5	H5	ND												1			CDM Smith	N. Ross		
PS-20209	176331	10	E5	H3	ND												1			CDM Smith	N. Ross		
PS-20209	176332	11	E5	F9	ND												1			CDM Smith	N. Ross		
PS-20209	176333	12	E5	F7	ND												1			CDM Smith	N. Ross		
PS-20217	176675	1	R1	H9	ND												1			CDM Smith	N. Ross		
PS-20217	176676	2	R1	H7	ND												1			CDM Smith	N. Ross		
PS-20217	176677	3	R1	H5	ND												1			CDM Smith	N. Ross		
PS-20217	176678	4	R1	H3	ND												1			CDM Smith	N. Ross		
PS-20217	176679	5	R1	H1	ND												1			CDM Smith	N. Ross		
PS-20217	176680	6	R1	G10	ND												1			CDM Smith	N. Ross		
PS-20217	176681	7	R1	G8	ND												1			CDM Smith	N. Ross		
PS-20217	176682	8	R1	G6	ND												1			CDM Smith	N. Ross		
PS-20217	176683	9	R1	G4	ND												1			CDM Smith	N. Ross		
PS-20217	176684	10	R1	G2	ND												1			CDM Smith	N. Ross		
PS-20217	176685	11	R1	F10	ND												1			CDM Smith	N. Ross		
PS-20217	176686	12	R1	F8	ND												1			CDM Smith	N. Ross		
PS-20217	176687	13	R1	F6	ND												1			CDM Smith	N. Ross		
PS-20217	176688	14	R1	F4	ND												1			CDM Smith	N. Ross		
PS-20217	176689	15	R1	F2	ND												1			CDM Smith	N. Ross		
PS-20217	176690	16	R1	E9	ND												1			CDM Smith	N. Ross		
PS-20217	176691	17	R1	E7	ND												1			CDM Smith	N. Ross		
PS-20217	176692	18	R1	E5	ND												1			CDM Smith	N. Ross		
PS-20217	176693	19	R1	E3	ND												1			CDM Smith	N. Ross		
PS-20217	176694	20	R1	E1	ND												1			CDM Smith	N. Ross		
PS-20217	176695	21	R1	D10	ND												1			CDM Smith	N. Ross		
PS-20217	176696	22	R1	D8	B	1	1	23.3	0.9	25.89	LA		ADX	1	1	1	1		NaK, WRTA	CDM Smith	N. Ross		
PS-20217	176697	23	R1	D6	ND												1			CDM Smith	N. Ross		
PS-20217	176698	24	R1	D4	ND												1			CDM Smith	N. Ross		
PS-20217	176699	25	R1	D2	ND												1			CDM Smith	N. Ross		
PS-20217	176700	26	R1	B10	ND												1			CDM Smith	N. Ross		
PS-20217	176701	27	R1	B8	ND												1			CDM Smith	N. Ross		
PS-20217	176702	28	R1	B6	ND												1			CDM Smith	N. Ross		
PS-20217	176703	29	R1	B4	ND												1			CDM Smith	N. Ross		
PS-20217	176704	30	R1	B2	ND												1			CDM Smith	N. Ross		
PS-20217	176705	31	R2	B1	ND												1			CDM Smith	N. Ross		
PS-20217	176706	32	R2	B3	ND												1			CDM Smith	N. Ross		
PS-20217	176707	33	R2	B5	ND												1			CDM Smith	N. Ross		
PS-20217	176708	34	R2	B7	ND												1			CDM Smith	N. Ross		
PS-20217	176709	35	R2	B9	ND												1			CDM Smith	N. Ross		
PS-20217	176710	36	R2	D1	ND												1			CDM Smith	N. Ross		
PS-20217	176711	37	R2	D3	ND												1			CDM Smith	N. Ross		
PS-20217	176712	38	R2	D5	ND												1			CDM Smith	N. Ross		
PS-20217	176713	39	R2	D7	ND												1			CDM Smith	N. Ross		
PS-20217	176714	40	R2	D9	ND												1			CDM Smith	N. Ross		
PS-20217	176715	41	R2	E2	ND												1			CDM Smith	N. Ross		
PS-20217	176716	42	R2	E4	ND												1			CDM Smith	N. Ross		
PS-20217	176717	43	R2	E6	ND												1			CDM Smith	N. Ross		
PS-20217	176718	44	R2	E8	ND												1			CDM Smith	N. Ross		
PS-20217	176719	45	R2	E10	ND												1			CDM Smith	N. Ross		
PS-20217	176720	46	R2	F1	ND												1			CDM Smith	N. Ross		
PS-20217	176721	47	R2	F3	ND												1			CDM Smith	N. Ross		
PS-20217	176722	48	R2	F5	ND												1			CDM Smith	N. Ross		
PS-20217	176723	49	R2	F7	ND												1			CDM Smith	N. Ross		
PS-20217	176724	50	R2	F9	ND												1			CDM Smith	N. Ross		
PS-20217	176725	51	R2	G2	ND												1			CDM Smith	N. Ross		
PS-20217	176726	52	R2	G4	ND												1			CDM Smith	N. Ross		
PS-20217	176727	53	R2	G6	ND												1			CDM Smith	N. Ross		
PS-20217	176728	54	R2	G8	ND												1			CDM Smith	N. Ross		
PS-20217	176729	55	R2	G10	ND												1			CDM Smith	N. Ross		
PS-20217	176730	56	R2	H1	ND												1			CDM Smith	N. Ross		
PS-20217	176731	57	R2	H3	ND												1			CDM Smith	N. Ross		
PS-20217	176732	58	R2	H5	ND												1			CDM Smith	N. Ross		
PS-20217	176733	59	R2	H7	ND												1			CDM Smith	N. Ross		
PS-20217	176734	60	R2	H9	ND												1			CDM Smith	N. Ross		
PS-20225	176964	1	B1	B6	F	1	1	3.65	0.2	18.25	LA		ADX	1	1	1	1		NaK, WRTA;	CDM Smith	N. Ross		
PS-20225	176965	2	B1	B6	F	2	2	3.3	0.1	33	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20225	176966	3	B1	B6	F	3	3	0.9	0.1	9	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20225	176967	4	B1	B6	B	4	4	1.2	0.35	3.428571429	LA		ADX	1		1			NaK, WRTA	CDM Smith	N. Ross		
PS-20225	176968	5	B1	B6	F	5	5	2.7	0.15	18	LA		ADX	1		1			NaK, WRTA	CDM Smith	N. Ross		
PS-20225	176969	6	B1	B6	F	6	6	1.8	0.25	7.2	LA		ADX	1		1			NaK, WRTA	CDM Smith	N. Ross		
PS-20225	176970	7	B1	B6	B	7	7	3.2	0.2	16	LA		ADX	1		1			NaK, WRTA	CDM Smith	N. Ross		
PS-20225	176971	8	B1	B8	F	8	8	6.1	0.3	20.33333333	LA		ADX	1			1		NaK, WRTA	CDM Smith	N. Ross		
PS-20225	176972	9	B1	B8	F	9	9	1.2	0.1	12	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20225	176973	10	B1	B8	F	10	10	12.65	0.25	50.6	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		
PS-20225	176974	11	B1	B8	F	11	11	2.2	0.1	22	LA		ADX	1					NaK, WRTA	CDM Smith	N. Ross		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B SURFACE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
PS-20225	176975	12	B1	B8	F	12	12	1.6	0.1	16	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176976	13	B1	B8	B	13	13	3.3	0.5	6.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176977	14	B1	B8	F	14	14	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176978	15	B1	B8	F	15	15	3.35	0.35	9.571428571	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176979	16	B1	B8	B	16	16	7.85	0.4	19.625	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176980	17	B1	B8	B	17	17	1.5	0.35	4.285714286	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176981	18	B2	I2	F	18	18	2.35	0.25	9.4	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176982	19	B2	I2	B	19	19	3.75	0.65	5.769230769	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176983	20	B2	I2	F	20	20	2.85	0.35	8.142857143	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176984	21	B2	I2	F	21	21	4.8	0.4	12	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176985	22	B2	E3	F	22	22	7.5	0.4	18.75	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176986	23	B2	E3	F	23	23	3.9	0.4	9.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176987	24	B2	E3	F	24	24	2.35	0.15	15.66666667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20225	176988	25	B2	E3	F	25	25	5.65	0.1	56.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20241	176695	1	Q4	I1	F	1	1	7	0.45	15.55555556	LA		ADX	1	1	1	1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	176696	2	Q4	I1	F	2	2	3.15	0.25	12.6	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
PS-20241	176697	3	Q4	I1	F	3	3	2.45	0.25	9.8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20241	176698	4	Q4	I1	F	4	4	27	0.4	67.5	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
PS-20241	176699	5	Q4	G2	F	5	5	3.3	0.15	22	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177700	6	Q4	F5	F	6	6	10	0.45	22.22222222	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177701	7	Q4	F5	F	7	7	9.5	0.3	31.66666667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177702	8	Q4	F5	F	8	8	3.1	0.2	15.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177703	9	Q4	F3	F	9	9	4.15	0.1	41.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177704	10	Q4	F3	F	10	10	5.2	0.2	26	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177705	11	Q4	F1	B	11	11	1.9	0.5	3.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177706	12	Q4	E4	B	12	12	1.25	0.5	2.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177707	13	Q4	D9	F	13	13	35.4	0.2	177	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177708	14	Q5	J3	B	14	14	16.6	1.2	13.83333333	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177709	15	Q5	J3	F	15	15	1.4	0.2	7	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177710	16	Q5	J1	F	16	16	2	0.35	5.714285714	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177711	17	Q5	I6	ND												1		CDM Smith	N. Ross			
PS-20241	177684	18	Q5	I4	F	17	17	3.15	0.25	12.6	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177685	19	Q5	I4	F	18	18	2.75	0.5	5.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177686	20	Q5	I2	B	19	19	5.5	0.25	22	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177687	21	Q5	I2	F	20	20	16.75	0.25	67	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177688	22	Q5	F8	B	21	21	2.6	0.5	5.2	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177689	23	Q5	F6	ND												1		CDM Smith	N. Ross			
PS-20241	177690	24	Q5	F4	ND												1		CDM Smith	N. Ross			
PS-20241	177691	25	Q5	C4	B	22	22	7.5	1.2	6.25	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177692	26	Q5	C2	B	23	23	6.6	0.85	7.764705882	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177693	27	Q5	B5	B	24	24	1.1	0.15	7.333333333	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20241	177694	28	Q5	B5	B	25	25	9.5	0.35	27.14285714	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187768	1	L1	H8	F	1	1	2.8	0.3	9.333333333	LA		ADX	1	1	1	1	NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187769	2	L1	H8	F	2	2	3.85	0.2	19.25	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187770	3	L1	H8	F	3	3	4.7	0.5	9.4	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187771	4	L1	H8	F	4	4	5.3	0.35	15.14285714	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187772	5	L1	H8	F	5	5	3.9	0.15	26	LA		ADX	1		1		NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187773	6	L1	H8	F	6	6	7.4	0.25	29.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187774	7	L1	H10	B	7	7	4.15	0.8	5.1875	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187775	8	L1	H10	B	8	8	4.8	0.35	13.71428571	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187776	9	L1	H10	F	9	9	4.75	0.3	15.83333333	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187777	10	L1	H10	F	10	10	2.4	0.3	8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187778	11	L1	H10	F	11	11	9.5	0.2	47.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187779	12	L1	H10	B	12	12	1.8	0.3	6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187780	13	L1	H10	F	13	13	2.15	0.25	8.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187781	14	L1	H10	B	14	14	6.25	1.25	5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187782	15	L1	H10	F	15	15	14.85	0.2	74.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187783	16	L1	H10	F	16	16	34	0.45	75.55555556	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187784	17	L1	H10	B	17	17	3.15	0.6	5.25	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187785	18	L1	H10	F	18	18	2.6	0.35	7.428571429	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187786	19	L2	H7	CD22	19											1		CDM Smith	N. Ross	Grid is L2, not L1 according to benchsheet. Applies to grid openings H7 and H9 on page 2 and page 3.	1/22/2014	
PS-20242	187787	20	L2	H7	CF		19	22.5	0.6	37.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187788	21	L2	H7	CF		20	7.6	0.5	15.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187789	22	L2	H7	F	20	21	1.9	0.2	9.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187790	23	L2	H7	F	21	22	6	0.25	24	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187791	24	L2	H7	B	22	23	9.5	0.75	12.66666667	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187792	25	L2	H7	F	23	24	3.9	0.4	9.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187793	26	L2	H7	F	24	25	3.9	0.25	15.6	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187794	27	L2	H7	F	25	26	7.75	1	7.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187795	28	L2	H7	B	26	27	1.75	0.2	8.75	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187796	29	L2	H7	B	27	28	4.8	0.6	8	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187797	30	L2	H9	F	28	29	3	0.15	20	LA		ADX	1			1	NaK, WRTA	CDM Smith	N. Ross	Grid is L2, not L1 according to benchsheet. Applies to grid openings H7 and H9 on page 2 and page 3.	1/22/2014	
PS-20242	187798	31	L2	H9	B	29	30	3	0.4	7.5	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187799	32	L2	H9	F	30	31	4.8	0.2	24	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187800	33	L2	H9	F	31	32	25.3	0.25	101.2	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187801	34	L2	H9	B	32	33	15	3.15	4.761904762	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187802	35	L2	H9	F	33	34	8.25	0.25	33	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187803	36	L2	H9	B	34	35	3.65	0.65	5.615384615	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20242	187804	37	L2	H9	F	35	36	5.1	0.35	14.57142857	LA		ADX	1				NaK, WRTA	CDM Smith	N. Ross			
PS-20251	178217	1	T4	G9	ND												1		CDM Smith	N. Ross			
PS-20251	178218	2	T4	G7	ND												1		CDM Smith	N. Ross			
PS-20251	178219	3	T4	G5	ND												1		CDM Smith	N. Ross			
PS-20251	178220	4	T4	G3	ND												1		CDM Smith	N. Ross			
PS-20251	178221	5	T4	G1	ND												1		CDM Smith	N. Ross			
PS-20251	178222	6	T4	F10	ND												1		CDM Smith	N. Ross			
PS-20251	178223	7	T4	F8	ND												1		CDM Smith	N. Ross			
PS-20251	178224	8	T4	F6	ND												1		CDM Smith	N. Ross			
PS-20251	178225	9	T4	F4	ND												1		CDM Smith	N. Ross			
PS-20251	178226	10	T4	F2	ND												1		CDM Smith	N. Ross			
PS-20251	178227	11	T4	E9	ND												1		CDM Smith	N. Ross			
PS-20251	178228	12	T4	E7	ND												1		CDM Smith	N. Ross			
PS-20251	178229	13	T4	E5	ND												1		CDM Smith	N. Ross			
PS-20251	178230	14	T4	E3	ND												1		CDM Smith	N. Ross			
PS-20251	178231	15	T4	E1	ND												1		CDM Smith	N. Ross			
PS-20251	178232	16	T4	D10	ND												1		CDM Smith	N. Ross			
PS-20251	178233	17	T4	D8	ND												1		CDM Smith	N. Ross			
PS-20251	178234	18	T4	D6	ND												1		CDM Smith	N. Ross			
PS-20251	178235	19	T4	D4	ND												1		CDM Smith	N. Ross			
PS-20251	178236	20	T4	D2	ND												1		CDM Smith	N. Ross			
PS-20251	178237	21	T4	C9	ND												1		CDM Smith	N. Ross			
PS-20251	178238	22	T4	C7	ND												1		CDM Smith	N. Ross			
PS-20251	178239	23	T4	C5	ND												1		CDM Smith	N. Ross			
PS-20251	178240	24	T4	C3	ND												1		CDM Smith	N. Ross			
PS-20251	178241	25	T4	C1	ND												1		CDM Smith	N. Ross			
PS-20251	178242	26	T5	C1	ND												1		CDM Smith	N. Ross			
PS-20251	178243	27	T5	C3	ND												1		CDM Smith	N. Ross			
PS-20251	178244	28	T5	C5	ND												1		CDM Smith	N. Ross			
PS-20251	178245	29	T5	C7	ND												1		CDM Smith	N. Ross			
PS-20251	178246	30	T5	C9	ND												1		CDM Smith	N. Ross			
PS-20251	178247	31	T5	D2	ND												1		CDM Smith	N. Ross			
PS-20251	178248	32	T5	D4	ND												1		CDM Smith	N. Ross			
PS-20251	178249	33	T5	D6	ND												1		CDM Smith	N. Ross			
PS-20251	178250	34	T5	D8	ND												1		CDM Smith	N. Ross			
PS-20251	178251	35	T5	D10	ND												1		CDM Smith	N. Ross			
PS-20251	178252	36	T5	E1	ND												1		CDM Smith	N. Ross			
PS-20251	178253	37	T5	E3	ND												1		CDM Smith	N. Ross			
PS-20251	178254	38	T5	E5	ND												1		CDM Smith	N. Ross			
PS-20251	178255	39	T5	E7	ND												1		CDM Smith	N. Ross			
PS-20251	178256	40	T5	E9	ND												1		CDM Smith	N. Ross			
PS-20251	178257	41	T5	F2	ND												1		CDM Smith	N. Ross			
PS-20251	178258	42	T5	F4	ND												1		CDM Smith	N. Ross			
PS-20251	178259	43	T5	F6	ND												1		CDM Smith	N. Ross			
PS-20251	178260	44	T5	F8	ND												1		CDM Smith	N. Ross			
PS-20251	178261	45	T5	F10	ND												1		CDM Smith	N. Ross			
PS-20251	178262	46	T5	G1	ND												1		CDM Smith	N. Ross			
PS-20251	178263	47	T5	G3	ND												1		CDM Smith	N. Ross			
PS-20251	178264	48	T5	G5	ND												1		CDM Smith	N. Ross			
PS-20251	178265	49	T5	G7	ND												1		CDM Smith	N. Ross			
PS-20251	178266	50	T5	G9	ND												1		CDM Smith	N. Ross			
PS-20251	178267	51	T5	H2	ND												1		CDM Smith	N. Ross			
PS-20251	178268	52	T5	H4	ND												1		CDM Smith	N. Ross			
PS-20251	178269	53	T5	H6	ND												1		CDM Smith	N. Ross			
PS-20251	178270	54	T5	H8	ND												1		CDM Smith	N. Ross			
PS-20251	178271	55	T5	H10	ND												1		CDM Smith	N. Ross			
PS-20251	178272	56	T6	I9	ND												1		CDM Smith	N. Ross			
PS-20251	178273	57	T6	I7	ND												1		CDM Smith	N. Ross			
PS-20251	178274	58	T6	I5	ND												1		CDM Smith	N. Ross			
PS-20251	178275	59	T6	I3	ND												1		CDM Smith	N. Ross			
PS-20251	178276	60	T6	I1	ND												1		CDM Smith	N. Ross			
PS-20251	178277	61	T6	H10	ND												1		CDM Smith	N. Ross			
PS-20251	178278	62	T6	H8	ND												1		CDM Smith	N. Ross			
PS-20251	178279	63	T6	H6	ND												1		CDM Smith	N. Ross			
PS-20251	178280	64	T6	H4	ND												1		CDM Smith	N. Ross			
PS-20251	178281	65	T6	H2	ND												1		CDM Smith	N. Ross			
PS-20251	178282	66	T6	G9	ND												1		CDM Smith	N. Ross			
PS-20251	178283	67	T6	G7	ND												1		CDM Smith	N. Ross			
PS-20251	178284	68	T6	G5	ND												1		CDM Smith	N. Ross			
PS-20251	178285	69	T6	G3	ND												1		CDM Smith	N. Ross			
PS-20251	178286	70	T6	G1	ND												1		CDM Smith	N. Ross			
PS-20251	178287	71	T6	F10	ND												1		CDM Smith	N. Ross			
PS-20251	178288	72	T6	F8	ND												1		CDM Smith	N. Ross			
PS-20251	178289	73	T6	F6	ND												1		CDM Smith	N. Ross			
PS-20251	178290	74	T6	F4	ND												1		CDM Smith	N. Ross			
PS-20251	178291	75	T6	F2	ND												1		CDM Smith	N. Ross			
PS-20251	178292	76	T6	E9	ND												1		CDM Smith	N. Ross			
PS-20251	178293	77	T6	E7	ND												1		CDM Smith	N. Ross			
PS-20251	178294	78	T6	E5	ND												1		CDM Smith	N. Ross			
PS-20251	178295	79	T6	E3	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B SURFACE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
PS-20251	178296	80	T6	E1	ND												1		CDM Smith	N. Ross			
PS-20271	179126	1	K1	G7	ND												1		CDM Smith	N. Ross			EF
PS-20271	179127	2	K1	G5	ND												1		CDM Smith	N. Ross			EF
PS-20271	179128	3	K1	G3	ND												1		CDM Smith	N. Ross			EF
PS-20271	179129	4	K1	G1	ND												1		CDM Smith	N. Ross			EF
PS-20271	179130	5	K1	F6	ND												1		CDM Smith	N. Ross			EF
PS-20271	179131	6	K1	F4	ND												1		CDM Smith	N. Ross			EF
PS-20271	179132	7	K1	F2	ND												1		CDM Smith	N. Ross			EF
PS-20271	179133	8	K1	E7	ND												1		CDM Smith	N. Ross			EF
PS-20271	179134	9	K1	E5	ND												1		CDM Smith	N. Ross			EF
PS-20271	179135	10	K1	E3	ND												1		CDM Smith	N. Ross			EF
PS-20271	179136	11	K1	E1	ND												1		CDM Smith	N. Ross			EF
PS-20271	179137	12	K1	D10	ND												1		CDM Smith	N. Ross			EF
PS-20271	179138	13	K1	D8	ND												1		CDM Smith	N. Ross			EF
PS-20271	179139	14	K1	D6	ND												1		CDM Smith	N. Ross			EF
PS-20271	179140	15	K1	D4	ND												1		CDM Smith	N. Ross			EF
PS-20271	179141	16	K1	D2	ND												1		CDM Smith	N. Ross			EF
PS-20271	179142	17	K1	C7	ND												1		CDM Smith	N. Ross			EF
PS-20271	179143	18	K1	C5	ND												1		CDM Smith	N. Ross			EF
PS-20271	179144	19	K1	C3	ND												1		CDM Smith	N. Ross			EF
PS-20271	179145	20	K1	C1	ND												1		CDM Smith	N. Ross			EF
PS-20271	179146	21	K1	B8	ND												1		CDM Smith	N. Ross			EF
PS-20271	179147	22	K1	B6	ND												1		CDM Smith	N. Ross			EF
PS-20271	179148	23	K1	B4	ND												1		CDM Smith	N. Ross			EF
PS-20271	179149	24	K1	B2	ND												1		CDM Smith	N. Ross			EF
PS-20271	179150	25	K1	A7	ND												1		CDM Smith	N. Ross			EF
PS-20271	179151	26	K1	A5	ND												1		CDM Smith	N. Ross			EF
PS-20271	179152	27	K1	A3	ND												1		CDM Smith	N. Ross			EF
PS-20271	179153	28	K1	A1	ND												1		CDM Smith	N. Ross			EF
PS-20271	179154	29	K2	H8	ND												1		CDM Smith	N. Ross			EF
PS-20271	179155	30	K2	H6	ND												1		CDM Smith	N. Ross			EF
PS-20271	179156	31	K2	H4	ND												1		CDM Smith	N. Ross			EF
PS-20271	179157	32	K2	H2	ND												1		CDM Smith	N. Ross			EF
PS-20271	179158	33	K2	G5	ND												1		CDM Smith	N. Ross			EF
PS-20271	179159	34	K2	G3	ND												1		CDM Smith	N. Ross			EF
PS-20271	179160	35	K2	G1	ND												1		CDM Smith	N. Ross			EF
PS-20271	179161	36	K2	F8	ND												1		CDM Smith	N. Ross			EF
PS-20271	179162	37	K2	F6	ND												1		CDM Smith	N. Ross			EF
PS-20271	179163	38	K2	F4	ND												1		CDM Smith	N. Ross			EF
PS-20271	179164	39	K2	F2	ND												1		CDM Smith	N. Ross			EF
PS-20271	179165	40	K2	E9	ND												1		CDM Smith	N. Ross			EF
PS-20271	179166	41	K2	D6	ND												1		CDM Smith	N. Ross			EF
PS-20271	179167	42	K2	D4	ND												1		CDM Smith	N. Ross			EF
PS-20271	179168	43	K2	D2	ND												1		CDM Smith	N. Ross			EF
PS-20271	179169	44	K2	C5	ND												1		CDM Smith	N. Ross			EF
PS-20271	179170	45	K2	C3	ND												1		CDM Smith	N. Ross			EF
PS-20271	179171	46	K2	C1	ND												1		CDM Smith	N. Ross			EF
PS-20271	179172	47	K2	B6	ND												1		CDM Smith	N. Ross			EF
PS-20271	179173	48	K2	B4	ND												1		CDM Smith	N. Ross			EF
PS-20271	179174	49	K2	B2	ND												1		CDM Smith	N. Ross			EF
PS-20271	179175	50	K2	A7	ND												1		CDM Smith	N. Ross			EF
PS-20271	179176	51	K2	A5	ND												1		CDM Smith	N. Ross			EF
PS-20271	179177	52	K2	A3	ND												1		CDM Smith	N. Ross			EF
PS-20271	179178	53	K2	A1	ND												1		CDM Smith	N. Ross			EF
PS-20271	179179	54	K3	C2	ND												1		CDM Smith	N. Ross			EF
PS-20271	179180	55	K3	C4	ND												1		CDM Smith	N. Ross			EF
PS-20271	179181	56	K3	C6	ND												1		CDM Smith	N. Ross			EF
PS-20271	179182	57	K3	C8	ND												1		CDM Smith	N. Ross			EF
PS-20271	179183	58	K3	C10	ND												1		CDM Smith	N. Ross			EF
PS-20271	179184	59	K3	D5	ND												1		CDM Smith	N. Ross			EF
PS-20271	179185	60	K3	D7	ND												1		CDM Smith	N. Ross			EF
PS-20271	179186	61	K3	D9	ND												1		CDM Smith	N. Ross			EF
PS-20271	179187	62	K3	E2	ND												1		CDM Smith	N. Ross			EF
PS-20271	179188	63	K3	E4	ND												1		CDM Smith	N. Ross			EF
PS-20271	179189	64	K3	E6	ND												1		CDM Smith	N. Ross			EF
PS-20271	179190	65	K3	E8	ND												1		CDM Smith	N. Ross			EF
PS-20271	179191	66	K3	E10	ND												1		CDM Smith	N. Ross			EF
PS-20271	179192	67	K3	F1	ND												1		CDM Smith	N. Ross			EF
PS-20271	179193	68	K3	F3	ND												1		CDM Smith	N. Ross			EF
PS-20271	179194	69	K3	F5	ND												1		CDM Smith	N. Ross			EF
PS-20271	179195	70	K3	F7	ND												1		CDM Smith	N. Ross			EF
PS-20271	179196	71	K3	F9	ND												1		CDM Smith	N. Ross			EF
PS-20271	179197	72	K3	G2	ND												1		CDM Smith	N. Ross			EF
PS-20271	179198	73	K3	G4	ND												1		CDM Smith	N. Ross			EF
PS-20271	179199	74	K3	G6	ND												1		CDM Smith	N. Ross			EF
PS-20271	179200	75	K3	G8	ND												1		CDM Smith	N. Ross			EF
PS-20271	179201	76	K3	G10	ND												1		CDM Smith	N. Ross			EF
PS-20271	179202	77	K3	H3	ND												1		CDM Smith	N. Ross			EF
PS-20271	179203	78	K3	H5	ND												1		CDM Smith	N. Ross			EF
PS-20271	179204	79	K3	H7	ND												1		CDM Smith	N. Ross			EF
PS-20271	179205	80	K3	H9	ND												1		CDM Smith	N. Ross			EF
PS-20273	179286	1	L1	A1	ND												1		CDM Smith	N. Ross			
PS-20273	179287	2	L1	A3	ND												1		CDM Smith	N. Ross			
PS-20273	179288	3	L1	A5	ND												1		CDM Smith	N. Ross			
PS-20273	179289	4	L1	A7	ND												1		CDM Smith	N. Ross			
PS-20273	179290	5	L1	A9	ND												1		CDM Smith	N. Ross			
PS-20273	179291	6	L1	B2	ND												1		CDM Smith	N. Ross			
PS-20273	179292	7	L1	B4	ND												1		CDM Smith	N. Ross			
PS-20273	179293	8	L1	B6	ND												1		CDM Smith	N. Ross			
PS-20273	179294	9	L1	B8	ND												1		CDM Smith	N. Ross			
PS-20273	179295	10	L1	B10	ND												1		CDM Smith	N. Ross			
PS-20273	179296	11	L1	C1	ND												1		CDM Smith	N. Ross			
PS-20273	179297	12	L1	C3	ND												1		CDM Smith	N. Ross			
PS-20273	179298	13	L1	C5	ND												1		CDM Smith	N. Ross			
PS-20273	179299	14	L1	C7	ND												1		CDM Smith	N. Ross			
PS-20273	179300	15	L1	C9	ND												1		CDM Smith	N. Ross			
PS-20273	179301	16	L1	D2	ND												1		CDM Smith	N. Ross			
PS-20273	179302	17	L1	D4	ND												1		CDM Smith	N. Ross			
PS-20273	179303	18	L1	D6	ND												1		CDM Smith	N. Ross			
PS-20273	179304	19	L1	D8	ND												1		CDM Smith	N. Ross			
PS-20273	179305	20	L1	D10	ND												1		CDM Smith	N. Ross			
PS-20273	179306	21	L1	E1	ND												1		CDM Smith	N. Ross			
PS-20273	179307	22	L1	E3	ND												1		CDM Smith	N. Ross			
PS-20273	179308	23	L1	E5	ND												1		CDM Smith	N. Ross			
PS-20273	179309	24	L1	E7	ND												1		CDM Smith	N. Ross			
PS-20273	179310	25	L1	E9	ND												1		CDM Smith	N. Ross			
PS-20273	179311	26	L1	F2	ND												1		CDM Smith	N. Ross			
PS-20273	179312	27	L1	F4	ND												1		CDM Smith	N. Ross			
PS-20273	179313	28	L1	F6	ND												1		CDM Smith	N. Ross			
PS-20273	179314	29	L1	F8	ND												1		CDM Smith	N. Ross			
PS-20273	179315	30	L1	F10	ND												1		CDM Smith	N. Ross			
PS-20273	179316	31	L1	G1	ND												1		CDM Smith	N. Ross			
PS-20273	179317	32	L1	G3	ND												1		CDM Smith	N. Ross			
PS-20273	179318	33	L1	G5	ND												1		CDM Smith	N. Ross			
PS-20273	179319	34	L1	G7	ND												1		CDM Smith	N. Ross			
PS-20273	179320	35	L1	G9	ND												1		CDM Smith	N. Ross			
PS-20273	179321	36	L1	H2	ND												1		CDM Smith	N. Ross			
PS-20273	179322	37	L1	H4	ND												1		CDM Smith	N. Ross			
PS-20273	179323	38	L1	H6	ND												1		CDM Smith	N. Ross			
PS-20273	179324	39	L1	H8	ND												1		CDM Smith	N. Ross			
PS-20273	179325	40	L1	H10	ND												1		CDM Smith	N. Ross			
PS-20273	179326	41	L3	I9	ND												1		CDM Smith	N. Ross			
PS-20273	179327	42	L3	I7	ND												1		CDM Smith	N. Ross			
PS-20273	179328	43	L3	I5	ND												1		CDM Smith	N. Ross			
PS-20273	179329	44	L3	I3	ND												1		CDM Smith	N. Ross			
PS-20273	179330	45	L3	I1	ND												1		CDM Smith	N. Ross			
PS-20273	179331	46	L3	H10	ND												1		CDM Smith	N. Ross			
PS-20273	179332	47	L3	H8	ND												1		CDM Smith	N. Ross			
PS-20273	179333	48	L3	H6	ND												1		CDM Smith	N. Ross			
PS-20273	179334	49	L3	H4	ND												1		CDM Smith	N. Ross			
PS-20273	179335	50	L3	H2	ND												1		CDM Smith	N. Ross			
PS-20273	179336	51	L3	G9	ND												1		CDM Smith	N. Ross			
PS-20273	179337	52	L3	G7	ND												1		CDM Smith	N. Ross			
PS-20273	179338	53	L3	G5	ND												1		CDM Smith	N. Ross			
PS-20273	179339	54	L3	G3	ND												1		CDM Smith	N. Ross			
PS-20273	179340	55	L3	G1	ND												1		CDM Smith	N. Ross			
PS-20273	179341	56	L3	F10	ND												1		CDM Smith	N. Ross			
PS-20273	179342	57	L3	F8	ND												1		CDM Smith	N. Ross			
PS-20273	179343	58	L3	F6	ND												1		CDM Smith	N. Ross			
PS-20273	179344	59	L3	F4	ND												1		CDM Smith	N. Ross			
PS-20273	179345	60	L3	F2	ND												1		CDM Smith	N. Ross			
PS-20273	179346	61	L3	E9	ND												1		CDM Smith	N. Ross			
PS-20273	179347	62	L3	E7	ND												1		CDM Smith	N. Ross			
PS-20273	179348	63	L3	E5	ND												1		CDM Smith	N. Ross			
PS-20273	179349	64	L3	E3	ND												1		CDM Smith	N. Ross			
PS-20273	179350	65	L3	E1	ND												1		CDM Smith	N. Ross			
PS-20273	179351	66	L3	D10	ND												1		CDM Smith	N. Ross			
PS-20273	179352	67	L3	D8	ND												1		CDM Smith	N. Ross			
PS-20273	179353	68	L3	D6	ND												1		CDM Smith	N. Ross			
PS-20273	179354	69	L3	D4	ND												1		CDM Smith	N. Ross			
PS-20273	179355	70	L3	D2	ND												1		CDM Smith	N. Ross			
PS-20273	179356	71	L3	C9	ND												1		CDM Smith	N. Ross			
PS-20273	179357	72	L3	C7	ND												1		CDM Smith	N. Ross			
PS-20273	179358	73	L3	C5	ND												1		CDM Smith	N. Ross			
PS-20273	179359	74	L3	C3	ND												1		CDM Smith	N. Ross			
PS-20273	179360	75	L3	C1	ND												1		CDM Smith	N. Ross			
PS-20273	179361	76	L3	B10	ND												1		CDM Smith	N. Ross			
PS-20273	179362	77	L3	B8	ND												1		CDM Smith	N. Ross			
PS-20273	179363	78	L3	B6	ND												1		CDM Smith	N. Ross			
PS-20273	179364	79	L3	B4	ND												1		CDM Smith	N. Ross			
PS-20273	179365	80	L3	B2	ND												1		CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B (2013) SURFACE WATER AND PORE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
PS-20292	132833	1	G1	D7	B	1	1	2.1	0.7	3	LA		ADX	1	1	1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132834	2	G1	D7	B	2	2	3.55	0.7	5.071428571	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132835	3	G1	D7	B	3	3	15.1	0.8	18.875	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132836	4	G1	D7	B	4	4	51	1.1	46.36363636	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132837	5	G1	D9	F	5	5	6.2	0.2	31	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132838	6	G1	D9	B	6	6	12.3	0.75	16.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132839	7	G1	D9	F	7	7	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132840	8	G1	D9	F	8	8	2.5	0.25	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132841	9	G1	D9	B	9	9	1.15	0.25	4.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132842	10	G1	D9	B	10	10	2.25	0.2	11.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132843	11	G3	G8	F	11	11	3.15	0.25	12.6	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132844	12	G3	G8	F	12	12	8	0.2	40	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132845	13	G3	G8	F	13	13	20.6	0.75	27.46666667	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132846	14	G3	G8	F	14	14	3.2	0.25	12.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132847	15	G3	G10	F	15	15	12.15	0.2	60.75	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132848	16	G3	G10	F	16	16	5.95	0.7	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132849	17	G3	G10	F	17	17	1.5	0.15	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132850	18	G3	G10	F	18	18	5.8	0.3	19.33333333	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132851	19	G3	G10	F	19	19	8.75	0.2	43.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132852	20	G3	H7	F	20	20	5.75	0.15	38.33333333	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132853	21	G3	H7	F	21	21	4.2	0.15	28	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132854	22	G3	H9	F	22	22	4.5	0.25	18	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132855	23	G3	H9	B	23	23	1.2	0.35	3.428571429	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132856	24	G3	H9	F	24	24	6.75	0.45	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132857	25	G3	H9	B	25	25	2	0.45	4.444444444	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20292	132858	26	G3	H9	B	26	26	7.6	0.45	16.88888889	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20302	134384	1	P1	E2	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134385	2	P1	E4	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134386	3	P1	E6	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134387	4	P1	E8	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134388	5	P1	E10	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134389	6	P1	F1	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134390	7	P1	F3	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134391	8	P1	F5	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134392	9	P1	F7	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134393	10	P1	F9	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134394	11	P1	G2	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134395	12	P1	G4	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134396	13	P1	G6	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134397	14	P1	G8	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134398	15	P1	G10	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134399	16	P1	H1	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134400	17	P1	H3	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134401	18	P1	H5	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134402	19	P1	H7	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134403	20	P1	H9	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134404	21	P1	I2	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134405	22	P1	I4	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134406	23	P1	I6	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134407	24	P1	I8	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134408	25	P1	I10	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134409	26	P1	J1	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134410	27	P1	J3	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134411	28	P1	J5	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134412	29	P1	J7	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134413	30	P1	J9	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134414	31	P3	C2	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134415	32	P3	C4	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134416	33	P3	C6	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134417	34	P3	C8	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134418	35	P3	C10	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134419	36	P3	D1	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134420	37	P3	D3	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134421	38	P3	D5	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134422	39	P3	D7	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134423	40	P3	D9	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134424	41	P3	E2	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134425	42	P3	E4	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134426	43	P3	E6	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134427	44	P3	E8	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134428	45	P3	E10	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134429	46	P3	F1	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134430	47	P3	F3	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134431	48	P3	F5	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134432	49	P3	F7	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134433	50	P3	F9	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134434	51	P3	G2	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134435	52	P3	G4	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134436	53	P3	G6	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134437	54	P3	G8	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134438	55	P3	G10	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134439	56	P3	H1	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134440	57	P3	H3	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134441	58	P3	H5	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134442	59	P3	H7	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134443	60	P3	H9	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134444	61	P3	I2	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134445	62	P3	I4	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134446	63	P3	I6	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134447	64	P3	I8	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134448	65	P3	I10	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134449	66	P3	J1	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134450	67	P3	J3	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134451	68	P3	J5	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134452	69	P3	J7	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134453	70	P3	J9	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134454	71	P5	D2	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134455	72	P5	D4	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134456	73	P5	D6	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134457	74	P5	D8	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134458	75	P5	D10	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134459	76	P5	E1	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134460	77	P5	E3	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134461	78	P5	E5	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134462	79	P5	E7	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134463	80	P5	E9	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134464	81	P5	F2	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134465	82	P5	F4	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134466	83	P5	F6	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134467	84	P5	F8	ND												1		CDM Smith	A. Coler			x-NR
PS-20302	134468	85	P5	F10	ND												1		CDM Smith	A. Coler			x-NR
PS-20308	135042	1	D2	B1	F	1	1	6	0.3	20	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135043	2	D2	B1	F	2	2	3.75	0.25	15	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135044	3	D2	B1	B	3	3	3.5	0.4	8.75	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135045	4	D2	B1	MD10	4													CDM Smith	A. Coler			x-NR
PS-20308	135046	5	D2	B1	MB		4	4	0.2	20	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135047	6	D2	B1	MD11	5													CDM Smith	A. Coler			x-NR
PS-20308	135048	7	D2	B1	MF		5	5.5	0.5	11	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135049	8	D2	B1	B	6	6	22	0.65	33.85	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135050	9	D2	B1	F	7	7	2.95	0.5	5.9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135051	10	D2	G7	B	8	8	10.55	0.5	21.1	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135052	11	D2	G7	B	9	9	23.3	0.25	93.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135053	12	D2	G7	B	10	10	3.7	0.3	12.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135054	13	D2	G7	F	11	11	5.8	0.35	16.57	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135055	14	D2	G7	MD10	12													CDM Smith	A. Coler			x-NR
PS-20308	135056	15	D2	G7	MF		12	3.35	0.25	13.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135057	16	D2	G7	F	13	13	2.5	0.5	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135058	17	D6	A6	B	14	14	15.5	0.5	31	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135059	18	D6	A6	F	15	15	2.2	0.3	7.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135060	19	D6	A6	F	16	16	3.15	0.2	15.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135061	20	D6	A6	B	17	17	3.15	0.5	6.3	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135062	21	D6	A6	F	18	18	5.15	0.2	25.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135063	22	D6	A6	F	19	19	3.75	0.25	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135064	23	D6	A6	F	20	20	5.2	0.45	11.56	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135065	24	D6	D8	F	21	21	11.25	0.25	45	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135066	25	D6	D8	B	22	22	19	0.75	25.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135067	26	D6	D8	F	23	23	2.5	0.5	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135068	27	D6	D8	F	24	24	2.85	0.4	7.13	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135069	28	D6	D8	B	25	25	7.5	0.5	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135070	29	D6	D10	F	26	26	2.15	0.25	8.6	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135071	30	D6	D10	B	27	27	5	0.75	6.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135072	31	D6	D10	B	28	28	5.15	0.7	7.36	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20308	135073	32	D6	D10	B	29	29	17.8	0.85	20.94	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135765	1	T1	A6	F	0	0	11	0.25	44	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135766	2	T1	A6	B	0	0	15.5	0.4	38.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135767	3	T1	A6	F	0	0	5.5	0.3	18.33333333	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135768	4	T1	A6	F	1	1	10.85	0.25	43.4	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135769	5	T1	A6	F	2	2	2.7	0.15	18	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135770	6	T1	A6	F	3	3	3.3	0.15	22	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135771	7	T1	A6	F	4	4	2.6	0.2	13	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135772	8	T1	A6	B	5	5	1.8	0.4	4.5	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135773	9	T1	A6	F	6	6	30.35	0.5	60.7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135774	10	T1	A6	F	7	7	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135775	11	T1	A6	B	8	8	1.65	0.3	5.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135776	12	T1	B5	F	9	9	3.35	0.35	9.571428571	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135777	13	T1	B5	F	10	10	4.2	0.2	21	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135778	14	T1	B5	F	11	11	2.4	0.25	9.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135779	15	T1	B5	F	12	12	10.2	0.2	51	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135780	16	T3	B6	F	13	13	2.3	0.25	9.2	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135781	17	T3	B6	F	14	14	5.15	0.25	20.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135782	18	T3	B6	F	15	15	8.25	0.25	33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B (2013) SURFACE WATER AND PORE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
PS-20323	135783	19	T3	B6	B	16	16	15.9	0.7	22.71428571	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135784	20	T3	B6	F	17	17	5.75	0.4	14.375	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135785	21	T3	B6	F	18	18	7.2	0.25	28.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135786	22	T3	B6	B	19	19	6.25	0.45	13.88888889	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135787	23	T3	B6	B	20	20	12.3	0.8	15.375	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135788	24	T3	C1	F	21	21	5.15	0.15	34.33333333	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135789	25	T3	C1	F	22	22	2.95	0.15	19.66666667	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135790	26	T3	C1	B	23	23	6.35	0.75	8.466666667	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135791	27	T3	C1	F	24	24	3.25	0.4	8.125	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20323	135792	28	T3	C1	F	25	25	4.7	0.2	23.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160646	1	A1	J2	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160647	2	A1	J4	F	1	1	7.7	0.6	12.83	LA		ADX	1	1	1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160648	3	A1	J6	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160649	4	A1	J8	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160650	5	A1	J10	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160651	6	A1	I9	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160652	7	A1	I7	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160653	8	A1	I5	F	2	2	5.5	0.5	11	LA		ADX	1		1	1	NaX, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160654	9	A1	I3	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160655	10	A1	I1	F	3	3	3.1	0.25	12.4	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160656	11	A1	H2	F	4	4	7.2	0.25	28.8	LA		ADX	1	1	1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160657	12	A1	H2	F	5	5	2	0.4	5	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160658	13	A1	H4	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160659	14	A1	H6	F	6	6	3.5	0.25	14	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160660	15	A1	H8	F	7	7	1.9	0.2	9.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160661	16	A1	H8	F	8	8	1.6	0.25	6.4	LA		AX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160612	17	A1	H10	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160613	18	A1	G9	F	9	9	2.8	0.6	4.67	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160614	19	A1	G7	F	10	10	12.9	0.25	51.6	LA		ADX	1	1		1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160615	20	A1	G5	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160616	21	A1	G3	F	11	11	4.7	1	4.7	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160617	22	A1	G1	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160618	23	A1	F2	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160619	24	A1	F4	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160620	25	A1	F6	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160621	26	A1	F8	F	12	12	12.3	0.3	41	LA		ADX	1			1	NaX, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160622	27	A1	F10	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160623	28	A1	E9	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160624	29	A1	E7	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160625	30	A1	E3	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160626	31	A1	E1	F	13	13	2.6	0.5	5.2	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160627	32	A1	D2	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160628	33	A1	D4	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160629	34	A1	D6	F	14	14	2.9	0.2	14.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160630	35	A1	D8	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160631	36	A1	D10	F	15	15	4	0.25	16	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160632	37	A2	C9	F	16	16	15	0.25	60	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160633	38	A2	C7	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160634	39	A2	C5	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160635	40	A2	C3	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160636	41	A2	C1	F	17	17	2.6	0.25	10.4	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160637	42	A2	D2	F	18	18	7.5	0.3	25	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160638	43	A2	D4	F	19	19	1.9	0.2	9.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160639	44	A2	D4	F	20	20	3.4	0.12	28.33	LA		ADX	1				NaX, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160640	45	A2	D6	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160641	46	A2	D8	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160642	47	A2	D10	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160643	48	A2	E9	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160644	49	A2	E7	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160645	50	A2	E5	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160662	51	A2	E3	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160663	52	A2	E1	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160664	53	A2	F2	F	21	21	10.5	1	10.5	LA		ADX	1	1	1	1	XX, TR; Phot	CDM Smith	A. Coler			x-NR
PS-20325	160665	54	A2	F4	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160666	55	A2	F6	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160667	56	A2	F8	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160668	57	A2	F10	F	22	22	2.6	0.7	3.71	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160669	58	A2	G9	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160670	59	A2	G7	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160671	60	A2	G5	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160672	61	A2	G3	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160673	62	A2	G1	F	23	23	2.3	0.25	9.2	LA		ADX	1			1	NaX, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160674	63	A2	H2	ND												1		CDM Smith	A. Coler			x-NR
PS-20325	160675	64	A2	H4	F	24	24	69.1	1	69.1	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20325	160676	65	A2	H6	F	25	25	2.8	0.25	11.2	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138318	1	I1	C1	F	1	1	5.5	0.5	11	LA		ADX	1	1	1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138319	2	I1	C1	F	2	2	3.15	0.3	10.5	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138320	3	I1	C3	F	3	3	5	0.2	25	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138321	4	I1	C3	B	4	4	5.45	0.35	15.57142857	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138322	5	I1	C3	F	5	5	2.65	0.25	10.6	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138323	6	I1	C3	B	6	6	51.5	0.5	103	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138324	7	I1	C5	F	7	7	4.5	0.2	22.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138325	8	I1	C7	F	0	0	16	0.25	64	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138326	9	I1	C7	F	8	8	1.25	0.2	6.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138327	10	I1	C7	F	9	9	3.25	0.25	13	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138328	11	I1	C9	ND												1		CDM Smith	A. Coler			x-NR
PS-20361	138329	12	I1	D2	F	10	10	3.15	0.3	10.5	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138330	13	I1	D2	B	11	11	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138331	14	I1	D6	B	12	12	20.5	0.4	51.25	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138303	15	I1	D6	F	13	13	1	0.25	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138304	16	I3	A7	F	14	14	5.15	0.25	20.6	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138305	17	I3	A7	B	15	15	7	0.4	17.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138306	18	I3	A7	F	16	16	6.2	0.35	17.71428571	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138307	19	I3	A7	B	17	17	9.75	0.75	13	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138308	20	I3	A7	F	18	18	1.35	0.2	6.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138309	21	I3	D6	B	19	19	11.45	0.7	16.35714286	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138310	22	I3	D8	F	20	20	1.2	0.25	4.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138311	23	I3	E2	F	21	21	3.85	0.2	19.25	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138312	24	I3	E2	F	22	22	2.4	0.2	12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138313	25	I3	F1	F	23	23	7.5	0.5	15	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138314	26	I3	F3	ND												1		CDM Smith	A. Coler			x-NR
PS-20361	138315	27	I3	F5	ND												1		CDM Smith	A. Coler			x-NR
PS-20361	138316	28	I3	F7	F	24	24	1.8	0.25	7.2	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20361	138317	29	I3	F9	F	25	25	7.6	0.4	19	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
PS-20363	137984	1	L1	C3	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137985	2	L1	C5	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137986	3	L1	C7	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137987	4	L1	C9	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137988	5	L1	D2	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137989	6	L1	D4	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137990	7	L1	D6	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137991	8	L1	D8	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137992	9	L1	D10	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137993	10	L1	E1	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137994	11	L1	E3	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137995	12	L1	E5	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137996	13	L1	E7	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137997	14	L1	E9	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137998	15	L1	F2	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	137999	16	L1	F4	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138000	17	L1	F6	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138001	18	L1	F8	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138002	19	L1	F10	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138003	20	L1	G1	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138004	21	L1	G3	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138005	22	L1	G5	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138006	23	L1	G7	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138007	24	L1	G9	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138008	25	L1	H2	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138009	26	L1	H4	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138010	27	L1	H6	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138011	28	L1	H8	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138012	29	L1	H10	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138013	30	L1	I1	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138014	31	L1	I3	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138015	32	L1	I5	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138016	33	L1	I7	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138017	34	L1	I9	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138018	35	L1	J2	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138019	36	L1	J4	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138020	37	L1	J6	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138021	38	L1	J8	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138022	39	L1	J10	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138023	40	L3	C2	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138024	41	L3	C4	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138025	42	L3	C6	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138026	43	L3	C8	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138027	44	L3	C10	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138028	45	L3	D1	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138029	46	L3	D3	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138030	47	L3	D5	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138031	48	L3	D7	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138032	49	L3	D9	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138033	50	L3	E2	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138034	51	L3	E4	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138035	52	L3	E6	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138036	53	L3	E8	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138037	54	L3	E10	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138038	55	L3	F1	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138039	56	L3	F3	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138040	57	L3	F5	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138041	58	L3	F7	ND												1		CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B (2013) SURFACE WATER AND PORE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
PS-20363	138042	59	L3	F9	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138043	60	L3	G2	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138044	61	L3	G4	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138045	62	L3	G6	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138046	63	L3	G8	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138047	64	L3	G10	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138048	65	L3	H1	ND												1		CDM Smith	A. Coler	Grid_grid opening is L3_H1, not L3_H10 according to benchsheet (page 5).	1/29/2013	x-NR
PS-20363	138049	66	L3	H3	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138050	67	L3	H5	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138051	68	L3	H7	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138052	69	L3	H9	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138053	70	L3	I2	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138054	71	L3	I4	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138055	72	L3	I6	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138056	73	L3	I8	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138057	74	L3	I10	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138058	75	L3	J1	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138059	76	L3	J3	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138060	77	L3	J5	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138061	78	L3	J7	ND												1		CDM Smith	A. Coler			x-NR
PS-20363	138062	79	L3	J9	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138554	1	Q2	B2	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138555	2	Q2	B4	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138556	3	Q2	B6	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138557	4	Q2	B8	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138558	5	Q2	B10	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138559	6	Q2	C1	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138560	7	Q2	C3	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138561	8	Q2	C5	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138562	9	Q2	C7	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138563	10	Q2	C9	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138564	11	Q2	D2	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138565	12	Q2	D4	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138566	13	Q2	D6	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138567	14	Q2	D8	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138568	15	Q2	D10	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138569	16	Q2	E1	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138570	17	Q2	E3	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138571	18	Q2	E5	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138572	19	Q2	E7	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138573	20	Q2	E9	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138574	21	Q2	F2	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138575	22	Q2	F4	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138576	23	Q2	F6	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138577	24	Q2	F8	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138578	25	Q2	F10	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138579	26	Q2	G1	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138580	27	Q2	G3	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138581	28	Q2	G5	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138582	29	Q2	G7	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138583	30	Q2	G9	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138584	31	Q2	H2	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138585	32	Q2	H4	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138586	33	Q2	H6	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138587	34	Q2	H8	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138588	35	Q2	H10	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138589	36	Q2	I1	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138590	37	Q2	I3	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138591	38	Q2	I5	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138592	39	Q2	I7	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138593	40	Q2	I9	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138594	41	Q4	A1	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138595	42	Q4	A3	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138596	43	Q4	A5	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138597	44	Q4	A7	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138598	45	Q4	A9	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138599	46	Q4	B2	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138600	47	Q4	B4	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138601	48	Q4	B6	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138602	49	Q4	B8	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138603	50	Q4	B10	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138604	51	Q4	C1	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138605	52	Q4	C3	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138606	53	Q4	C5	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138607	54	Q4	C7	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138608	55	Q4	C9	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138609	56	Q4	D2	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138610	57	Q4	D4	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138611	58	Q4	D6	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138612	59	Q4	D8	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138613	60	Q4	D10	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138614	61	Q4	E1	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138615	62	Q4	E3	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138616	63	Q4	E5	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138617	64	Q4	E7	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138618	65	Q4	E9	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138619	66	Q4	F2	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138620	67	Q4	F4	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138621	68	Q4	F6	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138622	69	Q4	F8	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138623	70	Q4	F10	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138624	71	Q4	G1	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138625	72	Q4	G3	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138626	73	Q4	G5	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138627	74	Q4	G7	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138628	75	Q4	G9	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138629	76	Q4	H2	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138630	77	Q4	H4	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138631	78	Q4	H6	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138632	79	Q4	H8	ND												1		CDM Smith	A. Coler			x-NR
PS-20368	138633	80	Q4	H10	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139249	1	D2	A2	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139250	2	D2	A4	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139251	3	D2	A6	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139252	4	D2	A8	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139253	5	D2	A10	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139254	6	D2	B1	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139255	7	D2	B3	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139256	8	D2	B5	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139257	9	D2	B7	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139258	10	D2	B9	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139259	11	D2	C2	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139260	12	D2	C4	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139261	13	D2	C6	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139262	14	D2	C8	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139263	15	D2	C10	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139264	16	D2	D1	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139265	17	D2	D3	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139266	18	D2	D5	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139267	19	D2	D7	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139268	20	D2	D9	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139269	21	D2	E2	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139270	22	D2	E4	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139271	23	D2	E6	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139272	24	D2	E8	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139273	25	D2	E10	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139274	26	D2	F1	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139275	27	D2	F3	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139276	28	D2	F5	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139277	29	D2	F7	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139278	30	D2	F9	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139279	31	D2	G2	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139280	32	D2	G4	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139281	33	D2	G6	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139282	34	D2	G8	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139283	35	D2	G10	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139284	36	D2	H1	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139285	37	D2	H3	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139286	38	D2	H5	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139287	39	D2	H7	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139288	40	D2	H9	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139289	41	D2	I2	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139290	42	D2	I4	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139291	43	D2	I6	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139292	44	D2	I8	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139293	45	D2	I10	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139294	46	D2	J1	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139295	47	D2	J3	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139296	48	D2	J5	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139297	49	D2	J7	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139298	50	D2	J9	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139299	51	D4	D2	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139300	52	D4	D4	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139301	53	D4	D6	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139302	54	D4	D8	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139303	55	D4	D10	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139304	56	D4	E1	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139305	57	D4	E3	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139306	58	D4	E5	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139307	59	D4	E7	ND												1		CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - PHASE V PART B (2013) SURFACE WATER AND PORE WATER

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
PS-20374	139308	60	D4	E9	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139309	61	D4	F2	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139310	62	D4	F4	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139311	63	D4	F6	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139312	64	D4	F8	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139313	65	D4	F10	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139314	66	D4	G1	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139315	67	D4	G3	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139316	68	D4	G5	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139317	69	D4	G7	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139318	70	D4	G9	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139319	71	D4	H2	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139320	72	D4	H4	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139321	73	D4	H6	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139322	74	D4	H8	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139323	75	D4	H10	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139324	76	D4	I1	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139325	77	D4	I3	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139326	78	D4	I5	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139327	79	D4	I7	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139328	80	D4	I9	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139329	81	D4	J2	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139330	82	D4	J4	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139331	83	D4	J6	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139332	84	D4	J8	ND												1		CDM Smith	A. Coler			x-NR
PS-20374	139333	85	D4	J10	ND												1		CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - REPLICATE ANALYSIS OF PHASE I AND COMMERCIAL LOGGING DUFF (2013)

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCoun ted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
CL-3-0003	041316497-0003A	201730	1	O1	A7	F	1	1	6.3	0.5	12.6	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201731	2	O1	A7	F	2	2	8.6	1.1	7.82	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201732	3	O1	A7	MD10	3													CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201733	4	O1	A7	MFO		3	4.5	0.2	22.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201734	5	O1	A7	F	4	4	0.8	0.1	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201735	6	O1	A7	CD21	5													CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201736	7	O1	A7	CF		5	8.5	0.7	12.14	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201737	8	O1	A7	CF		6	1.8	0.3	6	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201738	9	O1	A7	F	6	7	1.2	0.2	6	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201739	10	O1	A7	F	7	8	1.5	0.1	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201740	11	O1	A7	F	8	9	2.5	0.3	8.33	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201741	12	O1	A7	F	9	10	2.6	0.4	6.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201742	13	O1	A7	F	10	11	2.5	0.5	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201743	14	O1	A7	F	11	12	4.6	0.4	11.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201744	15	O1	A7	F	12	13	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201745	16	O1	A7	MD10	13													CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201746	17	O1	A7	MFO		14	2.8	0.2	14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201747	18	O1	A7	F	14	15	7.2	0.8	9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201748	19	O1	A7	F	15	16	1.8	0.3	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201749	20	O1	A7	F	16	17	5.3	0.7	7.57	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201750	21	O1	A7	F	17	18	8.6	0.3	28.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201751	22	O1	F10	F	18	19	1.3	0.3	4.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201752	23	O1	F10	F	19	20	6.5	0.7	9.29	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201753	24	O1	F10	F	20	21	5.2	0.3	17.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201754	25	O1	F10	F	21	22	1	0.2	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201755	26	O1	F10	F	22	23	11.3	0.4	28.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201756	27	O1	F10	F	23	24	3.8	0.4	9.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201757	28	O1	F10	F	24	25	13.1	2.2	5.95	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201758	29	O1	F10	F	25	26	2.3	0.4	5.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201759	30	O1	F10	F	26	27	0.8	0.2	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201760	31	O1	F10	F	27	28	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201761	32	O1	F10	F	28	29	16.7	1.1	15.18	LA		ADX	1				NaK, WRTA;	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201762	33	O2	J1	F	29	30	1.8	0.4	4.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201763	34	O2	J1	F	30	31	9.9	1	9.9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201764	35	O2	J1	F	0	0	6.8	0.5	13.6	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201765	36	O2	J1	MD11	31													CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201766	37	O2	J1	MFO		32	6.3	0.2	31.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201767	38	O2	J1	F	32	33	1.8	0.3	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201768	39	O2	J1	B	33	34	11.3	1.2	9.42	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201769	40	O2	J1	F	34	35	8.3	0.9	9.22	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201770	41	O2	J1	F	35	36	2.8	0.3	9.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201771	42	O2	J1	F	36	37	1.3	0.3	4.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201772	43	O2	J1	F	37	38	3.1	0.4	7.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201773	44	O2	J1	MD11	38													CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201774	45	O2	J1	MF		39	6.3	0.4	15.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201775	46	O2	J1	F	39	40	3.2	0.4	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201776	47	O2	D2	F	40	41	4.9	0.2	24.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201777	48	O2	D2	F	41	42	3	0.3	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201778	49	O2	D2	F	42	43	2.8	0.2	14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201779	50	O2	D2	F	43	44	4.6	0.5	9.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201780	51	O2	D2	F	44	45	0.8	0.1	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201781	52	O2	D2	F	45	46	1.6	0.2	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201782	53	O2	D2	MD10	46													CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201783	54	O2	D2	MFO		47	3.7	0.2	18.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201784	55	O2	D2	F	47	48	2.1	0.4	5.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0003	041316497-0003A	201785	56	O2	D2	F	48	49	3	0.3	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201919	1	Q3	F3	MD10	1													CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201920	2	Q3	F3	MFO		1	2.4	0.4	6	LA		ADX	1				XX, AC	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201921	3	Q3	F3	F	2	2	1.8	0.4	4.5	LA		ADX	1				NaX, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201922	4	Q3	F3	F	3	3	2.9	0.5	5.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201923	5	Q3	F3	F	4	4	6.5	0.4	16.25	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201924	6	Q3	F3	F	5	5	1.6	0.2	8	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201925	7	Q3	F3	F	6	6	6.4	0.6	10.67	LA		AX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201926	8	Q3	F3	F	7	7	2.5	0.4	6.25	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201927	9	Q3	F3	MD11	8													CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201928	10	Q3	F3	MFO		8	5.2	0.4	13	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201929	11	Q3	F3	F	9	9	10.1	0.5	20.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201930	12	Q3	F3	F	10	10	2.2	0.25	8.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201931	13	Q3	C4	F	0	0	5.6	0.25	22.4	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201932	14	Q3	C4	F	11	11	9.5	0.5	19	LA		AX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201933	15	Q3	C4	F	12	12	2.4	0.75	3.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201934	16	Q3	C4	F	13	13	3.5	0.7	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201935	17	Q3	C4	F	14	14	2.8	0.2	14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201936	18	Q3	C4	F	15	15	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201937	19	Q3	C4	F	16	16	7.7	1	7.7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201938	20	Q3	C4	F	17	17	4.8	0.7	6.86	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201939	21	Q3	C4	MD11	18													CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201940	22	Q3	C4	MFO		18	15	0.4	37.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201941	23	Q3	C4	F	19	19	1.7	0.3	5.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201942	24	Q4	D3	MD11	0													CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201943	25	Q4	D3	MFO		0	24.8	0.5	49.6	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201944	26	Q4	D3	MD10	20													CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201945	27	Q4	D3	MFO		20	3.2	0.6	5.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201946	28	Q4	D3	F	21	21	3.1	0.5	6.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201947	29	Q4	D3	F	22	22	1.5	0.25	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201948	30	Q4	D3	F	23	23	2.9	0.3	9.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201949	31	Q4	D3	F	24	24	7.5	0.5	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201950	32	Q4	D3	F	25	25	4	0.8	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201951	33	Q4	H3	F	26	26	2.6	0.5	5.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201952	34	Q4	H3	MD11	0													CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201953	35	Q4	H3	MFO		0	21.1	0.6	35.17	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201954	36	Q4	H3	F	27	27	1.8	0.2	9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201955	37	Q4	H3	MD10	28													CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201956	38	Q4	H3	MFO		28	1.5	0.25	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201957	39	Q4	H3	F	29	29	2.6	0.3	8.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201958	40	Q4	H3	F	30	30	7.8	1.2	6.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201959	41	Q4	H3	MD11	31													CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201960	42	Q4	H3	MFO		31	5.1	0.5	10.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0009	041316497-0007A	201961	43	Q4	H3	B	32	32	7.3	0.75	9.73	LA		ADX	1	1	1		XX, TR; Phot	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202098	1	P2	B8	F	1	1	2.8	0.68	4.12	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202099	2	P2	B8	F	0	0	5.1	0.25	20.4	OA		ADX	1		1			CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202100	3	P2	B8	F	2	2	2.4	0.25	9.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202101	4	P2	B8	F	3	3	1.8	0.13	13.85	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202102	5	P2	B8	F	0	0	12.7	0.8	15.88	OA		ADX	1					CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202103	6	P2	B8	MD11	4													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202104	7	P2	B8	MF		4	6.9	0.26	26.54	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202105	8	P2	B8	F	5	5	1.1	0.2	5.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202106	9	P2	B8	F	6	6	4.9	0.3	16.33	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202107	10	P2	B8	MD10	7													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202108	11	P2	B8	MF		7	1.9	0.23	8.26	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202109	12	P2	B8	F	8	8	1.1	0.25	4.4	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202110	13	P2	B8	F	9	9	3.4	0.2	17	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202111	14	P2	B8	MD10	10													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202112	15	P2	B8	MF		10	1.3	0.22	5.91	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202113	16	P2	B8	F	11	11	5.4	0.9	6	LA		ADX	1		1		NaK, WRTA;	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202114	17	P2	B8	F	0	0	3.6	0.27	13.33	OA		ADX	1					CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202115	18	P2	H6	F	12	12	2.2	0.6	3.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202116	19	P2	H6	MD10	13													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202117	20	P2	H6	MF		13	3.7	0.27	13.7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202118	21	P2	H6	B	0	0	6.5	1.3	5	OA		ADX	1					CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202119	22	P2	H6	MD10	14													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202120	23	P2	H6	MF		14	2.6	0.27	9.63	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202121	24	P2	H6	F	15	15	7.2	0.25	28.8	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202122	25	P2	H6	F	0	0	10.2	1.1	9.27	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202123	26	P2	H6	F	0	0	9.9	0.55	18	OA		ADX	1					CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202124	27	P2	H6	F	16	16	2.2	0.26	8.46	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202125	28	P2	H6	F	17	17	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202126	29	P2	H6	F	18	18	8.3	0.27	30.74	OA		ADX	1				NaK, NR	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202127	30	P2	H6	F	19	19	2.5	0.5	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202128	31	P2	H6	F	20	20	2.3	0.25	9.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202129	32	P2	H6	F	21	21	5.5	0.7	7.86	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202130	33	P2	H6	F	22	22	3.1	0.28	11.07	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202131	34	P2	H6	MD21	23													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202132	35	P2	H6	MF		23	10	0.47	21.28	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202133	36	P2	H6	MF		24	4.7	0.49	9.59	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202134	37	P2	H6	F	24	25	1.1	0.2	5.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202135	38	P2	H6	B	25	26	39	0.75	52	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202136	39	P2	H6	F	26	27	2.2	0.26	8.46	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202137	40	P3	D5	F	27	28	6.9	0.5	13.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202138	41	P3	D5	B	28	29	2.5	0.55	4.55	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202139	42	P3	D5	MD11	29													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202140	43	P3	D5	MFO		30	9.4	0.45	20.89	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202141	44	P3	D5	F	30	31	2	0.36	5.56	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202142	45	P3	D5	MD10	31													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202143	46	P3	D5	MF		32	4.2	0.49	8.57	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202144	47	P3	D5	F	32	33	2.5	0.24	10.42	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202145	48	P3	D5	F	33	34	4.8	0.31	15.48	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202146	49	P3	D5	F	34	35	9	0.82	10.98	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202147	50	P3	D5	MD10	35													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202148	51	P3	D5	MF		36	3.3	0.26	12.69	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202149	52	P3	D5	MD10	36													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202150	53	P3	D5	MFO		37	3.2	0.26	12.31

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - REPLICATE ANALYSIS OF PHASE I AND COMMERCIAL LOGGING DUFF (2013)

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCoun ted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
CL-3-0011	041316497-0009B	202151	54	P3	D5	MD10	37													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202152	55	P3	D5	MFO		38	3.1	0.72	4.31	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202153	56	P3	D5	B	38	39	3.3	0.48	6.88	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202154	57	P3	D5	F	39	40	2.1	0.13	16.15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202155	58	P3	D5	F	40	41	1.4	0.24	5.83	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202156	59	P3	D5	F	41	42	10.4	0.47	22.13	LA		ADX	1				NaK, WRTA;	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202157	60	P3	D5	F	42	43	3.2	0.21	15.24	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202158	61	P3	D5	F	43	44	2.3	0.51	4.51	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202159	62	P3	G6	F	0	0	11.6	0.98	11.84	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202160	63	P3	G6	F	44	45	1.9	0.24	7.92	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202161	64	P3	G6	F	45	46	3.1	0.15	20.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202162	65	P3	G6	F	46	47	2.9	0.25	11.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202163	66	P3	G6	MD10	47													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202164	67	P3	G6	MF		48	1.9	0.22	8.64	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202165	68	P3	G6	F	48	49	6.3	1	6.3	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202166	69	P3	G6	F	49	50	5.6	0.51	10.98	LA		ADX	1				NaK, WRTA;	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202167	70	P3	G6	F	50	51	1.3	0.13	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202168	71	P3	G6	MD11	51													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202169	72	P3	G6	MF		52	5.2	0.9	5.78	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202170	73	P3	G6	MD10	52													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202171	74	P3	G6	MFO		53	2.2	0.2	11	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202172	75	P3	G6	F	53	54	1.5	0.21	7.14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202173	76	P3	G6	F	54	55	2.1	0.23	9.13	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202174	77	P3	G6	F	55	56	2.5	0.1	25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202175	78	P3	G6	F	56	57	6.3	0.78	8.08	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202176	79	P3	G6	MD10	0													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202177	80	P3	G6	MFO		0	1.1	0.47	2.34	LA		ADX	1					CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202178	81	P3	G6	CD21	57													CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202179	82	P3	G6	CF		58	10	1.6	6.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0011	041316497-0009B	202180	83	P3	G6	CFO		59	2.3	0.48	4.79	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200905	1	A7	I4	F	0	0	14.4	0.4	36	LA		ADX	1			1	; Structure i	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200906	2	A7	I4	F	1	1	1.25	0.4	3.13	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200907	3	A7	I4	MD10	2													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200908	4	A7	I4	MFO		2	1.2	0.23	5.22	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200909	5	A7	I4	MD11	3													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200910	6	A7	I4	MFO		3	6	0.26	23.08	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200911	7	A7	I4	MD10	4													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200912	8	A7	I4	MF		4	4.8	0.5	9.6	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200913	9	A7	I4	MD10	5													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200914	10	A7	I4	MF		5	1.6	0.25	6.4	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200915	11	A7	I4	F	6	6	8.5	0.22	38.64	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200916	12	A7	I4	F	7	7	8.8	0.24	36.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200917	13	A7	I4	F	8	8	2.3	0.24	9.58	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200918	14	A7	I4	F	9	9	4.9	0.13	37.69	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200919	15	A7	A2	MD11	10											1		CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200920	16	A7	A2	MFO		10	5.6	1.1	5.09	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200921	17	A7	A2	F	11	11	6.3	0.2	31.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200922	18	A7	A2	F	12	12	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200923	19	A7	A2	MD10	13													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200924	20	A7	A2	MF		13	1.1	0.23	4.78	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200925	21	A8	D5	F	0	0	1.7	0.52	3.27	OA		ADX	1			1		CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200926	22	A8	D5	F	14	14	7.3	0.49	14.9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200927	23	A8	D5	F	15	15	16	0.2	80	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200928	24	A8	D5	F	16	16	1.2	0.19	6.32	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200929	25	A8	D5	F	0	0	4	0.52	7.69	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200930	26	A8	D5	F	17	17	1.4	0.2	7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200931	27	A8	D5	F	18	18	3.5	0.2	17.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200932	28	A8	D5	MD10	19													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200933	29	A8	D5	MB		19	4.1	0.8	5.12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200934	30	A8	J7	F	20	20	2	0.35	5.71	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200935	31	A8	J7	F	21	21	2.2	0.24	9.17	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200936	32	A8	J7	MD10	22													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200937	33	A8	J7	MF		22	1.1	0.23	4.78	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200938	34	A8	J7	B	23	23	3.8	0.48	7.92	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200939	35	A8	J7	F	24	24	2.4	0.26	9.23	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200940	36	A8	J7	F	25	25	1.7	0.25	6.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200941	37	A8	J7	MD11	26													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200942	38	A8	J7	MF		26	6.5	0.8	8.13	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200943	39	A8	J7	MD11	27													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200944	40	A8	J7	MF		27	15.7	0.9	17.44	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200945	41	A8	B9	F	28	28	9.8	0.45	21.78	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200946	42	A8	B9	F	29	29	5.9	0.47	12.55	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200947	43	A8	B9	MD10	30													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200948	44	A8	B9	MFO		30	4.5	0.42	10.71	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200949	45	A8	B9	F	0	0	1.75	0.85	2.06	LA		ADX	1				; Structure c	CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200950	46	A8	B9	MD11	0													CDM Smith	A. Coler			x-NR
P1-00040	041316496-0003A	200951	47	A8	B9	MF		0	6.7	1.1	6.09	OA		ADX	1					CDM Smith	A. Coler			x-NR
P1-00054	041316496-0002A	200998	1	A4	I6	F	1	1	1.2	0.2	6	LA		ADX	1		1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00054	041316496-0002A	200999	2	A4	B2	ND												1		CDM Smith	A. Coler			x-NR
P1-00054	041316496-0002A	201000	3	A5	G3	ND												1		CDM Smith	A. Coler			x-NR
P1-00054	041316496-0002A	201001	4	A5	A5	ND												1		CDM Smith	A. Coler			x-NR
P1-00054	041316496-0002A	201002	5	A4	D5	MD10	2											1		CDM Smith	A. Coler			x-NR
P1-00054	041316496-0002A	201003	6	A4	D5	MFO		2	2.6	0.26	10	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201056	1	C1	D8	MD10	1											1		CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201057	2	C1	D8	MFO		1	3.8	0.3	12.67	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201058	3	C1	D8	F	2	2	6.6	1	6.6	LA		ADX	1	1	1		NaK, WRTA;	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201059	4	C1	D8	F	3	3	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201060	5	C1	D8	F	4	4	2.8	0.2	14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201061	6	C1	D8	F	5	5	4.7	0.25	18.8	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201062	7	C1	D8	MD10	6													CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201063	8	C1	D8	MFO		6	1	0.2	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201064	9	C1	D8	F	7	7	1.8	0.3	6	LA		ADX	1	1	1		XX, AC; Phot	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201065	10	C1	D8	F	8	8	2.3	0.25	9.2	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201066	11	C1	D8	F	9	9	4.2	0.5	8.4	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201067	12	C1	D8	F	0	0	9.4	0.2	47	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201068	13	C1	D8	F	10	10	2.6	0.5	5.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201069	14	C1	D8	F	11	11	1	0.2	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201070	15	C1	D8	F	12	12	11.7	1.2	9.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201071	16	C1	D8	F	13	13	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201072	17	C1	D8	F	14	14	3.5	0.7	5	LA		ADX	1				XX, AC	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201073	18	C1	D8	F	15	15	2.8	0.4	7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201074	19	C1	D8	CD21	16													CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201075	20	C1	D8	CF		16	5.4	0.25	21.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201076	21	C1	D8	CF		17	2.6	0.4	6.5	LA		ADX	1				XX, AC	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201077	22	C1	D8	F	17	18	5.9	0.5	11.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201078	23	C1	D8	F	18	19	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201079	24	C1	D8	F	19	20	2.6	0.2	13	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201080	25	C1	D8	F	20	21	6.3	1.6	3.94	LA		ADX	1				XX, AC	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201081	26	C1	D8	F	21	22	1.6	0.5	3.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201082	27	C1	D8	F	22	23	3.6	0.5	7.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201083	28	C1	D8	CD21	23													CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201084	29	C1	D8	CF		24	15.9	1	15.9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201085	30	C1	D8	CFO		25	2.1	0.25	8.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201086	31	C1	D8	F	24	26	21.1	0.5	42.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201087	32	C1	D8	MD10	25													CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201088	33	C1	D8	MFO		27	1.7	0.25	6.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201089	34	C1	D8	F	26	28	3.1	0.25	12.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201090	35	C1	D8	F	27	29	5.5	0.2	27.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201091	36	C1	D8	F	28	30	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201092	37	C1	D8	F	29	31	9.4	1.3	7.23	LA		ADX	1				NaK, WRTA;	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201093	38	C1	G10	F	0	0	4.6	0.15	30.67	LA		ADX	1			1	; Structure i	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201094	39	C1	G10	B	30	32	4.7	1	4.7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201095	40	C1	G10	F	31	33	1.8	0.25	7.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201096	41	C1	G10	F	32	34	1.3	0.25	5.2	LA		ADX	1	1	1		XX, TR; Phot	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201097	42	C1	G10	F	33	35	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201098	43	C1	G10	F	34	36	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201099	44	C1	G10	F	35	37	11.7	1.8	6.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201100	45	C1	G10	F	36	38	1.7	0.5	3.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201101	46	C1	G10	F	37	39	5.4	0.4	13.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201102	47	C1	G10	F	38	40	3.3	0.5	6.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201103	48	C1	G10	F	39	41	7	0.5	14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201104	49	C1	G10	F	40	42	8	0.2	40	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201105	50	C1	G10	F	41	43	3.3	0.25	13.2	LA		ADX	1				XX, AC	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201106	51	C1	G10	F	42	44	11.7	1	11.7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201107	52	C1	G10	F	43	45	6.1	0.7	8.71	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201108	53	C1	G10	F	44	46	3.8	1	3.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201109	54	C1	G10	F	45	47	6.2	0.5	12.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201110	55	C1	G10	F	46	48	5.7	0.7	8.14	LA		ADX	1				XX, AC	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201111	56	C2	H2	F	47	49	4.7	0.4	11.75	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201112	57	C2	H2	F	48	50	1.4	0.25	5.6	LA		ADX	1				XX, AC	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201113	58	C2	H2	F	49	51	2.8	0.1	28	LA		AX	1				NaX, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201114	59	C2	H2	F	50	52	1.4	0.25	5.6	LA		AX	1				XX, AC	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201115	60	C2	H2	F	51	53	3.4	0.25	13.6	LA		ADX	1	1	1		NaX, WRTA;	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201116	61	C2	H2	F	52	54	3.7	0.5	7.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201117	62	C2	H2	F	53	55	1	0.25	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201118	63	C2	H2	F	54	56	10.1	0.25	40.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201119	64	C2	H2	CD21	55													CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201120	65	C2	H2	CF		57	8	0.5	16	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201121	66	C2	H2	CF		58	1.6	0.25	6.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201122	67	C2	H2	F	56	59	1.4	0.3	4.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201123	68	C2	H2	MD11	57													CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201124	69	C2	H2	MFO		60	13.3	0.5	26.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - REPLICATE ANALYSIS OF PHASE I AND COMMERCIAL LOGGING DUFF (2013)

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P1-00220	041316624-0001A	201125	70	C2	H2	F	58	61	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201126	71	C2	H2	MD10	59													CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201127	72	C2	H2	MFO		62	2	0.5	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201128	73	C2	H2	F	60	63	3.1	0.25	12.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201129	74	C2	H2	F	61	64	4.2	0.4	10.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201130	75	C2	H2	F	62	65	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201131	76	C2	H2	F	63	66	4.6	0.5	9.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201132	77	C2	H2	F	64	67	1.6	0.5	3.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201133	78	C2	H2	MD10	65													CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201134	79	C2	H2	MFO		68	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201135	80	C2	H2	F	66	69	1.5	0.5	3	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201136	81	C2	H2	F	67	70	4.2	0.6	7	LA		ADX	1				NaX, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201137	82	C2	H2	F	68	71	6.3	1.2	5.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201138	83	C2	H2	MD20	69													CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201139	84	C2	H2	MFO		72	4.7	0.5	9.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201140	85	C2	H2	MFO		73	3	0.5	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201141	86	C2	H2	F	70	74	4	0.2	20	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201142	87	C2	H2	F	71	75	3	0.5	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201143	88	C2	H2	F	72	76	4.5	0.25	18	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201144	89	C2	H2	F	73	77	4.6	0.5	9.2	LA		ADX	1				NaK, WRTA;	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201145	90	C2	D3	F	74	78	9.4	2	4.7	LA		ADX	1			1	XX, AC	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201146	91	C2	D3	F	75	79	1	0.2	5	LA		AX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201147	92	C2	D3	F	0	0	8.2	0.75	10.93	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201148	93	C2	D3	F	76	80	2.5	0.25	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201149	94	C2	D3	F	77	81	1.4	0.15	9.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201150	95	C2	D3	F	0	0	5.6	0.25	22.4	LA		ADX	1				; Structure i	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201151	96	C2	D3	F	78	82	7.3	0.4	18.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201152	97	C2	D3	B	79	83	6.1	0.5	12.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201153	98	C2	D3	MD11	80													CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201154	99	C2	D3	MFO		84	6.1	0.25	24.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201155	100	C2	D3	F	81	85	45.5	0.3	151.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201156	101	C2	D3	F	82	86	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201157	102	C2	D3	F	83	87	2.7	0.2	13.5	LA		AX	1				XX, TR	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201158	103	C2	D3	F	84	88	3.2	0.25	12.8	LA		AX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201159	104	C2	D3	F	85	89	3.1	0.25	12.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201160	105	C2	D3	F	86	90	5.2	0.5	10.4	LA		ADX	1				NaK, AC	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201161	106	C2	D3	F	87	91	1.4	0.3	4.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00220	041316624-0001A	201162	107	C2	D3	F	88	92	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - REPLICATE ANALYSIS OF PHASE I AND COMMERCIAL LOGGING TREE BARK (2013)

Samp No	Lab Sample ID	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
CL-3-0002	041316497-0002B	197484	1	H5	C8	F	1	1	1	0.2	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197485	2	H5	C8	F	2	2	1.2	0.2	6	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197486	3	H5	C8	F	3	3	1.2	0.12	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197487	4	H5	C8	F	4	4	7	0.7	10	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197488	5	H5	C8	F	5	5	2.3	0.5	4.6	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197489	6	H5	C8	F	6	6	2.3	0.4	5.75	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197490	7	H5	C8	F	7	7	4.8	0.7	6.857142857	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197491	8	H5	C8	F	8	8	2.3	0.4	5.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	EDS for total structure #8 was not marked on the benchsheet but was entered in the EDD. Please revise either the benchsheet or EDD accordingly.	2/21/2014	x-NR
CL-3-0002	041316497-0002B	197492	9	H5	C8	F	9	9	2.5	0.3	8.333333333	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197493	10	H5	C8	F	10	10	1.7	0.5	3.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197494	11	H5	C8	F	11	11	1.4	0.1	14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197495	12	H5	C8	F	12	12	2.7	0.25	10.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197496	13	H5	F7	F	13	13	3.2	0.3	10.66666667	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197497	14	H5	F7	F	14	14	1.6	0.25	6.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197498	15	H5	F7	F	15	15	4.6	0.7	6.571428571	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197499	16	H5	F7	F	16	16	2.3	0.7	3.285714286	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197500	17	H5	F7	F	17	17	1.7	0.12	14.16666667	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197501	18	H5	F7	F	18	18	1.2	0.12	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197502	19	H5	F7	F	19	19	3	0.5	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197503	20	H5	F7	F	20	20	2	0.3	6.666666667	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197504	21	H5	F7	F	21	21	4.6	0.25	18.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197505	22	H6	H8	F	22	22	1.1	0.12	9.166666667	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197506	23	H6	H8	MD42	23													CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197507	24	H6	H8	MF		23	7.5	0.2	37.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197508	25	H6	H8	MF		24	6.8	0.5	13.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197509	26	H6	H8	MFO		25	2.5	0.25	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197510	27	H6	H8	MFO		26	1.2	0.3	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197511	28	H6	H8	MD10	24													CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197512	29	H6	H8	MFO		27	1	0.1	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197513	30	H6	H8	F	25	28	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197514	31	H6	H8	F	26	29	7	0.6	11.66666667	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197515	32	H6	H8	F	27	30	1.8	0.5	3.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197516	33	H6	H8	MD10	28													CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197517	34	H6	H8	MFO		31	4.5	0.25	18	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197518	35	H6	F9	F	29	32	11.8	0.3	39.33333333	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197519	36	H6	F9	F	30	33	56.6	3.2	17.6875	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197520	37	H6	F9	F	31	34	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197521	38	H6	F9	MD10	32													CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197522	39	H6	F9	MFO		35	2	0.6	3.333333333	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197523	40	H6	F9	F	33	36	1.6	0.25	6.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197524	41	H6	F9	F	34	37	2.8	0.3	9.333333333	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197525	42	H6	F9	F	35	38	4.6	0.2	23	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197526	43	H6	F9	F	36	39	4.5	0.25	18	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197527	44	H6	F9	F	37	40	1.7	0.2	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197528	45	H6	F9	CD20	38													CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197529	46	H6	F9	CF		41	4	0.4	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197530	47	H6	F9	CF		42	3.4	0.4	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197531	48	H6	F9	F	39	43	1	0.25	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197532	49	H6	F9	F	40	44	2	0.12	16.66666667	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197533	50	H6	C7	F	0	0	24	0.1	240	LA		ADX	1				; Structure	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197534	51	H6	C7	MD10	41													CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197535	52	H6	C7	MFO		45	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197536	53	H6	C7	MD10	0													CDM Smith	A. Coler	The sketch field should not be marked in the EDD for non-countable MD10 structure on page 4.	2/21/2014	x-NR
CL-3-0002	041316497-0002B	197537	54	H6	C7	MFO		0	5.8	0.2	29	LA		ADX	1				; Structure	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197538	55	H6	C7	F	42	46	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197539	56	H6	C7	F	43	47	18	1	18	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197540	57	H6	C7	F	44	48	3.4	0.5	6.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197541	58	H6	C7	MD10	45													CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197542	59	H6	C7	MFO		49	3.7	0.2	18.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197543	60	H6	C7	F	46	50	5.1	0.25	20.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197544	61	H6	C7	F	47	51	1.8	0.25	7.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197545	62	H6	C7	F	48	52	5	0.4	12.5	LA		AX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197546	63	H6	C7	F	49	53	7.6	1	7.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197547	64	H6	C7	F	50	54	3.7	0.5	7.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197548	65	H6	C7	F	51	55	1	0.2	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197549	66	H6	C7	MD10	52													CDM Smith	A. Coler			x-NR
CL-3-0002	041316497-0002B	197550	67	H6	C7	MFO		56	1.8	0.25	7.2	LA		ADX	1					CDM Smith	A. Coler	For the last structure, "12" was entered into the mineral class field in the EDD rather than "1"; as a result, the total number of countable structures was incorrectly reported as 55, rather than 56.	2/21/2014	x-NR
CL-3-0012	041316497-0010A	197804	1	L1	H4	F	1	1	0.95	0.16	5.94	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197805	2	L1	H4	F	2	2	2.5	0.24	10.42	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197806	3	L1	H4	B	3	3	3.3	0.52	6.35	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197807	4	L1	H4	F	4	4	3.1	0.2	15.5	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197808	5	L1	H4	F	5	5	1.3	0.14	9.29	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197809	6	L1	H4	F	6	6	1.8	0.15	12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197810	7	L1	H4	MD10	7													CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197811	8	L1	H4	MFO		7	1.6	0.26	6.15	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197812	9	L1	H4	F	8	8	0.95	0.28	3.39	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197813	10	L1	H4	F	9	9	2.2	0.25	8.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197814	11	L1	H4	F	10	10	3.1	0.54	5.74	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197815	12	L1	B8	F	11	11	3.25	1	3.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197816	13	L1	B8	MD10	12													CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197817	14	L1	B8	MFO		12	1.6	0.3	5.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197818	15	L1	B8	F	13	13	2	0.19	10.53	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197819	16	L1	B8	F	14	14	2.6	0.53	4.91	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197820	17	L1	B8	MD10	15													CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197821	18	L1	B8	MF		15	3.4	0.25	13.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197822	19	L1	B8	F	16	16	5.1	0.5	10.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197823	20	L1	B8	F	17	17	4.8	0.2	24	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197824	21	L1	B8	MD10	18													CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197825	22	L1	B8	MFO		18	2	0.28	7.14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197826	23	L1	B8	F	19	19	0.65	0.13	5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197827	24	L1	B8	F	20	20	15.3	2.5	6.12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197828	25	L1	B8	F	21	21	2	0.14	14.29	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197829	26	L1	B8	F	22	22	2.6	0.25	10.4	LA		ADX	1	1	1		XX, AC, Phu	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197830	27	L1	B8	MD10	23													CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197831	28	L1	B8	MF		23	1.9	0.2	9.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197832	29	L1	B8	B	24	24	2.7	0.48	5.63	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197833	30	L1	B8	F	25	25	0.8	0.25	3.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197834	31	L1	B8	F	26	26	3	0.5	6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197835	32	L2	E4	F	27	27	2	0.28	7.14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197836	33	L2	E4	F	28	28	14.6	0.7	20.86	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197837	34	L2	E4	F	29	29	5.1	0.26	19.62	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197838	35	L2	E4	F	30	30	6.1	0.26	23.46	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197839	36	L2	E4	F	31	31	1.7	0.27	6.3	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197840	37	L2	E4	F	32	32	1	0.12	8.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197841	38	L2	E4	F	33	33	2	0.25	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197842	39	L2	E4	F	34	34	1.3	0.4	3.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197843	40	L2	E4	MD10	35													CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197844	41	L2	E4	MF		35	2	0.22	9.09	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197845	42	L2	E4	F	36	36	2.3	0.13	17.69	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197846	43	L2	E4	F	37	37	1	0.24	4.17	LA		ADX	1		1		XX, AC	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197847	44	L2	E4	MD10	38													CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197848	45	L2	E4	MFO		38	1.9	0.24	7.92	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197849	46	L2	H5	F	39	39	2.6	0.2	13	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197850	47	L2	H5	CD20	40													CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197851	48	L2	H5	CF		40	2.6	0.23	11.3	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197852	49	L2	H5	CF		41	2.2	0.23	9.57	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197853	50	L2	H5	F	41	42	7.6	0.48	15.83	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197854	51	L2	H5	F	42	43	3	0.32	9.38	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197855	52	L2	H5	MD30	43													CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197856	53	L2	H5	MF		44	1.5	0.12	12.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197857	54	L2	H5	MF		45	1.3	0.14	9.29	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197858	55	L2	H5	MF		46	1.2	0.14	8.57	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197859	56	H5	F	44	47	3.1	0.26	11.92	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197860	57	L2	H5	F	45	48	7.8	0.47	16.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197861	58	L2	H5	F	46	49	2.7	0.48	5.63	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197862	59	L2	H5	MD11	0													CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197863	60	L2	H5	MF		0	5.1	0.35	14.57	NAM		NAM	1					CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197864	61	L2	H5	B	47	50	8.1	0.9	9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197865	62	L2	H5	F	48	51	4.5	0.25	18	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197866	63	L2	H5	F	49	52	0.51	0.12	4.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
CL-3-0012	041316497-0010A	197867	64	L2	H5	F	50	53	0.65	0.12	5.42	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196849	1	K2	D2	F	1	1	2.65	0.3	8.83	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196850	2	K2	D2	B	2	2	3	0.35	8.57	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196851	3	K2	D2	F	3	3	2.75	0.3	9.17	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196852	4	K2	D2	CD20	4													CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196853	5	K2	D2	CF		4	4.85	0.2	24.25	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196854	6	K2	D2	CF		5	3.1	0.2	15.5	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196855	7	K2	D2	B	5	6	2.25	0.65	3.46	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196856	8	K2	D2	B	6	7	3.1	0.5	6.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196857	9	K2	D2	F	7	8	7	0.35	20	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196858	10	K2	D2	CD21	8													CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196859	11	K2	D2	CF		9	8.5	0.75	11.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196860	12	K2	D2	CF		10	2.35	0.2	11.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196861	13	K2	D4	F	9	11	2	0.2	10	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196862	14	K2	D4	F	10	12	2	0.2	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196863	15	K2	D4	B	11	13	4	0.5	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196864	16	K2	D4	F	12	14	3.75	0.2	18.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196865	17	K2	D4	F	13	15	8.85	0.25	35.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196866	18	K2	D4	F	14	16	9.5	0.25	38	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196867	19	K2	D4	F	15	17	6.8	0.3	22.67	LA		ADX	1				NaK, W

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - REPLICATE ANALYSIS OF PHASE I AND COMMERCIAL LOGGING TREE BARK (2013)

Samp No	Lab Sample ID	Structure ID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P1-00039	041316628-0001A	196891	43	K4	D5	MF		38	2.4	0.35	6.86	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196892	44	K4	D5	MFO		39	1	0.25	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196893	45	K4	D7	F	32	40	6.1	0.25	24.4	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196894	46	K4	D7	F	33	41	4.5	0.2	22.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196895	47	K4	D7	B	34	42	5.6	1.1	5.09	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196896	48	K4	D7	MD10	35													CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196897	49	K4	D7	MB		43	4	1	4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196898	50	K4	D7	B	36	44	5.35	0.4	13.38	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196899	51	K4	D9	B	37	45	17.75	1.5	11.83	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196900	52	K4	D9	B	38	46	10	1.15	8.7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196901	53	K4	D9	F	39	47	1.85	0.2	9.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001A	196902	54	K4	D9	F	40	48	11.2	0.85	13.18	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196910	1	P1	D2	F	1	1	4.6	0.3	15.33	LA		ADX	1	1	1	1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196911	2	P1	D2	B	2	2	2.85	0.5	5.7	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196912	3	P1	D2	F	3	3	3.9	0.25	15.6	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196913	4	P1	D2	B	4	4	13.8	1.5	9.2	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196914	5	P1	D2	CD32	5													CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196915	6	P1	D2	CB		5	14	1	14	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196916	7	P1	D2	CB		6	6.6	0.5	13.2	LA		ADX	1	1			NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196917	8	P1	D2	CF		7	4.8	0.3	16	LA		ADX	1	1			NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196918	9	P1	D2	B	6	8	40.5	1.35	30	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196919	10	P1	D2	F	7	9	12.45	1	12.45	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196920	11	P1	D4	F	8	10	1.9	0.35	5.43	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196921	12	P1	D4	F	9	11	2.8	0.45	6.22	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196922	13	P1	D4	F	10	12	3.6	0.25	14.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196923	14	P1	D6	F	11	13	4.9	0.45	10.89	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196924	15	P1	D6	B	12	14	12.75	1.15	11.09	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196925	16	P1	D6	CD22	13													CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196926	17	P1	D6	CB		15	8.5	0.45	18.89	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196927	18	P1	D6	CB		16	6	0.45	13.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196928	19	P1	D8	MD10	14											1		CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196929	20	P1	D8	MFO		17	2.8	0.25	11.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196930	21	P1	D8	F	15	18	83.5	1	83.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	The length for primary structure #18 is 83.5, not 23.5 according to benchsheet.	2/21/2014	x-NR
P1-00039	041316628-0001B	196931	22	P1	D8	B	16	19	18.75	1.4	13.39	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196932	23	P1	D8	B	17	20	0.9	0.3	3	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196933	24	P1	D8	F	18	21	1.6	0.15	10.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196934	25	P1	D8	B	19	22	2.3	0.55	4.18	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196935	26	P1	D10	F	20	23	6.85	0.35	19.57	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196936	27	P1	D10	F	21	24	3	0.35	8.57	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196937	28	P1	D10	F	22	25	1.3	0.25	5.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196938	29	P1	D10	F	23	26	4.1	0.25	16.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196939	30	P3	D2	F	24	27	3.75	0.25	15	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196940	31	P3	D2	B	25	28	2	0.2	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196941	32	P3	D2	B	26	29	3	0.45	6.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196942	33	P3	D4	B	27	30	8.75	0.35	25	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196943	34	P3	D4	F	28	31	5.7	0.2	28.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196944	35	P3	D4	F	29	32	10.7	0.7	15.29	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196945	36	P3	D4	F	30	33	2.4	0.5	4.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196946	37	P3	D4	F	31	34	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196947	38	P3	D4	F	32	35	10	1.75	5.71	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196948	39	P3	D4	F	33	36	4.8	0.25	19.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196949	40	P3	D6	F	34	37	3.25	0.3	10.83	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196950	41	P3	D6	F	35	38	3.7	0.3	12.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196951	42	P3	D6	F	36	39	3.7	0.45	8.22	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196952	43	P3	D6	F	37	40	3.35	0.25	13.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196953	44	P3	D8	B	38	41	3.9	1.2	3.25	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196954	45	P3	D8	F	39	42	3.75	0.25	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196955	46	P3	D8	F	40	43	7.7	0.65	11.85	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196956	47	P3	D8	F	41	44	2.85	0.2	14.25	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196957	48	P3	D8	B	42	45	1.25	0.3	4.17	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196958	49	P3	D10	B	43	46	8.5	1.25	6.8	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196959	50	P3	D10	F	44	47	4.05	0.25	16.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196960	51	P3	F2	B	45	48	5.75	1.5	3.83	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196961	52	P3	F2	MD11	46													CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196962	53	P3	F2	MFO		49	4.95	0.5	9.9	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196963	54	P3	F2	F	47	50	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196964	55	P3	F2	F	48	51	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00039	041316628-0001B	196965	56	P3	F2	F	49	52	3.7	0.3	12.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	196990	1	M2	D2	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	196991	2	M2	D4	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	196992	3	M2	D6	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	196993	4	M2	D8	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	196994	5	M2	D10	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	196995	6	M2	E1	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	196996	7	M4	D2	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	196997	8	M4	D4	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	196998	9	M4	D6	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	196999	10	M4	D8	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	197000	11	M4	D10	ND												1		CDM Smith	A. Coler			x-NR
P1-00053	041316628-0003A	197001	12	M4	E1	ND												1		CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197188	1	H2	B6	F	0	0	25.5	0.65	39.23	LA		ADX	1			1	; Structure	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197189	2	H2	B6	F	0	0	33.8	0.6	56.33	LA		ADX	1				; Structure	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197190	3	H2	B6	B	0	0	21.75	3.35	6.49	LA		ADX	1				; Structure	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197191	4	H2	B6	B	1	1	7.75	1.3	5.96	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197192	5	H2	B6	F	2	2	2.45	0.5	4.9	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197193	6	H2	B6	CD22	3													CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197194	7	H2	B6	CF		3	7.2	0.45	16	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197195	8	H2	B6	CF		4	5.5	0.5	11	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197196	9	H2	B6	F	4	5	1.75	0.3	5.83	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197197	10	H2	B6	F	5	6	4.7	0.5	9.4	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197198	11	H2	B6	B	6	7	2.7	0.35	7.71	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197199	12	H2	B6	F	7	8	7.5	0.3	25	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197200	13	H2	B6	F	8	9	3	0.2	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197201	14	H2	B6	CD21	9													CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197202	15	H2	B6	CB		10	8	0.85	9.41	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197203	16	H2	B6	CF		11	3.3	0.25	13.2	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197204	17	H2	B6	F	10	12	4	0.25	16	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197205	18	H2	B6	F	11	13	2.9	0.15	19.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197206	19	H2	B6	F	12	14	1.25	0.3	4.17	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197207	20	H2	B6	B	13	15	3.2	0.35	9.14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197208	21	H2	B6	F	14	16	13.25	0.75	17.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197209	22	H2	B6	B	15	17	13.25	0.75	17.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197210	23	H2	B6	F	16	18	1.3	0.3	4.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197211	24	H2	B6	MD10	17													CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197212	25	H2	B6	MFO		19	3.3	0.2	16.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197213	26	H2	B6	F	18	20	2.95	0.3	9.83	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197214	27	H2	B6	F	19	21	3.2	0.4	8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197215	28	H2	B6	F	20	22	4.5	0.3	15	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197216	29	H2	B6	CD20	21													CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197217	30	H2	B6	CF		23	4	0.35	11.43	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197218	31	H2	B6	CF		24	1.7	0.3	5.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197219	32	H2	B6	MD10	22													CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197220	33	H2	B6	MF		25	3.65	0.6	6.08	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler	Structure type for primary structure #25 was recorded on the benchsheet as MF but entered in the EDD as MFO. Please confirm the correct structure type and revise the benchsheet or EDD accordingly.	2/21/2014	x-NR
P1-00219	041316629-0001B	197221	34	H2	B6	B	23	26	6.7	1	6.7	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197222	35	H2	B6	F	24	27	3.5	0.2	17.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197223	36	H2	B6	F	25	28	4.95	0.2	24.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197224	37	H2	B6	B	26	29	6.2	0.7	8.86	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197225	38	H2	B6	F	27	30	20.5	0.85	24.12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197226	39	H2	B6	F	28	31	3	0.25	12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197227	40	H2	B6	F	29	32	10.5	0.35	30	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197228	41	H2	B6	F	30	33	5.8	0.35	16.57	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197229	42	H2	B6	F	31	34	3.65	0.15	24.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197230	43	H2	B6	CD20	32													CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197231	44	H2	B6	CF		35	2.75	0.2	13.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197232	45	H2	B6	CF		36	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197233	46	H2	B6	F	33	37	2	0.35	5.71	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197234	47	H2	B6	F	34	38	2.6	0.3	8.67	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197235	48	H2	B6	F	35	39	7.3	0.35	20.86	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197236	49	H2	B6	F	36	40	3	0.15	20	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197237	50	H2	B6	F	37	41	2.8	0.5	5.6	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197238	51	H2	F8	F	0	0	12	0.5	24	LA		ADX	1			1	; Structure	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197239	52	H2	F8	F	0	0	17.5	0.25	70	LA		ADX	1				; Structure	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197240	53	H2	F8	F	38	42	3	0.25	12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197241	54	H2	F8	MD11	39													CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197242	55	H2	F8	MF		43	5.2	0.25	20.8	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197243	56	H2	F8	F	40	44	8.75	0.8	10.94	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197244	57	H2	F8	F	41	45	1.85	0.25	7.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197245	58	H2	F8	B	42	46	1.5	0.4	3.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197246	59	H2	F8	F	43	47	4.8	0.4	12	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197247	60	H2	F8	F	44	48	3.25	0.35	9.29	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197248	61	H2	F8	F	45	49	3.2	0.2	16	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197249	62	H2	F8	F	46	50	2	0.2	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197250	63	H2	F8	MD21	47													CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197251	64	H2	F8	MFO		51	7.8	0.25	31.2	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197252	65	H2	F8	MF		52	4.2	0.4	10.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197253	66	H2	F8	F	48	53	4.9	0.75	6.53	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197254	67	H2	F8	F	49	54	5.5	0.2	27.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197255	68	H2	F8	F	50	55	1.85	0.25	7.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197256	69	H4	D5	F	51	56	6.85	0.55	12.45	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197257	70	H4	D5	F	52	57	7.7	0.75	10.27	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197258	71	H4	D5	F	53	58	1.7	0.2	8.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197259	72	H4	D5	MD42	54													CDM Smith	A. Coler	CH Not Counted for primary structure #54 was recorded on the benchsheet but was not entered in the EDD.	2/21/2014	x-NR
P1-00219	041316629-0001B	197260	73	H4	D5	MF		59	15	0.35	42.86	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197261	74	H4	D5	MF		60	5.2	0.25	20.8

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - REPLICATE ANALYSIS OF PHASE I AND COMMERCIAL LOGGING TREE BARK (2013)

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P1-00219	041316629-0001B	197282	95	H4	D5	F	67	79	5.8	0.45	12.89	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197283	96	H4	D5	B	68	80	12	1.15	10.43	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197284	97	H4	D5	F	69	81	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197285	98	H4	D5	B	70	82	7.7	0.35	22	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197286	99	H4	G10	F	71	83	2.5	0.3	8.33	LA		ADX	1			1	NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197287	100	H4	G10	F	72	84	2.6	0.6	4.33	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197288	101	H4	G10	F	73	85	3.75	0.2	18.75	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197289	102	H4	G10	B	74	86	5.2	1.85	2.81	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197290	103	H4	G10	F	75	87	4.8	0.75	6.4	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197291	104	H4	G10	F	76	88	3.2	0.35	9.14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197292	105	H4	G10	B	77	89	7.75	0.5	15.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197293	106	H4	G10	F	78	90	5.5	0.2	27.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197294	107	H4	G10	F	79	91	8.3	0.35	23.71	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197295	108	H4	G10	F	80	92	7.75	0.45	17.22	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197296	109	H4	G10	F	81	93	7.8	0.4	19.5	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197297	110	H4	G10	B	82	94	2.95	0.45	6.56	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197298	111	H4	G10	MD11	83													CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197299	112	H4	G10	MF		95	5.75	0.6	9.58	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197300	113	H4	G10	MD20	84													CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197301	114	H4	G10	MF		96	6.5	0.35	18.57	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197302	115	H4	G10	MF		97	2.1	0.15	14	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR
P1-00219	041316629-0001B	197303	116	H4	G10	F	85	98	8	0.8	10	LA		ADX	1				NaK, WRTA	CDM Smith	A. Coler			x-NR

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	QVC - 5%
SB-00113	041514397-0002	245787	1	Q2	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245788	2	Q2	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245789	3	Q2	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245790	4	Q2	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245791	5	Q2	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245792	6	Q2	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245793	7	Q2	C5	MD11	0													Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245794	8	Q2	C5	MF		0	29	1.68	17.261905	LA		ADX	1	1	1		XNCGBLD / 010532D	Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245795	9	Q2	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245796	10	Q2	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245797	11	Q2	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245798	12	Q2	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245799	13	Q2	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245800	14	Q2	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245801	15	Q2	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245802	16	Q2	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245803	17	Q2	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245804	18	Q2	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245805	19	Q3	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245806	20	Q3	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245807	21	Q3	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245808	22	Q3	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245809	23	Q3	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245810	24	Q3	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245811	25	Q3	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245812	26	Q3	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245813	27	Q3	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245814	28	Q3	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245815	29	Q3	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245816	30	Q3	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245817	31	Q3	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245818	32	Q3	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245819	33	Q3	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245820	34	Q3	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00113	041514397-0002	245821	35	Q3	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234608	1	Q5	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234609	2	Q5	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234610	3	Q5	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234611	4	Q5	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234612	5	Q5	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234613	6	Q5	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234614	7	Q5	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234615	8	Q5	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234616	9	Q5	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234617	10	Q5	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234618	11	Q5	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234619	12	Q5	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234620	13	Q5	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234621	14	Q5	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234622	15	Q5	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234623	16	Q5	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234624	17	Q5	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234625	18	Q5	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234626	19	Q5	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234627	20	Q5	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234628	21	Q6	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234629	22	Q6	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234630	23	Q6	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234631	24	Q6	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234632	25	Q6	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234633	26	Q6	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234634	27	Q6	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234635	28	Q6	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234636	29	Q6	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234637	30	Q6	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234638	31	Q6	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234639	32	Q6	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234640	33	Q6	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234641	34	Q6	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234642	35	Q6	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234643	36	Q6	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00115	041514397-0004	234644	37	Q6	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251185	1	R1	A10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251186	2	R1	A8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251187	3	R1	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251188	4	R1	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251189	5	R1	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251190	6	R1	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251191	7	R1	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251192	8	R1	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251193	9	R1	C8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251194	10	R1	C10	F	1	1	5.6	1.1	5.0909091	LA		ADX	1	1	1		NaK, WRTA; Asbestos_390, Asbesto	Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251195	11	R1	E10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251196	12	R1	E8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251197	13	R1	E6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251198	14	R1	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251199	15	R1	E2	MD11	2													Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251200	16	R1	E2	MB		2	45.6	5.8	7.862069	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251201	17	R1	G2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251202	18	R1	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251203	19	R1	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251204	20	R1	G8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251205	21	R1	G10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251206	22	R1	I10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251207	23	R1	I8	F	3	3	20.8	1.1	18.909091	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251208	24	R1	I8	F	4	4	55.3	6.1	9.0655738	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251209	25	R1	I6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251210	26	R1	I4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251211	27	R1	I2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251212	28	R2	B2	F	0	0	16.6	0.2	83	LA		ADX	1				XNCGBLD, does not meet minimu	Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251213	29	R2	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251214	30	R2	B6	F	5	5	28.6	3.3	8.6666667	LA		ADX			1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251215	31	R2	B6	F	6	6	5.3	0.4	13.25	LA		ADX					NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251216	32	R2	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251217	33	R2	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251218	34	R2	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251219	35	R2	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251220	36	R2	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251221	37	R2	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251222	38	R2	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251223	39	R2	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251224	40	R2	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251225	41	R2	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251226	42	R2	G8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251227	43	R2	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251228	44	R2	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00117	041514397-0006	251229	45	R2	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234690	1	R6	A2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234691	2	R6	A4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234692	3	R6	A6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234693	4	R6	A8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234694	5	R6	A10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234695	6	R6	C10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234696	7	R6	C8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234697	8	R6	C6	F	1	1	7.6	0.75	10.133333	LA		ADX	1	1			NaK, WRTA; Asbestos_392, Asbesto	Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234698	9	R6	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234699	10	R6	C2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234700	11	R6	E2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234701	12	R6	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234702	13	R6	E6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234703	14	R6	E8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234704	15	R6	E10	F	2	2	7.6	0.65	11.692308	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234705	16	R6	G10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234706	17	R6	G8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234707	18	R6	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234708	19	R6	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234709	20	R6	G2	F	3	3	33.2	1	33.2	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234710	21	R6	I2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234711	22	R6	I4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234712	23	R6	I6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234713	24	R6	I8	F	4	4	5.1	0.55	9.2727273	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234714	25	R6	I10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234715	26	R7	J1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234716	27	R7	J3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234717	28	R7	J5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234718	29	R7	J7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234719	30	R7	J9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234720	31	R7	H9	F	5	5	5.4	0.3	18	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234721	32	R7	H7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234722	33	R7	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234723	34	R7	H3	F	6	6	21.8	0.9	24.222222	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234724	35	R7	H3	MD11	7													Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234725	36	R7	H3	MF		7	5.2	0.4	13	LA		ADX	1				NaK, WRTA; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234726	37	R7	H1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234727	38	R7	F1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234728	39	R7	F3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234729	40	R7	F5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234730	41	R7	F7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234731	42	R7	F9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234732	43	R7	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234733	44	R7	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234734	45	R7	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234735	46	R7	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234736	47	R7	D1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00119	041514397-0008	234737	48	R7	B1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245822	1	S1	A1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245823	2	S1	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245824	3	S1	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245825	4	S1	A7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245826	5	S1	A9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245827	6	S1	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245828	7	S1	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245829	8	S1	B6	F	1	1	8.3	0.45	18.444444	LA		ADX	1	1	1		NaK, WRTA; Asbestos_387, Asbesto	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245830	9	S1	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245831	10	S1	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245832	11	S1	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245833	12	S1	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245834	13	S1	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245835	14	S1	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245836	15	S1	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245837	16	S1	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245838	17	S1	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245839	18	S1	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245840	19	S1	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245841	20	S1	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245842	21	S1	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245843	22	S1	E3	F	2	2	23	6.8	3.3823529	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245844	23	S1	E3	F	3	3	74.1	0.9	82.333333	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245845	24	S1	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245846	25	S1	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245847	26	S1	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245848	27	S1	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245849	28	S1	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245850	29	S1	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245851	30	S1	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245852	31	S1	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245853	32	S1	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245854	33	S1	G3	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	QVC - 5%
SB-00137	041514397-0010	245855	34	S1	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245856	35	S1	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245857	36	S1	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245858	37	S1	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245859	38	S1	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245860	39	S1	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245861	40	S1	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245862	41	S1	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245863	42	S1	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245864	43	S1	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245865	44	S1	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245866	45	S1	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245867	46	S1	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245868	47	S1	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245869	48	S1	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245870	49	S1	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245871	50	S1	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245872	51	S1	J2	F	4	4	6.4	0.35	18.285714	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245873	52	S1	J2	F	5	5	27.1	0.8	33.875	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245874	53	S2	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245875	54	S2	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245876	55	S2	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245877	56	S2	J4	F	6	6	69.4	1.4	49.571429	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245878	57	S2	J2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245879	58	S2	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245880	59	S2	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245881	60	S2	I5	F	7	7	5.8	0.4	14.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245882	61	S2	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245883	62	S2	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245884	63	S2	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245885	64	S2	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245886	65	S2	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245887	66	S2	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245888	67	S2	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245889	68	S2	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245890	69	S2	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245891	70	S2	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245892	71	S2	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245893	72	S2	G9	MD11	8													Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245894	73	S2	G9	MFO		8	7.8	0.5	15.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245895	74	S2	G9	F	9	9	6.2	0.5	12.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245896	75	S2	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245897	76	S2	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245898	77	S2	F6	F	10	10	5.9	0.9	6.5555556	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245899	78	S2	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245900	79	S2	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245901	80	S2	E1	F	11	11	13.1	0.6	21.833333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245902	81	S2	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245903	82	S2	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245904	83	S2	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245905	84	S2	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245906	85	S2	D10	F	12	12	9.2	0.35	26.285714	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245907	86	S2	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245908	87	S2	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245909	88	S2	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245910	89	S2	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245911	90	S2	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245912	91	S2	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245913	92	S2	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245914	93	S2	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245915	94	S2	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245916	95	S2	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245917	96	S2	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245918	97	S2	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245919	98	S2	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245920	99	S2	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245921	100	S2	A1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245922	101	S2	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245923	102	S2	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245924	103	S2	A7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245925	104	S2	A9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245926	105	S2	A10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245927	106	S3	A1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245928	107	S3	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245929	108	S3	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245930	109	S3	A7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245931	110	S3	A9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245932	111	S3	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245933	112	S3	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245934	113	S3	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245935	114	S3	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245936	115	S3	B2	F	0	0	12.4	0.4	31	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245937	116	S3	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245938	117	S3	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245939	118	S3	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245940	119	S3	C7	F	13	13	19.6	3.3	5.9393939	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245941	120	S3	C7	F	14	14	9.2	0.7	13.142857	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245942	121	S3	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245943	122	S3	D10	F	15	15	20.8	1.4	14.857143	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245944	123	S3	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245945	124	S3	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245946	125	S3	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245947	126	S3	D2	F	0	0	40.8	0.45	90.666667	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245948	127	S3	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245949	128	S3	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245950	129	S3	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245951	130	S3	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245952	131	S3	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245953	132	S3	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245954	133	S3	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245955	134	S3	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245956	135	S3	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245957	136	S3	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245958	137	S3	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245959	138	S3	G3	MF11	16													Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245960	139	S3	G3	MFO		16	24.3	1.1	22.090909	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245961	140	S3	G3	F	17	17	9.7	0.5	19.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245962	141	S3	G5	F	18	18	5.1	0.85	6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245963	142	S3	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245964	143	S3	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245965	144	S3	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245966	145	S3	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00137	041514397-0010	245967	146	S3	H6	F	19	19	15.7	0.4	39.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251230	1	N1	J1	F	1	1	11.1	1.8	6.1666667	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251231	2	N1	J3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251232	3	N1	J5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251233	4	N1	J9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251234	5	N1	I8	F	2	2	6.9	0.3	23	LA		ADX	1	1	1		NaK, WRTA; Asbestos_395, Asbestos	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251235	6	N1	I4	F	3	3	11.1	0.4	27.75	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251236	7	N1	I2	F	4	4	8.2	0.7	11.714286	LA		ADX	1		1		NaK, WRTA; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251237	8	N1	H1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251238	9	N1	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251239	10	N1	H5	F	5	5	7.6	0.25	30.4	LA		ADX	1				NaK, WRTA; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251240	11	N1	G8	F	6	6	6.9	0.75	9.2	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251241	12	N1	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251242	13	N1	G4	F	7	7	10.2	0.3	34	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251243	14	N1	G2	F	8	8	6.1	0.3	20.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251244	15	N1	F1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251245	16	N1	F3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251246	17	N1	F5	MD11	9													Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251247	18	N1	F5	MFO		9	5.2	0.5	10.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251248	19	N1	F5	F	10	10	6.2	0.3	20.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251249	20	N1	F9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251250	21	N1	E10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251251	22	N1	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251252	23	N1	E2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251253	24	N1	D1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251254	25	N1	D3	F	11	11	8.3	0.45	18.444444	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251255	26	N1	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251256	27	N1	D9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251257	28	N1	C10	F	12	12	5.1	0.45	11.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251258	29	N1	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251259	30	N1	C2	F	13	13	9.2	0.7	13.142857	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251260	31	N1	B1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251261	32	N1	B3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251262	33	N1	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251263	34	N1	B9	F	14	14	10.9	1.6	6.8125	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251264	35	N1	B9	F	15	15	13.5	1	13.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251265	36	N2	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251266	37	N2	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251267	38	N2	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251268	39	N2	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251269	40	N2	J2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251270	41	N2	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251271	42	N2	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251272	43	N2	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251273	44	N2	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251274	45	N2	I9	F	16	16	6.7	0.5	13.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251275	46	N2	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251276	47	N2	H8	MD11	17													Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251277	48	N2	H8	MFO		17	7.5	0.5	15	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251278	49	N2	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251279	50	N2	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251280	51	N2	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251281	52	N2	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251282	53	N2	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251283	54	N2	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251284	55	N2	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251285	56	N2	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251286	57	N2	E10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251287	58	N2	E8	F	0	0	41.6	1.2	34.666667	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251288	59	N2	E6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251289	60	N2	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251290	61	N2	E2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251291	62	N2	D1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251292	63	N2	D3	F	18	18	14.7	1.3	11.307692	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251293	64	N2	D3	MD11	19													Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251294	65	N2	D3	MF		19	9.8	1.7	5.7647059	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251295	66	N2	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251296	67	N2	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251297	68	N2	D9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251298	69	N2	C8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251299	70	N2	C6	F	20	20	5.1	1.3	3.9230769	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251300	71	N2	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251301	72	N2	C2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251302	73	N2	B1	F	0	0	12.7	5.5	2.3090909	LA		ADX	1					Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251303	74	N2	B3	F	21	21	10.4	0.5	20.8	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251304	75	N2	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251305	76	N2	B7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251306	77	N2	B9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251307	78	N2	A10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
SB-00139	041514400-0002	251315	86	N3	A4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251316	87	N3	A2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251317	88	N3	B1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251318	89	N3	B3	F	22	22	5.1	0.4	12.75	LA		ADX	1					Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251319	90	N3	B3	F	23	23	6.8	1.1	6.181818	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251320	91	N3	B3	F	24	24	7.9	0.4	19.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00139	041514400-0002	251321	92	N3	B5	F	25	25	6.1	0.5	12.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00143	041514400-0004	235690	1	N5	H2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235691	2	N5	H4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235692	3	N5	H6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235693	4	N5	H10	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235694	5	N5	G9	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235695	6	N5	G7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235696	7	N5	G5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235697	8	N5	G3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235698	9	N5	G1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235699	10	N5	F2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235700	11	N5	F4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235701	12	N5	F6	F	1	1	22.3	1.92	11.614583	LA		ADX	1	1	1		NaK, WRTA; 010548D	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235702	13	N5	F8	F	2	2	7.4	0.72	10.277778	LA		ADX	1	1	1		NaK, WRTA; 010550D	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235703	14	N5	E9	ND													. Additional analysis 5/29/15	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235704	15	N5	E7	F	3	3	7.4	0.72	10.277778	LA		ADX	1		1		XK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235705	16	N5	E5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235706	17	N5	E3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235707	18	N5	E1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235708	19	N5	D2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235709	20	N5	D4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235710	21	N5	D6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235711	22	N5	C7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235712	23	N5	C5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235713	24	N5	C3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235714	25	N5	C1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235715	26	N5	B2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235716	27	N5	B4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235717	28	N5	B6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235718	29	N5	B8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235719	30	N5	A7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235720	31	N5	A5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235721	32	N5	A3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235722	33	N5	A1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235723	34	N6	A1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235724	35	N6	A3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235725	36	N6	A5	F	4	4	10.5	0.96	10.9375	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235726	37	N6	A7	F	5	5	10	1.68	5.952381	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235727	38	N6	A9	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235728	39	N6	B10	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235729	40	N6	B8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235730	41	N6	B6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235731	42	N6	B4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235732	43	N6	B2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235733	44	N6	C1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235734	45	N6	C3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235735	46	N6	C5	F	6	6	12.1	0.84	14.404762	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235736	47	N6	C7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235737	48	N6	C9	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235738	49	N6	D10	F	7	7	15	1.2	12.5	LA		ADX	1				XK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235739	50	N6	D8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235740	51	N6	D6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235741	52	N6	D4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235742	53	N6	D2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235743	54	N6	E1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235744	55	N6	E3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235745	56	N6	E5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235746	57	N6	E7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235747	58	N6	E9	F	8	8	10.5	0.48	21.875	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235748	59	N6	F10	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235749	60	N6	F8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235750	61	N6	F6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235751	62	N6	F4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235752	63	N6	F2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235753	64	N6	G1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235754	65	N6	G3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235755	66	N6	G5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235756	67	N6	G7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235757	68	N6	G9	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235758	69	N6	H8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235759	70	N6	H6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235760	71	N6	H4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235761	72	N6	H2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235762	73	N6	I1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235763	74	N6	I3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235764	75	N6	I5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235765	76	N6	I7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235766	77	N6	I9	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235767	78	N6	J8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235768	79	N6	J6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235769	80	N6	J4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235770	81	N6	J2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235771	82	N7	A9	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235772	83	N7	A7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235773	84	N7	A5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235774	85	N7	A3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235775	86	N7	B2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235776	87	N7	B4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235777	88	N7	B6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235778	89	N7	B8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235779	90	N7	B10	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235780	91	N7	C9	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235781	92	N7	C7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235782	93	N7	C5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235783	94	N7	C3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235784	95	N7	C1	F	9	9	20.7	3.1	6.6774194	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235785	96	N7	D2	F	10	10	18.5	0.48	38.541667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235786	97	N7	D4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235787	98	N7	D6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235788	99	N7	D8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235789	100	N7	D10	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235790	101	N7	E9	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235791	102	N7	E7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235792	103	N7	E5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235793	104	N7	E3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235794	105	N7	E1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235795	106	N7	F2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235796	107	N7	F4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235797	108	N7	F6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235798	109	N7	F8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235799	110	N7	F10	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235800	111	N7	G9	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235801	112	N7	G7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235802	113	N7	G5	F	11	11	11.6	0.96	12.083333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235803	114	N7	G3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235804	115	N7	G1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235805	116	N7	H2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235806	117	N7	H4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235807	118	N7	H6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235808	119	N7	H8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235809	120	N7	H10	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235810	121	N7	I9	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235811	122	N7	I7	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235812	123	N7	I5	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235813	124	N7	I3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235814	125	N7	I1	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235815	126	N7	J2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235816	127	N7	J4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235817	128	N7	J6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235818	129	N7	J10	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235819	130	N8	B10	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235820	131	N8	B8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235821	132	N8	B6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235822	133	N8	B4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235823	134	N8	B2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235824	135	N8	D2	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235825	136	N8	D4	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235826	137	N8	D6	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235827	138	N8	D8	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00143	041514400-0004	235828	139	N8	D10	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00145	041514400-0006	235829	1	O1	A10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235830	2	O1	A8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235831	3	O1	A6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235832	4	O1	A4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235833	5	O1	B3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235834	6	O1	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235835	7	O1	B7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235836	8	O1	B9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235837	9	O1	C10	F	1	1	8.2	0.65	12.615385	LA		ADX	1	1	1		NaK, WRTA; Asbestos_397, Asbestos	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235838	10	O1	C8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235839	11	O1	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235840	12	O1	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235841	13	O1	C2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235842	14	O1	D1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235843	15	O1	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235844	16	O1	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235845	17	O1	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235846	18	O1	D9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235847	19	O1	E8	ND													. Analysis started on 5/27/2015	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235848	20	O1	E6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235849	21	O1	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235850	22	O1	E2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235851	23	O1	F1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235852	24	O1	F3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235853	25	O1	F5	F	2	2	5.6	0.3	18.666667	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235854	26	O1	F7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235855	27	O1	F9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235856	28	O1	G10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235857	29	O1	G8	F	3	3	9.4	0.5	18.8	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235858	30	O1	G6	F	4	4	5.3	0.25	21.2	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235859	31	O1	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235860	32	O1	G2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235861	33	O1	H1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235862	34	O1	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235863	35	O1	H5	MD11	5													Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235864	36	O1	H5	MF		5	11.3	0.85	13.294118	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235865	37	O1	H7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235866	38	O1	H9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235867	39	O1	I10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235868	40	O1	I8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235869	41	O1	I6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235870	42	O1	I4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235871	43	O1	I2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235872	44	O1	J1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235873	45	O1	J3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235874	46	O1	J5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235875	47	O1	J7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235876	48	O1	J9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235877	49	O2	A4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235878	50	O2	A6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235879	51	O2	A8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235880	52	O2	B9	ND		

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	QVC - 5%
SB-00145	041514400-0006	235881	53	O2	B7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235882	54	O2	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235883	55	O2	C10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235884	56	O2	D9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235885	57	O2	D7	F	6	6	7.3	0.75	9.7333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235886	58	O2	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235887	59	O2	E6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235888	60	O2	E8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235889	61	O2	E10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235890	62	O2	F9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235891	63	O2	F7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235892	64	O2	F5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235893	65	O2	F1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235894	66	O2	G2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235895	67	O2	G4	F	7	7	17.4	0.3	58	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235896	68	O2	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235897	69	O2	G8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235898	70	O2	G10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235899	71	O2	H9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235900	72	O2	H7	F	8	8	7.7	0.75	10.266667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235901	73	O2	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235902	74	O2	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235903	75	O2	H1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235904	76	O2	I2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235905	77	O2	I4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235906	78	O2	I6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235907	79	O2	I8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235908	80	O2	I10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235909	81	O2	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235910	82	O2	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235911	83	O2	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235912	84	O2	J2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235913	85	O3	A1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235914	86	O3	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235915	87	O3	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235916	88	O3	A7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235917	89	O3	A9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235918	90	O3	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235919	91	O3	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235920	92	O3	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235921	93	O3	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235922	94	O3	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235923	95	O3	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235924	96	O3	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235925	97	O3	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235926	98	O3	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235927	99	O3	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235928	100	O3	D8	F	9	9	9.9	0.7	14.142857	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235929	101	O3	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235930	102	O3	E3	F	10	10	8.8	0.25	35.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235931	103	O3	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235932	104	O3	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235933	105	O3	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235934	106	O3	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235935	107	O3	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235936	108	O3	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235937	109	O3	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235938	110	O3	F2	F	11	11	10.6	0.6	17.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235939	111	O3	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235940	112	O3	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235941	113	O3	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235942	114	O3	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235943	115	O3	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235944	116	O3	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235945	117	O3	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235946	118	O3	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235947	119	O3	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235948	120	O3	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235949	121	O3	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235950	122	O3	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235951	123	O3	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235952	124	O3	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235953	125	O3	J2	F	12	12	10.3	1.3	7.9230769	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00145	041514400-0006	235954	126	O4	J9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235955	1	O5	A1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235956	2	O5	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235957	3	O5	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235958	4	O5	A7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235959	5	O5	A9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235960	6	O5	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235961	7	O5	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235962	8	O5	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235963	9	O5	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235964	10	O5	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235965	11	O5	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235966	12	O5	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235967	13	O5	C5	F	1	1	9.9	0.7	14.142857	LA		ADX	1	1	1		NaK, WRTA; Asbestos_411, Asbesto	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235968	14	O5	C7	F	2	2	5.5	0.3	18.333333	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235969	15	O5	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235970	16	O5	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235971	17	O5	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235972	18	O5	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235973	19	O5	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235974	20	O5	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235975	21	O5	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235976	22	O5	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235977	23	O5	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235978	24	O5	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235979	25	O5	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235980	26	O5	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235981	27	O5	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235982	28	O5	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235983	29	O5	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235984	30	O5	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235985	31	O5	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235986	32	O5	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235987	33	O5	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235988	34	O5	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235989	35	O5	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235990	36	O5	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235991	37	O5	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235992	38	O5	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235993	39	O5	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235994	40	O5	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235995	41	O5	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235996	42	O5	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235997	43	O5	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235998	44	O5	I9	F	3	3	6.5	1.3	5	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	235999	45	O5	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236000	46	O5	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236001	47	O5	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236002	48	O5	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236003	49	O5	J2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236004	50	O6	A1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236005	51	O6	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236006	52	O6	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236007	53	O6	A7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236008	54	O6	A9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236009	55	O6	B10	CD22	4													Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236010	56	O6	B10	CF		4	5.2	0.7	7.4285714	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236011	57	O6	B10	CF		5	5.5	0.25	22	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236012	58	O6	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236013	59	O6	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236014	60	O6	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236015	61	O6	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236016	62	O6	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236017	63	O6	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236018	64	O6	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236019	65	O6	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236020	66	O6	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236021	67	O6	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236022	68	O6	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236023	69	O6	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236024	70	O6	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236025	71	O6	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236026	72	O6	E5	F	5	6	5.3	0.6	8.8333333	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236027	73	O6	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236028	74	O6	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236029	75	O6	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236030	76	O6	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236031	77	O6	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236032	78	O6	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236033	79	O6	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236034	80	O6	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236035	81	O6	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236036	82	O6	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236037	83	O6	G7	F	6	7	8.6	0.7	12.285714	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236038	84	O6	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236039	85	O6	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236040	86	O6	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236041	87	O6	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236042	88	O6	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236043	89	O6	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236044	90	O6	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236045	91	O6	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236046	92	O6	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236047	93	O6	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236048	94	O6	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236049	95	O6	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236050	96	O6	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236051	97	O6	J2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236052	98	O7	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236053	99	O7	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236054	100	O7	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236055	101	O7	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236056	102	O7	J2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236057	103	O7	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236058	104	O7	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236059	105	O7	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236060	106	O7	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236061	107	O7	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236062	108	O7	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236063	109	O7	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236064	110	O7	H6	F	7	8	10.4	0.65	16	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236065	111	O7	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236066	112	O7	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236067	113	O7	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236068	114	O7	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236069	115	O7	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236070	116	O7	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236071	117	O7	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236072	118	O7	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236073	119	O7	F8	F	8	9	21.2	0.25	84.8	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236074	120	O7	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236075	121	O7	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236076	122	O7	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236077	123	O7	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236078	124	O7	E3	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	QVC - 5%
SB-00147	041514400-0008	236079	125	O7	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236080	126	O7	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236081	127	O7	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236082	128	O7	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236083	129	O7	D8	F	9	10	7.4	0.7	10.571429	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236084	130	O7	D6	F	0	0	10.8	0.4	27	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236085	131	O7	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236086	132	O7	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236087	133	O7	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236088	134	O7	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236089	135	O7	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236090	136	O7	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236091	137	O7	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236092	138	O7	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236093	139	O7	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236094	140	O7	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236095	141	O7	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236096	142	O7	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236097	143	O7	A1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236098	144	O7	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236099	145	O7	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236100	146	O7	A7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236101	147	O7	A9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236102	148	O8	A1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00147	041514400-0008	236103	149	O8	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236104	1	P1	A9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236105	2	P1	A7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236106	3	P1	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236107	4	P1	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236108	5	P1	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236109	6	P1	B4	F	0	0	5.7	1.2	4.75	NAM		NAM	1	1	1		; 010535M	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236110	7	P1	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236111	8	P1	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236112	9	P1	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236113	10	P1	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236114	11	P1	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236115	12	P1	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236116	13	P1	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236117	14	P1	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236118	15	P1	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236119	16	P1	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236120	17	P1	D6	F	1	1	9.1	0.36	25.277778	LA		ADX	1	1	1		NuK, WRTA; 010536D	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236121	18	P1	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236122	19	P1	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236123	20	P1	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236124	21	P1	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236125	22	P1	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236126	23	P1	E3	F	2	2	8.8	0.6	14.666667	LA		ADX	1		1		NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236127	24	P1	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236128	25	P1	F2	F	3	3	5.5	0.25	22	LA		ADX	1		1		NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236129	26	P1	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236130	27	P1	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236131	28	P1	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236132	29	P1	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236133	30	P1	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236134	31	P1	G7	F	0	0	10	1	10	NAM		NAM	1		1			Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236135	32	P1	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236136	33	P1	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236137	34	P1	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236138	35	P1	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236139	36	P1	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236140	37	P1	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236141	38	P1	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236142	39	P1	H10	MD32	4													Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236143	40	P1	H10	MF		4	10	0.48	20.833333	LA		ADX	1		1		NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236144	41	P1	H10	MF		5	7.7	0.6	12.833333	LA		ADX	1	1	1		NuK, WRTA; 040538D	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236145	42	P1	H10	MF		0	2.5	0.2	12.5	LA		AX	1					Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236146	43	P1	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236147	44	P1	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236148	45	P1	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236149	46	P1	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236150	47	P1	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236151	48	P1	J2	F	5	6	10	0.48	20.833333	LA		ADX	1				NuK, WRTA; XCGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236152	49	P1	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236153	50	P1	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236154	51	P1	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236155	52	P1	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236156	53	P2	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236157	54	P2	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236158	55	P2	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236159	56	P2	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236160	57	P2	J2	F	0	0	42.8	3.1	13.806452	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236161	58	P2	I1	F	6	7	6.6	0.72	9.1666667	LA		ADX	1				XX, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236162	59	P2	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236163	60	P2	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236164	61	P2	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236165	62	P2	I9	MF	7	8	11.9	1.2	9.9166667	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236166	63	P2	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236167	64	P2	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236168	65	P2	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236169	66	P2	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236170	67	P2	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236171	68	P2	G1	F	8	9	5.8	0.72	8.0555556	LA		AX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236172	69	P2	G3	F	9	10	5.5	0.48	11.458333	LA		ADX	1				XX, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236173	70	P2	G5	F	10	11	28.5	0.48	59.375	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236174	71	P2	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236175	72	P2	G7	F	11	12	11.6	0.96	12.083333	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236176	73	P2	G9	F	12	13	12.6	0.48	26.25	LA		AX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236177	74	P2	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236178	75	P2	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236179	76	P2	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236180	77	P2	F4	F	13	14	28	1.32	21.212121	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236181	78	P2	F2	F	14	15	6	1.44	4.1666667	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236182	79	P2	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236183	80	P2	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236184	81	P2	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236185	82	P2	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236186	83	P2	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236187	84	P2	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236188	85	P2	D8	F	15	16	9.7	0.96	10.104167	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236189	86	P2	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236190	87	P2	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236191	88	P2	D2	F	16	17	6.9	0.25	27.6	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236192	89	P2	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236193	90	P2	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236194	91	P2	C5	F	17	18	9.5	0.96	9.8958333	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236195	92	P2	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236196	93	P2	C9	F	0	0	10.9	0.48	22.708333	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236197	94	P2	D9	F	18	19	28	1.44	19.444444	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236198	95	P2	B10	F	19	20	9.9	1.2	8.25	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236199	96	P2	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236200	97	P2	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236201	98	P2	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236202	99	P2	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236203	100	P2	A1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236204	101	P2	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236205	102	P2	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236206	103	P2	A7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236207	104	P2	A9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236208	105	P3	J2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236209	106	P3	J4	MD11	20													Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236210	107	P3	J4	MFO		21	5.2	0.48	10.833333	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236211	108	P3	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236212	109	P3	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236213	110	P3	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236214	111	P3	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236215	112	P3	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236216	113	P3	I5	F	21	22	23.8	1.32	18.030303	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236217	114	P3	I3	F	22	23	5.2	0.36	14.444444	LA		ADX	1				XX, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236218	115	P3	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236219	116	P3	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236220	117	P3	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236221	118	P3	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236222	119	P3	H8	F	23	24	12.1	0.48	25.208333	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236223	120	P3	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236224	121	P3	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236225	122	P3	G7	F	24	25	5.2	0.25	? 20.8	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00149	041514400-0010	236226	123	P3	G7	B	25	26	11.4	1.44	? 7.916667	LA		ADX	1				XX, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238979	1	P1	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238980	2	P1	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238981	3	P1	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238982	4	P1	F7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238983	5	P1	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238984	6	P1	I8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238985	7	P2	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238986	8	P2	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238987	9	P2	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238988	10	P2	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238989	11	P2	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00087	041514414-0002	238990	12	P2	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	238991	1	P6	C2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	238992	2	P6	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	238993	3	P6	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	238994	4	P6	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	238995	5	P6	J7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	238996	6	P6	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	238997	7	P5	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	238998	8	P5	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	238999	9	P5	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	239000	10	P5	G2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	239001	11	P5	J7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00089	041514414-0004	239002	12	P5	I2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239003	1	Q1	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239004	2	Q1	C8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239005	3	Q1	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239006	4	Q1	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239007	5	Q1	F7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239008	6	Q1	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239009	7	Q1	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239010	8	Q2	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239011	9	Q2	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239012	10	Q2	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239013	11	Q2	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239014	12	Q2	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00091	041514414-0006	239015	13	Q2	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00093	041514414-0008	239016	1	Q6	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00093	041514414-0008	239017	2	Q6	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00093	041514414-0008	239018	3	Q6	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00093	041514414-0008	239019	4	Q6	H1	F	1	1	16.7	0.36	46.388889	LA		ADX	1	1	1		NuK, WRTA; XCGBLD ! 010597D	Air	CDM Smith	N. Ross/DDE			
SB-00093	041514414-0008	239020	5	Q6	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00093	041514414-0008	239021	6	Q6	B7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00093	041514414-0008	239022	7	Q5	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00093	041514414-0008	239023	8	Q5	G10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00093	041514414-0008	239024	9	Q5	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00093	041514414-0008	239025	10	Q5	D3	ND							

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	QVC - 5%
SB-00027	041514418-0002	237943	2	O1	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237944	3	O1	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237945	4	O1	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237946	5	O1	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237947	6	O1	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237948	7	O1	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237949	8	O2	J2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237950	9	O2	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237951	10	O2	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237952	11	O2	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237953	12	O2	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00027	041514418-0002	237954	13	O2	A4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237955	1	O5	A8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237956	2	O5	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237957	3	O5	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237958	4	O5	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237959	5	O5	G2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237960	6	O5	I4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237961	7	O5	J7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237962	8	O6	J3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237963	9	O6	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237964	10	O6	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237965	11	O6	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237966	12	O6	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00029	041514418-0004	237967	13	O6	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237968	1	P1	J2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237969	2	P1	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237970	3	P1	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237971	4	P1	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237972	5	P1	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237973	6	P1	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237974	7	P1	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237975	8	P2	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237976	9	P2	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237977	10	P2	E10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237978	11	P2	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237979	12	P2	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00031	041514418-0006	237980	13	P2	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237981	1	P5	A8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237982	2	P5	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237983	3	P5	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237984	4	P5	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237985	5	P5	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237986	6	P5	H9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237987	7	P5	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237988	8	P6	A7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237989	9	P6	B9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237990	10	P6	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237991	11	P6	F7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237992	12	P6	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237993	13	P6	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00033	041514418-0008	237994	14	P6	I10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	237995	1	Q1	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	237996	2	Q1	I2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	237997	3	Q1	H7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	237998	4	Q1	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	237999	5	Q1	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	238000	6	Q1	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	238001	7	Q1	A6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	238002	8	Q2	J5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	238003	9	Q2	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	238004	10	Q2	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	238005	11	Q2	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	238006	12	Q2	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00046	041514418-0010	238007	13	Q2	A5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238008	1	Q5	J7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238009	2	Q5	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238010	3	Q5	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238011	4	Q5	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238012	5	Q5	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238013	6	Q5	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238014	7	Q5	A3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238015	8	Q6	A8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238016	9	Q6	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238017	10	Q6	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238018	11	Q6	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00048	041514418-0012	238019	12	Q6	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240526	1	K1	G10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240527	2	K1	G8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240528	3	K1	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240529	4	K1	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240530	5	K1	G2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240531	6	K1	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240532	7	K1	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240533	8	K2	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240534	9	K2	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240535	10	K2	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240536	11	K2	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00050	041514422-0002	240537	12	K2	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240538	1	K5	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240539	2	K5	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240540	3	K5	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240541	4	K5	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240542	5	K5	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240543	6	K5	D1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240544	7	K5	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240545	8	K6	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240546	9	K6	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240547	10	K6	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240548	11	K6	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240549	12	K6	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00052	041514422-0004	240550	13	K6	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240559	1	L5	D9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240560	2	L5	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240561	3	L5	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240562	4	L5	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240563	5	L5	F5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240564	6	L5	F3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240565	7	L6	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240566	8	L6	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240567	9	L6	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240568	10	L6	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240569	11	L6	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00055	041514422-0007	240570	12	L6	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240571	1	M1	C2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240572	2	M1	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240573	3	M1	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240574	4	M1	C8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240575	5	M1	C10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240576	6	M1	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240577	7	M3	H9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240578	8	M3	H7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240579	9	M3	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240580	10	M3	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00057	041514422-0009	240581	11	M3	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240582	1	M5	E8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240583	2	M5	E6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240584	3	M5	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240585	4	M5	E2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240586	5	M5	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240587	6	M5	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240588	7	M6	H7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240589	8	M6	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240590	9	M6	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240591	10	M6	H1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240592	11	M6	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00059	041514422-0011	240593	12	M6	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240594	1	N1	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240595	2	N1	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240596	3	N1	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240597	4	N1	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240598	5	N1	B10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240599	6	N1	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240600	7	N1	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240601	8	N2	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240602	9	N2	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240603	10	N2	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240604	11	N2	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240605	12	N2	J5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00061	041514422-0013	240606	13	N2	J7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239281	1	F1	A4	F	1	1	6.75	0.28	24.107143	LA		ADX	1	1	1		NaK, WRTA; 27869	Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239282	2	F1	A6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239283	3	F1	A8	MD11	2													Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239284	4	F1	A8	MF		2	24	1.25	19.2	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239285	5	F1	A10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239286	6	F1	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239287	7	F1	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239288	8	F2	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239289	9	F2	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239290	10	F2	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239291	11	F2	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239292	12	F2	H6	F	3	3	6.5	0.45	14.444444	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00075	041514425-0002	239293	13	F2	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00077	041514425-0004	239294	1	F6	A2	F	0	0	7	0.4	17.5	LA		ADX	1				_KNCGBLD	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239295	2	F6	A2	MD11	1													Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239296	3	F6	A2	MF		1	6.5	0.4	16.25	LA		ADX	1	1	1		NaK, WRTA; 27873	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239297	4	F6	A4	F	2	2	10.75	0.75	14.333333	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239298	5	F6	A4	F	3	3	5.15	0.9	5.7222222	LA		ADX	1		1		XX, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239299	6	F6	A4	F	4	4	5.25	0.28	18.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239300	7	F6	D1	F	5	5	5.5	.1	5.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239301	8	F6	D1	MD11	6													Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239302	9	F6	D1	MF		6	8	0.5	16	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239303	10	F6	E2	F	7	7	20.9	.1	20.9	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239304	11	F6	E2	F	8	8	5.25	0.5	10.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239305	12	F6	E4	F	9	9	12.75	0.95	13.421053	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239306	13	F6	J5	F	10	10	10	0.3	33.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239307	14	F7	J4	F	11	11	11	0.9	12.222222	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239308	15	F7	J4	MD11	12													Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239309	16	F7	J4	MF		12	7.5	0.6	12.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239310	17	F7	J2	MD11	13													Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239311	18	F7	J2	MF		13	5.8	0.45	12.888889	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239312	19	F7	J2	MD11	14													Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239313	20	F7	J2	MF		14	5.5	0.7	7.8571429	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239314	21	F7	E9	MD22	15													Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239315	22	F7	E9	MF		15	17.5	0.6	29.166667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239316	23	F7	E9	MF		16	9.5	0.5	19	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239317	24	F7	D3	ND														Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239318	25	F7	A8	MD11	16													Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239319	26	F7	A8	MF		17	16.5	0.9	18.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00077	041514425-0004	239320	27	F7	A8	F	17	18	6	1	6	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
SB-00079	041514425-0006	239321	1	G1	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00079	041514425-0006	239322	2	G1	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00079	041514425-0006	239323	3	G1	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00079	041514425-0006	239324	4	G1	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00079	041514425-0006	239325	5	G1	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00079	041514425-0006	239326	6	G1	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00079	041514425-0006	239327	7	G3	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00079	041514425-0006	239328	8	G3	I7	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
SB-00079	041514425-0006	239329	9	G3	G8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00079	041514425-0006	239330	10	G3	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00079	041514425-0006	239331	11	G3	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00079	041514425-0006	239332	12	G3	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239333	1	G5	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239334	2	G5	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239335	3	G5	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239336	4	G5	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239337	5	G5	D9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239338	6	G5	D7	F	1	1	5.1	0.3	17	LA		ADX	1	1	1		NaK, WRTA; 27874	Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239339	7	G5	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239340	8	G5	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239341	9	G6	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239342	10	G6	G2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239343	11	G6	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00081	041514425-0008	239344	12	G6	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239345	1	H1	F9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239346	2	H1	F5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239347	3	H1	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239348	4	H1	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239349	5	H1	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239350	6	H1	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239351	7	H1	B4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239352	8	H2	H7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239353	9	H2	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239354	10	H2	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239355	11	H2	F9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00083	041514425-0010	239356	12	H2	F7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239357	1	H6	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239358	2	H6	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239359	3	H6	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239360	4	H6	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239361	5	H6	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239362	6	H6	C4	MD11	1													Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239363	7	H6	C4	MF		1	19	0.9	21.111111	LA		ADX	1	1	1		NaK, WRTA; 27876	Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239364	8	H6	C4	F	2	2	12	0.9	13.333333	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239365	9	H7	J5	F	3	3	8.3	0.7	11.857143	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239366	10	H7	J5	MD11	4													Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239367	11	H7	J5	MF		4	12.2	0.7	17.428571	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239368	12	H7	J3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239369	13	H7	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239370	14	H7	G5	MD11	5													Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239371	15	H7	G5	MF		5	12.75	0.8	15.9375	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239372	16	H7	B8	F	6	6	10.5	.1	10.5	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239373	17	H7	A7	MD11	7													Air	CDM Smith	N. Ross/DDE			
SB-00085	041514425-0012	239374	18	H7	A7	MF		7	7.5	0.8	9.375	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239196	1	J1	C2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239197	2	J1	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239198	3	J1	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239199	4	J1	C8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239200	5	J1	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239201	6	J1	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239202	7	J2	J9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239203	8	J2	J7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239204	9	J2	J5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239205	10	J2	J3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239206	11	J2	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00063	041514458-0002	239207	12	J2	H5	ND													; ADD'L ANALYSYS-6/9/15	Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245724	1	J5	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245725	2	J5	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245726	3	J5	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245727	4	J5	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245728	5	J5	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245729	6	J5	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245730	7	J6	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245731	8	J6	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245732	9	J6	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245733	10	J6	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245734	11	J6	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00065	041514458-0004	245735	12	J6	F2	ND													; ADD'L ANALYSIS-6/9/15	Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239220	1	K1	C2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239221	2	K1	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239222	3	K1	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239223	4	K1	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239224	5	K1	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239225	6	K1	H7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239226	7	K3	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239227	8	K3	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239228	9	K3	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239229	10	K3	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00067	041514458-0006	239230	11	K3	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239231	1	O1	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239232	2	O1	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239233	3	O1	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239234	4	O1	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239235	5	O1	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239236	6	O1	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239237	7	O1	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239238	8	O2	B2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239239	9	O2	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239240	10	O2	B7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239241	11	O2	E2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239242	12	O2	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239243	13	O2	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239244	14	O2	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00069	041514458-0008	239245	15	O2	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239246	1	L1	B3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239247	2	L1	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239248	3	L1	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239249	4	L1	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239250	5	L1	F8	F	1	1	18	0.5	36	LA		ADX	1	1	1		NaK, WRTA; Photo#27879	Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239251	6	L1	F8	MD11	2													Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239252	7	L1	F8	MF		2	18.25	0.4	45.625	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239253	8	L1	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239254	9	L2	E6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239255	10	L2	E8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239256	11	L2	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239257	12	L2	I6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239258	13	L2	I8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00071	041514458-0010	239259	14	L2	I10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239260	1	O5	I8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239261	2	O5	I6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239262	3	O5	I4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239263	4	O5	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239264	5	O5	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239265	6	O5	E10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239266	7	O5	E8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239267	8	O6	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239268	9	O6	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239269	10	O6	E8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239270	11	O6	E6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239271	12	O6	B7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00073	041514458-0012	239272	13	O6	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239873	1	T1	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239874	2	T1	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239875	3	T1	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239876	4	T1	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239877	5	T1	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239878	6	T1	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239879	7	T1	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239880	8	T2	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239881	9	T2	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239882	10	T2	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239883	11	T2	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239884	12	T2	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239885	13	T2	B3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00218	041514588-0002	239886	14	T2	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239887	1	T5	D1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239888	2	T5	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239889	3	T5	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239890	4	T5	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239891	5	T5	D9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239892	6	T5	G10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239893	7	T5	G8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239894	8	T6	G1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239895	9	T6	G3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239896	10	T6	G5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239897	11	T6	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239898	12	T6	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239899	13	T6	E10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00220	041514588-0004	239900	14	T6	E8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251350	1	U1	C2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251351	2	U1	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251352	3	U1	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251353	4	U1	J1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251354	5	U1	J3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251355	6	U2	D1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251356	7	U2	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251357	8	U2	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251358	9	U2	I4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251359	10	U2	I6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251360	11	U3	B3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251361	12	U3	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00222	041514588-0006	251362	13	U3	B7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239914	1	U5	F1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239915	2	U5	F3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239916	3	U5	F5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239917	4	U5	F7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239918	5	U5	F9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239919	6	U6	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239920	7	U6	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239921	8	U6	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239922	9	U6	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239923	10	U6	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239924	11	U8	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239925	12	U8	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239926	13	U8	B7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00224	041514588-0008	239927	14	U8	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239928	1	A1	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239929	2	A1	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239930	3	A1	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239931	4	A1	H4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239932	5	A1	H2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239933	6	A1	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239934	7	A1	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239935	8	A2	I1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239936	9	A2	I3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239937	10	A2	I5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239938	11	A2	I7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239939	12	A2	I9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239940	13	A2	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00226	041514588-0010	239941	14	A2	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239942	1	A5	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239943	2	A5	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239944	3	A5	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239945	4	A5	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239946	5	A5	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239947	6	A5	B1	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
SB-00228	041514588-0012	239948	7	A5	B3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239949	8	A6	J10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239950	9	A6	J8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239951	10	A6	J6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239952	11	A6	J4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239953	12	A6	J2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00228	041514588-0012	239954	13	A6	F2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251322	1	P1	F9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251323	2	P1	F7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251324	3	P1	F5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251325	4	P1	F3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251326	5	P1	F1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251327	6	P1	B8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251328	7	P1	B6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251329	8	P2	B1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251330	9	P2	B3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251331	10	P2	B5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251332	11	P2	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251333	12	P2	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251334	13	P2	D6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00205	041514595-0002	251335	14	P2	F5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240629	1	P5	E8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240630	2	P5	E6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240631	3	P5	E4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240632	4	P5	E2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240633	5	P6	F4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240634	6	P6	F6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240635	7	P6	F8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240636	8	P6	F10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240637	9	P7	C2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240638	10	P7	C4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240639	11	P7	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240640	12	P7	G2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240641	13	P7	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00207	041514595-0004	240642	14	P7	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240643	1	Q1	G2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240644	2	Q1	G4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240645	3	Q1	G6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240646	4	Q1	G8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240647	5	Q1	G10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240648	6	Q2	D1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240649	7	Q2	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240650	8	Q2	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240651	9	Q2	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240652	10	Q2	D9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240653	11	Q3	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240654	12	Q3	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240655	13	Q3	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00209	041514595-0006	240656	14	Q3	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251336	1	Q5	D1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251337	2	Q5	D3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251338	3	Q5	D5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251339	4	Q5	D7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251340	5	Q5	D9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251341	6	Q5	G9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251342	7	Q5	G7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251343	8	Q6	C9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251344	9	Q6	C7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251345	10	Q6	C5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251346	11	Q6	C3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251347	12	Q6	C1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251348	13	Q6	E1	ND														Air	CDM Smith	N. Ross/DDE			
SB-00211	041514595-0008	251349	14	Q6	E3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240671	1	R1	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240672	2	R1	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240673	3	R1	D6	B	1	1	37.1	1.75	21.2	LA		ADX	1	1	1		NaK, WRTA; XGBLD Photo #27880	Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240674	4	R1	D8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240675	5	R1	D10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240676	6	R1	E9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240677	7	R1	E7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240678	8	R1	E5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240679	9	R2	H7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240680	10	R2	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240681	11	R3	A4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240682	12	R3	A6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240683	13	R3	D2	ND														Air	CDM Smith	N. Ross/DDE			
SB-00214	041514595-0011	240684	14	R3	D4	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240695	1	R5	H9	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240696	2	R5	H7	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240697	3	R5	H5	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240698	4	R5	H3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240699	5	R5	E10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240700	6	R5	E8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240701	7	R5	E6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240702	8	R6	H10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240703	9	R6	H8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240704	10	R6	H6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240705	11	R6	C10	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240706	12	R6	C8	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240707	13	R6	C6	ND														Air	CDM Smith	N. Ross/DDE			
SB-00216	041514595-0013	240708	14	R6	B3	ND														Air	CDM Smith	N. Ross/DDE			
SB-00020	A150107-01	234364	1	A1	G2-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234365	2	A1	F2-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234366	3	A1	F2-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234367	4	A1	E2-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234368	5	A1	E2-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234369	6	A1	K3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234370	7	A1	H3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234371	8	A1	H3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234372	9	A1	G3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234373	10	A1	G3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234374	11	A1	F3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234375	12	A1	F3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234376	13	A1	E3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234377	14	A1	E3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234378	15	A1	C3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234379	16	A1	K4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234380	17	A1	H4-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234381	18	A1	H4-1	B	1	1	70	1.2	58.333333	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234382	19	A1	G4-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234383	20	A1	G4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234384	21	A1	F4-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234385	22	A1	F4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234386	23	A1	E4-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234387	24	A1	E4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234388	25	A1	C4-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234389	26	A1	C4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234390	27	A1	B4-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234391	28	A1	K5-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234392	29	A1	H5-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234393	30	A1	H5-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234394	31	A1	G5-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234395	32	A1	F5-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234396	33	A1	F5-1	B	2	2	14	1.1	12.727273	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234397	34	A1	E5-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234398	35	A1	E5-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234399	36	A1	C5-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234400	37	A1	C5-1	B	3	3	33	0.5	66	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234401	38	A1	B5-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234402	39	A1	H5-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234403	40	A1	H5-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234404	41	A1	G5-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234405	42	A1	G5-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234406	43	A1	F5-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234407	44	A1	F5-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234408	45	A1	E5-6	B	4	4	24	1.4	17.142857	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234409	46	A1	E5-3	B	5	5	20	0.5	40	LA		ADX	1	1			NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234410	47	A1	E5-3	B	6	6	8	0.5	16	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234411	48	A1	G6-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234412	49	A1	G6-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234413	50	A1	F6-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234414	51	A1	F6-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234415	52	A1	E6-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234416	53	A1	E6-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234417	54	A1	C6-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234418	55	B1	G2-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234419	56	B1	F2-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234420	57	B1	F2-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234421	58	B1	H3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234422	59	B1	H3-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234423	60	B1	G3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234424	61	B1	G3-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234425	62	B1	F3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234426	63	B1	F3-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234427	64	B1	E3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234428	65	B1	E3-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234429	66	B1	C3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234430	67	B1	C3-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234431	68	B1	B3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234432	69	B1	H3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234433	70	B1	H3-3	B	7	7	18	1	18	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234434	71	B1	H3-3	B	8	8	16	0.7	22.857143	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234435	72	B1	G3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234436	73	B1	G3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234437	74	B1	F3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234438	75	B1	F3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234439	76	B1	E3-6	B	0	0	68	2	34	LA		ADX	1				_KNCGBLD	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234440	77	B1	E3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234441	78	B1	C3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234442	79	B1	C3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234443	80	B1	B3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234444	81	B1	B3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234445	82	B1	K4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234446	83	B1	H4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234447	84	B1	H4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234448	85	B1	G4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234449	86	B1	G4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234450	87	B1	F4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234451	88	B1	F4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234452	89	B1	E4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234453	90	B1	E4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234454	91	B1	C4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234455	92	B1	C4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234456	93	B1	B4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234457	94	B1	B4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234458	95	B1	A4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234459	96	B1	H5-1	B	9	9	8	0.4	20	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234460	97	B1	G5-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234461	98	B1	G5-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234462	99	B1	F5-4	B	10	10	7.8	0.8	9.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234463	100	B1	F5-1	B	11	11	11	0.9	12.222222	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234464	101	B1	F5-1	B	12	12	5.1	0.4	12.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234465	102	B1	E5-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234466	103	B1	E5-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234467	104	B1	C5-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234468	105	B1	C5-1	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234469	106	B1	B5-4	B	13	13	160	3	53.333333	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234470	107	B1	B5-1	ND														Air	CDM Smith	N. Ross			EF

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
SB-00020	A150107-01	234471	108	B1	G6-4	ND														Air	CDM Smith	N. Ross			EF
SB-00020	A150107-01	234472	109	B1	G6-1	ND														Air	CDM Smith	N. Ross			EF
SB-00030	A150107-01	234473	110	B1	F6-4	ND														Air	CDM Smith	N. Ross			EF
SB-00022	A150107-03	234474	1	A2	F2-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234475	2	A2	F2-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234476	3	A2	E2-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234477	4	A2	E2-3	B	1	1	9	1	9	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234478	5	A2	G3-4	MD11	2													Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234479	6	A2	G3-4	MB		2	6	0.8	7.5	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234480	7	A2	G3-1	B	3	3	9.4	1.2	7.8333333	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234481	8	A2	F3-4	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234482	9	A2	F3-1	B	4	4	24	0.8	30	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234483	10	A2	E3-4	B	5	5	13	1	13	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234484	11	A2	E3-1	B	6	6	10	0.9	11.111111	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234485	12	A2	K4-1	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234486	13	A2	H4-4	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234487	14	A2	H4-1	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234488	15	A2	G4-4	B	7	7	6	0.8	7.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234489	16	A2	G4-1	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234490	17	A2	F4-4	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234491	18	A2	F4-1	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234492	19	A2	E4-4	B	8	8	12	1.2	10	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234493	20	A2	E4-4	B	0	0	35	1	35	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234494	21	A2	E4-1	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234495	22	A2	K4-3	B	9	9	12	0.5	24	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234496	23	A2	H4-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234497	24	A2	H4-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234498	25	A2	G4-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234499	26	A2	G4-3	B	10	10	35	1	35	LA		ADX	1	1			NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234500	27	A2	G4-3	MD11	11												NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234501	28	A2	G4-3	MB		11	23	1	23	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234502	29	A2	F4-6	CD22	12													Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234503	30	A2	F4-6	CB		12	24	0.5	48	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234504	31	A2	F4-6	CB		13	16	0.5	32	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234505	32	A2	F4-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234506	33	A2	E4-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234507	34	A2	E4-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234508	35	A2	C4-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234509	36	A2	G5-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234510	37	A2	G5-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234511	38	A2	F5-6	B	0	0	70	1.2	58.333333	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234512	39	A2	F5-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234513	40	A2	E5-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234514	41	A2	E5-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234515	42	A2	C5-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234516	43	A2	C5-3	B	13	14	8	0.7	11.428571	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234517	44	B2	G2-6	CD22	14													Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234518	45	B2	G2-6	CB		15	29	0.9	32.222222	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234519	46	B2	G2-6	CB		16	8.8	0.5	17.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234520	47	B2	G2-6	MD11	15													Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234521	48	B2	G2-6	MB		17	47	1.2	39.166667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234522	49	B2	G2-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234523	50	B2	F2-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234524	51	B2	F2-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234525	52	B2	E2-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234526	53	B2	F2-3	B	16	18	6	1	6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234527	54	B2	K3-3	B	17	19	23	1	23	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234528	55	B2	H3-6	MD11	18													Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234529	56	B2	H3-6	MB		20	7	1.3	5.3846154	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234530	57	B2	H3-6	B	19	21	38	2	19	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234531	58	B2	H3-6	B	0	0	32	2	16	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234532	59	B2	H3-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234533	60	B2	G3-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234534	61	B2	G3-3	B	0	0	100	1.5	66.666667	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234535	62	B2	F3-6	B	20	22	12	1	12	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234536	63	B2	F3-6	MD11	21													Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234537	64	B2	F3-6	MB		23	6	0.5	12	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234538	65	B2	F3-3	B	0	0	60	1.5	40	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234539	66	B2	E3-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234540	67	B2	E3-3	B	0	0	52	2	26	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234541	68	B2	K4-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234542	69	B2	H4-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234543	70	B2	H4-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234544	71	B2	G4-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234545	72	B2	G4-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234546	73	B2	F4-6	MD11	22													Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234547	74	B2	F4-6	MB		24	40	1.5	26.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234548	75	B2	F4-6	B	0	0	115	.5	23	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234549	76	B2	F4-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234550	77	B2	E4-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234551	78	B2	E4-3	B	23	25	12	0.8	15	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234552	79	B2	H5-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234553	80	B2	G5-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234554	81	B2	G5-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234555	82	B2	F5-6	MD11	24													Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234556	83	B2	F5-6	MB		26	6	0.4	15	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234557	84	B2	F5-3	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234558	85	B2	E5-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234559	86	B2	E5-3	B	0	0	32	3	10.666667	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234560	87	B2	C5-6	ND														Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234561	88	B2	C5-3	MD11	25													Air	CDM Smith	N. Ross			
SB-00022	A150107-03	234562	89	B2	C5-3	MB		27	7	0.3	23.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234884	1	B4	G2-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234885	2	B4	F2-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234886	3	B4	E2-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234887	4	B4	C2-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234888	5	B4	L3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234889	6	B4	K3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234890	7	B4	H3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234891	8	B4	G3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234892	9	B4	F3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234893	10	B4	E3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234894	11	B4	C3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234895	12	B4	K4-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234896	13	B4	H4-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234897	14	B4	G4-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234898	15	B4	F4-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234899	16	B4	E4-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234900	17	B4	C4-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234901	18	B4	B4-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234902	19	B4	K5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234903	20	B4	H5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234904	21	B4	G5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234905	22	B4	F5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234906	23	B4	E5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234907	24	B4	C5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234908	25	A5	G2-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234909	26	A5	F2-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234910	27	A5	E2-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234911	28	A5	C2-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234912	29	A5	B2-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234913	30	A5	K3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234914	31	A5	H3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234915	32	A5	G3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234916	33	A5	F3-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234917	34	A5	E3-3	B	0	0	8	0.9	8.8888889	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234918	35	A5	C3-6	B	1	1	17	.2	8.5	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234919	36	A5	B3-6	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234920	37	A5	K4-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234921	38	A5	H4-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234922	39	A5	G4-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234923	40	A5	F4-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234924	41	A5	E4-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234925	42	A5	C4-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234926	43	A5	B4-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234927	44	A5	H5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234928	45	A5	G5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234929	46	A5	F5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234930	47	A5	E5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234931	48	A5	C5-3	ND														Air	CDM Smith	N. Ross			
SB-00101	A150108-02	234932	49	A5	B5-3	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234933	1	C5	H2-3	B	1	1	5.7	0.7	8.1428571	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234934	2	C5	G2-3	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234935	3	C5	F2-3	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234936	4	C5	E2-3	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234937	5	C5	K3-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234938	6	C5	H3-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234939	7	C5	G3-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234940	8	C5	F3-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234941	9	C5	E3-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234942	10	C5	C3-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234943	11	C5	B3-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234944	12	C5	K4-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234945	13	C5	H4-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234946	14	C5	G4-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234947	15	C5	F4-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234948	16	C5	E4-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234949	17	C5	C4-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234950	18	C5	B4-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234951	19	C5	H5-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234952	20	C5	G5-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234953	21	C5	F5-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234954	22	C5	E5-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234955	23	C5	C5-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234956	24	C5	B5-6	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234957	25	C5	G6-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234958	26	C5	F6-4	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234959	27	C5	E6-4	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234960	28	A6	G2-1	B	2	2	13	0.5	26	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234961	29	A6	F2-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234962	30	A6	K3-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234963	31	A6	H3-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234964	32	A6	G3-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234965	33	A6	F3-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234966	34	A6	E3-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234967	35	A6	C3-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234968	36	A6	K4-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234969	37	A6	H4-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234970	38	A6	G4-1	B	3	3	13	1	13	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234971	39	A6	F4-1	B	4	4	8	0.8	10	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234972	40	A6	E4-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234973	41	A6	C4-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234974	42	A6	B4-1	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234975	43	A6	K5-3	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234976	44	A6	H5-4	B	5	5	28	1	28	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234977	45	A6	G5-4	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234978	46	A6	F5-4	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234979	47	A6	E5-4	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234980	48	A6	C5-4	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234981	49	A6	B5-4	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234982	50	A6	H5-3	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234983	51	A6	G5-3	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234984	52	A6	F5-3	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234985	53	A6	E5-3	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234986	54	A6	C5-3	ND														Air	CDM Smith	N. Ross			
SB-00103	A150108-04	234987	55	A6	G6-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234988	1	A7	H2-3	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234989	2	A7	G2-3	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	QVC - 5%
SB-00105	A150108-06	234990	3	A7	F2-3	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234991	4	A7	E2-3	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234992	5	A7	C2-3	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234993	6	A7	K3-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234994	7	A7	H3-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234995	8	A7	G3-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234996	9	A7	F3-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234997	10	A7	E3-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234998	11	A7	C3-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	234999	12	A7	B3-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235000	13	A7	K4-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235001	14	A7	H4-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235002	15	A7	G4-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235003	16	A7	F4-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235004	17	A7	E4-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235005	18	A7	C4-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235006	19	A7	B4-6	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235007	20	A7	K5-3	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235008	21	A7	H5-3	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235009	22	A7	G5-3	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235010	23	A7	F5-3	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235011	24	A7	E5-3	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235012	25	A7	C5-3	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235013	26	B7	G2-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235014	27	B7	F2-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235015	28	B7	E2-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235016	29	B7	K3-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235017	30	B7	H3-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235018	31	B7	G3-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235019	32	B7	F3-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235020	33	B7	E3-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235021	34	B7	C3-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235022	35	B7	B3-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235023	36	B7	K4-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235024	37	B7	H4-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235025	38	B7	G4-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235026	39	B7	F4-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235027	40	B7	E4-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235028	41	B7	C4-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235029	42	B7	B4-4	F	1	1	8.5	0.5	17	LA		ADX	1	1	1		NuK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235030	43	B7	A4-4	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235031	44	B7	H5-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235032	45	B7	G5-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235033	46	B7	F5-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235034	47	B7	E5-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235035	48	B7	C5-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235036	49	B7	B5-1	ND														Air	CDM Smith	N. Ross			
SB-00105	A150108-06	235037	50	B7	G6-4	ND														Air	CDM Smith	N. Ross			
SB-00107	A150108-08	235038	1	A8	C3-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235039	2	A8	C3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235040	3	A8	C3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235041	4	A8	C3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235042	5	A8	C4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235043	6	A8	C4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235044	7	A8	C4-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235045	8	A8	C4-6	F	0	0	79	1	79	LA		ADX	1				XNCGBLD	Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235046	9	A8	E3-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235047	10	A8	E3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235048	11	A8	E3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235049	12	A8	E3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235050	13	A8	E4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235051	14	A8	E4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235052	15	A8	E4-4	MD11	1													Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235053	16	A8	E4-4	MF		1	16.5	1	16.5	LA		ADX	1		1		NuK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235054	17	A8	E4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235055	18	A8	E5-1	B	2	2	14	0.8	17.5	LA		ADX	1		1		NuK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235056	19	A8	E5-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235057	20	A8	E5-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235058	21	A8	E5-6	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235059	22	A8	G3-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235060	23	A8	G3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235061	24	A8	G3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235062	25	A8	G3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235063	26	A8	G4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235064	27	A8	G4-3	F	3	3	7.5	0.9	8.3333333	LA		ADX	1		1		NuK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235065	28	A8	G4-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235066	29	A8	G4-6	F	0	0	6.5	1.5	4.3333333	NAM		NAM	1		1			Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235067	30	B8	C3-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235068	31	B8	C3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235069	32	B8	C3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235070	33	B8	C3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235071	34	B8	C4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235072	35	B8	C4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235073	36	B8	C4-4	F	4	4	12	0.8	15	LA		ADX	1	1	1		NuK, WRTA	Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235074	37	B8	C4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235075	38	B8	C5-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235076	39	B8	C5-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235077	40	B8	E2-3	B	5	5	42	1.7	24.705882	LA		ADX	1		1		NuK, WRTA; XGBLD	Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235078	41	B8	E2-6	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235079	42	B8	E3-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235080	43	B8	E3-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235081	44	B8	E3-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235082	45	B8	E3-6	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235083	46	B8	E4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235084	47	B8	E4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235085	48	B8	E4-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235086	49	B8	E4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235087	50	B8	H4-1	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235088	51	B8	H4-3	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235089	52	B8	H4-4	ND														Air	CDM Smith	N. Ross			EF
SB-00107	A150108-08	235090	53	B8	H4-6	ND														Air	CDM Smith	N. Ross			EF
SB-00108	A150108-09	235101	1	B9	G2-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235102	2	B9	F2-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235103	3	B9	E2-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235104	4	B9	H3-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235105	5	B9	G3-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235106	6	B9	F3-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235107	7	B9	E3-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235108	8	B9	C3-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235109	9	B9	B3-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235110	10	B9	K3-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235111	11	B9	H3-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235112	12	B9	G3-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235113	13	B9	F3-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235114	14	B9	E3-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235115	15	B9	C3-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235116	16	B9	B3-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235117	17	B9	K4-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235118	18	B9	H4-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235119	19	B9	G4-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235120	20	B9	F4-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235121	21	B9	E4-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235122	22	B9	C4-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235123	23	B9	B4-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235124	24	B9	K4-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235125	25	B9	H4-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235126	26	B9	G4-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235127	27	B9	F4-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235128	28	B9	E4-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235129	29	B9	C4-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235130	30	B9	B4-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235131	31	B9	H5-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235132	32	B9	G5-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235133	33	B9	F5-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235134	34	B9	E5-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235135	35	B9	C5-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235136	36	B9	B5-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235137	37	C9	G2-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235138	38	C9	F2-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235139	39	C9	E2-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235140	40	C9	H3-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235141	41	C9	G3-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235142	42	C9	F3-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235143	43	C9	E3-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235144	44	C9	C3-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235145	45	C9	B3-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235146	46	C9	K4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235147	47	C9	H4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235148	48	C9	G4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235149	49	C9	F4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235150	50	C9	E4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235151	51	C9	C4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235152	52	C9	B4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235153	53	C9	K4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235154	54	C9	H4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235155	55	C9	G4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235156	56	C9	F4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235157	57	C9	E4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235158	58	C9	C4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235159	59	C9	B4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235160	60	C9	H5-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235161	61	C9	G5-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235162	62	C9	F5-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235163	63	C9	E5-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235164	64	C9	C5-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235165	65	C9	B5-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235166	66	C9	H5-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235167	67	C9	G5-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235168	68	C9	F5-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235169	69	C9	E5-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235170	70	C9	C5-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235171	71	C9	G6-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235172	72	C9	F6-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235173	73	C9	E6-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235174	74	C9	C6-4	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235175	75	C9	C2-1	B	1	1	9	0.5	18	LA		ADX	1				NuK, WRTA	Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235176	76	A10	G2-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235177	77	A10	F2-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235178	78	A10	H2-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235179	79	A10	G2-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235180	80	A10	F2-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235181	81	A10	E2-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235182	82	A10	C2-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235183	83	A10	K3-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235184	84	A10	H3-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235185	85	A10	G3-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235186	86	A10	F3-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235187	87	A10	E3-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235188	88	A10	C3-6	B	2	2	7	0.3	23.333333	LA		ADX	1	1	1		NuK, WRTA	Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235189	89	A10	B3-6	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235190	90	A10	K4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235191	91	A10	H4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235192	92	A10	G4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235193	93	A10	F4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235194	94	A10	E4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235195	95	A10	C4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235196	96	A10	B4-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235197	97	A10	K4-3	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
SB-00108	A150108-09	235198	98	A10	H4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235199	99	A10	G4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235200	100	A10	F4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235201	101	A10	E4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235202	102	A10	C4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235203	103	A10	B4-3	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235204	104	A10	K5-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235205	105	A10	H5-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235206	106	A10	G5-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235207	107	A10	F5-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235208	108	A10	E5-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235209	109	A10	C5-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235210	110	A10	B5-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235211	111	A10	H6-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235212	112	A10	G6-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235213	113	A10	F6-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235214	114	A10	E6-1	ND														Air	CDM Smith	N. Ross			
SB-00108	A150108-09	235215	115	A10	C6-1	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235216	1	B10	H2-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235217	2	B10	G2-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235218	3	B10	F2-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235219	4	B10	E2-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235220	5	B10	H3-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235221	6	B10	G3-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235222	7	B10	F3-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235223	8	B10	E3-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235224	9	B10	C3-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235225	10	B10	B3-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235226	11	B10	K4-3	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235227	12	B10	H4-3	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235228	13	B10	G4-3	B	1	1	30	6	5	LA		ADX	1	1	1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235229	14	B10	F4-3	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235230	15	B10	E4-3	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235231	16	B10	C4-3	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235232	17	B10	B4-3	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235233	18	B10	H5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235234	19	B10	G5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235235	20	B10	F5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235236	21	B10	E5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235237	22	B10	C5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235238	23	B10	H6-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235239	24	B10	G6-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235240	25	B10	F6-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235241	26	B10	E6-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235242	27	B10	C6-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235243	28	A11	G2-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235244	29	A11	F2-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235245	30	A11	E2-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235246	31	A11	C2-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235247	32	A11	H3-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235248	33	A11	G3-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235249	34	A11	F3-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235250	35	A11	E3-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235251	36	A11	C3-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235252	37	A11	B3-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235253	38	A11	K4-3	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235254	39	A11	H4-6	B	2	2	10.2	1.2	8.5	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235255	40	A11	G4-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235256	41	A11	F4-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235257	42	A11	E4-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235258	43	A11	C4-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235259	44	A11	B4-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235260	45	A11	H5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235261	46	A11	G5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235262	47	A11	F5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235263	48	A11	E5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235264	49	A11	C5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235265	50	A11	B5-6	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235266	51	A11	F6-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235267	52	A11	E6-4	ND														Air	CDM Smith	N. Ross			
SB-00111	A150108-12	235268	53	A11	C6-4	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236227	1	A1	F2-3	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236228	2	A1	E2-3	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236229	3	A1	G3-3	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236230	4	A1	E4-1	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236231	5	A1	B4-3	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236232	6	A1	C5-4	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236233	7	A1	F5-3	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236234	8	A1	G5-6	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236235	9	A1	F6-3	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236236	10	A1	C6-6	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236237	11	B1	F2-3	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236238	12	B1	G3-4	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236239	13	B1	E3-3	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236240	14	B1	B4-4	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236241	15	B1	A5-4	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236242	16	B1	C5-1	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236243	17	B1	F5-6	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236244	18	B1	H6-1	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236245	19	B1	G6-3	ND														Air	CDM Smith	N. Ross			
SB-00231	A150121-02	236246	20	B1	F7-1	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236247	1	A2	F2-6	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236248	2	A2	G3-4	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236249	3	A2	K3-6	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236250	4	A2	L4-3	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236251	5	A2	H5-1	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236252	6	A2	E5-4	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236253	7	A2	C5-1	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236254	8	A2	E6-4	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236255	9	A2	F6-4	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236256	10	A2	H6-1	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236257	11	B2	F2-6	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236258	12	B2	C2-6	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236259	13	B2	B3-4	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236260	14	B2	C4-1	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236261	15	B2	F4-3	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236262	16	B2	H4-6	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236263	17	B2	K5-3	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236264	18	B2	G6-4	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236265	19	B2	F6-1	ND														Air	CDM Smith	N. Ross			
SB-00233	A150121-04	236266	20	B2	C5-6	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236267	1	B3	E2-6	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236268	2	B3	F3-3	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236269	3	B3	G4-1	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236270	4	B3	H3-3	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236271	5	B3	H4-6	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236272	6	B3	H5-3	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236273	7	B3	F5-1	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236274	8	B3	B5-6	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236275	9	B3	E6-1	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236276	10	B3	F6-3	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236277	11	C3	F6-1	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236278	12	C3	C6-4	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236279	13	C3	C5-1	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236280	14	C3	E4-3	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236281	15	C3	G4-1	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236282	16	C3	K4-4	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236283	17	C3	H3-1	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236284	18	C3	F3-4	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236285	19	C3	C2-6	ND														Air	CDM Smith	N. Ross			
SB-00235	A150121-06	236286	20	C3	F1-3	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236287	1	B4	G2-1	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236288	2	B4	H2-6	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236289	3	B4	G3-1	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236290	4	B4	C3-4	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236291	5	B4	B4-4	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236292	6	B4	E4-3	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236293	7	B4	H4-3	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236294	8	B4	H5-3	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236295	9	B4	G6-1	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236296	10	B4	E6-4	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236297	11	A5	E6-4	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236298	12	A5	B6-4	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236299	13	A5	C5-1	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236300	14	A5	F5-4	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236301	15	A5	K4-3	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236302	16	A5	G3-6	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236303	17	A5	E3-4	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236304	18	A5	B3-4	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236305	19	A5	E2-3	ND														Air	CDM Smith	N. Ross			
SB-00237	A150121-08	236306	20	A5	F2-1	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ASH (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	QVC - 5%
SB-00132	041514462-0001	249468	1	C2	B6	MD10	1													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249469	2	C2	B6	MFO		1	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249470	3	C2	B6	F	0	0	6.6	0.45	14.666667	LA		ADX	1				XNCGBLD	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249471	4	C2	B6	CD20	2													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249472	5	C2	B6	CF		2	4.9	0.4	12.25	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249473	6	C2	B6	CF		3	4.3	0.5	8.6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249474	7	C2	B6	MD10	3													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249475	8	C2	B6	MFO		4	2.3	0.2	11.5	LA		ADX	1	1	1		NaK, WRTA; Asbestos_465	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249476	9	C2	B6	F	4	5	1.5	0.4	3.75			ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249477	10	C2	B6	MD10	5													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249478	11	C2	B6	MFO		6	2.1	0.4	5.25	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249479	12	C2	B6	CD21	6													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249480	13	C2	B6	CF		7	5.1	0.25	20.4	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249481	14	C2	B6	CF		8	2.7	0.7	3.8571429	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249482	15	C2	B6	F	7	9	22	0.25	88	LA		ADX	1				NaK, WRTA; XGBLD	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249483	16	C2	E3	F	8	10	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249484	17	C2	E3	F	9	11	11.3	0.65	17.384615	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249485	18	C2	E3	F	10	12	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249486	19	C2	E3	MD10	11													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249487	20	C2	E3	MFO		13	2.2	0.2	11	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249488	21	C2	E3	F	12	14	0.75	0.15	5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249489	22	C2	E3	F	13	15	1	0.1	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249490	23	C2	E3	MD10	14													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249491	24	C2	E3	MF		16	2.4	0.15	16	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249492	25	C3	J6	MD10	15													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249493	26	C3	J6	MFO		17	1.8	0.3	6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249494	27	C3	J6	MD10	16													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249495	28	C3	J6	MFO		18	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249496	29	C3	J6	MD20	17													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249497	30	C3	J6	MF		19	1.9	0.3	6.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249498	31	C3	J6	MF		20	1.4	0.3	4.6666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249499	32	C3	J6	F	18	21	6.4	0.55	11.636364	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249500	33	C3	J6	F	19	22	5.4	0.65	8.3076923	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249501	34	C3	J6	F	20	23	4.4	0.65	6.769230	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249502	35	C3	J6	F	0	0	54.2	0.4	135.5	LA		ADX	1				XNCGBLD	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249503	36	C3	J6	F	21	24	2.3	0.15	15.333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249504	37	C3	E8	F	22	25	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249505	38	C3	E8	F	0	0	4	0.2	20	LA		ADX	1				XNCGBLD	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249506	39	C3	E8	MD10	23													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249507	40	C3	E8	MF		26	2.4	0.2	12	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249508	41	C3	E8	F	24	27	2	0.25	8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249509	42	C3	E8	F	25	28	3.2	0.3	10.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249510	43	C3	E8	F	26	29	1.9	0.4	4.75	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249511	44	C3	E8	F	27	30	2.5	0.25	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001	249512	45	C3	E8	F	28	31	7.6	1.2	6.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249513	1	L1	H5	F	1	1	5.4	0.25	21.6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249514	2	L1	H5	F	2	2	8.5	0.8	10.625	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249515	3	L1	H5	MD10	3													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249516	4	L1	H5	MF		3	3	0.25	12	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249517	5	L1	H5	F	4	4	2.6	0.6	4.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249518	6	L1	H5	MD10	5													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249519	7	L1	H5	MFO		5	1.3	0.3	4.3333333	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249520	8	L1	H5	F	6	6	7.8	0.8	9.75	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249521	9	L1	H5	F	7	7	5.5	0.1	55	LA		ADX	1	1			NaK, WRTA; Asbestos_479	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249522	10	L1	E7	F	8	8	1.7	0.5	3.4	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249523	11	L1	E7	MD10	9													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249524	12	L1	E7	MF		9	3.4	0.25	13.6	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249525	13	L1	E7	F	10	10	2.5	0.3	8.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249526	14	L1	E7	F	11	11	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249527	15	L1	E7	F	12	12	1.8	0.05	36	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249528	16	L1	E7	F	13	13	6.8	0.25	27.2	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249529	17	L1	E7	F	14	14	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249530	18	L1	E7	F	15	15	11.8	0.15	78.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249531	19	L1	E7	F	16	16	4.9	0.9	5.4444444	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249532	20	L1	E7	F	17	17	5.5	0.8	6.875	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249533	21	L1	E7	F	18	18	2.3	0.1	23	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249534	22	L1	E7	MD10	19													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249535	23	L1	E7	MF		19	2.5	0.3	8.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249536	24	L1	E7	MD10	20													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249537	25	L1	E7	MF		20	1.8	0.15	12	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249538	26	L2	C7	F	21	21	3.3	0.35	9.4285714	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249539	27	L2	C7	F	22	22	2.5	0.2	12.5	LA		ADX	1				XK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249540	28	L2	C7	MD10	23													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249541	29	L2	C7	MF		23	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249542	30	L2	J10	F	24	24	7	1.2	5.8333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249543	31	L2	J10	F	25	25	1.1	0.15	7.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249544	32	L2	J10	F	26	26	0.7	0.05	14	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249545	33	L2	J10	F	27	27	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249546	34	L2	J10	F	28	28	11.4	0.15	76	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249547	35	L2	J10	F	29	29	1	0.2	5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249548	36	L2	J10	F	30	30	2.8	0.2	14	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249549	37	L2	J10	F	31	31	2.8	0.35	8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249550	38	L2	J10	F	32	32	2.7	0.3	9	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249551	39	L2	J10	F	33	33	8.3	0.6	13.833333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001A	249552	40	L2	J10	F	34	34	1.8	0.2	9	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249553	1	E1	I1	F	1	1	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249554	2	E1	I1	MD10	2													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249555	3	E1	I1	MF		2	1.2	0.15	8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249556	4	E1	I1	MD10	3													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249557	5	E1	I1	MFO		3	2.1	0.25	8.4	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249558	6	E1	I1	F	4	4	0.7	0.2	3.5	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249559	7	E1	I1	MD11	5													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249560	8	E1	I1	MF		5	12.3	0.8	15.375	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249561	9	E1	I1	F	6	6	4.8	1.3	3.6923077	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249562	10	E1	I1	MD10	7													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249563	11	E1	I1	MF		7	1.5	0.1	15	LA		ADX	1	1			NaK, WRTA; Asbestos_459	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249564	12	E1	C6	CD21	8													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249565	13	E1	C6	CF		8	5.5	0.4	13.75	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249566	14	E1	C6	CF		9	1.3	0.15	8.6666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249567	15	E1	C6	F	9	10	2.5	0.55	4.5454545	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249568	16	E1	C6	F	10	11	8.8	0.3	29.333333	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249569	17	E1	C6	B	11	12	6.2	0.5	12.4	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249570	18	E1	C6	F	12	13	11.6	2.5	4.64	LA		ADX	1				NaK, WRTA; XGBLD	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249571	19	E2	A5	MD10	13													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249572	20	E2	A5	MF		14	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249573	21	E2	A5	F	14	15	3.3	0.1	33	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249574	22	E2	A5	MD10	15													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249575	23	E2	A5	MF		16	2	0.25	8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249576	24	E2	A5	MD10	16													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249577	25	E2	A5	MF		17	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249578	26	E2	G5	F	17	18	1.1	0.05	22	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249579	27	E2	G5	F	18	19	2.8	0.2	14	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249580	28	E2	G5	F	19	20	0.9	0.15	6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249581	29	E2	G5	MD10	20													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249582	30	E2	G5	MFO		21	1.6	0.2	8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249583	31	E2	G5	F	21	22	5.3	0.25	21.2	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249584	32	E2	G5	F	22	23	2.8	0.2	14	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249585	33	E2	G5	MD10	23													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249586	34	E2	G5	MFO		24	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249587	35	E2	G5	MD10	24													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249588	36	E2	G5	MF		25	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249589	37	E2	G5	MD10	25													Ash	CDM Smith	N. Ross/DDE			
SB-00132	041514462-0001B	249590	38	E2	G5	MFO		26	0.6	0.05	12	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249591	1	F5	J3	F	1	1	7.2	0.7	10.285714	LA		ADX	1	1	1		NaK, WRTA; Asbestos_461	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249592	2	F5	J3	F	2	2	1.3	0.25	5.2	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249593	3	F5	J3	MD10	3													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249594	4	F5	J3	MFO		3	4.4	0.5	8.8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249595	5	F5	J3	CD20	4													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249596	6	F5	J3	CF		4	3.6	0.6	6	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249597	7	F5	J3	CF		5	2.3	0.3	7.6666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249598	8	F5	J3	MD10	5													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249599	9	F5	J3	MF		6	1.3	0.25	5.2	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249600	10	F5	I5	F	6	7	2.6	0.5	5.2	LA		ADX	1				XK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249601	11	F5	I5	F	7	8	2.2	0.25	8.8	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249602	12	F5	I5	F	8	9	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249603	13	F5	I5	MD10	9													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249604	14	F5	I5	MFO		10	3.3	0.35	9.4285714	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249605	15	F5	I5	F	10	11	5.3	0.3	17.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249606	16	F5	I5	F	11	12	2	0.2	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249607	17	F5	I5	MD10	12													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249608	18	F5	I5	MF		13	1.4	0.2	7	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249609	19	F5	I5	F	13	14	2.4	0.25	9.6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249610	20	F5	I5	F	14	15	2.8	0.3	9.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249611	21	F5	I5	CD20	15													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249612	22	F5	I5	CF		16	2.6	0.45	5.7777778	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249613	23	F5	I5	CF		17	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249614	24	F5	I5	F	16	18	1.5	0.4	3.75	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249615	25	F5	I5	F	17	19	3.3	0.3	11	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249616	26	F5	I5	F	18	20	5.8	0.25	23.2	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249617	27	F6	I5	MD11	19												Analysis continued on 6/11/2015	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249618	28	F6	I5	MF		21	5.7	0.5	11.4	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002	249619	29	F6	I5	MD33	20													Ash	CDM Sm

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN ASH (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
SB-00133	041514462-0002A	249732	8	G1	J5	F	6	7	1.5	0.25	6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249733	9	G1	H7	F	7	8	1.5	0.25	6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249734	10	G1	H7	F	8	9	13.1	0.4	32.75	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249735	11	G1	H7	MD10	9													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249736	12	G1	H7	MF		10	2.5	0.5	5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249737	13	G1	H7	F	10	11	1.2	0.25	4.8			ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249738	14	G1	H7	F	11	12	3.7	0.45	8.2222222	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249739	15	G1	H7	F	12	13	13.4	0.6	22.333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249740	16	G2	J6	F	13	14	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249741	17	G2	J6	F	14	15	2	0.2	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249742	18	G2	J6	F	15	16	2.5	0.4	6.25	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249743	19	G2	H2	F	16	17	2.4	0.2	12	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249744	20	G2	H2	F	17	18	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249745	21	G2	H2	F	18	19	2	0.2	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249746	22	G2	H2	F	19	20	9.1	0.85	10.705882	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249747	23	G2	G5	F	20	21	4.6	0.4	11.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249748	24	G2	G5	F	0	0	9.4	0.7	13.428571	LA		ADX	1				_XNCGBLD	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249749	25	G2	G5	F	21	22	1.5	0.25	6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249750	26	G2	G5	F	22	23	3.2	0.15	21.333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249751	27	G2	G5	F	23	24	2.4	0.3	8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249752	28	G2	G5	F	24	25	4.3	0.2	21.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249753	29	G2	G5	F	25	26	15.2	1.2	12.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002A	249754	30	G2	G5	F	26	27	3.8	0.3	12.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249755	1	L5	C8	F	1	1	1.9	0.25	7.6	LA		ADX	1	1			NaK, WRTA; Asbestos_480	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249756	2	L5	C8	F	2	2	2.4	0.3	8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249757	3	L5	C8	F	3	3	1.9	0.25	7.6	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249758	4	L5	C8	MD10	4													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249759	5	L5	C8	MFO		4	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249760	6	L5	A4	F	0	0	4.2	0.6	7	LA		ADX	1				_XNCGBLD	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249761	7	L5	A4	MD10	5													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249762	8	L5	A4	MF		5	1.5	0.2	7.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249763	9	L5	A4	MF10	6													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249764	10	L5	A4	MFO		6	2.6	0.2	13	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249765	11	L5	A4	F	7	7	1.2	0.4	3	LA		ADX	1		1		KK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249766	12	L5	A4	F	8	8	3.8	0.25	15.2	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249767	13	L5	A4	F	9	9	3.3	0.3	11	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249768	14	L5	A4	F	0	0	3.2	0.25	12.8	LA		ADX	1				_XNCGBLD	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249769	15	L5	G7	F	10	10	21.7	0.6	36.166667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249770	16	L5	G7	MD10	11													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249771	17	L5	G7	MF		11	4.2	0.15	28	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249772	18	L5	G7	MD10	12													Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249773	19	L5	G7	MF		12	2.5	0.1	25	LA		ADX	1				KK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249774	20	L5	G7	F	13	13	3.2	0.45	7.1111111	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249775	21	L5	G7	F	14	14	4.4	0.6	7.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249776	22	L6	A8	F	15	15	4.5	1.2	3.75	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249777	23	L6	A8	F	16	16	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249778	24	L6	A8	F	17	17	2.2	0.1	22	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249779	25	L6	E10	F	18	18	3.5	0.3	11.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249780	26	L6	E10	F	19	19	4.3	0.7	6.1428571	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249781	27	L6	E10	F	20	20	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249782	28	L6	E10	F	21	21	6.2	0.15	41.333333	LA		ADX	1				NaK, WRTA; XGBLD	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249783	29	L6	E10	F	22	22	1.9	0.6	3.1666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249784	30	L6	E10	F	23	23	2.4	0.25	9.6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249785	31	L6	I9	F	24	24	3.3	0.25	13.2	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249786	32	L6	I9	F	25	25	2.2	0.45	4.8888889	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249787	33	L6	I9	F	26	26	2	0.2	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249788	34	L6	I9	F	27	27	1.9	0.2	9.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249789	35	L6	I9	F	28	28	4.5	0.65	6.9230769	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00133	041514462-0002B	249790	36	L6	I9	F	29	29	3.3	0.3	11	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
SB-00134	041514462-0003	249791	1	I1	J4	F	1	1	3.8	0.3	12.666667	LA		ADX	1	1	1		NaK, WRTA; Asbestos_467	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249792	2	I1	J4	MD10	2													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249793	3	I1	J4	MFO		2	1.25	0.25	5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249794	4	I1	J4	MD10	3													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249795	5	I1	J4	MFO		3	1.9	0.2	9.5	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249796	6	I1	J4	F	4	4	1.4	0.1	14	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249797	7	I1	J4	MD10	5													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249798	8	I1	J4	MFO		5	3.9	0.2	19.5	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249799	9	I1	J4	F	6	6	4.5	0.7	6.4285714	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249800	10	I1	J4	MD10	7													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249801	11	I1	J4	MF		7	2.7	0.2	13.5	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249802	12	I1	E5	MD10	8													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249803	13	I1	E5	MFO		8	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249804	14	I1	E5	F	9	9	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249805	15	I1	E5	F	10	10	4.6	0.25	18.4	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249806	16	I1	E5	F	11	11	10.4	0.1	104	LA		ADX	1				NaK, WRTA; XGBLD	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249807	17	I1	E5	MD10	12													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249808	18	I1	E5	MFO		12	2.2	0.45	4.8888889	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249809	19	I1	E5	F	13	13	2.7	0.3	9	LA		ADX	1				KK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249810	20	I1	E5	F	14	14	2.8	0.15	18.666667	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249811	21	I1	B6	F	15	15	12.6	0.5	25.2	LA		ADX	1				NaK, WRTA; XGBLD	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249812	22	I1	B6	F	16	16	0.8	0.1	8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249813	23	I1	B6	F	17	17	1.6	0.45	3.5555556	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249814	24	I1	B6	F	18	18	4.2	0.5	8.4	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249815	25	I1	B6	F	19	19	1.8	0.2	9	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249816	26	I1	G7	F	20	20	3.1	0.2	15.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249817	27	I1	G7	F	21	21	3.6	0.15	24	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249818	28	I1	G7	MD10	22													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249819	29	I1	G7	MF		22	4.5	0.15	30	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249820	30	I1	G7	F	23	23	3.5	0.4	8.75	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249821	31	I1	G7	F	24	24	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249822	32	I1	G7	MD10	25													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003	249823	33	I1	G7	MF		25	3.7	0.2	18.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249824	1	J1	D9	F	1	1	4.5	0.24	18.75	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249825	2	J1	D9	F	2	2	1.4	0.12	11.666667	LA		AX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249826	3	J1	D9	F	0	0	1.9	0.24	7.9166667	NAM		NAM	1		1			Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249827	4	J1	D9	F	3	3	1.4	0.24	5.8333333	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249828	5	J1	D9	F	4	4	3.5	0.48	7.2916667	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249829	6	J1	D9	F	5	5	10.3	1.68	6.130952	LA		ADX	1	1	1		NaK, WRTA; 0106603D	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249830	7	J1	D9	F	6	6	3.5	0.48	7.2916667	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249831	8	J1	D9	F	7	7	5.5	0.6	9.1666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249832	9	J1	D9	F	8	8	1.7	0.24	7.0833333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249833	10	J1	G7	F	9	9	4.8	0.24	20	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249834	11	J1	G7	F	10	10	3.6	0.36	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249835	12	J1	G7	F	11	11	3	0.6	5	LA		ADX	1	1			NaK, WRTA; 0106680	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249836	13	J1	G7	F	12	12	1.9	0.18	10.555556	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249837	14	J2	E2	F	0	0	11.1	1.9	5.8421053	LA		ADX	1				_XNCGBLD; Additional analysis 6/1	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249838	15	J2	E2	F	13	13	11.2	1.44	7.7777778	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249839	16	J2	E2	B	14	14	9.7	0.84	11.547619	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249840	17	J2	E2	F	15	15	3.6	0.48	7.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249841	18	J2	E2	F	16	16	2.4	0.24	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249842	19	J2	C1	F	17	17	11.3	1.8	6.2777778	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249843	20	J2	C1	F	18	18	3.1	0.48	6.4583333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249844	21	J2	C1	F	19	19	5.7	0.72	7.9166667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249845	22	J2	C1	F	20	20	1.2	0.24	5	LA		ADX	1				KK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249846	23	J2	C1	F	21	21	5	0.72	6.9444444	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249847	24	J2	C1	F	22	22	3.6	0.48	7.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249848	25	J2	C1	MD10	23													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249849	26	J2	C1	MF		23	1.4	0.12	11.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249850	27	J2	I4	F	24	24	18.1	1.2	15.083333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249851	28	J2	I4	F	25	25	3.9	0.36	10.833333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003A	249852	29	J2	I4	F	26	26	7.8	0.36	21.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249853	1	K2	E8	B	1	1	20.6	0.72	28.611111	LA		ADX	1	1	1		NaK, WRTA; XCGBLD | 0106770	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249854	2	K2	E8	F	0	0	4.8	0.24	20	LA		ADX	1				_XNCGBLD	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249855	3	K2	E8	F	2	2	6.4	0.6	10.666667	LA		ADX	1	1	1		NaK, WRTA; 0106790	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249856	4	K2	E8	F	3	3	4.8	0.24	20	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249857	5	K2	E8	F	4	4	2.4	0.24	10	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249858	6	K2	E8	F	5	5	2.1	0.24	8.75	LA		ADX	1		1		KK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249859	7	K2	E8	F	6	6	6	0.6	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249860	8	K2	E8	F	7	7	2.1	0.12	17.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249861	9	K2	E8	F	8	8	10.46	0.72	14.527778	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249862	10	K2	E8	MD10	9													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249863	11	K2	E8	MF		9	3.1	0.36	8.6111111	LA		ADX	1				KK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249864	12	K2	E8	F	10	10	1.8	0.18	10	LA		ADX	1				KK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249865	13	K2	C7	B	0	0	22.8	2.6	8.7692308	LA		ADX	1				_XNCGBLD | Additional analysis 6/1	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249866	14	K2	C7	F	11	11	1.8	0.5	3.6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249867	15	K2	C7	F	12	12	15.7	0.48	32.708333	LA		ADX	1	1			NaK, WRTA; 0106890	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249868	16	K2	C7	F	13	13	4.8	0.48	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249869	17	K2	C7	F	14	14	2.1	0.36	5.8333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249870	18	K3	D6	F	15	15	3.6	0.36	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249871	19	K3	D6	F	16	16	1.2	0.18	6.6666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249872	20	K3	D6	F	17	17	3.3	0.72	4.5833333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249873	21	K3	D6	F	18	18	1.5	0.48	3.125	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249874	22	K3	D6	CD20	19													Ash	CDM Smith	N. Ross/DDE			EF
SB-00134	041514462-0003B	249875	23	K3	D6	CF		19	4.5	0.36	12.5	L

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN TREE BARK (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
SB-00001	041514012-0001	250363	1	CS	G7	F	1	1	0.7	0.15	4.6666667	LA		ADX	1	1	1		XX, AC; Asbestos_422, Asbestos_42	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250364	2	CS	G7	F	2	2	2.5	0.25	10	LA		ADX	1	1	1		NaK, WRTA; Asbestos_425	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250365	3	CS	G7	F	3	3	18.9	1.3	14.538462	LA		ADX	1	1	1		NaK, WRTA; Asbestos_424	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250366	4	CS	G7	F	4	4	2.3	0.65	3.5384615	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250367	5	CS	G7	F	5	5	3.7	0.25	14.8	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250368	6	CS	G7	MD10	6													Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250369	7	CS	G7	MF		6	2.6	0.25	10.4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250370	8	CS	G7	F	7	7	4.7	0.8	5.875	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250371	9	CS	G7	MD10	8		26											Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250372	10	CS	G7	MF		8	3.7	0.45	8.2222222	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250373	11	CS	C5	F	9	9	5.4	0.2	27	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250374	12	CS	C5	F	10	10	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250375	13	CS	C5	F	11	11	0.8	0.2	4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250376	14	CS	C5	CD22	12													Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250377	15	CS	C5	CF		12	16.7	0.7	23.857143	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250378	16	CS	C5	CF		13	6.1	0.2	30.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250379	17	CS	C5	F	13	14	11.5	0.2	57.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250380	18	CS	C5	F	14	15	2.5	0.3	8.3333333	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250381	19	CS	C5	F	15	16	5.1	0.3	17	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250382	20	C6	A5	F	16	17	1.5	0.2	7.5	LA		ADX	1				NaK, WRTA; Analysis continued on	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250383	21	C6	A5	F	17	18	3.8	0.4	9.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250384	22	C6	A5	F	18	19	3.4	0.25	13.6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250385	23	C6	A5	F	19	20	2.3	0.25	9.2	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250386	24	C6	A5	F	20	21	3.1	0.35	8.8571429	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250387	25	C6	A5	F	21	22	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250388	26	C6	I7	F	22	23	1.2	0.1	12	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250389	27	C6	I7	F	23	24	2.8	0.4	7	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250390	28	C6	I7	F	24	25	2	0.1	20	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250391	29	C6	I7	F	25	26	1	0.25	4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250392	30	C6	I7	CD20	26													Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250393	31	C6	I7	CF		27	3.4	0.15	22.666667	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250394	32	C6	I7	CF		28	3.1	0.35	8.8571714	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
SB-00001	041514012-0001	250395	33	C6	I7	F	27	29	2.3	0.35	6.5714286	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239457	1	D1	I4	F	1	1	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239458	2	D1	I4	F	2	2	1.2	0.15	8	LA		ADX	1	1			NaK, WRTA; Asbestos_426	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239459	3	D1	I4	MD10	3													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239460	4	D1	I4	MFO		3	0.6	0.15	4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239461	5	D1	I4	F	4	4	5.5	0.25	22	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239462	6	D1	I4	F	5	5	6.9	0.45	15.333333	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239463	7	D1	I4	F	6	6	0.9	0.3	3	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239464	8	D1	I4	F	7	7	3	0.4	7.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239465	9	D1	I4	F	8	8	5.7	0.5	11.4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239466	10	D1	I4	F	9	9	2.6	0.25	10.4	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239467	11	D1	I4	MD10	10													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239468	12	D1	I4	MF		10	2.9	0.3	9.6666667	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239469	13	D1	I4	F	11	11	2.5	0.55	4.5454545	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239470	14	D1	I4	F	12	12	1.5	0.25	6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239471	15	D1	I4	F	13	13	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239472	16	D1	I4	F	14	14	1	0.2	5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239473	17	D1	I4	MD10	15													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239474	18	D1	I4	MF		15	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239475	19	D1	I4	MD30	16													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239476	20	D1	I4	MFO		16	4	0.7	5.7142857	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239477	21	D1	I4	MFO		17	3.3	1.1	3	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239478	22	D1	I4	MFO		18	2.7	0.35	7.7142857	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239479	23	D1	I4	F	17	19	4.5	0.3	15	LA		ADX	1	1			NaK, WRTA; Asbestos_428	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239480	24	D1	C5	F	18	20	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239481	25	D1	C5	F	19	21	4	1	4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239482	26	D1	C5	F	20	22	2.5	0.15	16.666667	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239483	27	D1	C5	F	21	23	2.4	0.45	5.3333333	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239484	28	D1	C5	CD21	22													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239485	29	D1	C5	CF		24	6.5	0.9	7.2222222	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239486	30	D1	C5	CF		25	0.6	0.1	6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239487	31	D1	C5	F	23	26	2.3	0.25	9.2	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239488	32	D1	C5	MD10	24													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239489	33	D1	C5	MF		27	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239490	34	D1	C5	F	25	28	1.4	0.2	7	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239491	35	D1	C5	F	26	29	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239492	36	D2	B5	F	27	30	0.8	0.1	8	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239493	37	D2	B5	F	28	31	5.1	0.35	14.571429	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239494	38	D2	B5	MD10	29													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239495	39	D2	B5	MF		32	2.6	0.3	8.6666667	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239496	40	D2	B5	F	30	33	3	0.35	8.5714286	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239497	41	D2	B5	F	31	34	8.2	0.2	41	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239498	42	D2	B5	MD10	32													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239499	43	D2	B5	MFO		35	1	0.2	5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239500	44	D2	B5	F	33	36	5	0.75	6.6666667	LA		ADX	1				NaK, WRTA; XGBLD	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239501	45	D2	B5	MD10	34													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239502	46	D2	B5	MFO		37	2.4	0.3	8	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239503	47	D2	B5	F	35	38	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239504	48	D2	B5	MD10	36													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239505	49	D2	B5	MFO		39	1	0.25	4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239506	50	D2	B5	F	37	40	5.8	0.9	6.4444444	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239507	51	D2	B5	F	38	41	1.2	0.15	8	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239508	52	D2	I8	F	39	42	2.8	0.7	4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239509	53	D2	I8	MD10	40													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239510	54	D2	I8	MF		43	2.2	0.3	7.3333333	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239511	55	D2	I8	MD10	41													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239512	56	D2	I8	MFO		44	3.1	0.4	7.75	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239513	57	D2	I8	F	42	45	2.1	0.35	6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239514	58	D2	I8	F	43	46	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239515	59	D2	I8	F	44	47	3.4	0.25	13.6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239516	60	D2	I8	F	45	48	5.8	0.35	16.571429	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239517	61	D2	I8	F	46	49	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239518	62	D2	I8	MD10	47													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239519	63	D2	I8	MFO		50	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239520	64	D2	I8	F	48	51	2.1	0.25	8.4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239521	65	D2	I8	MD10	49													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239522	66	D2	I8	MFO		52	2.6	0.2	13	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239523	67	D2	I8	F	50	53	6.2	0.5	12.4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239524	68	D2	I8	F	51	54	3.7	0.35	10.571429	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239525	69	D2	I8	F	52	55	1	0.1	10	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239526	70	D2	I8	MD10	53													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00002	041514012-0002	239527	71	D2	I8	MF		56	4.7	0.55	8.5454545	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239528	1	E1	I8	F	1	1	0.55	0.15	3.6666667	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239529	2	E1	I8	MD10	2													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239530	3	E1	I8	MFO		2	0.6	0.1	6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239531	4	E1	I8	F	3	3	5.1	0.45	11.333333	LA		ADX	1	1			NaK, WRTA; Asbestos_429	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239532	5	E1	I8	F	4	4	2.3	0.35	6.5714286	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239533	6	E1	I8	F	5	5	4.7	0.25	18.8	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239534	7	E1	I8	F	6	6	0.9	0.2	4.5	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239535	8	E1	I8	F	7	7	4.8	0.4	12	LA		ADX	1	1			NaK, WRTA; Asbestos_430	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239536	9	E1	I8	F	8	8	1.4	0.25	5.6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239537	10	E1	I8	F	9	9	4	0.5	8	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239538	11	E1	I8	F	10	10	2	0.2	10	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239539	12	E1	I8	F	11	11	0.7	0.15	4.6666667	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239540	13	E1	D4	F	12	12	2	0.5	4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239541	14	E1	D4	F	13	13	2.2	0.2	11	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239542	15	E1	D4	F	14	14	2.8	0.5	5.6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239543	16	E1	D4	F	15	15	2.6	0.1	26	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239544	17	E1	D4	MD10	16													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239545	18	E1	D4	MFO		16	0.7	0.1	7	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239546	19	E1	D4	F	17	17	2.4	0.7	3.4285714	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239547	20	E1	D4	F	18	18	5.3	0.5	10.6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239548	21	E2	H3	F	19	19	5.3	0.5	10.6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239549	22	E2	H3	F	20	20	1.9	0.2	9.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239550	23	E2	H3	F	21	21	1.3	0.25	5.2	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239551	24	E2	H3	F	22	22	3.3	0.15	22	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239552	25	E2	H3	F	23	23	3.4	0.25	13.6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239553	26	E2	H3	F	24	24	2.5	0.4	6.25	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239554	27	E2	H3	MF10	25													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239555	28	E2	H3	MFO		25	2.1	0.4	5.25	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239556	29	E2	H3	F	26	26	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239557	30	E2	H3	F	27	27	3.8	0.25	15.2	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239558	31	E2	H3	F	28	28	7.5	1.1	6.8181818	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239559	32	E2	H3	F	29	29	1	0.15	6.6666667	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239560	33	E2	H3	F	30	30	10.9	1.2	9.0833333	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239561	34	E2	H3	F	31	31	3.6	0.25	14.4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239562	35	E2	C5	F	32	32	6.3	0.3	21	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239563	36	E2	C5	F	33	33	3.8	0.8	4.75	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239564	37	E2	C5	MD10	34													Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239565	38	E2	C5	MFO		34	1.4	0.45	3.1111111	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239566	39	E2	C5	F	35	35	1.2	0.3	4	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
SB-00003	041514012-0003	239567	40	E2	C5

ATTACHMENT 2. DATA SUMMARY OF STRUCTURE INFORMATION - SLASH PILE BURN DUFF (2015)

Libby Asbestos Superfund Site

Index ID	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	QVC - 5%
SB-00007	041514018-0001	239987	1	E5	D8	F	1	1	25.9	0.24	107.91667	LA		ADX	1	1	1		NaX, WRTA; 010603D	Duff	CDM Smith	N. Ross/DDE			
SB-00007	041514018-0001	239988	2	E5	G9	F	2	2	3.8	0.72	5.2777778	LA		ADX	1	1	1		NaX, WRTA; 010605D	Duff	CDM Smith	N. Ross/DDE			
SB-00007	041514018-0001	239989	3	E5	G9	MD10	3													Duff	CDM Smith	N. Ross/DDE			
SB-00007	041514018-0001	239990	4	E5	G9	MFO		3	1.4	0.1	14	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00007	041514018-0001	239991	5	E6	H7	ND														Duff	CDM Smith	N. Ross/DDE			
SB-00007	041514018-0001	239992	6	E6	E9	F	4	4	3.3	0.12	27.5	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	239993	1	F1	F8	F	1	1	1.8	0.12	15	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	239994	2	F1	F8	F	2	2	18.9	2.02	9.3564356	LA		ADX	1	1	1		NaX, WRTA; 010609D	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	239995	3	F1	F8	F	3	3	2.4	0.24	10	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	239996	4	F1	C9	F	4	4	5.7	0.24	23.75	LA		ADX	1		1		NaX, WRTA; Additional analysis 6/9	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	239997	5	F1	C9	F	5	5	6	0.48	12.5	LA		ADX	1		1		NAk, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	239998	6	F1	C9	F	6	6	5.4	0.72	7.5	LA		ADX	1	1	1		NaK, WRTA; 010611D	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	239999	7	F1	C9	F	7	7	1.2	0.18	6.6666667	LA		ADX	1				NaX, WRTA; Beam Damage	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240000	8	F1	C9	MD10	8													Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240001	9	F1	C9	MFO		8	2.6	0.48	5.4166667	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240002	10	F1	H6	F	9	9	5.5	0.48	11.458333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240003	11	F1	I9	F	10	10	12.6	0.84	15	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240004	12	F1	I9	F	11	11	3.8	0.84	4.5238095	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240005	13	F2	B2	F	12	12	7.8	0.18	43.333333	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240006	14	F2	D5	F	13	13	2.3	0.24	9.5833333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240007	15	F2	F3	F	14	14	6.6	1.2	5.5	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240008	16	F2	F3	F	15	15	6.4	0.24	26.666667	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240009	17	F2	F3	F	16	16	6.9	0.36	19.166667	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00008	041514018-0002	240010	18	F2	I2	F	17	17	1.3	0.24	5.4166667	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240011	1	G1	B6	F	1	1	3.1	0.24	12.916667	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240012	2	G1	B6	MD10	2													Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240013	3	G1	B6	MFO		2	2.4	0.48	5	LA		ADX	1	1	1		NaK, WRTA; 010607D	Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240014	4	G1	B6	F	3	3	5	0.48	10.416667	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240015	5	G1	E7	ND														Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240016	6	G1	I9	F	4	4	2.4	0.24	10	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240017	7	G1	I9	F	5	5	10.7	0.24	44.583333	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240018	8	G2	H8	F	6	6	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240019	9	G2	H8	MD11	7													Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240020	10	G2	H8	MFO		7	12.1	0.36	33.611111	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240021	11	G2	F7	ND														Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240022	12	G2	D9	F	8	8	2.6	0.12	21.666667	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00009	041514018-0003	240023	13	G2	D9	F	9	9	5	0.36	13.888889	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240024	1	H1	B8	F	1	1	2.9	0.2	14.5	LA		ADX	1	1	1		NaK, WRTA; Asbestos_457	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240025	2	H1	B8	F	2	2	3.7	0.75	4.9333333	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240026	3	H1	B8	F	3	3	2.2	0.35	6.2857143	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240027	4	H1	H4	F	4	4	1.3	0.15	8.6666667	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240028	5	H1	H4	F	5	5	2.6	0.25	10.4	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240029	6	H2	A4	F	6	6	4.9	0.5	9.8	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240030	7	H2	A4	F	7	7	2.6	0.3	8.6666667	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240031	8	H2	I8	F	8	8	9	0.75	12	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240032	9	H2	I8	F	9	9	5.1	0.45	11.333333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240033	10	H2	I8	F	10	10	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240034	11	H2	I8	MD10	11													Duff	CDM Smith	N. Ross/DDE			
SB-00010	041514018-0004	240035	12	H2	I8	MF		11	1.3	0.3	4.3333333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00011	041514018-0005	259661	1	I5	B7	F	1	1	3.2	0.48	6.6666667	LA		AX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259662	2	I5	B7	F	2	2	11.1	0.48	23.125	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259663	3	I5	B7	F	3	3	2.9	0.48	6.0416667	LA		ADX	1	1	1		NaK, WRTA; 010602D	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259664	4	I5	B7	MD10	4													Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259665	5	I5	B7	MF		4	4.7	0.36	13.055556	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259666	6	I5	B7	MD21	5													Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259667	7	I5	B7	MF		5	5.1	0.12	42.5	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259668	8	I5	B7	MF		6	1.9	0.12	15.833333	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259669	9	I5	B7	F	6	7	1.5	0.18	8.3333333	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259670	10	I5	B7	F	7	8	1.2	0.12	10	LA		ADX	1				XX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259671	11	I5	B7	F	8	9	6.9	0.48	14.375	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259672	12	I5	B7	F	9	10	4.3	0.36	11.944444	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259673	13	I5	B7	MD20	10													Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259674	14	I5	B7	MF		11	3.3	0.48	6.875	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259675	15	I5	B7	MF		12	1.4	0.1	14	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259676	16	I5	B7	F	0	0	1.6	0.24	6.6666667	NAM		NAM	1	1	1		010622D	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259677	17	I5	G9	F	11	13	8.1	0.6	13.5	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259678	18	I5	G9	F	12	14	3.3	0.96	3.4375	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259679	19	I5	G9	F	13	15	3.1	0.18	17.222222	LA		ADX	1				XX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259680	20	I5	G9	F	14	16	1.9	0.48	3.9583333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259681	21	I5	G9	F	15	17	1.2	0.12	10	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259682	22	I5	G9	F	16	18	1.4	0.24	5.8333333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259683	23	I5	G9	F	17	19	2	0.18	11.111111	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259684	24	I5	G9	MD10	18													Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259685	25	I5	G9	MFO		20	1	0.24	4.1666667	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259686	26	I5	G9	F	19	21	6	0.72	8.3333333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259687	27	I6	E9	F	20	22	2	0.12	16.666667	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259688	28	I6	E9	F	21	23	4.8	0.48	10	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259689	29	I6	E9	F	22	24	2.3	0.18	12.777778	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259690	30	I6	E9	F	23	25	2.6	0.36	7.2222222	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259691	31	I6	E9	F	24	26	2.1	0.18	11.666667	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259692	32	I6	E9	F	25	27	8.3	1.2	6.9166667	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259693	33	I6	E9	MD21	26													Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259694	34	I6	E9	MF		28	11.6	0.96	12.083333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259695	35	I6	E9	MF		29	3.8	0.24	15.833333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259696	36	I6	E9	MD10	27													Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259697	37	I6	E9	MFO		30	2.4	0.24	10	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259698	38	I6	E9	F	28	31	19.2	0.24	80	LA		ADX	1				NaX, WRTA; XCGBLD	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259699	39	I6	E9	F	29	32	9.5	0.36	26.388889	LA		ADX	1				NaK, WRTA; XCGBLD	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259700	40	I6	E9	F	30	33	1.6	0.18	8.8888889	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259701	41	I6	C8	F	31	34	6.6	0.96	6.875	LA		ADX	1				NaX, WRTA; Additional analysis 6/2	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259702	42	I6	C8	F	32	35	1.9	0.24	7.9166667	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259703	43	I6	C8	B	33	36	3.3	0.72	4.5833333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259704	44	I6	C8	F	34	37	1.7	0.1	17	LA		AX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259705	45	I6	C8	F	35	38	5	0.9	5.5555556	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259706	46	I6	C8	F	36	39	1.5	0.12	12.5	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259707	47	I6	C8	F	37	40	13.1	1.2	10.916667	LA		ADX	1				XX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259708	48	I6	C8	F	38	41	9.3	0.96	9.6875	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259709	49	I6	C8	F	39	42	3.6	0.12	30	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
SB-00011	041514018-0005	259710	50	I6	C8	F	40	43	2.1	0.24	8.75	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE	It is likely that the		EF
SB-00011	041514018-0005	259711	51	I6	C8	F	41	44	2.9	0.36	8.0555556	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE	grid should be I6		EF
SB-00011	041514018-0005	259712	52	I6	C8	MD10	42													Duff	CDM Smith	N. Ross/DDE	and the grid		EF
SB-00011	041514018-0005	259713	53	I6	C8	MFO		45	2.1	0.6	3.5	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE	opening should be		EF
SB-00011	041514018-0005	259714	54	I6	C8	F	43	46	1.4	0.18	7.7777778	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE	C8 for rows 61-66.		EF
SB-00012	041514018-0006	240090	1	J2	E8	F	1	1	5	1	5	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240091	2	J2	E8	F	2	2	1.8	0.48	3.75	LA		ADX	1	1	1		NaX, WRTA; 010636D	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240092	3	J2	B8	F	3	3	3.3	0.96	3.4375	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240093	4	J2	B8	F	4	4	14.3	0.72	19.861111	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240094	5	J2	B8	F	5	5	3.1	0.18	17.222222	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240095	6	J2	B8	F	6	6	1.9	0.36	5.2777778	LA		ADX	1		1		NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240096	7	J2	B8	CD20	7													Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240097	8	J2	B8	CF		7	2.7	0.36	7.5	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240098	9	J2	B8	CF		8	1.3	0.36	3.6111111	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240099	10	J2	H7	F	8	9	11.9	1.3	9.1538462	LA		ADX	1				XX, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240100	11	J2	H7	F	9	10	0.7	0.18	3.8888889	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240101	12	J2	H7	F	10	11	16.4	4.1	4	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240102	13	J2	H7	F	11	12	1.9	0.12	15.833333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240103	14	J3	G8	F	12	13	6	0.36	16.666667	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240104	15	J3	G8	F	13	14	0.9	0.18	5	LA		AX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240105	16	J3	G8	F	14	15	20.9	0.72	29.027778	LA		ADX	1				NaK, WRTA; XCGBLD	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240106	17	J3	D7	F	15	16	1.7	0.36	4.7222222	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240107	18	J3	D7	F	16	17	8.3	0.84	9.8809524	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240108	19	J3	D7	F	17	18	2.9	0.72	4.0277778	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240109	20	J3	D7	F	18	19	1.7	0.24	7.0833333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240110	21	J3	D7	CD20	19													Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240111	22	J3	D7	CF		20	5	0.24	20.833333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240112	23	J3	D7	CF		21	2.6	0.24	10.833333	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			
SB-00012	041514018-0006	240113	24	J3	D7	F	20	22	1	0.18	5.5555556	LA		ADX	1				NaK, WRTA	Duff	CDM Smith	N. Ross/DDE			

ATTACHMENT 1. DATA SUMMARY OF STRUCTURE INFORMATION - SUPPLEMENTAL ANALYSIS OF PHASE III AND PHASE IV PART A ABS AIR (2013)

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P3-00486	164361	1	A1S	A1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164362	2	A1S	A2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164363	3	A1S	A3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164364	4	A1S	A4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164365	5	A1S	A5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164366	6	A1S	A6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164367	7	A1S	A7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164368	8	A1S	A8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164369	9	A1S	A9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164370	10	A1S	A10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164371	11	A1S	B1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164372	12	A1S	B2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164373	13	A1S	B3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164374	14	A1S	B4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164375	15	A1S	B5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164376	16	A1S	B6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164377	17	A1S	B7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164378	18	A1S	B8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164379	19	A1S	B9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164380	20	A1S	B10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164381	21	A1S	C1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164382	22	A1S	C2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164383	23	A1S	C3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164384	24	A1S	C4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164385	25	A1S	C5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164386	26	A1S	C6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164387	27	A1S	C7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164388	28	A1S	C8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164389	29	A1S	C9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164390	30	A1S	C10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164391	31	A1S	D1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164392	32	A1S	D2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164393	33	A1S	D3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164394	34	A1S	D4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164395	35	A1S	D5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164396	36	A1S	D6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164397	37	A1S	D7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164398	38	A1S	D8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164399	39	A1S	D9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164400	40	A1S	D10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164401	41	A1S	E1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164402	42	A1S	E2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164403	43	A1S	E3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164404	44	A1S	E4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164405	45	A1S	E5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164406	46	A1S	E6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164407	47	A1S	E7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164408	48	A1S	E8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164409	49	A1S	E9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164410	50	A1S	E10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164411	51	A1S	F1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164412	52	A1S	F2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164413	53	A1S	F3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164414	54	A1S	F4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164415	55	A1S	F5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164416	56	A1S	F6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164417	57	A1S	F7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164418	58	A1S	F8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164419	59	A1S	F9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164420	60	A1S	F10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164421	61	A1S	G1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164422	62	A1S	G2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164423	63	A1S	G3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164424	64	A1S	G4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164425	65	A1S	G5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164426	66	A1S	G6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164427	67	A1S	G7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164428	68	A1S	G8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164429	69	A1S	G9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164430	70	A1S	G10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164431	71	A1S	H1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164432	72	A1S	H2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164433	73	A1S	H3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164434	74	A1S	H4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164435	75	A1S	H5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164436	76	A1S	H6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164437	77	A1S	H7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164438	78	A1S	H8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164439	79	A1S	H9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164440	80	A1S	H10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164441	81	A1S	I1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164442	82	A1S	I2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164443	83	A1S	I3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164444	84	A1S	I4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164445	85	A1S	I5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164446	86	A1S	I6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164447	87	A1S	I7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164448	88	A1S	I8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164449	89	A1S	I9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164450	90	A1S	I10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164451	91	A1S	J1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164452	92	A1S	J2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164453	93	A1S	J3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164454	94	A1S	J4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164455	95	A1S	J5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164456	96	A1S	J6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164457	97	A1S	J7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164458	98	A1S	J8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164459	99	A1S	J9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164460	100	A1S	J10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164461	101	A3S	A1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164462	102	A3S	A2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164463	103	A3S	A3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164464	104	A3S	A4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164465	105	A3S	A5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164466	106	A3S	A6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164467	107	A3S	A7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164468	108	A3S	A8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164469	109	A3S	A9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164470	110	A3S	A10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164471	111	A3S	B1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164472	112	A3S	B2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164473	113	A3S	B3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164474	114	A3S	B4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164475	115	A3S	B5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164476	116	A3S	B6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164477	117	A3S	B7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164478	118	A3S	B8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164479	119	A3S	B9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164480	120	A3S	B10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164481	121	A3S	C1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164482	122	A3S	C2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164483	123	A3S	C3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164484	124	A3S	C4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164485	125	A3S	C5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164486	126	A3S	C6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164487	127	A3S	C7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164488	128	A3S	C8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164489	129	A3S	C9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164490	130	A3S	C10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164491	131	A3S	D1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164492	132	A3S	D2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164493	133	A3S	D3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164494	134	A3S	D4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164495	135	A3S	D5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164496	136	A3S	D6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164497	137	A3S	D7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164498	138	A3S	D8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164499	139	A3S	D9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164500	140	A3S	D10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164501	141	A3S	E1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164502	142	A3S	E2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164503	143	A3S	E3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164504	144	A3S	E4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164505	145	A3S	E5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164506	146	A3S	E6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164507	147	A3S	E7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164508	148	A3S	E8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164509	149	A3S	E9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164510	150	A3S	E10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164511	151	A3S	F1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164512	152	A3S	F2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164513	153	A3S	F3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164514	154	A3S	F4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164515	155	A3S	F5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164516	156	A3S	F6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164517	157	A3S	F7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164518	158	A3S	F8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164519	159	A3S	F9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164520	160	A3S	F10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164521	161	A3S	G1	ND														CDM Smith	A. Coler			x-NR

ATTACHMENT 1. DATA SUMMARY OF STRUCTURE INFORMATION - SUPPLEMENTAL ANALYSIS OF PHASE III AND PHASE IV PART A ABS AIR (2013)

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P3-00486	164522	162	A3S	G2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164523	163	A3S	G3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164524	164	A3S	G4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164525	165	A3S	G5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164526	166	A3S	G6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164527	167	A3S	G7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164528	168	A3S	G8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164529	169	A3S	G9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164530	170	A3S	G10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164531	171	A3S	H1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164532	172	A3S	H2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164533	173	A3S	H3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164534	174	A3S	H4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164535	175	A3S	H5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164536	176	A3S	H6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164537	177	A3S	H7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164538	178	A3S	H8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164539	179	A3S	H9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164540	180	A3S	H10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164541	181	A3S	I1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164542	182	A3S	I2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164543	183	A3S	I3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164544	184	A3S	I4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164545	185	A3S	I5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164546	186	A3S	I6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164547	187	A3S	I7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164548	188	A3S	I8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164549	189	A3S	I9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164550	190	A3S	I10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164551	191	A3S	J1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164552	192	A3S	J2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164553	193	A3S	J3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164554	194	A3S	J4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164555	195	A3S	J5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164556	196	A3S	J6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164557	197	A3S	J7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164558	198	A3S	J8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164559	199	A3S	J9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164560	200	A3S	J10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164561	201	A5S	A1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164562	202	A5S	A2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164563	203	A5S	A3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164564	204	A5S	A4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164565	205	A5S	A5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164566	206	A5S	A6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164567	207	A5S	A7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164568	208	A5S	A8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164569	209	A5S	A9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164570	210	A5S	A10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164571	211	A5S	B1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164572	212	A5S	B2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164573	213	A5S	B3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164574	214	A5S	B4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164575	215	A5S	B5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164576	216	A5S	B6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164577	217	A5S	B7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164578	218	A5S	B8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164579	219	A5S	B9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164580	220	A5S	B10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164581	221	A5S	C1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164582	222	A5S	C2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164583	223	A5S	C3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164584	224	A5S	C4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164585	225	A5S	C5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164586	226	A5S	C6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164587	227	A5S	C7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164588	228	A5S	C8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164589	229	A5S	C9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164590	230	A5S	C10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164591	231	A5S	D1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164592	232	A5S	D2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164593	233	A5S	D3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164594	234	A5S	D4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164595	235	A5S	D5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164596	236	A5S	D6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164597	237	A5S	D7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164598	238	A5S	D8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164599	239	A5S	D9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164600	240	A5S	D10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164601	241	A5S	E1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164602	242	A5S	E2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164603	243	A5S	E3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164604	244	A5S	E4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164605	245	A5S	E5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164606	246	A5S	E6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164607	247	A5S	E7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164608	248	A5S	E8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164609	249	A5S	E9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164610	250	A5S	E10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164611	251	A5S	F1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164612	252	A5S	F2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164613	253	A5S	F3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164614	254	A5S	F4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164615	255	A5S	F5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164616	256	A5S	F6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164617	257	A5S	F7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164618	258	A5S	F8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164619	259	A5S	F9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164620	260	A5S	F10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164621	261	A5S	G1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164622	262	A5S	G2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164623	263	A5S	G3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164624	264	A5S	G4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164625	265	A5S	G5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164626	266	A5S	G6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164627	267	A5S	G7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164628	268	A5S	G8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164629	269	A5S	G9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164630	270	A5S	G10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164631	271	A5S	H1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164632	272	A5S	H2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164633	273	A5S	H3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164634	274	A5S	H4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164635	275	A5S	H5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164636	276	A5S	H6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164637	277	A5S	H7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164638	278	A5S	H8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164639	279	A5S	H9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164640	280	A5S	H10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164641	281	A5S	I1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164642	282	A5S	I2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164643	283	A5S	I3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164644	284	A5S	I4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164645	285	A5S	I5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164646	286	A5S	I6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164647	287	A5S	I7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164648	288	A5S	I8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164649	289	A5S	I9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164650	290	A5S	I10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164651	291	A5S	J1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164652	292	A5S	J2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164653	293	A5S	J3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164654	294	A5S	J4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164655	295	A5S	J5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164656	296	A5S	J6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164657	297	A5S	J7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164658	298	A5S	J8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164659	299	A5S	J9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164660	300	A5S	J10	ND														CDM Smith	A. Coler			x-NR
P3-00486	164661	301	A7S	A1	ND														CDM Smith	A. Coler			x-NR
P3-00486	164662	302	A7S	A2	ND														CDM Smith	A. Coler			x-NR
P3-00486	164663	303	A7S	A3	ND														CDM Smith	A. Coler			x-NR
P3-00486	164664	304	A7S	A4	ND														CDM Smith	A. Coler			x-NR
P3-00486	164665	305	A7S	A5	ND														CDM Smith	A. Coler			x-NR
P3-00486	164666	306	A7S	A6	ND														CDM Smith	A. Coler			x-NR
P3-00486	164667	307	A7S	A7	ND														CDM Smith	A. Coler			x-NR
P3-00486	164668	308	A7S	A8	ND														CDM Smith	A. Coler			x-NR
P3-00486	164669	309	A7S	A9	ND														CDM Smith	A. Coler			x-NR
P3-00486	164670	310	A7S	A10	ND														CDM Smith	A. Coler			x-NR
P3-00725	164991	1	C1S	A1	ND														CDM Smith	A. Coler			x-NR
P3-00725	164992	2	C1S	A2	ND														CDM Smith	A. Coler			x-NR
P3-00725	164993	3	C1S	A3	ND														CDM Smith	A. Coler			x-NR
P3-00725	164994	4	C1S	A4	ND														CDM Smith	A. Coler			x-NR
P3-00725	164995	5	C1S	A5	ND														CDM Smith	A. Coler			x-NR
P3-00725	164996	6	C1S	A6	ND														CDM Smith	A. Coler			x-NR
P3-00725	164997	7	C1S	A7	ND														CDM Smith	A. Coler			x-NR
P3-00725	164998	8	C1S	A8	ND														CDM Smith	A. Coler			x-NR
P3-00725	164999	9	C1S	A9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165000	10	C1S	A10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165001	11	C1S	B1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165002	12	C1S	B2	ND														CDM Smith	A. Coler			x-NR

ATTACHMENT 1. DATA SUMMARY OF STRUCTURE INFORMATION - SUPPLEMENTAL ANALYSIS OF PHASE III AND PHASE IV PART A ABS AIR (2013)

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P3-00725	165003	13	C1S	B3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165004	14	C1S	B4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165005	15	C1S	B5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165006	16	C1S	B6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165007	17	C1S	B7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165008	18	C1S	B8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165009	19	C1S	B9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165010	20	C1S	B10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165011	21	C1S	C1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165012	22	C1S	C2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165013	23	C1S	C3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165014	24	C1S	C4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165015	25	C1S	C5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165016	26	C1S	C6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165017	27	C1S	C7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165018	28	C1S	C8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165019	29	C1S	C9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165020	30	C1S	C10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165021	31	C1S	D1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165022	32	C1S	D2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165023	33	C1S	D3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165024	34	C1S	D4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165025	35	C1S	D5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165026	36	C1S	D6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165027	37	C1S	D7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165028	38	C1S	D8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165029	39	C1S	D9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165030	40	C1S	D10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165031	41	C1S	E1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165032	42	C1S	E2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165033	43	C1S	E3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165034	44	C1S	E4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165035	45	C1S	E5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165036	46	C1S	E6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165037	47	C1S	E7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165038	48	C1S	E8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165039	49	C1S	E9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165040	50	C1S	E10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165041	51	C1S	F1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165042	52	C1S	F2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165043	53	C1S	F3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165044	54	C1S	F4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165045	55	C1S	F5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165046	56	C1S	F6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165047	57	C1S	F7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165048	58	C1S	F8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165049	59	C1S	F9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165050	60	C1S	F10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165051	61	C1S	G1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165052	62	C1S	G2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165053	63	C1S	G3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165054	64	C1S	G4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165055	65	C1S	G5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165056	66	C1S	G6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165057	67	C1S	G7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165058	68	C1S	G8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165059	69	C1S	G9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165060	70	C1S	G10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165061	71	C1S	H1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165062	72	C1S	H2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165063	73	C1S	H3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165064	74	C1S	H4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165065	75	C1S	H5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165066	76	C1S	H6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165067	77	C1S	H7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165068	78	C1S	H8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165069	79	C1S	H9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165070	80	C1S	H10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165071	81	C3S	A1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165072	82	C3S	A2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165073	83	C3S	A3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165074	84	C3S	A4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165075	85	C3S	A5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165076	86	C3S	A6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165077	87	C3S	A7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165078	88	C3S	A8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165079	89	C3S	A9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165080	90	C3S	A10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165081	91	C3S	B1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165082	92	C3S	B2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165083	93	C3S	B3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165084	94	C3S	B4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165085	95	C3S	B5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165086	96	C3S	B6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165087	97	C3S	B7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165088	98	C3S	B8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165089	99	C3S	B9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165090	100	C3S	B10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165091	101	C3S	C1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165092	102	C3S	C2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165093	103	C3S	C3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165094	104	C3S	C4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165095	105	C3S	C5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165096	106	C3S	C6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165097	107	C3S	C7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165098	108	C3S	C8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165099	109	C3S	C9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165100	110	C3S	C10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165101	111	C3S	D1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165102	112	C3S	D2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165103	113	C3S	D3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165104	114	C3S	D4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165105	115	C3S	D5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165106	116	C3S	D6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165107	117	C3S	D7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165108	118	C3S	D8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165109	119	C3S	D9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165110	120	C3S	D10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165111	121	C3S	E1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165112	122	C3S	E2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165113	123	C3S	E3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165114	124	C3S	E4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165115	125	C3S	E5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165116	126	C3S	E6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165117	127	C3S	E7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165118	128	C3S	E8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165119	129	C3S	E9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165120	130	C3S	E10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165121	131	C3S	F1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165122	132	C3S	F2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165123	133	C3S	F3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165124	134	C3S	F4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165125	135	C3S	F5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165126	136	C3S	F6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165127	137	C3S	F7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165128	138	C3S	F8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165129	139	C3S	F9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165130	140	C3S	F10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165131	141	C3S	G1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165132	142	C3S	G2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165133	143	C3S	G3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165134	144	C3S	G4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165135	145	C3S	G5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165136	146	C3S	G6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165137	147	C3S	G7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165138	148	C3S	G8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165139	149	C3S	G9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165140	150	C3S	G10	ND														CDM Smith	A. Coler			x-NR
P3-00725	165141	151	C3S	H1	ND														CDM Smith	A. Coler			x-NR
P3-00725	165142	152	C3S	H2	ND														CDM Smith	A. Coler			x-NR
P3-00725	165143	153	C3S	H3	ND														CDM Smith	A. Coler			x-NR
P3-00725	165144	154	C3S	H4	ND														CDM Smith	A. Coler			x-NR
P3-00725	165145	155	C3S	H5	ND														CDM Smith	A. Coler			x-NR
P3-00725	165146	156	C3S	H6	ND														CDM Smith	A. Coler			x-NR
P3-00725	165147	157	C3S	H7	ND														CDM Smith	A. Coler			x-NR
P3-00725	165148	158	C3S	H8	ND														CDM Smith	A. Coler			x-NR
P3-00725	165149	159	C3S	H9	ND														CDM Smith	A. Coler			x-NR
P3-00725	165150	160	C3S	H10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163005	1	L5S	J1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163006	2	L5S	J2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163007	3	L5S	J3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163008	4	L5S	J4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163009	5	L5S	J5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163010	6	L5S	J6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163011	7	L5S	J7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163012	8	L5S	J8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163013	9	L5S	J9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163014	10	L5S	J10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163015	11	L5S	I6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163016	12	L5S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163017	13	L5S	I4	ND														CDM Smith	A. Coler			x-NR

ATTACHMENT 1. DATA SUMMARY OF STRUCTURE INFORMATION - SUPPLEMENTAL ANALYSIS OF PHASE III AND PHASE IV PART A ABS AIR (2013)

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P4-00011	163018	14	L5S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163019	15	L5S	I2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163020	16	L5S	I1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163021	17	L5S	H1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163022	18	L5S	H2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163023	19	L5S	H3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163024	20	L5S	H4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163025	21	L5S	H7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163026	22	L5S	H8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163027	23	L5S	H9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163028	24	L5S	H10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163029	25	L5S	G1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163030	26	L5S	G2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163031	27	L5S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163032	28	L5S	G4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163033	29	L5S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163034	30	L5S	G6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163035	31	L5S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163036	32	L5S	G8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163037	33	L5S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163038	34	L5S	G10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163039	35	L5S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163040	36	L5S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163041	37	L5S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163042	38	L5S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163043	39	L5S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163044	40	L5S	F6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163045	41	L5S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163046	42	L5S	F8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163047	43	L5S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163048	44	L5S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163049	45	L5S	E2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163050	46	L5S	E3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163051	47	L5S	E4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163052	48	L5S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163053	49	L5S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163054	50	L5S	E8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163055	51	L5S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163056	52	L5S	E10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163057	53	L5S	D1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163058	54	L5S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163059	55	L5S	D3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163060	56	L5S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163061	57	L5S	D5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163062	58	L5S	D9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163063	59	L5S	D10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163064	60	L5S	C1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163065	61	L5S	C2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163066	62	L5S	C3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163067	63	L5S	C4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163068	64	L5S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163069	65	L5S	C6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163070	66	L5S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163071	67	L5S	C8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163072	68	L5S	C9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163073	69	L5S	C10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163074	70	L5S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163075	71	L5S	B7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163076	72	L5S	B6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163077	73	L5S	B5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163078	74	L5S	B4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163079	75	L5S	B3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163080	76	L5S	B2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163081	77	L5S	B1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163082	78	L7S	H9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163083	79	L7S	H8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163084	80	L7S	H7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163085	81	L7S	H6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163086	82	L7S	H5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163087	83	L7S	H4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163088	84	L7S	H3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163089	85	L7S	H2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163090	86	L7S	H1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163091	87	L7S	G10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163092	88	L7S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163093	89	L7S	G8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163094	90	L7S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163095	91	L7S	G6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163096	92	L7S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163097	93	L7S	G4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163098	94	L7S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163099	95	L7S	G2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163100	96	L7S	G1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163101	97	L7S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163102	98	L7S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163103	99	L7S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163104	100	L7S	F6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163105	101	L7S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163106	102	L7S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163107	103	L7S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163108	104	L7S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163109	105	L7S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163110	106	L7S	E10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163111	107	L7S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163112	108	L7S	E4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163113	109	L7S	E3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163114	110	L7S	E2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163115	111	L7S	E1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163116	112	L7S	A10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163117	113	L7S	A9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163118	114	L7S	A8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163119	115	L7S	A7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163120	116	L7S	A4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163121	117	L7S	A3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163122	118	L7S	A2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163123	119	L7S	B3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163124	120	L7S	B6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163125	121	L7S	B8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163126	122	L7S	B9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163127	123	L7S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163128	124	L7S	C1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163129	125	L7S	C2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163130	126	L7S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163131	127	L7S	C6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163132	128	L7S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163133	129	L7S	C8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163134	130	L7S	C9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163135	131	L7S	C10	ND														CDM Smith	A. Coler			x-NR
P4-00011	163136	132	L7S	D9	ND														CDM Smith	A. Coler			x-NR
P4-00011	163137	133	L7S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00011	163138	134	L7S	D7	ND														CDM Smith	A. Coler			x-NR
P4-00011	163139	135	L7S	D6	ND														CDM Smith	A. Coler			x-NR
P4-00011	163140	136	L7S	D5	ND														CDM Smith	A. Coler			x-NR
P4-00011	163141	137	L7S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00011	163142	138	L7S	D3	ND														CDM Smith	A. Coler			x-NR
P4-00011	163143	139	L7S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00011	163144	140	L7S	D1	ND														CDM Smith	A. Coler			x-NR
P4-00011	163145	141	L7S	I6	ND														CDM Smith	A. Coler			x-NR
P4-00035	162617	1	E7S	J10	ND														CDM Smith	A. Coler			x-NR
P4-00035	162618	2	E7S	J8	ND														CDM Smith	A. Coler			x-NR
P4-00035	162619	3	E7S	J6	ND														CDM Smith	A. Coler			x-NR
P4-00035	162620	4	E7S	J4	ND														CDM Smith	A. Coler			x-NR
P4-00035	162621	5	E7S	J2	ND														CDM Smith	A. Coler			x-NR
P4-00035	162622	6	E7S	I1	ND														CDM Smith	A. Coler			x-NR
P4-00035	162623	7	E7S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00035	162624	8	E7S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00035	162625	9	E7S	I7	ND														CDM Smith	A. Coler			x-NR
P4-00035	162626	10	E7S	I9	ND														CDM Smith	A. Coler			x-NR
P4-00035	162627	11	E7S	H2	ND														CDM Smith	A. Coler			x-NR
P4-00035	162628	12	E7S	H4	ND														CDM Smith	A. Coler			x-NR
P4-00035	162629	13	E7S	H6	ND														CDM Smith	A. Coler			x-NR
P4-00035	162630	14	E7S	H8	ND														CDM Smith	A. Coler			x-NR
P4-00035	162631	15	E7S	H10	ND														CDM Smith	A. Coler			x-NR
P4-00035	162632	16	E7S	G1	ND														CDM Smith	A. Coler			x-NR
P4-00035	162633	17	E7S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00035	162634	18	E7S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00035	162635	19	E7S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00035	162636	20	E7S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00035	162637	21	E7S	F6	ND														CDM Smith	A. Coler			x-NR
P4-00035	162638	22	E7S	F8	ND														CDM Smith	A. Coler			x-NR
P4-00035	162639	23	E7S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00035	162640	24	E7S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00035	162641	25	E7S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00035	162642	26	E7S	D6	ND														CDM Smith	A. Coler			x-NR
P4-00035	162643	27	E7S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00035	162644	28	E7S	D10	ND														CDM Smith	A. Coler			x-NR
P4-00035	162645	29	E7S	C3	ND														CDM Smith	A. Coler			x-NR
P4-00035	162646	30	E7S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00035	162647	31	E7S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00035	162648	32	E7S	C9	ND														CDM Smith	A. Coler			x-NR
P4-00035	162649	33	E7S	A1	ND														CDM Smith	A. Coler			x-NR

ATTACHMENT 1. DATA SUMMARY OF STRUCTURE INFORMATION - SUPPLEMENTAL ANALYSIS OF PHASE III AND PHASE IV PART A ABS AIR (2013)

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P4-00035	162650	34	E7S	A3	ND														CDM Smith	A. Coler			x-NR
P4-00035	162651	35	E7S	A5	ND														CDM Smith	A. Coler			x-NR
P4-00035	162652	36	E7S	A7	ND														CDM Smith	A. Coler			x-NR
P4-00035	162653	37	E7S	A9	ND														CDM Smith	A. Coler			x-NR
P4-00035	162654	38	E7S	B6	ND														CDM Smith	A. Coler			x-NR
P4-00035	162655	39	E7S	B8	ND														CDM Smith	A. Coler			x-NR
P4-00035	162656	40	E7S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00035	162657	41	E9S	J10	ND														CDM Smith	A. Coler			x-NR
P4-00035	162658	42	E9S	J8	ND														CDM Smith	A. Coler			x-NR
P4-00035	162659	43	E9S	J6	ND														CDM Smith	A. Coler			x-NR
P4-00035	162660	44	E9S	J4	ND														CDM Smith	A. Coler			x-NR
P4-00035	162661	45	E9S	J2	ND														CDM Smith	A. Coler			x-NR
P4-00035	162662	46	E9S	I1	ND														CDM Smith	A. Coler			x-NR
P4-00035	162663	47	E9S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00035	162664	48	E9S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00035	162665	49	E9S	I7	ND														CDM Smith	A. Coler			x-NR
P4-00035	162666	50	E9S	I9	ND														CDM Smith	A. Coler			x-NR
P4-00035	162667	51	E9S	H10	ND														CDM Smith	A. Coler			x-NR
P4-00035	162668	52	E9S	H8	ND														CDM Smith	A. Coler			x-NR
P4-00035	162669	53	E9S	H6	ND														CDM Smith	A. Coler			x-NR
P4-00035	162670	54	E9S	H4	ND														CDM Smith	A. Coler			x-NR
P4-00035	162671	55	E9S	H2	ND														CDM Smith	A. Coler			x-NR
P4-00035	162672	56	E9S	G1	ND														CDM Smith	A. Coler			x-NR
P4-00035	162673	57	E9S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00035	162674	58	E9S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00035	162675	59	E9S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00035	162676	60	E9S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00035	162677	61	E9S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00035	162678	62	E9S	F8	ND														CDM Smith	A. Coler			x-NR
P4-00035	162679	63	E9S	F6	ND														CDM Smith	A. Coler			x-NR
P4-00035	162680	64	E9S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00035	162681	65	E9S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00035	162682	66	E9S	E1	ND														CDM Smith	A. Coler			x-NR
P4-00035	162683	67	E9S	E3	ND														CDM Smith	A. Coler			x-NR
P4-00035	162684	68	E9S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00035	162685	69	E9S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00035	162686	70	E9S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00035	162687	71	E9S	D10	ND														CDM Smith	A. Coler			x-NR
P4-00035	162688	72	E9S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00035	162689	73	E9S	D6	ND														CDM Smith	A. Coler			x-NR
P4-00035	162690	74	E9S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00035	162691	75	E9S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00035	162692	76	E9S	C1	ND														CDM Smith	A. Coler			x-NR
P4-00035	162693	77	E9S	C3	ND														CDM Smith	A. Coler			x-NR
P4-00035	162694	78	E9S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00035	162695	79	E9S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00083	167368	1	B10-S	G2-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167369	2	B10-S	F2-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167370	3	B10-S	E2-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167371	4	B10-S	C2-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167372	5	B10-S	B2-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167373	6	B10-S	H3-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167374	7	B10-S	G3-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167375	8	B10-S	F3-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167376	9	B10-S	E3-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167377	10	B10-S	C3-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167378	11	B10-S	B3-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167379	12	B10-S	H4-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167380	13	B10-S	G4-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167381	14	B10-S	F4-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167382	15	B10-S	E4-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167383	16	B10-S	H5-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167384	17	B10-S	G5-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167385	18	B10-S	F5-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167386	19	B10-S	E5-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167387	20	B10-S	C5-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167388	21	B10-S	B5-6	ND														CDM Smith	A. Coler			x-NR
P4-00083	167389	22	A11-S	H3-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167390	23	A11-S	G3-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167391	24	A11-S	F3-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167392	25	A11-S	E3-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167393	26	A11-S	C3-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167394	27	A11-S	B3-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167395	28	A11-S	K4-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167396	29	A11-S	H4-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167397	30	A11-S	G4-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167398	31	A11-S	F4-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167399	32	A11-S	E4-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167400	33	A11-S	C4-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167401	34	A11-S	B4-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167402	35	A11-S	K5-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167403	36	A11-S	H5-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167404	37	A11-S	G5-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167405	38	A11-S	F5-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167406	39	A11-S	E5-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167407	40	A11-S	C5-4	ND														CDM Smith	A. Coler			x-NR
P4-00083	167408	41	A11-S	B5-4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161757	1	A5S	J6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161758	2	A5S	J5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161759	3	A5S	J4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161760	4	A5S	J3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161761	5	A5S	J2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161762	6	A5S	J1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161763	7	A5S	I6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161764	8	A5S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161765	9	A5S	I4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161766	10	A5S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161767	11	A5S	I2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161768	12	A5S	I1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161769	13	A5S	H9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161770	14	A5S	H8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161771	15	A5S	H7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161772	16	A5S	H6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161773	17	A5S	H5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161774	18	A5S	H4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161775	19	A5S	H3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161776	20	A5S	H2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161777	21	A5S	H1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161778	22	A5S	G10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161779	23	A5S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161780	24	A5S	G8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161781	25	A5S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161782	26	A5S	G6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161783	27	A5S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161784	28	A5S	G4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161785	29	A5S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161786	30	A5S	G2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161787	31	A5S	G1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161788	32	A5S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161789	33	A5S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161790	34	A5S	F8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161791	35	A5S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161792	36	A5S	F6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161793	37	A5S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161794	38	A5S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161795	39	A5S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161796	40	A5S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161797	41	A5S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161798	42	A5S	E10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161799	43	A5S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161800	44	A5S	E8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161801	45	A5S	E6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161802	46	A5S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161803	47	A5S	E4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161804	48	A5S	E3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161805	49	A5S	E2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161806	50	A5S	E1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161807	51	A5S	D10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161808	52	A5S	D9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161809	53	A5S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161810	54	A5S	D7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161811	55	A5S	D6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161812	56	A5S	D5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161813	57	A5S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161814	58	A5S	D3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161815	59	A5S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161816	60	A5S	D1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161817	61	A5S	C10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161818	62	A5S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161819	63	A5S	C6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161820	64	A5S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161821	65	A5S	C4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161822	66	A5S	C3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161823	67	A5S	C2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161824	68	A5S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161825	69	A5S	B9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161826	70	A5S	B7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161827	71	A5S	B6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161828	72	A5S	B5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161829	73	A5S	B4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161830	74	A5S	B3	ND														CDM Smith	A. Coler			x-NR

ATTACHMENT 1. DATA SUMMARY OF STRUCTURE INFORMATION - SUPPLEMENTAL ANALYSIS OF PHASE III AND PHASE IV PART A ABS AIR (2013)

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P4-00120	161831	75	A5S	B2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161832	76	A5S	B1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161833	77	A5S	A1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161834	78	A5S	A3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161835	79	A5S	A4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161836	80	A5S	A5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161837	81	A5S	A6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161838	82	A5S	A7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161839	83	A5S	A8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161840	84	A5S	A9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161841	85	A5S	A10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161842	86	A7S	J1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161843	87	A7S	J2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161844	88	A7S	J3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161845	89	A7S	J4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161846	90	A7S	J5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161847	91	A7S	J6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161848	92	A7S	I1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161849	93	A7S	I2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161850	94	A7S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161851	95	A7S	I4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161852	96	A7S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161853	97	A7S	I6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161854	98	A7S	I7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161855	99	A7S	I8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161856	100	A7S	H1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161857	101	A7S	H2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161858	102	A7S	H3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161859	103	A7S	H4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161860	104	A7S	H5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161861	105	A7S	H6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161862	106	A7S	H7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161863	107	A7S	H8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161864	108	A7S	H9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161865	109	A7S	H10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161866	110	A7S	G1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161867	111	A7S	G2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161868	112	A7S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161869	113	A7S	G4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161870	114	A7S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161871	115	A7S	G6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161872	116	A7S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161873	117	A7S	G8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161874	118	A7S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161875	119	A7S	G10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161876	120	A7S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161877	121	A7S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161878	122	A7S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161879	123	A7S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161880	124	A7S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161881	125	A7S	F6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161882	126	A7S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161883	127	A7S	F8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161884	128	A7S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161885	129	A7S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161886	130	A7S	E1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161887	131	A7S	E2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161888	132	A7S	E3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161889	133	A7S	E4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161890	134	A7S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161891	135	A7S	E6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161892	136	A7S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161893	137	A7S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161894	138	A7S	E10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161895	139	A7S	D1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161896	140	A7S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161897	141	A7S	D3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161898	142	A7S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161899	143	A7S	D5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161900	144	A7S	D6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161901	145	A7S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161902	146	A7S	D9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161903	147	A7S	D10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161904	148	A7S	C1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161905	149	A7S	C2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161906	150	A7S	C3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161907	151	A7S	C4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161908	152	A7S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161909	153	A7S	C6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161910	154	A7S	C8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161911	155	A7S	C9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161912	156	A7S	C10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161913	157	A7S	B1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161914	158	A7S	B2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161915	159	A7S	B3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161916	160	A7S	B4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161917	161	A7S	B5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161918	162	A7S	B6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161919	163	A7S	B7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161920	164	A7S	B8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161921	165	A7S	B9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161922	166	A7S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161923	167	A7S	A1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161924	168	A7S	A2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161925	169	A7S	A3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161926	170	A7S	A4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161927	171	A7S	A6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161928	172	A7S	A7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161929	173	A7S	A8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161930	174	A7S	A9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161931	175	A7S	A10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161932	176	B2S	J10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161933	177	B2S	J9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161934	178	B2S	J8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161935	179	B2S	J6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161936	180	B2S	J5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161937	181	B2S	J4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161938	182	B2S	J2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161939	183	B2S	J1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161940	184	B2S	I9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161941	185	B2S	I8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161942	186	B2S	I7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161943	187	B2S	I6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161944	188	B2S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161945	189	B2S	I4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161946	190	B2S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161947	191	B2S	I2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161948	192	B2S	I1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161949	193	B2S	H9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161950	194	B2S	H8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161951	195	B2S	H7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161952	196	B2S	H6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161953	197	B2S	H5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161954	198	B2S	H4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161955	199	B2S	H3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161956	200	B2S	H2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161957	201	B2S	H1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161958	202	B2S	G10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161959	203	B2S	G8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161960	204	B2S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161961	205	B2S	G6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161962	206	B2S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161963	207	B2S	G4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161964	208	B2S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161965	209	B2S	G2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161966	210	B2S	G1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161967	211	B2S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161968	212	B2S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161969	213	B2S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161970	214	B2S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161971	215	B2S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161972	216	B2S	E10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161973	217	B2S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161974	218	B2S	E8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161975	219	B2S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161976	220	B2S	E6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161977	221	B2S	E4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161978	222	B2S	E3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161979	223	B2S	E2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161980	224	B2S	E1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161981	225	B2S	D1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161982	226	B2S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161983	227	B2S	D3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161984	228	B2S	D5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161985	229	B2S	D6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161986	230	B2S	D7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161987	231	B2S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161988	232	B2S	D9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161989	233	B2S	D10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161990	234	B2S	C4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161991	235	B2S	C5	ND														CDM Smith	A. Coler			x-NR

ATTACHMENT 1. DATA SUMMARY OF STRUCTURE INFORMATION - SUPPLEMENTAL ANALYSIS OF PHASE III AND PHASE IV PART A ABS AIR (2013)

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P4-00120	161992	236	B2S	C6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161993	237	B2S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161994	238	B2S	C8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161995	239	B2S	C9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161996	240	B2S	C10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161997	241	B2S	B1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161998	242	B2S	B3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161999	243	B2S	B4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162000	244	B2S	B5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162001	245	B2S	B7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162002	246	B2S	B8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162003	247	B2S	B9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162004	248	B2S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162005	249	B2S	A1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162006	250	B2S	A2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162007	251	B2S	A3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162008	252	B2S	A4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162009	253	B2S	A5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162010	254	B2S	A6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162011	255	B2S	A8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162012	256	B2S	A9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162013	257	B2S	A10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162014	258	B6S	A1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162015	259	B6S	A3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162016	260	B6S	A4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162017	261	B6S	A5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162018	262	B6S	A6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162019	263	B6S	A7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162020	264	B6S	A8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162021	265	B6S	A9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162022	266	B6S	A10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162023	267	B6S	B1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162024	268	B6S	B2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162025	269	B6S	B3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162026	270	B6S	B5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162027	271	B6S	B6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162028	272	B6S	B7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162029	273	B6S	B8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162030	274	B6S	B9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162031	275	B6S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162032	276	B6S	C1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162033	277	B6S	C2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162034	278	B6S	C3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162035	279	B6S	C4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162036	280	B6S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162037	281	B6S	C6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162038	282	B6S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162039	283	B6S	C8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162040	284	B6S	C9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162041	285	B6S	C10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162042	286	B6S	D1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162043	287	B6S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162044	288	B6S	D3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162045	289	B6S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162046	290	B6S	D5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162047	291	B6S	D6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162048	292	B6S	D7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162049	293	B6S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162050	294	B6S	D9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162051	295	B6S	D10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162052	296	B6S	E1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162053	297	B6S	E2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162054	298	B6S	E3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162055	299	B6S	E4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162056	300	B6S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162057	301	B6S	E6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162058	302	B6S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162059	303	B6S	E8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162060	304	B6S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162061	305	B6S	E10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162062	306	B6S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162063	307	B6S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162064	308	B6S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162065	309	B6S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162066	310	B6S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162067	311	B6S	F6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162068	312	B6S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162069	313	B6S	F8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162070	314	B6S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162071	315	B6S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162072	316	B6S	G1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162073	317	B6S	G2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162074	318	B6S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162075	319	B6S	G4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162076	320	B6S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162077	321	B6S	G6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162078	322	B6S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162079	323	B6S	G8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162080	324	B6S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162081	325	B6S	H1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162082	326	B6S	H2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162083	327	B6S	H5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162084	328	B6S	H9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162085	329	B6S	H10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162086	330	B6S	I1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162087	331	B6S	I2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162088	332	B6S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162089	333	B6S	I4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162090	334	B6S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162091	335	B6S	I6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162092	336	B6S	I7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162093	337	B6S	I8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162094	338	B6S	I9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162095	339	B6S	I10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162096	340	B6S	J1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162097	341	B6S	J2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162098	342	B6S	J3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162099	343	B6S	J4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162100	344	B6S	J5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162101	345	B6S	J6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162102	346	B6S	J7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162103	347	B10S	A6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162104	348	B10S	A9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162105	349	B10S	A10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162106	350	B10S	B1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162107	351	B10S	B5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162108	352	B10S	B6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162109	353	B10S	B9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162110	354	B10S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162111	355	B10S	C1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162112	356	B10S	C4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162113	357	B10S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162114	358	B10S	C6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162115	359	B10S	C10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162116	360	B10S	D1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162117	361	B10S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162118	362	B10S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162119	363	B10S	D5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162120	364	B10S	D6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162121	365	B10S	D7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162122	366	B10S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162123	367	B10S	D9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162124	368	B10S	D10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162125	369	B10S	E1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162126	370	B10S	E3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162127	371	B10S	E4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162128	372	B10S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162129	373	B10S	E6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162130	374	B10S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162131	375	B10S	E8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162132	376	B10S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162133	377	B10S	E10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162134	378	B10S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162135	379	B10S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162136	380	B10S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162137	381	B10S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162138	382	B10S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162139	383	B10S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162140	384	B10S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162141	385	B10S	G1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162142	386	B10S	G2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162143	387	B10S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162144	388	B10S	G4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162145	389	B10S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162146	390	B10S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162147	391	B10S	G6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162148	392	B10S	G8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162149	393	B10S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162150	394	B10S	G10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162151	395	B10S	H1	ND														CDM Smith	A. Coler			x-NR
P4-00120	162152	396	B10S	H2	ND														CDM Smith	A. Coler			x-NR

ATTACHMENT 1. DATA SUMMARY OF STRUCTURE INFORMATION - SUPPLEMENTAL ANALYSIS OF PHASE III AND PHASE IV PART A ABS AIR (2013)

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P4-00120	162153	397	B10S	H3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162154	398	B10S	H4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162155	399	B10S	H5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162156	400	B10S	H6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162157	401	B10S	H7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162158	402	B10S	H8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162159	403	B10S	H9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162160	404	B10S	H10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162161	405	B10S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00120	162162	406	B10S	I4	ND														CDM Smith	A. Coler			x-NR
P4-00120	162163	407	B10S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00120	162164	408	B10S	I6	ND														CDM Smith	A. Coler			x-NR
P4-00120	162165	409	B10S	I7	ND														CDM Smith	A. Coler			x-NR
P4-00120	162166	410	B10S	I8	ND														CDM Smith	A. Coler			x-NR
P4-00120	162167	411	B10S	I9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162168	412	B10S	I10	ND														CDM Smith	A. Coler			x-NR
P4-00120	162169	413	B10S	J2	ND														CDM Smith	A. Coler			x-NR
P4-00120	162170	414	B10S	J3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161721	415	B10S	J4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161722	416	B10S	J5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161723	417	B10S	J6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161724	418	B10S	J7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161725	419	B10S	J8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161726	420	B10S	J9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161727	421	B10S	J10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161728	422	C1S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161729	423	C1S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161730	424	C1S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161731	425	C1S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161732	426	C1S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161733	427	C1S	F6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161734	428	C1S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161735	429	C1S	F8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161736	430	C1S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161737	431	C1S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161738	432	C1S	G2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161739	433	C1S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161740	434	C1S	G4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161741	435	C1S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161742	436	C1S	G6	ND														CDM Smith	A. Coler			x-NR
P4-00120	161743	437	C1S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161744	438	C1S	G8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161745	439	C1S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161746	440	C1S	G10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161747	441	C1S	D1	ND														CDM Smith	A. Coler			x-NR
P4-00120	161748	442	C1S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00120	161749	443	C1S	D3	ND														CDM Smith	A. Coler			x-NR
P4-00120	161750	444	C1S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00120	161751	445	C1S	D5	ND														CDM Smith	A. Coler			x-NR
P4-00120	161752	446	C1S	D7	ND														CDM Smith	A. Coler			x-NR
P4-00120	161753	447	C1S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00120	161754	448	C1S	D9	ND														CDM Smith	A. Coler			x-NR
P4-00120	161755	449	C1S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00120	161756	450	C1S	B9	ND														CDM Smith	A. Coler			x-NR
P4-00120	162171	451	C1S	B8	ND														CDM Smith	A. Coler			x-NR
P4-00151	162437	1	S6S	D10	MD11	1													CDM Smith	A. Coler			x-NR
P4-00151	162438	2	S6S	D10	MF		1	12.75	0.5	25.5	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P4-00151	162439	3	S6S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00151	162440	4	S6S	D6	ND														CDM Smith	A. Coler			x-NR
P4-00151	162441	5	S6S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00151	162442	6	S6S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00151	162443	7	S6S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00151	162444	8	S6S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00151	162445	9	S6S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00151	162446	10	S6S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00151	162447	11	S6S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00151	162448	12	S8S	E10	ND														CDM Smith	A. Coler			x-NR
P4-00151	162449	13	S8S	E8	ND														CDM Smith	A. Coler			x-NR
P4-00151	162450	14	S8S	E6	ND														CDM Smith	A. Coler			x-NR
P4-00151	162451	15	S8S	E4	ND														CDM Smith	A. Coler			x-NR
P4-00151	162452	16	S8S	E2	ND														CDM Smith	A. Coler			x-NR
P4-00151	162453	17	S8S	G3	ND														CDM Smith	A. Coler			x-NR
P4-00151	162454	18	S8S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00151	162455	19	S8S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00151	162456	20	S8S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00241	161448	1	M8S	A1	ND														CDM Smith	A. Coler			x-NR
P4-00241	161449	2	M8S	B2	ND														CDM Smith	A. Coler			x-NR
P4-00241	161450	3	M8S	A3	ND														CDM Smith	A. Coler			x-NR
P4-00241	161451	4	M8S	B4	ND														CDM Smith	A. Coler			x-NR
P4-00241	161452	5	M8S	A5	ND														CDM Smith	A. Coler			x-NR
P4-00241	161453	6	M8S	B6	ND														CDM Smith	A. Coler			x-NR
P4-00241	161454	7	M8S	A7	ND														CDM Smith	A. Coler			x-NR
P4-00241	161455	8	M8S	B8	ND														CDM Smith	A. Coler			x-NR
P4-00241	161456	9	M8S	A9	ND														CDM Smith	A. Coler			x-NR
P4-00241	161457	10	M8S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00241	161458	11	M8S	E10	ND														CDM Smith	A. Coler			x-NR
P4-00241	161459	12	M8S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00241	161460	13	M8S	E8	ND														CDM Smith	A. Coler			x-NR
P4-00241	161461	14	M8S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00241	161462	15	M8S	E6	ND														CDM Smith	A. Coler			x-NR
P4-00241	161463	16	M8S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00241	161464	17	M8S	E4	ND														CDM Smith	A. Coler			x-NR
P4-00241	161465	18	M8S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00241	161466	19	M8S	E2	ND														CDM Smith	A. Coler			x-NR
P4-00241	161467	20	M8S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00241	161468	21	M8S	I1	ND														CDM Smith	A. Coler			x-NR
P4-00241	161469	22	M8S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00241	161470	23	M8S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00241	161471	24	M8S	I7	ND														CDM Smith	A. Coler			x-NR
P4-00241	161472	25	M8S	I9	ND														CDM Smith	A. Coler			x-NR
P4-00241	161473	26	M10S	F1	F	1	1	7	1	7	LA		ADX	1	1	1		XX, Tr; Phot	CDM Smith	A. Coler			x-NR
P4-00241	161474	27	M10S	G2	ND														CDM Smith	A. Coler			x-NR
P4-00241	161475	28	M10S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00241	161476	29	M10S	G4	ND														CDM Smith	A. Coler			x-NR
P4-00241	161477	30	M10S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00241	161478	31	M10S	G6	ND														CDM Smith	A. Coler			x-NR
P4-00241	161479	32	M10S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00241	161480	33	M10S	G8	ND														CDM Smith	A. Coler			x-NR
P4-00241	161481	34	M10S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00241	161482	35	M10S	G10	ND														CDM Smith	A. Coler			x-NR
P4-00241	161483	36	M10S	C10	ND														CDM Smith	A. Coler			x-NR
P4-00241	161484	37	M10S	B9	ND														CDM Smith	A. Coler			x-NR
P4-00241	161485	38	M10S	C8	ND														CDM Smith	A. Coler			x-NR
P4-00241	161486	39	M10S	B7	ND														CDM Smith	A. Coler			x-NR
P4-00241	161487	40	M10S	C6	ND														CDM Smith	A. Coler			x-NR
P4-00241	161488	41	M10S	B5	ND														CDM Smith	A. Coler			x-NR
P4-00241	161489	42	M10S	C4	ND														CDM Smith	A. Coler			x-NR
P4-00241	161490	43	M10S	B3	ND														CDM Smith	A. Coler			x-NR
P4-00241	161491	44	M10S	C2	ND														CDM Smith	A. Coler			x-NR
P4-00241	161492	45	M10S	B1	ND														CDM Smith	A. Coler			x-NR
P4-00247	161304	1	N7S	A1	ND														CDM Smith	A. Coler			x-NR
P4-00247	161305	2	N7S	A3	ND														CDM Smith	A. Coler			x-NR
P4-00247	161306	3	N7S	A5	ND														CDM Smith	A. Coler			x-NR
P4-00247	161307	4	N7S	A7	ND														CDM Smith	A. Coler			x-NR
P4-00247	161308	5	N7S	A9	ND														CDM Smith	A. Coler			x-NR
P4-00247	161309	6	N7S	B2	ND														CDM Smith	A. Coler			x-NR
P4-00247	161310	7	N7S	B4	ND														CDM Smith	A. Coler			x-NR
P4-00247	161311	8	N7S	B8	ND														CDM Smith	A. Coler			x-NR
P4-00247	161312	9	N7S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00247	161313	10	N7S	C3	ND														CDM Smith	A. Coler			x-NR
P4-00247	161314	11	N7S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00247	161315	12	N7S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00247	161316	13	N7S	C9	ND														CDM Smith	A. Coler			x-NR
P4-00247	161317	14	N7S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00247	161318	15	N7S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00247	161319	16	N7S	D10	ND														CDM Smith	A. Coler			x-NR
P4-00247	161320	17	N7S	E1	ND														CDM Smith	A. Coler			x-NR
P4-00247	161321	18	N7S	E3	ND														CDM Smith	A. Coler			x-NR
P4-00247	161322	19	N7S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00247	161323	20	N7S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00247	161324	21	N7S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00247	161325	22	N7S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00247	161326	23	N7S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00247	161327	24	N7S	F6	ND														CDM Smith	A. Coler			x-NR
P4-00247	161328	25	N7S	F8	ND														CDM Smith	A. Coler			x-NR
P4-00247	161329	26	N7S	J6	ND														CDM Smith	A. Coler			x-NR
P4-00247	161330	27	N7S	J8	ND														CDM Smith	A. Coler			x-NR
P4-00247	161331	28	N7S	J10	ND														CDM Smith	A. Coler			x-NR
P4-00247	161332	29	N3S	J10	ND														CDM Smith	A. Coler			x-NR
P4-00247	161333	30	N3S	J8	ND														CDM Smith	A. Coler			x-NR
P4-00247	161334	31	N3S	J6	ND														CDM Smith	A. Coler			x-NR
P4-00247	161335	32	N3S	J4	ND														CDM Smith	A. Coler			x-NR
P4-00247	161336	33	N3S	J2	ND														CDM Smith	A. Coler			x-NR
P4-00247	161337	34	N3S	I1	ND														CDM Smith	A. Coler			x-NR
P4-00247	161338	35	N3S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00247	161339	36	N3S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00247	161340	37	N3S	I7	ND														CDM Smith	A. Coler			x-NR
P4-00247	161341	38	N3S	I9	ND														CDM Smith	A. Coler			x-NR
P4-00247	161342	39	N3S	H2	ND														CDM Smith	A. Coler			x-NR
P4-00247	161343	40	N3S	H8	ND														CDM Smith	A. Coler			x-NR
P4-00247	161344	41	N3S	H10	ND														CDM Smith	A. Coler			x-NR

ATTACHMENT 1. DATA SUMMARY OF STRUCTURE INFORMATION - SUPPLEMENTAL ANALYSIS OF PHASE III AND PHASE IV PART A ABS AIR (2013)

Samp No	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identificati on	Sketch	Photo	EDS	CHNotCou nted	Structure Comment	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 100%
P4-00247	161345	42	N3S	G5	ND														CDM Smith	A. Coler			x-NR
P4-00247	161346	43	N3S	G7	ND														CDM Smith	A. Coler			x-NR
P4-00247	161347	44	N3S	G9	ND														CDM Smith	A. Coler			x-NR
P4-00247	161348	45	N3S	F2	ND														CDM Smith	A. Coler			x-NR
P4-00247	161349	46	N3S	F4	ND														CDM Smith	A. Coler			x-NR
P4-00247	161350	47	N3S	F6	ND														CDM Smith	A. Coler			x-NR
P4-00247	161351	48	N3S	F8	ND														CDM Smith	A. Coler			x-NR
P4-00247	161352	49	N3S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00247	161353	50	N3S	E1	ND														CDM Smith	A. Coler			x-NR
P4-00247	161354	51	N3S	E3	ND														CDM Smith	A. Coler			x-NR
P4-00247	161355	52	N3S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00247	161356	53	N3S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00247	161357	54	N3S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00247	161358	55	N3S	D2	ND														CDM Smith	A. Coler			x-NR
P4-00247	161359	56	N3S	D4	ND														CDM Smith	A. Coler			x-NR
P4-00247	161360	57	N3S	D6	ND														CDM Smith	A. Coler			x-NR
P4-00247	161361	58	N3S	D8	ND														CDM Smith	A. Coler			x-NR
P4-00247	161362	59	N3S	D10	ND														CDM Smith	A. Coler			x-NR
P4-00247	161363	60	N3S	C1	ND														CDM Smith	A. Coler			x-NR
P4-00247	161364	61	N3S	C3	ND														CDM Smith	A. Coler			x-NR
P4-00247	161365	62	N3S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00247	161366	63	N3S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00247	161367	64	N3S	C9	ND														CDM Smith	A. Coler			x-NR
P4-00247	161368	65	N3S	B2	ND														CDM Smith	A. Coler			x-NR
P4-00247	161369	66	N3S	B4	ND														CDM Smith	A. Coler			x-NR
P4-00247	161370	67	N3S	B6	ND														CDM Smith	A. Coler			x-NR
P4-00247	161371	68	N3S	B10	ND														CDM Smith	A. Coler			x-NR
P4-00247	161372	69	N3S	A1	ND														CDM Smith	A. Coler			x-NR
P4-00247	161373	70	N3S	A3	ND														CDM Smith	A. Coler			x-NR
P4-00247	161374	71	N3S	A5	ND														CDM Smith	A. Coler			x-NR
P4-00247	161375	72	N3S	A7	ND														CDM Smith	A. Coler			x-NR
P4-00247	161376	73	N3S	A9	ND														CDM Smith	A. Coler			x-NR
P4-00247	161377	74	N5S	B1	ND														CDM Smith	A. Coler			x-NR
P4-00247	161378	75	N5S	B3	ND														CDM Smith	A. Coler			x-NR
P4-00247	161379	76	N5S	B5	ND														CDM Smith	A. Coler			x-NR
P4-00247	161380	77	N5S	B7	ND														CDM Smith	A. Coler			x-NR
P4-00247	161381	78	N5S	B9	ND														CDM Smith	A. Coler			x-NR
P4-00247	161382	79	N5S	A2	ND														CDM Smith	A. Coler			x-NR
P4-00247	161383	80	N5S	A4	ND														CDM Smith	A. Coler			x-NR
P4-00247	161384	81	N5S	A6	ND														CDM Smith	A. Coler			x-NR
P4-00247	161385	82	N5S	A8	ND														CDM Smith	A. Coler			x-NR
P4-00247	161386	83	N5S	A10	ND														CDM Smith	A. Coler			x-NR
P4-00247	161387	84	N5S	G10	ND														CDM Smith	A. Coler			x-NR
P4-00247	161388	85	N5S	G8	ND														CDM Smith	A. Coler			x-NR
P4-00247	161389	86	N5S	G6	ND														CDM Smith	A. Coler			x-NR
P4-00247	161390	87	N5S	G4	ND														CDM Smith	A. Coler			x-NR
P4-00247	161391	88	N5S	G2	ND														CDM Smith	A. Coler			x-NR
P4-00247	161392	89	N5S	F1	ND														CDM Smith	A. Coler			x-NR
P4-00247	161393	90	N5S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00247	161394	91	N5S	F5	ND														CDM Smith	A. Coler			x-NR
P4-00247	161395	92	N5S	F7	ND														CDM Smith	A. Coler			x-NR
P4-00247	161396	93	N5S	F9	ND														CDM Smith	A. Coler			x-NR
P4-00362	161503	1	Q6S	I1	ND														CDM Smith	A. Coler			x-NR
P4-00362	161504	2	Q6S	I3	ND														CDM Smith	A. Coler			x-NR
P4-00362	161505	3	Q6S	I5	ND														CDM Smith	A. Coler			x-NR
P4-00362	161506	4	Q6S	I7	ND														CDM Smith	A. Coler			x-NR
P4-00362	161507	5	Q6S	I9	ND														CDM Smith	A. Coler			x-NR
P4-00362	161508	6	Q6S	E1	ND														CDM Smith	A. Coler			x-NR
P4-00362	161509	7	Q6S	E3	F	1	1	15.5	1.5	10.3	LA		ADX	1	1	1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P4-00362	161510	8	Q6S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00362	161511	9	Q6S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00362	161512	10	Q6S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00362	161513	11	Q8S	I2	ND														CDM Smith	A. Coler			x-NR
P4-00362	161514	12	Q8S	I4	ND														CDM Smith	A. Coler			x-NR
P4-00362	161515	13	Q8S	I6	F	2	2	16	3	5.3	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P4-00362	161516	14	Q8S	I10	ND														CDM Smith	A. Coler			x-NR
P4-00362	161517	15	Q8S	C9	F	3	3	17.5	1	17.5	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P4-00362	161518	16	Q8S	C9	F	4	4	5.5	0.25	22	LA		ADX	1		1		NaK, WRTA	CDM Smith	A. Coler			x-NR
P4-00362	161519	17	Q8S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00362	161520	18	Q8S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00362	161521	19	Q8S	C3	ND														CDM Smith	A. Coler			x-NR
P4-00362	161522	20	Q8S	C1	ND														CDM Smith	A. Coler			x-NR
P4-00593	160022	1	I9S	C3	ND														CDM Smith	A. Coler			x-NR
P4-00593	160023	2	I9S	C5	ND														CDM Smith	A. Coler			x-NR
P4-00593	160024	3	I9S	C7	ND														CDM Smith	A. Coler			x-NR
P4-00593	160025	4	I9S	C9	ND														CDM Smith	A. Coler			x-NR
P4-00593	160026	5	I9S	E5	ND														CDM Smith	A. Coler			x-NR
P4-00593	160027	6	I9S	E7	ND														CDM Smith	A. Coler			x-NR
P4-00593	160028	7	I9S	E9	ND														CDM Smith	A. Coler			x-NR
P4-00593	160029	8	I9S	H1	ND														CDM Smith	A. Coler			x-NR
P4-00593	160030	9	I9S	J1	ND														CDM Smith	A. Coler			x-NR
P4-00593	160031	10	I9S	F3	ND														CDM Smith	A. Coler			x-NR
P4-00593	160032	11	I2S	A1	ND														CDM Smith	A. Coler			x-NR
P4-00593	160033	12	I2S	B2	ND														CDM Smith	A. Coler			x-NR
P4-00593	160034	13	I2S	C1	ND														CDM Smith	A. Coler			x-NR
P4-00593	160035	14	I2S	I2	ND														CDM Smith	A. Coler			x-NR
P4-00593	160036	15	I2S	I4	ND														CDM Smith	A. Coler			x-NR
P4-00593	160037	16	I2S	F8	ND														CDM Smith	A. Coler			x-NR
P4-00593	160038	17	I2S	F10	ND														CDM Smith	A. Coler			x-NR
P4-00593	160039	18	I2S	C8	ND														CDM Smith	A. Coler			x-NR
P4-00593	160040	19	I2S	G5	ND														CDM Smith	A. Coler			x-NR

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeSample	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00002	A150500-02	252908	1	A1	H2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252909	2	A1	G2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252910	3	A1	G2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252911	4	A1	F2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252912	5	A1	F2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252913	6	A1	E2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252914	7	A1	E2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252915	8	A1	C2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252916	9	A1	C2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252917	10	A1	G3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252918	11	A1	G3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252919	12	A1	F3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252920	13	A1	F3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252921	14	A1	E3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252922	15	A1	E3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252923	16	A1	C3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252924	17	A1	C3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252925	18	A1	B3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252926	19	A1	K4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252927	20	A1	H4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252928	21	A1	H4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252929	22	A1	G4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252930	23	A1	G4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252931	24	A1	F4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252932	25	A1	F4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252933	26	A1	E4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252934	27	A1	E4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252935	28	A1	C4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252936	29	A1	C4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252937	30	A1	B4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252938	31	A1	B4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252939	32	A1	A4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252940	33	A1	H4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252941	34	A1	H4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252942	35	A1	G4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252943	36	A1	G4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252944	37	A1	F4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252945	38	A1	F4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252946	39	A1	E4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252947	40	A1	E4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252948	41	A1	C4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252949	42	A1	C4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252950	43	A1	B4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252951	44	A1	B4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252952	45	A1	A4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252953	46	A1	H5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252954	47	A1	G5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252955	48	A1	G5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252956	49	A1	F5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252957	50	A1	F5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252958	51	A1	E5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252959	52	A1	E5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252960	53	A1	C5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252961	54	A1	C5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252962	55	A1	B5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252963	56	A1	F6-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252964	57	B1	G2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252965	58	B1	F2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252966	59	B1	F2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252967	60	B1	E2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252968	61	B1	E3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252969	62	B1	H3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252970	63	B1	H3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252971	64	B1	G3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252972	65	B1	G3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252973	66	B1	F3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252974	67	B1	F3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252975	68	B1	E3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252976	69	B1	E3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252977	70	B1	C3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252978	71	B1	C3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252979	72	B1	B3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252980	73	B1	B3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252981	74	B1	K4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252982	75	B1	H4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252983	76	B1	H4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252984	77	B1	G4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252985	78	B1	G4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252986	79	B1	F4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252987	80	B1	F4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252988	81	B1	E4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252989	82	B1	E4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252990	83	B1	C4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252991	84	B1	C4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252992	85	B1	B4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252993	86	B1	B4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252994	87	B1	A4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252995	88	B1	K4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252996	89	B1	H4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252997	90	B1	H4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252998	91	B1	G4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	252999	92	B1	G4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253000	93	B1	F4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253001	94	B1	F4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253002	95	B1	E4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253003	96	B1	E4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253004	97	B1	C4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253005	98	B1	C4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253006	99	B1	B4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253007	100	B1	B4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253008	101	B1	K5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253009	102	B1	H5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253010	103	B1	H5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253011	104	B1	G5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253012	105	B1	G5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253013	106	B1	F5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253014	107	B1	F5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253015	108	B1	E5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253016	109	B1	E5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253017	110	B1	C5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253018	111	B1	C5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00002	A150500-02	253019	112	B1	B5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			EF
TS-00004	A150500-04	253020	1	A2	G2-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253021	2	A2	G2-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253022	3	A2	F2-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253023	4	A2	F2-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253024	5	A2	E2-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253025	6	A2	E2-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253026	7	A2	K3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253027	8	A2	K3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253028	9	A2	H3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253029	10	A2	H3-1	7	1	1	5.5		0.3		18.333333	LA	ADX	1	1	1		NoK, WRTA	Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253030	11	A2	G3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253031	12	A2	G3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253032	13	A2	F3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253033	14	A2	F3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253034	15	A2	E3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253035	16	A2	E3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253036	17	A2	C3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253037	18	A2	C3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253038	19	A2	B3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253039	20	A2	K4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253040	21	A2	K4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253041	22	A2	K4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253042	23	A2	H4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253043	24	A2	H4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253044	25	A2	G4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253045	26	A2	G4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253046	27	A2	F4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253047	28	A2	F4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253048	29	A2	E4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253049	30	A2	E4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253050	31	A2	C4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253051	32	A2	C4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253052	33	A2	B4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253053	34	A2	B4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253054	35	A2	K4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253055	36	A2	K4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253056	37	A2	H4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253057	38	A2	H4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253058	39	A2	G4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253059	40	A2	G4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253060	41	A2	F4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253061	42	A2	F4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253062	43	A2	E4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253063	44	A2	E4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253064	45	A2	C4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253065	46	A2	C4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253066	47	A2	B4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253067	48	A2	B4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253068	49	A2	K5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253069	50	A2	H5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253070	51	A2	H5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253071	52	A2	G5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253072	53	A2	G5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253073	54	A2	F5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253074	55	A2	F5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253075	56	A2	E5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253076	57	A2	E5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253077	58	A2	C5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253078	59	A2	C5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253079	60	B2	G2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253080	61	B2	G2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253081	62	B2	F2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253082	63	B2	F2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253083	64	B2	E2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253084	65	B2	E2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253085	66	B2	C2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253086	67	B2	C2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253087	68	B2	K3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253088	69	B2	H3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253089	70	B2	H3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253090	71	B2	G3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253091	72	B2	G3-3	ND											

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00004	A150500-04	253098	79	B2	B3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253099	80	B2	B3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253100	81	B2	K4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253101	82	B2	K4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253102	83	B2	H4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253103	84	B2	H4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253104	85	B2	G4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253105	86	B2	G4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253106	87	B2	F4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253107	88	B2	F4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253108	89	B2	E4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253109	90	B2	E4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253110	91	B2	C4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253111	92	B2	C4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253112	93	B2	B4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253113	94	B2	B4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253114	95	B2	A4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253115	96	B2	K5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253116	97	B2	K5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253117	98	B2	H5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253118	99	B2	H5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253119	100	B2	G5-4	7	2	2	37		0.4		92.5	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253120	101	B2	G5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253121	102	B2	F5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253122	103	B2	F5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253123	104	B2	E5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253124	105	B2	E5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253125	106	B2	C5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253126	107	B2	C5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253127	108	B2	B5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253128	109	B2	B5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253129	110	B2	A5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00004	A150500-04	253130	111	B2	H6-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253131	1	B3	K2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253132	2	B3	H2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253133	3	B3	H2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253134	4	B3	G2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253135	5	B3	G2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253136	6	B3	F2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253137	7	B3	F2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253138	8	B3	E2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253139	9	B3	E2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253140	10	B3	C2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253141	11	B3	C2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253142	12	B3	K3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253143	13	B3	K3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253144	14	B3	H3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253145	15	B3	H3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253146	16	B3	G3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253147	17	B3	G3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253148	18	B3	F3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253149	19	B3	F3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253150	20	B3	E3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253151	21	B3	E3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253152	22	B3	C3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253153	23	B3	C3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253154	24	B3	B3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253155	25	B3	L4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253156	26	B3	K4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253157	27	B3	K4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
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TS-00006	A150500-06	253159	29	B3	H4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253160	30	B3	G4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
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TS-00006	A150500-06	253162	32	B3	F4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253163	33	B3	F4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253164	34	B3	E4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253165	35	B3	E4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253166	36	B3	C4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253167	37	B3	C4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253168	38	B3	B4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253169	39	B3	B4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253170	40	B3	K5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253171	41	B3	H5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253172	42	B3	H5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253173	43	B3	G5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253174	44	B3	G5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253175	45	B3	F5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253176	46	B3	F5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253177	47	B3	E5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253178	48	B3	E5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253179	49	B3	C5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253180	50	B3	C5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253181	51	C3	K3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253182	52	C3	H3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253183	53	C3	H3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253184	54	C3	G3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253185	55	C3	G3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253186	56	C3	F3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253187	57	C3	F3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253188	58	C3	E3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253189	59	C3	E3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253190	60	C3	C3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253191	61	C3	C3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253192	62	C3	K4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253193	63	C3	K4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253194	64	C3	H4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253195	65	C3	H4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253196	66	C3	G4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253197	67	C3	G4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253198	68	C3	F4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253199	69	C3	F4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253200	70	C3	E4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253201	71	C3	E4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253202	72	C3	C4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253203	73	C3	C4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253204	74	C3	B4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253205	75	C3	B4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253206	76	C3	K5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253207	77	C3	K5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253208	78	C3	H5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
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TS-00006	A150500-06	253210	80	C3	G5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253211	81	C3	G5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253212	82	C3	F5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253213	83	C3	F5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253214	84	C3	E5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253215	85	C3	E5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253216	86	C3	C5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253217	87	C3	C5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253218	88	C3	B5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
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TS-00006	A150500-06	253220	90	C3	K5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253221	91	C3	K5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253222	92	C3	H5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253223	93	C3	H5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253224	94	C3	G5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253225	95	C3	G5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253226	96	C3	F5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253227	97	C3	F5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253228	98	C3	E5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253229	99	C3	E5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253230	100	C3	C5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253231	101	C3	C5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253232	102	C3	B5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253233	103	C3	K6-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253234	104	C3	H6-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
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TS-00006	A150500-06	253237	107	C3	G6-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00006	A150500-06	253238	108	C3	F6-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
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TS-00008	A150500-08	253253	12	B4	G3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253254	13	B4	G3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253255	14	B4	F3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253256	15	B4	F3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253257	16	B4	E3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253258	17	B4	E3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253259	18	B4	C3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253260	19	B4	C3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253261	20	B4	B3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253262	21	B4	B3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253263	22	B4	K4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253264	23	B4	H4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253265	24	B4	H4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253266	25	B4	G4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253267	26	B4	G4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253268	27	B4	F4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253269	28	B4	F4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253270	29	B4	E4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253271	30	B4	E4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253272	31	B4	C4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253273	32	B4	H5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253274	33	B4	H5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
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TS-00008	A150500-08	253278	37	B4	F5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253279	38	B4	E5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253280	39	B4	E5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253281	40	B4	C5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253282	41	B4	C5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253283	42	B4	H6-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253284	43	B

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00008	A150500-08	253288	47	B4	E6-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253289	48	B4	E6-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253290	49	B4	C6-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253291	50	B4	C6-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253292	51	A5	G2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253293	52	A5	G2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253294	53	A5	F2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253295	54	A5	F2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253296	55	A5	E2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253297	56	A5	E2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253298	57	A5	C2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253299	58	A5	C2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253300	59	A5	G3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253301	60	A5	G3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253302	61	A5	F3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253303	62	A5	F3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253304	63	A5	E3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253305	64	A5	E3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253306	65	A5	C3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253307	66	A5	C3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253308	67	A5	B3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253309	68	A5	B3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253310	69	A5	H3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253311	70	A5	G3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253312	71	A5	G3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253313	72	A5	F3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253314	73	A5	F3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253315	74	A5	E3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253316	75	A5	E3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253317	76	A5	C3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253318	77	A5	C3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253319	78	A5	B3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253320	79	A5	B3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253321	80	A5	A3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253322	81	A5	K4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253323	82	A5	H4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253324	83	A5	H4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253325	84	A5	G4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253326	85	A5	G4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253327	86	A5	F4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253328	87	A5	F4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253329	88	A5	E4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253330	89	A5	E4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253331	90	A5	C4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253332	91	A5	C4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253333	92	A5	B4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253334	93	A5	B4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253335	94	A5	A4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253336	95	A5	A4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253337	96	A5	H4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253338	97	A5	H4-3	B	1	1	7		1		7	OA	ADX	1		1		NaK, NR; magnesio riebeckite	Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253339	98	A5	G4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253340	99	A5	G4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253341	100	A5	F4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253342	101	A5	F4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253343	102	A5	E4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253344	103	A5	E4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253345	104	A5	C4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253346	105	A5	C4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253347	106	A5	B4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253348	107	A5	B4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253349	108	A5	A4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253350	109	A5	K5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253351	110	A5	H5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253352	111	A5	H5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253353	112	A5	G5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00008	A150500-08	253354	113	A5	G5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253355	1	C5	G2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253356	2	C5	F2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253357	3	C5	F2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253358	4	C5	E2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253359	5	C5	E2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253360	6	C5	C2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253361	7	C5	C2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253362	8	C5	K3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253363	9	C5	K3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253364	10	C5	H3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253365	11	C5	H3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253366	12	C5	G3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253367	13	C5	G3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253368	14	C5	F3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253369	15	C5	F3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253370	16	C5	E3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253371	17	C5	E3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253372	18	C5	C3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253373	19	C5	C3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253374	20	C5	B3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253375	21	C5	B3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253376	22	C5	K4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253377	23	C5	H4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253378	24	C5	H4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253379	25	C5	G4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253380	26	C5	G4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253381	27	C5	F4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253382	28	C5	F4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253383	29	C5	E4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253384	30	C5	E4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253385	31	C5	C4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253386	32	C5	C4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253387	33	C5	B4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253388	34	C5	B4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253389	35	C5	H5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253390	36	C5	H5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253391	37	C5	G5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253392	38	C5	G5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253393	39	C5	F5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253394	40	C5	F5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253395	41	C5	E5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253396	42	C5	E5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253397	43	C5	C5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253398	44	C5	C5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253399	45	C5	B5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253400	46	C5	B5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253401	47	C5	H5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253402	48	C5	G5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253403	49	C5	G5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253404	50	C5	F5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253405	51	C5	F5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253406	52	C5	E5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253407	53	C5	E5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253408	54	C5	C5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253409	55	C5	C5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253410	56	C5	B5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253411	57	A6	G2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253412	58	A6	G2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253413	59	A6	F2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253414	60	A6	F2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253415	61	A6	E2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253416	62	A6	E2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253417	63	A6	C2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253418	64	A6	C2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253419	65	A6	B2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253420	66	A6	H3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253421	67	A6	H3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253422	68	A6	G3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253423	69	A6	G3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253424	70	A6	F3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253425	71	A6	F3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253426	72	A6	E3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253427	73	A6	E3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253428	74	A6	C3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253429	75	A6	C3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253430	76	A6	B3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253431	77	A6	B3-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253432	78	A6	A3-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253433	79	A6	K4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253434	80	A6	H4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253435	81	A6	H4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253436	82	A6	G4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253437	83	A6	G4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253438	84	A6	F4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253439	85	A6	F4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253440	86	A6	E4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253441	87	A6	E4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253442	88	A6	C4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253443	89	A6	C4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253444	90	A6	B4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253445	91	A6	B4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253446	92	A6	A4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253447	93	A6	H4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253448	94	A6	H4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253449	95	A6	G4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253450	96	A6	G4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253451	97	A6	F4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253452	98	A6	F4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253453	99	A6	E4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253454	100	A6	E4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253455	101	A6	C4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253456	102	A6	C4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253457	103	A6	B4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253458	104	A6	B4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253459	105	A6	A4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253460	106	A6	H5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253461	107	A6	G5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253462	108	A6	G5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253463	109	A6	F5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253464	110	A6	F5-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00010	A150500-10	253465	111	A6	E5-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253466	1	A7	G2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253467	2	A7	G2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253468	3	A7	F2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253469	4	A7	F2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253470	5	A7	E2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253471	6	A7	E2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253472	7	A7	C2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253473	8	A7	C2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253474	9

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00012	A150500-12	253478	13	A7	E3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253479	14	A7	E3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253480	15	A7	C3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253481	16	A7	C3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253482	17	A7	B3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253483	18	A7	K4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253484	19	A7	K4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253485	20	A7	H4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253486	21	A7	H4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253487	22	A7	G4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253488	23	A7	G4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253489	24	A7	F4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253490	25	A7	F4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253491	26	A7	E4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253492	27	A7	E4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253493	28	A7	C4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253494	29	A7	C4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253495	30	A7	B4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253496	31	A7	B4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253497	32	A7	H4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253498	33	A7	H4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253499	34	A7	G4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253500	35	A7	G4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253501	36	A7	F4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253502	37	A7	F4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253503	38	A7	E4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253504	39	A7	E4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253505	40	A7	C4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253506	41	A7	C4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253507	42	A7	B4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253508	43	A7	B4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253509	44	A7	H5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253510	45	A7	H5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253511	46	A7	G5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253512	47	A7	G5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253513	48	A7	F5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253514	49	A7	F5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253515	50	A7	E5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253516	51	A7	E5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253517	52	A7	C5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253518	53	A7	C5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253519	54	A7	B5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253520	55	A7	B5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253521	56	A7	G6-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253522	57	A7	F6-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253523	58	A7	F6-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253524	59	B7	F2-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253525	60	B7	E2-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253526	61	B7	E2-3	B	1	1	10.2		0.25		40.8	LA	ADX	1	1	1		NaK, WRTA	Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253527	62	B7	G3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253528	63	B7	G3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253529	64	B7	F3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253530	65	B7	F3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253531	66	B7	E3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253532	67	B7	E3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253533	68	B7	C3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253534	69	B7	C3-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253535	70	B7	B3-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253536	71	B7	K4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253537	72	B7	H4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253538	73	B7	H4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253539	74	B7	G4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253540	75	B7	G4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253541	76	B7	F4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253542	77	B7	F4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253543	78	B7	E4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253544	79	B7	E4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253545	80	B7	C4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253546	81	B7	C4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253547	82	B7	B4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253548	83	B7	B4-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253549	84	B7	A4-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253550	85	B7	H4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253551	86	B7	H4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253552	87	B7	G4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253553	88	B7	G4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253554	89	B7	F4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253555	90	B7	F4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253556	91	B7	E4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253557	92	B7	E4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253558	93	B7	C4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253559	94	B7	C4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253560	95	B7	B4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253561	96	B7	B4-3	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253562	97	B7	A4-6	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253563	98	B7	H5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253564	99	B7	G5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253565	100	B7	G5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253566	101	B7	F5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253567	102	B7	F5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253568	103	B7	E5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253569	104	B7	E5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253570	105	B7	C5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253571	106	B7	C5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253572	107	B7	B5-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253573	108	B7	B5-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253574	109	B7	F6-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253575	110	B7	F6-1	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00012	A150500-12	253576	111	B7	E6-4	ND															Air	10/19/2015 16:39	CDM Smith	N. Ross			
TS-00014	A150501-02	254628	1	B9	G2-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254629	2	B9	G2-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254630	3	B9	F2-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254631	4	B9	F2-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254632	5	B9	E2-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254633	6	B9	E2-1	B	1	1	14		1		14	LA	ADX	1	1	1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254634	7	B9	H2-3	B	2	2	16		0.5		32	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254635	8	B9	G2-6	B	0	0	10		1		10	LA	ADX	1				, XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254636	9	B9	G2-3	MD11	3														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254637	10	B9	G2-3	MB		3	21		1.1		t9.090909	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254638	11	B9	F2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254639	12	B9	F2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254640	13	B9	E2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254641	14	B9	E2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254642	15	B9	C2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254643	16	B9	C2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254644	17	B9	K3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254645	18	B9	H3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254646	19	B9	H3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254647	20	B9	G3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254648	21	B9	G3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254649	22	B9	F3-4	B	4	4	6		0.7		8.5714286	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254650	23	B9	F3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254651	24	B9	E3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254652	25	B9	E3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254653	26	B9	C3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254654	27	B9	C3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254655	28	B9	B3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254656	29	B9	K3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254657	30	B9	K3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254658	31	B9	H3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254659	32	B9	H3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254660	33	B9	G3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254661	34	B9	G3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254662	35	B9	F3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254663	36	B9	F3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254664	37	B9	E3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254665	38	B9	E3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254666	39	B9	C3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254667	40	B9	B3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254668	41	B9	B3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254669	42	B9	K4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254670	43	B9	K4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254671	44	B9	H4-4	B	5	5	17		0.4		42.5	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254672	45	B9	H4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254673	46	B9	G4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254674	47	B9	G4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254675	48	B9	F4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254676	49	B9	F4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254677	50	B9	E4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254678	51	B9	E4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254679	52	B9	C4-4	B	6	6	26		0.6		43.333333	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254680	53	B9	C4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254681	54	B9	B4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254682	55	B9	B4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254683	56	B9	K4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254684	57	B9	H4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254685	58	B9	H4-3	B	7	7	10		0.8		12.5	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254686	59	B9	G4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254687	60	B9	G4-3	B	8	8	7		1.1		6.3636364	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254688	61	B9	F4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254689	62	B9	F4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254690	63	B9	E4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254691	64	B9	E4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254692	65	B9	C4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254693	66	B9	C4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254694	67	B9	B4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254695	68	B9	B4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254696	69	B9	H5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254697	70	B9	H5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254698	71	B9	G5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254699	72	B9	G5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254700	73	B9	F5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254701	74	B9	F5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254702	75	B9	E5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254703	76	B9	E5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254704	77	B9	C5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254705	78	B9	C5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254706	79	B9	B5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254707	80	B9	H5-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254708	81	B9	H5-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254709	82	B9	G5-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254710	83	B9	G5-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254711	84	B9	F5-6

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeSample	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00014	A150501-02	254719	92	C9	E2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254720	93	C9	E2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254721	94	C9	H3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254722	95	C9	H3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254723	96	C9	G3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254724	97	C9	G3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254725	98	C9	F3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254726	99	C9	F3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254727	100	C9	E3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254728	101	C9	E3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254729	102	C9	C3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254730	103	C9	C3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254731	104	C9	B3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254732	105	C9	K3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254733	106	C9	H3-6	B	10	10	35		1.3		26.923077	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254734	107	C9	H3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254735	108	C9	G3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254736	109	C9	G3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254737	110	C9	F3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254738	111	C9	F3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254739	112	C9	E3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254740	113	C9	E3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254741	114	C9	C3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254742	115	C9	C3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254743	116	C9	B3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254744	117	C9	B3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254745	118	C9	K4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254746	119	C9	H4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254747	120	C9	H4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254748	121	C9	G4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254749	122	C9	G4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254750	123	C9	F4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254751	124	C9	F4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254752	125	C9	E4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254753	126	C9	E4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254754	127	C9	C4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254755	128	C9	C4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254756	129	C9	B4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254757	130	C9	B4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254758	131	C9	K4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254759	132	C9	H4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254760	133	C9	H4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254761	134	C9	G4-6	B	11	11	10		0.5		20	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254762	135	C9	G4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254763	136	C9	F4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254764	137	C9	F4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254765	138	C9	E4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254766	139	C9	E4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254767	140	C9	C4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254768	141	C9	C4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254769	142	C9	B4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254770	143	C9	B4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254771	144	C9	H5-1	B	12	12	20		0.8		25	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254772	145	C9	G5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254773	146	C9	G5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254774	147	C9	F5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254775	148	C9	F5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254776	149	C9	E5-4	B	13	13	13		0.5		26	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254777	150	C9	E5-4	B	14	14	28		2		14	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254778	151	C9	E5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254779	152	C9	C5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254780	153	C9	C5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254781	154	C9	B5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254782	155	C9	H5-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254783	156	C9	H5-3	B	0	0	30		1		30	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254784	157	C9	G5-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254785	158	C9	G5-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254786	159	C9	F5-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254787	160	C9	F5-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254788	161	C9	E5-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254789	162	C9	E5-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254790	163	C9	C5-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254791	164	C9	C5-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254792	165	C9	B5-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254793	166	C9	G6-1	B	15	15	8		0.8		10	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254794	167	C9	G6-1	B	16	16	13.4		0.8		16.75	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254795	168	C9	F6-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254796	169	C9	F6-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00014	A150501-02	254797	170	C9	E6-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254798	1	B10	H2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254799	2	B10	G2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254800	3	B10	G2-3	MD11	1														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254801	4	B10	G2-3	MB		1	8		0.8		10	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254802	5	B10	F2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254803	6	B10	F2-3	MD11	2														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254804	7	B10	F2-3	MB		2	17		0.3		56.666667	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254805	8	B10	E2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254806	9	B10	E2-3	B	3	3	13		1.1		11.818182	LA	ADX	1	1	1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254807	10	B10	H3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254808	11	B10	H3-1	B	4	4	39		1.3		30	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254809	12	B10	G3-4	B	5	5	10		0.7		14.285714	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254810	13	B10	G3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254811	14	B10	F3-4	B	6	6	14		0.7		20	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254812	15	B10	F3-4	B	7	7	5.8		1		5.8	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross	Mineral ID and EDXA observation for total structure #7 were not recorded on the benchsheet (page 2).	1/6/2016	
TS-00016	A150501-04	254813	16	B10	F3-1	B	8	8	30		0.7		42.857143	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254814	17	B10	E3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254815	18	B10	E3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254816	19	B10	C3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254817	20	B10	C3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254818	21	B10	B3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254819	22	B10	K3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254820	23	B10	H3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254821	24	B10	H3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254822	25	B10	G3-6	CD33	9														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254823	26	B10	G3-6	CB		9	25		2.5		10	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254824	27	B10	G3-6	CB		10	14		1.5		9.3333333	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254825	28	B10	G3-6	CB		11	7		0.8		8.75	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254826	29	B10	G3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254827	30	B10	F3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254828	31	B10	F3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254829	32	B10	E3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254830	33	B10	E3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254831	34	B10	C3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254832	35	B10	C3-3	B	10	12	10.5		0.5		21	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254833	36	B10	C3-3	B	11	13	32		0.4		80	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254834	37	A11	G3-1	B	12	14	35		1.2		29.166667	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254835	38	A11	F3-4	B	13	15	33		0.8		41.25	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254836	39	A11	F3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254837	40	A11	E3-4	B	14	16	6		0.7		8.5714286	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254838	41	A11	E3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254839	42	A11	C3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254840	43	A11	C3-1	B	15	17	14		1		14	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254841	44	A11	C3-1	B	0	0	16		1.5		10.666667	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254842	45	A11	B3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254843	46	A11	B3-1	B	16	18	38		3.5		10.857143	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254844	47	A11	B3-1	B	0	0	20		0.9		22.222222	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254845	48	A11	H4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254846	49	A11	G4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254847	50	A11	G4-1	B	17	19	6		0.5		12	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254848	51	A11	G4-1	B	18	20	50		2.5		20	LA	ADX	1				NaK, WRTA, XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254849	52	A11	F4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254850	53	A11	F4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254851	54	A11	E4-4	B	19	21	11		1		11	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254852	55	A11	E4-4	B	0	0	25		1.2		20.833333	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254853	56	A11	H4-3	B	20	22	13		0.6		21.666667	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254854	57	A11	G4-6	MD11	21														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254855	58	A11	G4-6	MB		23	15		0.4		37.5	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254856	59	A11	G4-3	B	22	24	31.5		1		31.5	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254857	60	A11	F4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254858	61	A11	F4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254859	62	A11	E4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00016	A150501-04	254860	63	A11	E4-3	B	23	25	8.2		1.1		7.4545455	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254861	1	C11	G2-3	B	1	1	43		0.9		47.777778	LA	ADX	1		1		NaK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254862	2	C11	G2-3	B	2	2	5.3		0.4		13.25	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254863	3	C11	F2-6	B	3	3	42		0.9		46.666667	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254864	4	C11	F2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254865	5	C11	E2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254866	6	C11	E2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254867	7	C11	C2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254868	8	C11	C2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254869	9	C11	H3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254870	10	C11	G3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254871	11	C11	G3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254872	12	C11	F3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254873	13	C11	F3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254874	14	C11	E3-4	B	4	4	12		1		12	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254875	15	C11	E3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254876	16	C11	C3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254877	17	C11	C3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254878	18	C11	B3-4	B	5	5	6		0.6		10	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254879	19	C11	H3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254880	20	C11	H3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254881	21	C11	G3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254882	22	C11	G3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254883	23	C11	F3-6	B	6	6	48		0.9		53.333333	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254884	24	C11	F3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254885	25	C11	E3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254886	26	C11	E3-3	B	7	7	19		1		19	LA	ADX	1	1			NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00018	A150501-06	254906	46	A12	G2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254907	47	A12	G2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254908	48	A12	F2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254909	49	A12	F2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254910	50	A12	E2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254911	51	A12	E2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254912	52	A12	C2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254913	53	A12	H3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254914	54	A12	G3-4	B	14	14	7		0.7		10	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254915	55	A12	G3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254916	56	A12	F3-4	B	15	15	16		0.3		53.333333	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254917	57	A12	F3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254918	58	A12	E3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254919	59	A12	E3-1	B	16	16	6		0.4		15	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254920	60	A12	C3-4	B	17	17	11		2		5.5	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254921	61	A12	C3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254922	62	A12	B3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254923	63	A12	H3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254924	64	A12	H3-3	B	18	18	5.8		0.5		11.6	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254925	65	A12	G3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254926	66	A12	G3-3	CD33	19														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254927	67	A12	G3-3	CB		19	38		1		38	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254928	68	A12	G3-3	CB		20	17		0.9		18.888889	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254929	69	A12	G3-3	CB		21	13		0.9		14.444444	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254930	70	A12	F3-6	B	20	22	17		1.1		15.454545	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254931	71	A12	F3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254932	72	A12	E3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254933	73	A12	E3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254934	74	A12	C3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254935	75	A12	C3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254936	76	A12	B3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254937	77	A12	B3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254938	78	A12	H4-4	B	21	23	6		0.5		12	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254939	79	A12	H4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254940	80	A12	G4-4	B	22	24	21		0.5		42	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00018	A150501-06	254941	81	A12	G4-1	B	23	25	8.3		0.7		11.857143	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254942	1	A13	G2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254943	2	A13	F2-6	CD22	1														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254944	3	A13	F2-6	CB		1	6		0.3		20	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254945	4	A13	F2-6	CB		2	24		5		4.8	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254946	5	A13	E2-6	B	2	3	5.2		0.7		7.4285714	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254947	6	A13	E2-6	B	3	4	21		0.8		26.25	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254948	7	A13	E2-3	B	4	5	10.5		0.5		21	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254949	8	A13	H3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254950	9	A13	G3-6	B	5	6	5.8		0.3		19.333333	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254951	10	A13	G3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254952	11	A13	F3-6	B	6	7	50		2.5		20	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254953	12	A13	F3-6	B	7	8	29		2		14.5	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254954	13	A13	F3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254955	14	A13	E3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254956	15	A13	E3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254957	16	A13	C3-6	B	0	0	150		1		150	LA	ADX	1				, XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254958	17	A13	F2-1	B	8	9	6		0.4		15	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254959	18	A13	H4-1	B	9	10	16		1.2		13.333333	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254960	19	A13	G4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254961	20	A13	G4-1	B	10	11	5.2		0.3		17.333333	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254962	21	A13	G4-1	B	0	0	52		1.1		47.272727	LA	ADX	1				, XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254963	22	A13	F4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254964	23	A13	F4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254965	24	A13	E4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254966	25	A13	E4-1	B	11	12	110		2		55	LA	ADX	1				NaK, WRTA; XGRLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254967	26	A13	C4-4	MD11	12														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254968	27	A13	C4-4	MB		13	7		0.3		23.333333	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254969	28	B13	G2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254970	29	B13	F2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254971	30	B13	F2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254972	31	B13	E2-6	B	13	14	6		0.7		8.5714286	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254973	32	B13	E2-6	B	14	15	6		0.3		20	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254974	33	B13	E2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254975	34	B13	C2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254976	35	B13	C2-3	B	15	16	9		0.3		30	LA	ADX	1	1			NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254977	36	B13	C2-3	B	16	17	46		2		23	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254978	37	B13	C2-3	B	17	18	40		1.3		30.769231	LA	ADX	1				NaK, WRTA; XGRLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254979	38	B13	H3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254980	39	B13	H3-3	B	18	19	14		0.4		35	LA	ADX	1				NaK, WRTA; XGRLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254981	40	B13	G3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254982	41	B13	G3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254983	42	B13	F3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254984	43	B13	F3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254985	44	B13	E3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254986	45	B13	E3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254987	46	B13	C3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254988	47	B13	H4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254989	48	B13	H4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254990	49	B13	G4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254991	50	B13	G4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254992	51	B13	F4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254993	52	B13	F4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254994	53	B13	E4-4	MD11	19														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254995	54	B13	E4-4	MB		20	43		0.5		86	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254996	55	B13	E4-1	B	20	21	15		1		15	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254997	56	B13	C4-4	B	21	22	31		1.7		18.235294	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254998	57	B13	C4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	254999	58	B13	B4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	255000	59	B13	H4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	255001	60	B13	H4-3	B	22	23	11		1		11	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	255002	61	B13	G4-6	B	0	0	20		0.5		40	LA	ADX	1				, XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	255003	62	B13	G4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	255004	63	B13	F4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	255005	64	B13	F4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	255006	65	B13	E4-6	B	0	0	12		0.7		17.142857	LA	ADX	1				, XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	255007	66	B13	E4-3	B	23	24	17		0.9		18.888889	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	255008	67	B13	C4-6	B	24	25	18		1.1		16.363636	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00020	A150501-08	255009	68	A13	H4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255010	1	A14	K2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255011	2	A14	H2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255012	3	A14	H2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255013	4	A14	G2-6	F	1	1	14		1		14	LA	ADX	1	1	1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255014	5	A14	G2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255015	6	A14	F2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255016	7	A14	F2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255017	8	A14	E2-6	B	2	2	12		1		12	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255018	9	A14	E2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255019	10	A14	C2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255020	11	A14	K3-4	CD64	3														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255021	12	A14	K3-4	CB		3	23		0.5		46	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255022	13	A14	K3-4	CB		4	19		0.5		38	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255023	14	A14	K3-4	CB		5	6.8		0.7		9.7142857	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255024	15	A14	K3-4	CF		6	5.3		0.7		8.8333333	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255025	16	A14	K3-4	CF		0	106		0.6		176.66667	LA	ADX	1				, XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255026	17	A14	K3-4	CF		0	24		0.8		30	LA	ADX	1				, XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255027	18	A14	K3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255028	19	A14	H3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255029	20	A14	H3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255030	21	A14	G3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255031	22	A14	G3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255032	23	A14	F3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255033	24	A14	F3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255034	25	A14	E3-4	F	4	7	50		1.5		33.333333	LA	ADX	1		1		NaK, WRTA; XGRLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255035	26	A14	L3-3	B	5	8	33		3		11	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255036	27	A14	K3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255037	28	A14	K3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255038	29	A14	H3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255039	30	A14	H3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255040	31	A14	G3-6	B	6	9	12.5		0.7		17.857143	LA	ADX	1				NaK, WRTA; XGRLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255041	32	A14	G3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255042	33	A14	F3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255043	34	A14	F3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255044	35	A14	L4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255045	36	A14	L4-1	B	7	10	39		1		39	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255046	37	A14	K4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255047	38	A14	K4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255048	39	A14	H4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255049	40	A14	H4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255050	41	A14	G4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255051	42	A14	G4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255052	43	A14	F4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255053	44	A14	F4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255054	45	A14	E4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255055	46	A14	E4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255056	47	A14	C4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255057	48	A14	C4-1	CD22	8														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255058	49	A14	C4-1	CF		11	22		0.25		88	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255059	50	A14	C4-1	CB		12	17		0.6		28.333333	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255060	51	A14	B4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255061	52	A14	L4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255062	53	B14	G2-6	F	9	13	9.2		0.25		36.8	LA	ADX	1				NaK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255063	54	B14	G2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255064	55	B14	F2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255065	56	B14	F2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255066	57	B14	E2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255067	58	B14	E2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255068	59	B14	C2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255069	60	B14	C2-3	ND															Air	10/21/

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00022	A150501-10	255096	87	B14	G4-4	F	0	0	78		1.8		43.333333	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255097	88	B14	G4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255098	89	B14	F4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255099	90	B14	F4-1	B	0	0	36		0.8		45	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255100	91	B14	E4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255101	92	B14	E4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255102	93	B14	C4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255103	94	B14	C4-1	CD31	14														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255104	95	B14	C4-1	CF		18	16.8		0.4		42	LA	ADX	1				NvK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255105	96	B14	C4-1	CF		0	4.1		0.2		20.5	LA	ADX	1					Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255106	97	B14	C4-1	CF		0	3.3		0.2		16.5	LA	ADX	1					Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255107	98	B14	B4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255108	99	B14	B4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255109	100	B14	A4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255110	101	B14	K4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255111	102	B14	H4-6	B	15	19	7		1		7	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255112	103	B14	H4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255113	104	B14	G4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255114	105	B14	G4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255115	106	B14	F4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255116	107	B14	F4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255117	108	B14	E4-6	F	16	20	40		0.6		66.666667	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255118	109	B14	E4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255119	110	B14	C4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255120	111	B14	C4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255121	112	B14	B4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255122	113	B14	B4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255123	114	B14	A4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255124	115	B14	K5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255125	116	B14	H5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255126	117	B14	H5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255127	118	B14	G5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255128	119	B14	G5-1	F	17	21	5.7		0.3		19	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255129	120	B14	F5-4	B	0	0	18		0.5		36	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255130	121	B14	F5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255131	122	B14	E5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255132	123	B14	E5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255133	124	B14	C5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255134	125	B14	C5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255135	126	B14	B5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255136	127	B14	B5-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255137	128	B14	A5-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255138	129	B14	H5-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255139	130	B14	H5-3	B	18	22	6.2		0.8		7.75	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255140	131	B14	G5-6	B	19	23	6.1		0.9		6.7777778	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255141	132	B14	G5-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255142	133	B14	F5-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255143	134	B14	F5-3	B	0	0	14		1.2		11.666667	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255144	135	B14	E5-6	B	20	24	16		1.2		13.333333	LA	ADX	1				NvK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00022	A150501-10	255145	136	B14	E5-6	B	21	25	56		1		56	LA	ADX	1				NvK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255146	1	B15	H2-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255147	2	B15	G2-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255148	3	B15	G2-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255149	4	B15	F2-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255150	5	B15	F2-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255151	6	B15	E2-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255152	7	B15	E2-1	F	0	0	12.8		0.3		42.666667	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255153	8	B15	E2-1	MD11	1														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255154	9	B15	E2-1	MB		1	15		2		7.5	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255155	10	B15	K2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255156	11	B15	H2-6	MD11	2														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255157	12	B15	H2-6	MB		2	13		1.6		8.125	LA	ADX	1		1		NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255158	13	B15	H2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255159	14	B15	G2-6	B	3	3	47		0.8		58.75	LA	ADX	1		1		NvK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255160	15	B15	G2-6	B	0	0	30		1.4		21.428571	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255161	16	B15	G2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255162	17	B15	F2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255163	18	B15	F2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255164	19	B15	E2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255165	20	B15	E2-3	MF	4	4	13.6		0.6		22.666667	LA	ADX	1	1			NvK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255166	21	B15	C2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255167	22	B15	C2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255168	23	B15	K3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255169	24	B15	K3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255170	25	B15	H3-4	MD62	5														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255171	26	B15	H3-4	MFD		5	9		0.3		30	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255172	27	B15	H3-4	MB		6	7.5		0.8		9.375	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255173	28	B15	H3-4	MB		0	4		0.5		8	LA	ADX	1					Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255174	29	B15	H3-4	MB		0	2		0.3		6.6666667	LA	ADX	1					Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255175	30	B15	H3-4	MFO		0	2		0.3		6.6666667	LA	ADX	1					Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255176	31	B15	H3-4	MFO		0	0.5		0.2		2.5	LA	ADX	1					Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255177	32	B15	H3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255178	33	B15	G3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255179	34	B15	G3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255180	35	B15	F3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255181	36	B15	F3-1	F	6	7	11		0.4		27.5	LA	ADX	1		1		NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255182	37	B15	E3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255183	38	B15	E3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255184	39	B15	C3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255185	40	B15	C3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255186	41	B15	B3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255187	42	B15	K3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255188	43	B15	K3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255189	44	B15	H3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255190	45	B15	H3-3	F	7	8	7.5		0.8		9.375	LA	ADX	1		1		NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255191	46	B15	H3-3	B	8	9	7.8		1.1		7.0909091	LA	ADX	1		1		NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255192	47	B15	H3-3	B	9	10	16		1.5		10.666667	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255193	48	B15	G3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255194	49	B15	G3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255195	50	B15	F3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255196	51	B15	F3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255197	52	B15	E3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255198	53	B15	E3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255199	54	B15	C3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255200	55	B15	C3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255201	56	B15	B3-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255202	57	B15	B3-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255203	58	B15	L4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255204	59	B15	K4-4	B	0	0	24		0.7		34.285714	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255205	60	B15	K4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255206	61	B15	H4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255207	62	B15	H4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255208	63	B15	G4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255209	64	B15	G4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255210	65	B15	F4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255211	66	B15	F4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255212	67	B15	E4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255213	68	B15	E4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255214	69	B15	C4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255215	70	B15	C4-1	MD11	10														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255216	71	B15	C4-1	MF		11	5.8		0.7		8.2857143	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255217	72	B15	B4-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255218	73	B15	B4-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255219	74	B15	K4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255220	75	B15	K4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255221	76	B15	H4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255222	77	B15	H4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255223	78	B15	G4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255224	79	B15	G4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255225	80	B15	F4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255226	81	B15	F4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255227	82	B15	E4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255228	83	B15	E4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255229	84	B15	C4-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255230	85	B15	C4-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255231	86	B15	B4-6	MD11	11														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255232	87	B15	B4-6	MF		12	19		0.7		27.142857	LA	ADX	1				NvK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255233	88	B15	B4-3	B	12	13	6.5		0.8		8.125	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255234	89	B15	B4-3	CD22	13														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255235	90	B15	B4-3	CF		14	66		0.6		110	LA	ADX	1				NvK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255236	91	B15	B4-3	CB		15	46		1.1		41.818182	LA	ADX	1				NvK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255237	92	C15	H2-3	B	14	16	94		2.3		40.869565	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255238	93	C15	G2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255239	94	C15	G2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255240	95	C15	F2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255241	96	C15	F2-3	B	15	17	34		3		11.333333	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255242	97	C15	E2-3	F	16	18	17		0.6		28.333333	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255243	98	C15	E2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255244	99	C15	E2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255245	100	C15	C2-6	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255246	101	C15	C2-3	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255247	102	C15	H3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255248	103	C15	H3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255249	104	C15	G3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255250	105	C15	G3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255251	106	C15	F3-4	F	0	0	42		1.7		24.705882	LA	ADX	1				XNCGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255252	107	C15	F3-1	B	17	19	5.3		0.4		13.25	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255253	108	C15	E3-4	MD32	18														Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255254	109	C15	E3-4	MF		20	7		0.4		17.5	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255255	110	C15	E3-4	MF		21	6.2		0.5		12.4	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255256	111	C15	E3-4	MF	0	0	3		0.2		15	LA	ADX						Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255257	112	C15	E3-4	B	19	22	7.8		1.1		7.0909091	LA	ADX	1				NvK, WRTA	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255258	113	C15	E3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255259	114	C15	C3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255260	115	C15	C3-1	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255261	116	C15	B3-4	ND															Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255262	117	C15	K3-3	B	20	23	13		1.2		10.833333	LA	ADX	1				NvK, WRTA; XGBLD	Air	10/21/2015 16:37	CDM Smith	N. Ross			
TS-00024	A150501-12	255263	118	C15	H3-6	ND									

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00027	041529347-0003	251949	17	L1	A10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251950	18	L1	A4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251951	19	L1	A2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251952	20	L2	J1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251953	21	L2	J3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251954	22	L2	J5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251955	23	L2	J7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251956	24	L2	J9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251957	25	L2	I10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251958	26	L2	I8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251959	27	L2	I6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251960	28	L2	I4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251961	29	L2	I2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251962	30	L2	H5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251963	31	L2	H3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251964	32	L2	H1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251965	33	L2	G10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251966	34	L2	G8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251967	35	L2	G6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251968	36	L2	G4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251969	37	L2	G2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251970	38	L2	F3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251971	39	L2	F5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251972	40	L2	F9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251973	41	L2	E8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251974	42	L2	E6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251975	43	L2	E4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251976	44	L2	E2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251977	45	L2	D3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251978	46	L2	D5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251979	47	L2	C6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251980	48	L2	C4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251981	49	L2	C2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251982	50	L2	B1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251983	51	L2	B3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251984	52	L2	B5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251985	53	L2	B7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251986	54	L2	B9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251987	55	L2	A10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251988	56	L2	A8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251989	57	L2	A6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251990	58	L2	A4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251991	59	L2	A2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251992	60	L3	A10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251993	61	L3	A8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251994	62	L3	A6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251995	63	L3	A4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251996	64	L3	B7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251997	65	L3	B9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251998	66	L3	C10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	251999	67	L3	C8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252000	68	L3	C6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252001	69	L3	C4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252002	70	L3	D1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252003	71	L3	D3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252004	72	L3	D5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252005	73	L3	D7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252006	74	L3	D9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252007	75	L3	E10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252008	76	L3	E8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252009	77	L3	E6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252010	78	L3	E4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252011	79	L3	E2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00027	041529347-0003	252012	80	L3	F1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263211	1	Q1	J2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263212	2	Q1	J4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263213	3	Q1	J8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263214	4	Q1	J10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263215	5	Q1	I9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263216	6	Q1	I5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263217	7	Q1	H6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263218	8	Q1	H10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263219	9	Q1	G7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263220	10	Q1	G5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263221	11	Q1	G3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263222	12	Q1	F2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263223	13	Q1	F4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263224	14	Q1	F6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263225	15	Q1	F10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263226	16	Q1	E9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263227	17	Q1	E7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263228	18	Q1	E1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263229	19	Q1	D2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263230	20	Q1	D4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263231	21	Q1	D6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263232	22	Q1	C9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263233	23	Q1	C7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263234	24	Q1	C5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263235	25	Q1	B2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263236	26	Q1	B4	F	0	0	10.4		0.45		23.111111	LA	ADX	1	1	1		, Asbestos_773, Asbestos_774, KNCGBLD	Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)	Reason for noncountable structure in grid_grid opening:Q1_B4 was not provided in the comments.	12/29/2015	
TS-00029	041529347-0005	263237	27	Q1	B6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263238	28	Q1	B8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263239	29	Q1	A9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263240	30	Q1	A7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263241	31	Q1	A5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263242	32	Q1	A3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263243	33	Q1	A1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263244	34	Q2	J4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263245	35	Q2	I9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263246	36	Q2	I3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263247	37	Q2	H8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263248	38	Q2	H10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263249	39	Q2	G7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263250	40	Q2	G5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263251	41	Q2	G3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263252	42	Q2	F4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263253	43	Q2	E3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263254	44	Q2	D2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263255	45	Q2	D4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263256	46	Q2	D6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263257	47	Q2	C9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263258	48	Q2	C7	F	1	1	11.3		0.5		22.6	LA	ADX	1		1		NaX, WRTA	Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263259	49	Q2	C5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263260	50	Q2	C3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263261	51	Q2	B4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263262	52	Q2	B6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263263	53	Q2	B10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263264	54	Q2	A9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263265	55	Q2	A3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263266	56	Q3	I6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263267	57	Q3	I8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263268	58	Q3	H9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263269	59	Q3	H7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263270	60	Q3	H5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263271	61	Q3	G6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263272	62	Q3	G10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263273	63	Q3	F9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263274	64	Q3	F3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263275	65	Q3	E2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263276	66	Q3	E4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263277	67	Q3	E6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263278	68	Q3	E8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263279	69	Q3	D7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263280	70	Q3	D5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263281	71	Q3	D1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263282	72	Q3	C4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263283	73	Q3	C6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263284	74	Q3	C8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263285	75	Q3	B7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263286	76	Q3	B5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263287	77	Q3	B1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263288	78	Q3	A8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263289	79	Q4	J7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00029	041529347-0005	263290	80	Q4	J1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252093	1	P1	A2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252094	2	P1	A4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252095	3	P1	A8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252096	4	P1	B9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252097	5	P1	B7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252098	6	P1	B1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252099	7	P1	C4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252100	8	P1	C6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252101	9	P1	C10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252102	10	P1	D7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252103	11	P1	D5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252104	12	P1	D3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252105	13	P1	E2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252106	14	P1	E4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252107	15	P1	E6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252108	16	P1	E8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252109	17	P1	F9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252110	18	P1	F7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252111	19	P1	F5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252112	20	P1	F3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252113	21	P1	F1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252114	22	P1	G2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252115	23	P1	G4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252116	24	P1	G8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252117	25	P1	H7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252118	26	P1	H3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252119	27	P1	H1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252120	28	P1	I2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252121	29	P1	I6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252122	30	P1	I10	ND															Air	10/19/2015 13:25	CDM

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00031	041529347-0007	252136	44	P2	G10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252137	45	P2	F9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252138	46	P2	F7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252139	47	P2	F5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252140	48	P2	F3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252141	49	P2	F1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252142	50	P2	E2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252143	51	P2	E4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252144	52	P2	E10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252145	53	P2	D7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252146	54	P2	D5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252147	55	P2	D3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252148	56	P2	D1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252149	57	P2	C2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252150	58	P2	C4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252151	59	P2	C8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252152	60	P2	C10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252153	61	P2	B9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252154	62	P2	B3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252155	63	P2	B1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252156	64	P2	A4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252157	65	P2	A6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252158	66	P3	A2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252159	67	P3	A4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252160	68	P3	A6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252161	69	P3	A10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252162	70	P3	B9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252163	71	P3	B7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252164	72	P3	B3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252165	73	P3	B1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252166	74	P3	C2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252167	75	P3	C4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252168	76	P3	D9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252169	77	P3	D5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252170	78	P3	D3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252171	79	P3	D1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00031	041529347-0007	252172	80	P3	E6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252173	1	M6	A10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252174	2	M6	A8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252175	3	M6	A4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252176	4	M6	A2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252177	5	M6	B1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252178	6	M6	B3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252179	7	M6	B5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252180	8	M6	B7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252181	9	M6	B9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252182	10	M6	C10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252183	11	M6	C8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252184	12	M6	C6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252185	13	M6	C4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252186	14	M6	C2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252187	15	M6	D1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252188	16	M6	D7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252189	17	M6	D9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252190	18	M6	E10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252191	19	M6	F3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252192	20	M6	F9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252193	21	M6	G10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252194	22	M6	G8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252195	23	M6	H7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252196	24	M6	H9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252197	25	M6	I10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252198	26	M6	I8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252199	27	M6	I6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252200	28	M6	I4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252201	29	M6	I2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252202	30	M6	J3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252203	31	M6	J7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252204	32	M7	A10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252205	33	M7	A8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252206	34	M7	B7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252207	35	M7	C6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252208	36	M7	C4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252209	37	M7	D5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252210	38	M7	D7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252211	39	M7	D9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252212	40	M7	E10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252213	41	M7	E8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252214	42	M7	E6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252215	43	M7	F5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252216	44	M7	F9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252217	45	M7	G10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252218	46	M7	G8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252219	47	M7	G6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252220	48	M7	H5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252221	49	M7	H7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252222	50	M7	H9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252223	51	M7	I10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252224	52	M7	I8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252225	53	M7	I6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252226	54	M7	I4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252227	55	M7	J5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252228	56	M7	J7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252229	57	M7	J9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252230	58	M8	A3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252231	59	M8	A5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252232	60	M8	A7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252233	61	M8	A9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252234	62	M8	C5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252235	63	M8	D6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252236	64	M8	D8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252237	65	M8	E9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252238	66	M8	E7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252239	67	M8	E5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252240	68	M8	F6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252241	69	M8	F8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252242	70	M8	F10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252243	71	M8	G9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252244	72	M8	G7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252245	73	M8	H4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252246	74	M8	H8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252247	75	M8	H10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252248	76	M8	I9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252249	77	M8	I7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252250	78	M8	I5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00033	041529347-0009	252251	79	M8	J8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252252	1	N2	J4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252253	2	N2	J2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252254	3	N2	I1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252255	4	N2	I3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252256	5	N2	H2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252257	6	N2	G1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252258	7	N2	G3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252259	8	N2	F8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252260	9	N2	F6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252261	10	N2	E7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252262	11	N2	E9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252263	12	N2	D8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252264	13	N2	D4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252265	14	N2	D2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252266	15	N2	C3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252267	16	N2	C5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252268	17	N2	C7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252269	18	N2	B8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252270	19	N2	B4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252271	20	N3	A2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252272	21	N3	A4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252273	22	N3	A6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252274	23	N3	A8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252275	24	N3	A10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252276	25	N3	B7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252277	26	N3	B5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252278	27	N3	B3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252279	28	N3	C2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252280	29	N3	C4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252281	30	N3	C6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252282	31	N3	D5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252283	32	N3	D3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252284	33	N3	F9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252285	34	N3	F3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252286	35	N3	G8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252287	36	N3	G10	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252288	37	N3	H9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252289	38	N3	I4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252290	39	N3	I6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252291	40	N3	J9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252292	41	N3	J7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252293	42	N3	J5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252294	43	N3	J3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252295	44	N4	J10	F	1	1	11.4		0.5		22.8	LA	ADX	1	1	1		NaK, WRTA; Asbestos_769, Asbesto	Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252296	45	N4	J8	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252297	46	N4	J6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252298	47	N4	J2	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252299	48	N4	I1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252300	49	N4	I3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252301	50	N4	I5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252302	51	N4	I7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252303	52	N4	I9	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252304	53	N4	H6	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252305	54	N4	H4	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252306	55	N4	H2	I	2	2	45.7		1.8		25.388889	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252307	56	N4	G1	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252308	57	N4	G3	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252309	58	N4	G5	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011	252310	59	N4	G7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00035	041529347-0011

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CNNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00035	041529347-0011	252326	75	N4	A7	ND															Air	10/19/2015 13:25	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253585	1	G5	A1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253586	2	G5	A3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253587	3	G5	A5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253588	4	G5	A7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253589	5	G5	A9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253590	6	G5	C10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253591	7	G5	C8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253592	8	G5	C6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253593	9	G5	C4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253594	10	G5	C2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253595	11	G5	E1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253596	12	G5	E3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253597	13	G5	E5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253598	14	G5	E7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253599	15	G5	E9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253600	16	G5	G9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253601	17	G5	F8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253602	18	G5	G5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253603	19	G5	G3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253604	20	G5	G1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253605	21	G5	I1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253606	22	G5	I3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253607	23	G5	I5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253608	24	G5	I7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253609	25	G5	I9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253610	26	G7	J3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253611	27	G7	J5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253612	28	G7	J7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253613	29	G7	J9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253614	30	G7	J10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253615	31	G7	I8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253616	32	G7	I6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253617	33	G7	I4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253618	34	G7	H5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253619	35	G7	H7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253620	36	G7	H9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253621	37	G7	G10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253622	38	G7	G8	F	1	1	7		0.7		10	LA	ADX	1	1	1		NaK, WRTA; Asbestos_759; Asbesto	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253623	39	G7	G6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253624	40	G7	G4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253625	41	G7	F3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253626	42	G7	F5	F	0	0	33.4		3		11.133333	LA	ADX	1		1		XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253627	43	G7	F7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253628	44	G7	E10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253629	45	G7	E8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253630	46	G7	E6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253631	47	G7	E4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253632	48	G7	D3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253633	49	G7	D5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253634	50	G7	D7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253635	51	G7	D9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253636	52	G7	C10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253637	53	G7	C8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253638	54	G7	C6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253639	55	G7	C4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253640	56	G7	B5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253641	57	G7	B7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253642	58	G7	B9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253643	59	G7	A4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253644	60	G8	A3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253645	61	G8	A5	F	2	2	36.2		0.95		38.105263	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253646	62	G8	A7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253647	63	G8	C8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253648	64	G8	C6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253649	65	G8	C4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253650	66	G8	C2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253651	67	G8	E2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253652	68	G8	E4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253653	69	G8	E6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253654	70	G8	G5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253655	71	G8	G3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253656	72	G8	G1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253657	73	G8	I2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253658	74	G8	I5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00037	041529357-0001	253659	75	G8	I7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259073	1	S5	J10	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259074	2	S5	J8	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259075	3	S5	J6	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259076	4	S5	I7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259077	5	S5	I9	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259078	6	S5	H10	F	1	1	6.4		0.45		14.222222	LA	ADX	1	1	1		NaK, WRTA; Asbestos_894	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259079	7	S5	H8	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259080	8	S5	H6	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259081	9	S5	H4	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259082	10	S5	G5	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259083	11	S5	G7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259084	12	S5	G9	F	2	2	13.2		1.3		10.153846	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259085	13	S5	G9	F	3	3	6.7		0.5		13.4	LA	ADX	1	1	1		NaK, WRTA; Asbestos_895	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259086	14	S5	F10	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259087	15	S5	F8	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259088	16	S5	F6	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259089	17	S5	F4	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259090	18	S5	F2	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259091	19	S5	E3	MD11	4														Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259092	20	S5	E3	MF		4	9.2		0.25		36.8	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259093	21	S5	E3	F	5	5	7.2		0.5		14.4	LA	ADX	1		1		NaK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259094	22	S5	E5	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259095	23	S5	E7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259096	24	S5	E9	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259097	25	S5	D10	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259098	26	S5	D8	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259099	27	S5	D6	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259100	28	S5	D4	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259101	29	S5	D2	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259102	30	S5	C1	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259103	31	S5	C3	F	6	6	31.2		1.3		24	LA	ADX	1		1		NaK, WRTA; XGBLD	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259104	32	S5	C5	F	7	7	9.6		0.3		32	LA	ADX	1		1		NaK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259105	33	S5	C5	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259106	34	S5	C7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259107	35	S5	C9	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259108	36	S5	B10	F	8	8	21.8		2.5		8.72	LA	ADX	1				NaK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259109	37	S5	B8	F	9	9	5.3		0.5		10.6	LA	ADX	1				NaK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259110	38	S5	B6	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259111	39	S5	B4	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259112	40	S5	B2	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259113	41	S5	A1	F	10	10	38.4		1.6		24	LA	ADX	1				NaK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259114	42	S5	A3	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259115	43	S5	A5	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259116	44	S5	A7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259117	45	S5	A9	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259118	46	S6	J9	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259119	47	S6	J7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259120	48	S6	J5	F	11	11	52.2		1.2		43.5	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259121	49	S6	J3	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259122	50	S6	J2	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259123	51	S6	J4	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259124	52	S6	J6	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259125	53	S6	J8	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259126	54	S6	J10	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259127	55	S6	H9	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259128	56	S6	H7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259129	57	S6	H5	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259130	58	S6	G2	F	12	12	11.2		0.9		12.444444	LA	ADX	1				NaK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259131	59	S6	G4	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259132	60	S6	G6	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259133	61	S6	G8	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259134	62	S6	G10	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259135	63	S6	F9	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259136	64	S6	F7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259137	65	S6	F5	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259138	66	S6	F3	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259139	67	S6	F1	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259140	68	S6	E2	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259141	69	S6	E4	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259142	70	S6	E6	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259143	71	S6	E8	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259144	72	S6	E10	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259145	73	S6	D7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259146	74	S6	D5	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259147	75	S6	D3	F	0	0	24.8		1.3		19.076923	LA	ADX	1				XNCGBLD	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259148	76	S6	D1	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259149	77	S6	C2	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259150	78	S6	C4	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259151	79	S6	C6	F	13	13	7.8		0.25		31.2	LA	ADX	1				NaK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259152	80	S6	C8	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259153	81	S6	B5	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259154	82	S6	B3	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259155	83	S6	B1	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259156	84	S6	A2	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259157	85	S6	A4	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259158	86	S7	J8	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259159	87	S7	J6	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259160	88	S7	J4	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259161	89	S7	J2	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259162	90	S7	I3	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259163	91	S7	I5	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259164	92	S7	I7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259165	93	S7	I9	ND			

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00041	041529357-0005	259187	115	S7	D2	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259188	116	S7	C3	F	18	18	14.4		0.7		20.571429	LA	ADX	1				NwK, WRTA; XGBLD	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259189	117	S7	C5	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259190	118	S7	C7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259191	119	S7	C9	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259192	120	S7	B10	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259193	121	S7	B8	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259194	122	S7	B6	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259195	123	S7	B4	F	19	19	31.8		1.7		18.705882	LA	ADX	1				NwK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259196	124	S7	B2	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259197	125	S7	A3	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259198	126	S7	A5	F	20	20	6.3		0.5		12.6	LA	ADX	1				NwK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259199	127	S7	A7	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259200	128	S7	A9	ND															Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259201	129	S8	J10	CD44	21														Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259202	130	S8	J10	CB		21	23		0.9		25.555556	LA	ADX	1				NwK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259203	131	S8	J10	CF		22	12.4		0.25		49.6	LA	ADX	1				NwK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259204	132	S8	J10	CF		23	10.4		0.8		13	LA	ADX	1				NwK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259205	133	S8	J10	CF		24	6.1		0.3		20.333333	LA	ADX	1				NwK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259206	134	S8	J10	F	22	25	9		0.35		25.714286	LA	ADX	1				NwK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259207	135	S8	J10	F	23	26	21.4		0.3		71.333333	LA	ADX	1				NwK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259208	136	S8	J10	F	24	27	7.4		0.3		24.666667	LA	ADX	1				NwK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00041	041529357-0005	259209	137	S8	J10	F	25	28	5.3		0.25		21.2	LA	ADX	1				NwK, WRTA	Air	10/30/2015 14:34	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253761	1	I5	J10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253762	2	I5	J7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253763	3	I5	H7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253764	4	I5	H5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253765	5	I5	H3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253766	6	I5	H1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253767	7	I5	G2	F	1	1	5.4		1.1		4.9090909	LA	ADX	1	1	1		NwK, WRTA; Asbestos_761	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253768	8	I5	G2	F	2	2	5.2		0.45		11.555556	LA	ADX	1		1		NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253769	9	I5	G4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253770	10	I5	G6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253771	11	I5	G8	F	3	3	36.6		1.4		26.142857	LA	ADX	1	1	1		NwK, WRTA; Asbestos_762	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253772	12	I5	G8	CD44	4														Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253773	13	I5	G8	CF		4	20.5		0.5		41	LA	ADX	1		1		NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253774	14	I5	G8	CF		5	10.2		0.5		20.4	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253775	15	I5	G8	CF		6	7.7		0.5		15.4	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253776	16	I5	G8	CF		7	5.7		0.25		22.8	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253777	17	I5	G10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253778	18	I5	F7	F	0	0	15.4		1.5		10.266667	LA	ADX	1				.XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253779	19	I5	F5	F	5	8	6.8		0.65		10.461538	LA	ADX	1		1		NwK, WRTA; XGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253780	20	I5	F3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253781	21	I5	F1	MD11	6														Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253782	22	I5	F1	MF		9	10.2		0.55		18.545455	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253783	23	I5	E2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253784	24	I5	E4	F	7	10	5.1		0.25		20.4	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253785	25	I5	E6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253786	26	I5	E8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253787	27	I5	D7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253788	28	I5	C4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253789	29	I5	C8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253790	30	I5	B7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253791	31	I5	B5	F	8	11	10.2		1.1		9.2727273	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253792	32	I5	B3	F	9	12	12.2		1.4		8.7142857	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253793	33	I5	B1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253794	34	I5	A2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253795	35	I5	A4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253796	36	I5	A6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253797	37	I6	A1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253798	38	I6	A3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253799	39	I6	A5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253800	40	I6	B10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253801	41	I6	B8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253802	42	I6	B6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253803	43	I6	B4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253804	44	I6	B2	F	10	13	6.6		0.45		14.666667	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253805	45	I6	C3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253806	46	I6	C5	F	11	14	15.1		2.5		6.04	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253807	47	I6	C9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253808	48	I6	D6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253809	49	I6	D4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253810	50	I6	E1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253811	51	I6	E5	F	12	15	7.7		0.3		25.666667	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253812	52	I6	E7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253813	53	I6	E9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253814	54	I6	F10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253815	55	I6	F8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253816	56	I6	F6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253817	57	I6	F4	F	13	16	42.2		1.4		30.142857	LA	ADX	1				NwK, WRTA; XGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253818	58	I6	F2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253819	59	I6	G3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253820	60	I6	G5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253821	61	I6	G7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253822	62	I6	G9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253823	63	I6	H10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253824	64	I6	H8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253825	65	I6	H6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253826	66	I6	H4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253827	67	I6	H2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253828	68	I6	I3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253829	69	I6	I5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253830	70	I6	I7	F	14	17	41.2		1		41.2	LA	ADX	1				NwK, WRTA; XGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253831	71	I6	I9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253832	72	I6	J10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253833	73	I6	J8	F	15	18	12.9		0.8		16.125	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253834	74	I6	J6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253835	75	I6	J4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253836	76	I6	J2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253837	77	I7	J10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253838	78	I7	J8	B	0	0	86.6		3		28.866667	LA	ADX	1				.XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253839	79	I7	J6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253840	80	I7	J4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253841	81	I7	J2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253842	82	I7	I3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253843	83	I7	I5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253844	84	I7	I7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253845	85	I7	I9	F	16	19	11.9		0.35		34	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253846	86	I7	H10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253847	87	I7	H8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253848	88	I7	H6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253849	89	I7	H4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253850	90	I7	H2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253851	91	I7	G1	F	17	20	7.5		0.75		10	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253852	92	I7	G3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253853	93	I7	G5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253854	94	I7	G7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253855	95	I7	G9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253856	96	I7	F10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253857	97	I7	F8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253858	98	I7	F6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253859	99	I7	F4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253860	100	I7	F2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253861	101	I7	E1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253862	102	I7	E3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253863	103	I7	E5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253864	104	I7	E7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253865	105	I7	E9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253866	106	I7	D10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253867	107	I7	D8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253868	108	I7	D6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253869	109	I7	D4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253870	110	I7	D2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253871	111	I7	C1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253872	112	I7	C3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253873	113	I7	C5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253874	114	I7	C7	F	18	21	5.2		0.35		14.857143	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253875	115	I7	B10	MD11	19														Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253876	116	I7	B10	MFO		22	7.3		0.85		8.5882353	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253877	117	I7	B8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253878	118	I7	B6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253879	119	I7	B4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253880	120	I7	B2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253881	121	I7	A1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253882	122	I7	A3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253883	123	I7	A5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253884	124	I8	J10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253885	125	I8	J8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253886	126	I8	J6	F	20	23	17.9		1.1		16.272727	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253887	127	I8	J4	F	21	24	12.9		0.5		25.8	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00044	041529357-0008	253888	128	I8	J4	F	22	25	14.6		3.8		3.8421053	LA	ADX	1				NwK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263291	1	J1	A10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263292	2	J1	A8	F	1	1	93.8		6		15.633333	LA	ADX	1		1		NwK, WRTA; XGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263293	3	J1	A8	F	2	2	12.4		0.8		15.5	LA	ADX	1	1	1		NwK, WRTA; Asbestos_764	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263294	4	J1	A8	F	0	0	7.8		0.8		9.75	LA	ADX	1				.XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)	Reason for noncountable structure in grid_grid opening A8_F was not provided in the comments.	12/29/2015	
TS-00046	041529357-0010	263295	5	J1	A4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263296	6	J1	A2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263297	7	J1	B1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00046	041529357-0010	263327	37	J1	J3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263328	38	J1	J5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263329	39	J1	J9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263330	40	J1	J5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263331	41	J1	J7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263332	42	J1	I10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263333	43	J1	I8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263334	44	J1	I6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263335	45	J1	I2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263336	46	J1	H1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263337	47	J1	H3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263338	48	J1	H5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263339	49	J1	H7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263340	50	J1	G10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263341	51	J1	G8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263342	52	J1	G6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263343	53	J1	F3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263344	54	J1	F5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263345	55	J1	F9	F	3	3	5.3		0.4		13.25	LA	ADX	1	1	1		NaK, WRTA; Asbestos_765	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263346	56	J3	E8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263347	57	J3	E4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263348	58	J3	D1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263349	59	J3	D3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263350	60	J3	D5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263351	61	J3	C8	CO22	4														Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263352	62	J3	C8	CF		4	14.8		1.4		10.571429	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263353	63	J3	C8	CF		5	7.7		0.25		30.8	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263354	64	J3	C6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263355	65	J3	C2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263356	66	J3	B1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263357	67	J3	B3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263358	68	J3	B5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263359	69	J3	B9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263360	70	J3	A10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263361	71	J3	A4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263362	72	J3	A2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263363	73	J4	J7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263364	74	J4	J9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263365	75	J4	I10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263366	76	J4	G9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263367	77	J4	F8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263368	78	J4	F6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263369	79	J4	F4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263370	80	J4	E3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263371	81	J4	E7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263372	82	J4	E9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263373	83	J4	D8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263374	84	J4	D6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263375	85	J4	D4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263376	86	J4	C3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263377	87	J4	C7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263378	88	J4	C9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263379	89	J4	B8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263380	90	J4	B6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263381	91	J4	B4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263382	92	J4	B1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263383	93	J4	A7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263384	94	J4	A9	F	5	6	6.2		0.6		10.333333	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263385	95	J4	A9	F	0	0	9.2		0.55		16.727273	LA	ADX	1				XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263386	96	O1	A2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263387	97	O1	A6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263388	98	O1	A8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263389	99	O1	A10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263390	100	O1	B9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263391	101	O1	B7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263392	102	O1	B3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263393	103	O1	B1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263394	104	O1	C2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263395	105	O1	B8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263396	106	O1	B10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263397	107	O1	D9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263398	108	O1	D7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263399	109	O1	D1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263400	110	O1	E8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263401	111	O1	E10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263402	112	O1	F9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263403	113	O1	F7	F	6	7	13.2		0.7		18.857143	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263404	114	O1	F3	F	7	8	13.2		0.8		16.5	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263405	115	O1	G2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263406	116	O1	G4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263407	117	O1	G6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263408	118	O1	G10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263409	119	O1	H5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263410	120	O1	H1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263411	121	O1	I4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263412	122	O1	I6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263413	123	O1	I8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263414	124	O1	I10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263415	125	O1	J9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263416	126	O1	J7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00046	041529357-0010	263417	127	O1	J5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254016	1	O5	A4	F	0	0	15.4		0.5		30.8	LA	ADX	1		1		XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254017	2	O5	A6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254018	3	O5	A8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254019	4	O5	A10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254020	5	O5	B7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254021	6	O5	B5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254022	7	O5	B3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254023	8	O5	D9	F	1	1	13.2		0.7		18.857143	LA	ADX	1	1			NaK, WRTA; Asbestos_766	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254024	9	O5	D5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254025	10	O5	E4	F	2	2	6.5		0.9		7.2222222	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254026	11	O5	E4	F	0	0	25.2		2.7		9.3333333	LA	ADX	1				XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254027	12	O5	E7	F	3	3	22.8		0.25		91.2	LA	ADX	1		1		NaK, WRTA; XGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254028	13	O5	E10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254029	14	O5	F9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254030	15	O5	F5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254031	16	O5	G2	F	4	4	76.3		0.8		95.375	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254032	17	O5	G4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254033	18	O5	G6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254034	19	O5	H9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254035	20	O5	H7	F	5	5	11.7		0.55		21.272727	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254036	21	O5	H5	F	6	6	7.1		2.3		3.0869565	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254037	22	O5	I2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254038	23	O5	I4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254039	24	O5	I6	F	7	7	6.4		1.2		5.3333333	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254040	25	O5	J9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254041	26	O5	J7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254042	27	O5	J5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254043	28	U5	A10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254044	29	U5	A8	F	8	8	7.6		0.8		9.5	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254045	30	U5	A6	F	9	9	6		0.9		6.6666667	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254046	31	U5	A4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254047	32	U5	A2	F	0	0	26.6		1.3		20.461538	LA	ADX	1				XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254048	33	U5	B1	F	0	0	13.8		0.3		46	LA	ADX	1				XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254049	34	U5	B3	F	10	10	7.5		0.55		13.636364	LA	ADX	1	1			NaK, WRTA; Asbestos_768	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254050	35	U5	B5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254051	36	U5	B7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254052	37	U5	B9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254053	38	U5	C10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254054	39	U5	C8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254055	40	U5	C6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254056	41	U5	C4	F	11	11	7.6		0.6		12.666667	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254057	42	U5	C4	F	12	12	47.6		0.8		59.5	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254058	43	U5	C2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254059	44	U5	D1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254060	45	U5	D3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254061	46	U5	D5	F	13	13	5.6		0.5		11.2	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254062	47	U5	D7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254063	48	U5	D9	F	14	14	22.1		1.1		20.090909	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254064	49	U5	E10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254065	50	U5	E8	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254066	51	U5	E6	F	0	0	10		1.6		6.25	LA	ADX	1				XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254067	52	U5	E4	F	15	15	9.5		0.25		38	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254068	53	U5	E2	F	16	16	90.8		1.4		64.857143	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254069	54	U5	F1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254070	55	U5	F3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254071	56	U5	F5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254072	57	U5	F7	F	17	17	5.1		0.3		17	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254073	58	U5	F9	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254074	59	U5	G10	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254075	60	U5	G6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254076	61	U5	G4	F	18	18	18.2		0.5		36.4	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254077	62	U5	G2	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254078	63	U5	H1	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254079	64	U5	H3	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254080	65	U5	H5	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254081	66	U5	H7	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254082	67	U5	H9	F	19	19	8.2		0.6		13.666667	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254083	68	U5	I10	F	20	20	8.4		0.7		12	LA	ADX	1				NaK, WRTA	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254084	69	U5	I8	F	0	0	20.2		0.7		28.857143	LA	ADX	1				XNCGBLD	Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254085	70	U5	I6	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00048	041529357-0012	254086	71	U5	I4	ND															Air	10/21/2015 13:43	CDM Smith	N. Ross (DDE)			
TS-00

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00050	031531899-0002	252367	22	A1	F6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252368	23	A1	F8	F	7	7	19		0.6		31.666667	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252369	24	A1	F10	B	8	8	8		0.3		26.666667	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252370	25	A1	G9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252371	26	A1	G7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252372	27	A1	G5	F	9	9	25.75		1.5		17.166667	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252373	28	A1	G3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252374	29	A1	G1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252375	30	A1	H2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252376	31	A1	H4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252377	32	A1	H6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252378	33	A1	H10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252379	34	A1	I9	MD11	10														Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252380	35	A1	I9	MB		10	6		0.8		7.5	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252381	36	A1	I7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252382	37	A1	I5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252383	38	A1	I3	F	11	11	15.25		1.5		10.166667	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252384	39	A1	I3	F	12	12	11.9		1.5		7.9333333	LA	ADX					NaK, WRTA; XGBLD	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252385	40	A1	J4	F	13	13	61		1.5		40.666667	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252386	41	A1	J8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252387	42	A1	J10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252388	43	A2	A2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252389	44	A2	A4	F	14	14	104		1.5		69.333333	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252390	45	A2	A6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252391	46	A2	A8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252392	47	A2	A10	F	15	15	6.25		0.28		22.321429	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252393	48	A2	B9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252394	49	A2	B7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252395	50	A2	B5	F	16	16	29.4		1.9		15.473684	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252396	51	A2	B3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252397	52	A2	B1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252398	53	A2	C2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252399	54	A2	C4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252400	55	A2	C6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252401	56	A2	C8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252402	57	A2	C10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252403	58	A2	D9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252404	59	A2	D7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252405	60	A2	D5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252406	61	A2	D3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252407	62	A2	D1	F	17	17	24.5		3		8.1666667	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252408	63	A2	E2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252409	64	A2	E4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252410	65	A2	E6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252411	66	A2	E8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252412	67	A2	E10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252413	68	A2	F9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252414	69	A2	F7	MD44	18														Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252415	70	A2	F7	MF		18	14		1		14	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252416	71	A2	F7	MF		19	11.5		0.5		23	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252417	72	A2	F7	MF		20	10		0.3		33.333333	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252418	73	A2	F7	MF		21	5.5		0.9		6.1111111	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252419	74	A2	F5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252420	75	A2	F3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252421	76	A2	F1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252422	77	A2	G2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252423	78	A2	G4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252424	79	A2	G6	MD33	19														Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252425	80	A2	G6	MF		22	8.5		0.9		9.4444444	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252426	81	A2	G6	MF		23	6.5		1.5		4.3333333	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252427	82	A2	G6	MF		24	5.9		0.9		6.5555556	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252428	83	A2	G8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252429	84	A2	G10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252430	85	A2	H9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252431	86	A2	H7	CD22	20														Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252432	87	A2	H7	CF		25	40.5		0.9		45	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252433	88	A2	H7	CB		26	33		1		33	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252434	89	A2	H7	CD22	21														Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252435	90	A2	H7	CF		27	29.2		0.9		32.444444	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252436	91	A2	H7	CF		28	7		0.28		25	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252437	92	A2	H5	F	22	29	15		1.9		7.8947368	LA	ADX					NaK, WRTA; XGBLD	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252438	93	A2	H3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252439	94	A2	H1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252440	95	A2	I2	CD22	23														Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252441	96	A2	I2	CF		0	70		2.5		28	LA	ADX					.XNCGBLD	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252442	97	A2	I2	CB		30	19		0.9		21.111111	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252443	98	A2	I4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252444	99	A2	I6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252445	100	A2	I8	F	0	0	16		0.6		26.666667	LA	ADX					.XNCGBLD	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252446	101	A2	I10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252447	102	A2	J9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252448	103	A2	J7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252449	104	A2	J5	CD33	24														Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252450	105	A2	J5	CF		31	116		1		116	LA	ADX					NaK, WRTA; XGBLD	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252451	106	A2	J5	CF		32	35		2.2		15.909091	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252452	107	A2	J5	CF		33	15.8		2		7.9	LA	ADX					NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252453	108	A2	J1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00050	031531899-0002	252454	109	A3	A2	F	25	34	29		0.7		41.428571	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00052	031531899-0004	252455	1	A4	E1	F	1	1	8.5		1		8.5	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252456	2	A4	E3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252457	3	A4	E5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252458	4	A4	E7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252459	5	A4	E9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252460	6	A4	A10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252461	7	A4	A8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252462	8	A4	A6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252463	9	A4	A4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252464	10	A4	D2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252465	11	A4	D4	B	2	2	10.75		0.54		19.907407	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252466	12	A4	D6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252467	13	A4	D8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252468	14	A4	D10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252469	15	A4	F9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252470	16	A4	F7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252471	17	A4	F5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252472	18	A4	G1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252473	19	A4	G3	F	3	3	6.7		0.7		9.5714286	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252474	20	A4	G5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252475	21	A4	G7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252476	22	A4	G9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252477	23	A4	H8	F	4	4	23		1.1		20.909091	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252478	24	A4	H6	F	5	5	12.5		0.5		25	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252479	25	A4	H4	F	6	6	11		1.7		6.4705882	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252480	26	A4	H2	F	0	0	76		2.8		27.142857	LA	ADX	1					Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252481	27	A4	H2	F	0	0	90		1.1		81.818182	LA	ADX	1					Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252482	28	A4	I3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252483	29	A4	I5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252484	30	A4	I7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252485	31	A4	I9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252486	32	A4	J4	F	7	7	10.1		1		10.1	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252487	33	A4	J4	F	8	8	10.5		1.9		5.5263158	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252488	34	A4	J6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252489	35	A4	J10	MD11										1					Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252490	36	A4	J10	MF	9	9	7.5		0.9		8.3333333	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252491	37	A4	J2	F	10	10	28		2.6		10.769231	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252492	38	A4	J2	F	11	11	6		0.75		8	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252493	39	A4	J2	F	12	12	6		0.8		7.5	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252494	40	A4	J2	CD11	13														Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252495	41	A4	J2	CF		13	9		0.25		36	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252496	42	A5	J10	F	14	14	12.2		0.6		20.333333	LA	ADX	1	1			NaK, WRTA; DIFF#279; Additional a	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252497	43	A5	J8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252498	44	A5	J6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252499	45	A5	J4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252500	46	A5	J2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252501	47	A5	I1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252502	48	A5	I3	CD22	15														Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252503	49	A5	I3	CF		15	125		2.5		50	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252504	50	A5	I3	CF		16	6.5		0.9		7.2222222	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252505	51	A5	I3	F	16	17	78		2		39	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252506	52	A5	I5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252507	53	A5	I7	F	17	18	16		0.25		64	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252508	54	A5	I9	MD22	18														Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252509	55	A5	I9	MF		19	21.5		0.8		26.875	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252510	56	A5	I9	MF		20	7.5		0.5		15	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252511	57	A5	H8	B	19	21	50		1.7		29.411765	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252512	58	A5	H2	F	20	22	20.5		0.5		41	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252513	59	A5	H10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252514	60	A5	H6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252515	61	A5	H4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252516	62	A5	G1	F	21	23	12.5		0.65		19.230769	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252517	63	A5	G3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252518	64	A5	G5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252519	65	A5	G7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	252520	66	A5

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00052	031531899-0004	2525S7	103	A6	F6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	2525S8	104	A6	F4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	2525S9	105	A6	F2	F	25	27	11.6		0.9		12.888889	LA	ADX	1				NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00052	031531899-0004	2525S0	106	A6	F2	F	26	28	15		0.7		21.428571	LA	ADX	1				NaK, WRTA, XGRLD	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			EF
TS-00054	031531899-0006	252561	1	A7	A1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252562	2	A7	A3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252563	3	A7	A7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252564	4	A7	A9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252565	5	A7	B10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252566	6	A7	B8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252567	7	A7	B6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252568	8	A7	B4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252569	9	A7	B2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252570	10	A7	C1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252571	11	A7	C3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252572	12	A7	C5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252573	13	A7	C7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252574	14	A7	C9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252575	15	A7	D10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252576	16	A7	D8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252577	17	A7	D6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252578	18	A7	D4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252579	19	A7	D2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252580	20	A7	E1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252581	21	A7	E3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252582	22	A7	E5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252583	23	A7	E7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252584	24	A7	E9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252585	25	A7	F10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252586	26	A7	F8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252587	27	A7	F6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252588	28	A7	F4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252589	29	A7	F2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252590	30	A7	G1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252591	31	A7	G3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252592	32	A7	G5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252593	33	A7	G7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252594	34	A7	G9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252595	35	A7	H10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252596	36	A7	H8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252597	37	A7	H6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252598	38	A7	H4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252599	39	A7	H2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252600	40	A7	I9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252601	41	A7	I7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252602	42	A7	I5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252603	43	A7	I3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252604	44	A7	I1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252605	45	A7	J10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252606	46	A7	J8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252607	47	A7	J6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252608	48	A7	J4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252609	49	A7	J2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252610	50	A8	A2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252611	51	A8	A4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252612	52	A8	A6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252613	53	A8	A8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252614	54	A8	A10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252615	55	A8	D10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252616	56	A8	D3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252617	57	A8	D5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252618	58	A8	D9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252619	59	A8	E10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252620	60	A8	E8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252621	61	A8	E6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252622	62	A8	E4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252623	63	A8	E2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252624	64	A8	F1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252625	65	A8	F3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252626	66	A8	F5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252627	67	A8	F7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252628	68	A8	F9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252629	69	A8	G10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252630	70	A8	G8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252631	71	A8	G6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252632	72	A8	G4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252633	73	A8	G2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252634	74	A8	H1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252635	75	A8	H3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252636	76	A8	H5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252637	77	A8	H7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252638	78	A8	H9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252639	79	A8	I10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252640	80	A8	I8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252641	81	A8	I6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252642	82	A8	I4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252643	83	A8	I2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00054	031531899-0006	252644	84	A8	J10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252645	1	B1	J10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252646	2	B1	J8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252647	3	B1	J6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252648	4	B1	J4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252649	5	B1	J2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252650	6	B1	I1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252651	7	B1	I3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252652	8	B1	I5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252653	9	B1	I7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252654	10	B1	I9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252655	11	B1	H10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252656	12	B1	H8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252657	13	B1	H6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252658	14	B1	H4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252659	15	B1	H2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252660	16	B1	E10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252661	17	B1	E8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252662	18	B1	E6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252663	19	B1	E4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252664	20	B1	E2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252665	21	B1	D1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252666	22	B1	D3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252667	23	B1	D5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252668	24	B1	D7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252669	25	B1	C6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252670	26	B1	C4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252671	27	B1	C2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252672	28	B1	B1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252673	29	B1	B3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252674	30	B1	B5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252675	31	B1	B7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252676	32	B1	A10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252677	33	B1	A8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252678	34	B1	A6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252679	35	B1	A4	F	1	1	9.04		0.5		18.08	LA	ADX	1	1	1		NaK, WRTA; 27863	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252680	36	B1	A2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252681	37	B2	A1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252682	38	B2	A3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252683	39	B2	A5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252684	40	B2	A7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252685	41	B2	A9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252686	42	B2	B10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252687	43	B2	B8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252688	44	B2	B6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252689	45	B2	B4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252690	46	B2	B2	F	2	2	35		2.5		14	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252691	47	B2	C1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252692	48	B2	C3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252693	49	B2	C5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252694	50	B2	C9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252695	51	B2	D8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252696	52	B2	D6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252697	53	B2	D4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252698	54	B2	D2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252699	55	B2	E1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252700	56	B2	E3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252701	57	B2	E5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252702	58	B2	E9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252703	59	B2	F10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252704	60	B2	F8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252705	61	B2	F6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252706	62	B2	F4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252707	63	B2	F2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252708	64	B2	G1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252709	65	B2	G3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252710	66	B2	G5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252711	67	B2	G7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252712	68	B2	G9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252713	69	B2	H10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252714	70	B2	H8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252715	71	B2	H6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252716	72	B2	H4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252717	73	B2	H2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252718	74	B2	I1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252719	75	B2	I3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252720	76	B2	I5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252721	77	B2	I7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252722	78	B2	I9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252723	79	B2	J10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252724	80	B2	J8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252725	81	B2	J6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252726	82	B2	J4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252727	83	B2	J2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252728	84	B3	H9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00056	031531899-0008	252729	85	B3	H7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252730	1	B4	I10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252731	2

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00058	031531899-0010	252747	18	B4	E6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252748	19	B4	E4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252749	20	B4	E2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252750	21	B4	C2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252751	22	B4	C4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252752	23	B4	C6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252753	24	B4	C8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252754	25	B4	C10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252755	26	B4	A10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252756	27	B4	A8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252757	28	B4	A6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252758	29	B4	A4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252759	30	B4	A2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252760	31	B5	J1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252761	32	B5	J3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252762	33	B5	J5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252763	34	B5	J7	F	1	1	28		1.15		24.347826	LA	ADX	1	1	1		NaK, WRTA; DIFFRACTION #280	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252764	35	B5	J9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252765	36	B5	H7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252766	37	B5	H5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252767	38	B5	H3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252768	39	B5	H1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252769	40	B5	F1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252770	41	B5	F3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252771	42	B5	F5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252772	43	B5	F7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252773	44	B5	F9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252774	45	B5	D9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252775	46	B5	D7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252776	47	B5	D5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252777	48	B5	D3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252778	49	B5	D1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252779	50	B5	C2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252780	51	B5	C4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252781	52	B5	C6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252782	53	B5	C8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252783	54	B5	C10	B	2	2	38		2.7		14.074074	LA	ADX	1		1		NaK, WRTA	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252784	55	B5	B9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252785	56	B5	B7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252786	57	B5	B5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252787	58	B5	B3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252788	59	B5	B1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252789	60	B5	A2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252790	61	B5	A4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252791	62	B5	A6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252792	63	B5	A8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252793	64	B5	A10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252794	65	B6	J10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252795	66	B6	J8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252796	67	B6	J6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252797	68	B6	J4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252798	69	B6	J2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252799	70	B6	A1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252800	71	B6	A3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252801	72	B6	A5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252802	73	B6	A7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252803	74	B6	A9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252804	75	B6	C1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252805	76	B6	C3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252806	77	B6	C5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252807	78	B6	C7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252808	79	B6	C9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252809	80	B6	D1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252810	81	B6	D3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252811	82	B6	F1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00058	031531899-0010	252812	83	B6	F3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252813	1	B7	J1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252814	2	B7	J3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252815	3	B7	J5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252816	4	B7	J7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252817	5	B7	J9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252818	6	B7	I10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252819	7	B7	I8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252820	8	B7	I6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252821	9	B7	I4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252822	10	B7	I2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252823	11	B7	H1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252824	12	B7	H3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252825	13	B7	H5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252826	14	B7	H7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252827	15	B7	H9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252828	16	B7	G10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252829	17	B7	G8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252830	18	B7	G6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252831	19	B7	G4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252832	20	B7	G2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252833	21	B7	F1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252834	22	B7	F3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252835	23	B7	F5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252836	24	B7	F7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252837	25	B7	F9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252838	26	B7	E10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252839	27	B7	E8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252840	28	B7	E6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252841	29	B7	E4	F	1	1	7.6		0.4		19	LA	ADX	1	1	1		NaK, WRTA; DIFFRACTION #281	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252842	30	B7	E2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252843	31	B7	D1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252844	32	B7	D3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252845	33	B7	D5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252846	34	B7	D7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252847	35	B7	D9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252848	36	B7	C10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252849	37	B7	C8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252850	38	B7	C6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252851	39	B7	C4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252852	40	B7	C2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252853	41	B7	B1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252854	42	B7	B3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252855	43	B7	B5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252856	44	B7	B7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252857	45	B7	B9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252858	46	B7	A10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252859	47	B7	A8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252860	48	B7	A6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252861	49	B7	A4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252862	50	B7	A2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252863	51	B8	A10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252864	52	B8	A8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252865	53	B8	A6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252866	54	B8	A4	F	2	2	130		4.9		26.530612	LA	ADX	1		1		NaK, WRTA; XGRLD	Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252867	55	B8	A2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252868	56	B8	B1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252869	57	B8	B3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252870	58	B8	B5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252871	59	B8	B7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252872	60	B8	B9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252873	61	B8	D9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252874	62	B8	D7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252875	63	B8	D5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252876	64	B8	D3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252877	65	B8	D1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252878	66	B8	E10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252879	67	B8	E8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252880	68	B8	E6	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252881	69	B8	E4	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252882	70	B8	E2	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252883	71	B8	J1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252884	72	B8	J3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252885	73	B8	J5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252886	74	B8	J7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252887	75	B8	J9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252888	76	B9	I1	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252889	77	B9	I3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252890	78	B9	I5	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252891	79	B9	I7	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252892	80	B9	I9	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252893	81	B9	J10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252894	82	B9	J8	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252895	83	B9	G10	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00060	031531899-0012	252896	84	B9	G3	ND															Air	10/19/2015 13:41	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263921	1	J1	A4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263922	2	J1	A6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263923	3	J1	A10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263924	4	J1	B9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263925	5	J1	B7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263926	6	J1	B5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263927	7	J1	B3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263928	8	J1	C2	B	1	1	18.2		1.25		14.56	LA	ADX	1	1	1		NaK, WRTA; 27982	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263929	9	J1	C4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263930	10	J1	C6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263931	11	J1	D9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263932	12	J1	D7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263933	13	J1	D5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263934	14	J1	D3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263935	15	J1	D1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263936	16	J1	E2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263937	17	J1	E4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263938	18	J1	E6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263939	19	J1	E8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263940	20	J1	E10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263941	21	J1	F9	CO2	2														Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263942	22	J1	F9	CF		2	9.55		1.25		7.64	LA	ADX	1	1	1		NaK, WRTA; 27983	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	031531900-0002	263943	23	J1	F9	CF		3	5.77		1.2		4.8083333	LA	ADX	1		1		NaK, WRTA	Air	10/

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00062	03153190-0002	263961	41	J1	J9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263962	42	J1	J7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263963	43	J1	J5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263964	44	J1	J3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263965	45	J1	J1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263966	46	J2	A2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263967	47	J2	A4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263968	48	J2	A6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263969	49	J2	A8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263970	50	J2	A10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263971	51	J2	B9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263972	52	J2	B7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263973	53	J2	B5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263974	54	J2	B3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263975	55	J2	B1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263976	56	J2	C2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263977	57	J2	C4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263978	58	J2	C6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263979	59	J2	C8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263980	60	J2	C10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263981	61	J2	D7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263982	62	J2	D5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263983	63	J2	D3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263984	64	J2	D1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263985	65	J2	E2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263986	66	J2	E4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263987	67	J2	E6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263988	68	J2	E8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263989	69	J2	E10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263990	70	J2	F9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263991	71	J2	F7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263992	72	J2	F5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263993	73	J2	F3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263994	74	J2	F1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263995	75	J2	G2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263996	76	J2	G4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263997	77	J2	G6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263998	78	J2	G8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	263999	79	J2	G10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	264000	80	J2	I4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	264001	81	J2	I6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	264002	82	J2	I8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	264003	83	J2	I10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	264004	84	J2	J5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	264005	85	J2	J7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00062	03153190-0002	264006	86	J2	J9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254188	1	D4	A1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254189	2	D4	A3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254190	3	D4	A5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254191	4	D4	A7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254192	5	D4	B8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254193	6	D4	B6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254194	7	D4	B4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254195	8	D4	B2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254196	9	D4	D9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254197	10	D4	D7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254198	11	D4	D5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254199	12	D4	D3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254200	13	D4	F2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254201	14	D4	F4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254202	15	D4	F6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254203	16	D4	F8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254204	17	D4	F10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254205	18	D4	G9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254206	19	D4	G7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254207	20	D4	G5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254208	21	D4	G3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254209	22	D4	H4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254210	23	D4	H6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254211	24	D4	H8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254212	25	D4	H10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254213	26	D4	I9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254214	27	D4	I7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254215	28	D4	I5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254216	29	D4	I3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254217	30	D4	I1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254218	31	D4	J2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254219	32	D4	J4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254220	33	D4	J6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254221	34	D4	J10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254222	35	D5	J9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254223	36	D5	J7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254224	37	D5	J5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254225	38	D5	J3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254226	39	D5	J1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254227	40	D5	I2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254228	41	D5	I4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254229	42	D5	I6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254230	43	D5	I8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254231	44	D5	I10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254232	45	D5	H9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254233	46	D5	H3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254234	47	D5	H1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254235	48	D5	G4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254236	49	D5	G6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254237	50	D5	G8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254238	51	D5	G10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254239	52	D5	F9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254240	53	D5	F7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254241	54	D5	E4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254242	55	D5	E6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254243	56	D5	E8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254244	57	D5	E10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254245	58	D5	D9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254246	59	D5	D7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254247	60	D5	D5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254248	61	D5	D1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254249	62	D5	B9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254250	63	D5	B7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254251	64	D5	B3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254252	65	D6	B2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254253	66	D6	B4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254254	67	D6	B6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254255	68	D6	B8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254256	69	D6	B10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254257	70	D6	C7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254258	71	D6	C5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254259	72	D6	C3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254260	73	D6	D2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254261	74	D6	D4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254262	75	D6	D6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254263	76	D6	D8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254264	77	D6	E9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254265	78	D6	E7	F	1	1	38.9		1.2		32.416667	LA	ADX	1	1	1		NaK, WRTA; 27978	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254266	79	D6	E5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254267	80	D6	G1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254268	81	D6	G3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254269	82	D6	G5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254270	83	D6	G7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254271	84	D6	G9	CD33	2														Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254272	85	D6	G9	CF		2	26		0.9		28.888889	LA	ADX	1	1	1		NaK, WRTA; 27979	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254273	86	D6	G9	CB		3	17.5		1.7		10.294118	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254274	87	D6	G9	CF		4	10.5		0.8		13.125	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00064	03153190-0004	254275	88	D6	H8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254276	1	D7	F10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254277	2	D7	F8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254278	3	D7	F6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254279	4	D7	F4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254280	5	D7	F2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254281	6	D7	E1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254282	7	D7	E3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254283	8	D7	E5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254284	9	D7	E7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254285	10	D7	E9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254286	11	D7	D10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254287	12	D7	D8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254288	13	D7	D6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254289	14	D7	D4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254290	15	D7	C3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254291	16	D7	C5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254292	17	D7	C7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254293	18	D7	C9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254294	19	D7	B10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254295	20	D7	B8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254296	21	D7	B6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254297	22	D7	B4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254298	23	D7	B2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254299	24	D7	A1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254300	25	D7	A3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254301	26	D7	A5	MD11	1														Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254302	27	D7	A5	MF		1	18		0.8		22.5	LA	ADX	1	1	1		NaK, WRTA; 27980	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254303	28	D7	A7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254304	29	D7	A9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254305	30	D8	A1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254306	31	D8	A3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254307	32	D8	A5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254308	33	D8	A7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254309	34	D8	A9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254310	35	D8	B6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254311	36	D8	B4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254312	37	D8	B2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254313	38	D8	C1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254314	39	D8	C3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190-0006	254315	40	D8	C5	ND															Air	10/21/2015 16:29	CDM

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00066	03153190O-0006	254332	57	D8	G1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254333	58	D8	G3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254334	59	D8	G5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254335	60	D8	G7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254336	61	D8	G9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254337	62	D8	H10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254338	63	D8	H8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254339	64	D8	H6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254340	65	D8	H4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254341	66	D8	H2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254342	67	D8	I1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254343	68	D8	I3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254344	69	D8	I5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254345	70	D8	I9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254346	71	D8	J10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254347	72	D8	J8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254348	73	D8	J6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254349	74	D9	A3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254350	75	D9	A5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254351	76	D9	A7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254352	77	D9	C2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254353	78	D9	C4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254354	79	D9	C6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254355	80	D9	C8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254356	81	D9	F5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254357	82	D9	F7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254358	83	D9	F9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254359	84	D9	G10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254360	85	D9	G8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00066	03153190O-0006	254361	86	D9	G6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254362	1	E1	H1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254363	2	E1	H5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254364	3	E1	G2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254365	4	E1	G6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254366	5	E1	G8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254367	6	E1	F3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254368	7	E1	F5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254369	8	E1	F7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254370	9	E1	E1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254371	10	E1	D2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254372	11	E1	D4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254373	12	E1	D6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254374	13	E1	C1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254375	14	E1	C3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254376	15	E1	C5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254377	16	E1	C7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254378	17	E1	C9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254379	18	E1	A8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254380	19	E1	A2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254381	20	E2	J1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254382	21	E2	J3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254383	22	E2	J5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254384	23	E2	J7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254385	24	E2	J9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254386	25	E2	I10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254387	26	E2	I8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254388	27	E2	I6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254389	28	E2	I4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254390	29	E2	I2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254391	30	E2	H1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254392	31	E2	H3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254393	32	E2	H5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254394	33	E2	H7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254395	34	E2	H9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254396	35	E2	G10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254397	36	E2	G8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254398	37	E2	G6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254399	38	E2	G4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254400	39	E2	G2	MD11	1														Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254401	40	E2	G2	MF		1	14.8		0.25		59.2	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254402	41	E2	F1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254403	42	E2	F3	T	2	2	8.25		2.6		3.1730769	LA	ADX	1		1		NaK, WRTA	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254404	43	E2	F5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254405	44	E2	F7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254406	45	E2	F9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254407	46	E2	E10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254408	47	E2	E8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254409	48	E2	E6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254410	49	E2	E4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254411	50	E2	E2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254412	51	E2	D1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254413	52	E2	D3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254414	53	E2	D5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254415	54	E2	D7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254416	55	E2	D9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254417	56	E2	C10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254418	57	E2	C8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254419	58	E2	C6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254420	59	E2	C4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254421	60	E2	C2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254422	61	E2	B1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254423	62	E2	B3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254424	63	E2	B5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254425	64	E2	B7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254426	65	E2	B9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254427	66	E2	A10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254428	67	E2	A8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254429	68	E2	A6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254430	69	E2	A4	B	3	3	43		2.5		17.2	LA	ADX	1		1		NaK, WRTA; XGRLD	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254431	70	E3	A10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254432	71	E3	A8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254433	72	E3	A6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254434	73	E3	A4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254435	74	E3	A2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254436	75	E3	B1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254437	76	E3	B3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254438	77	E3	B5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254439	78	E3	B7	T	4	4	9.9		0.25		39.6	LA	ADX	1	1	1		NaK, WRTA; DIFFRACTION #282	Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254440	79	E3	B9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254441	80	E3	C10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254442	81	E3	C8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254443	82	E3	C6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254444	83	E3	C4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254445	84	E3	C2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00068	03153190O-0008	254446	85	E3	D3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254447	1	E4	D2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254448	2	E4	D4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254449	3	E4	D6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254450	4	E4	D8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254451	5	E4	D10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254452	6	E4	C9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254453	7	E4	C7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254454	8	E4	C5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254455	9	E4	C3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254456	10	E4	C1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254457	11	E4	B2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254458	12	E4	B4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254459	13	E4	B6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254460	14	E4	B8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254461	15	E4	B10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254462	16	E4	A9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254463	17	E4	A7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254464	18	E4	A5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254465	19	E4	A3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254466	20	E4	A1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254467	21	E5	J4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254468	22	E5	J6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254469	23	E5	J8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254470	24	E5	I9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254471	25	E5	I7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254472	26	E5	I5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254473	27	E5	I3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254474	28	E5	I1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254475	29	E5	H2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254476	30	E5	H4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254477	31	E5	H6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254478	32	E5	H8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254479	33	E5	G9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254480	34	E5	G7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254481	35	E5	G5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254482	36	E5	G3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254483	37	E5	G1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254484	38	E5	F4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254485	39	E5	F6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254486	40	E5	F8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254487	41	E5	E9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254488	42	E5	E7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254489	43	E5	E5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254490	44	E5	E3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254491	45	E5	E1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254492	46	E5	D2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254493	47	E5	D4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254494	48	E5	D6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254495	49	E5	D8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254496	50	E5	D10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254497	51	E5	C9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254498	52	E5	C7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254499	53	E5	C5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254500	54	E5	C3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254501	55	E5	C1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254502	56	E5	B2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254503	57	E5	B4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	03153190O-0010	254504	58	E

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00070	031531900-0010	254522	76	E3	C8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	031531900-0010	254523	77	E3	C6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	031531900-0010	254524	78	E3	C4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	031531900-0010	254525	79	E3	C2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	031531900-0010	254526	80	E3	D1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	031531900-0010	254527	81	E3	D3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	031531900-0010	254528	82	E3	D5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	031531900-0010	254529	83	E3	D7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	031531900-0010	254530	84	E3	D9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00070	031531900-0010	254531	85	E3	E10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254532	1	E7	B1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254533	2	E7	B3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254534	3	E7	B5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254535	4	E7	B7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254536	5	E7	B9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254537	6	E7	C10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254538	7	E7	C8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254539	8	E7	C6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254540	9	E7	C4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254541	10	E7	C2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254542	11	E7	D1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254543	12	E7	D3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254544	13	E7	D5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254545	14	E7	D7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254546	15	E7	D9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254547	16	E7	E10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254548	17	E7	E8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254549	18	E7	E6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254550	19	E7	E4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254551	20	E7	E2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254552	21	E7	F1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254553	22	E7	F3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254554	23	E7	F5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254555	24	E7	F7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254556	25	E7	F9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254557	26	E7	G10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254558	27	E7	G8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254559	28	E7	G6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254560	29	E7	G4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254561	30	E7	G2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254562	31	E7	I10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254563	32	E7	I8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254564	33	E7	I6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254565	34	E7	I4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254566	35	E7	I2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254567	36	E7	J1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254568	37	E7	J3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254569	38	E7	J5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254570	39	E7	J7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254571	40	E7	J9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254572	41	E8	A9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254573	42	E8	A7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254574	43	E8	A5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254575	44	E8	A3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254576	45	E8	A1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254577	46	E8	B2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254578	47	E8	B4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254579	48	E8	B6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254580	49	E8	B8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254581	50	E8	B10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254582	51	E8	C9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254583	52	E8	C7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254584	53	E8	C5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254585	54	E8	C3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254586	55	E8	C1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254587	56	E8	D2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254588	57	E8	D4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254589	58	E8	D6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254590	59	E8	D8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254591	60	E8	D10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254592	61	E8	E9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254593	62	E8	E7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254594	63	E8	E5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254595	64	E8	E3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254596	65	E8	E1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254597	66	E8	F2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254598	67	E8	F4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254599	68	E8	F6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254600	69	E8	F8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254601	70	E8	F10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254602	71	E8	G9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254603	72	E8	G7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254604	73	E8	G5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254605	74	E8	G3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254606	75	E8	G1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254607	76	E8	H2	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254608	77	E8	H4	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254609	78	E8	H6	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254610	79	E8	H8	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254611	80	E8	H10	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254612	81	E8	I9	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254613	82	E8	I7	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254614	83	E8	I5	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254615	84	E8	I3	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00072	031531900-0012	254616	85	E8	I1	ND															Air	10/21/2015 16:29	CDM Smith	N. Ross (DDE)			
TS-00074	451500387-0002	256898	1	C7	H3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256899	2	C7	H3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256900	3	C7	G3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256901	4	C7	G3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256902	5	C7	F3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256903	6	C7	F3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256904	7	C7	E3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256905	8	C7	E3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256906	9	C7	C3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256907	10	C7	C3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256908	11	C7	C4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256909	12	C7	C4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256910	13	C7	E4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256911	14	C7	E4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256912	15	C7	F4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256913	16	C7	F4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256914	17	C7	G4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256915	18	C7	G4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256916	19	C7	H4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256917	20	C7	H4-2	F	1	1	6.44	40	0.5635	3.5	11.428571	LA	ADX	1	1	1		NaK, WRTA; Photo #589	Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256918	21	C7	H4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256919	22	C7	H4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256920	23	C7	G4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256921	24	C7	G4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256922	25	C7	F4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256923	26	C7	F4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256924	27	C7	E4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256925	28	C7	C4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256926	29	C7	C4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256927	30	C7	C5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256928	31	C7	C5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256929	32	C7	E5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256930	33	C7	E5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256931	34	C7	F5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256932	35	C7	F5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256933	36	C7	G5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256934	37	C7	G5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256935	38	C7	H5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256936	39	C7	H5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256937	40	C7	H5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256938	41	C7	H5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256939	42	C7	G5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256940	43	C7	G5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256941	44	C7	F5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256942	45	C7	F5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256943	46	C7	E5-3	T	2	2	31.395	195	0.966	6	32.5	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256944	47	C7	E5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256945	48	C7	C5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256946	49	C7	C6-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256947	50	C7	E6-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256948	51	C7	E6-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256949	52	C7	F6-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256950	53	C7	F6-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256951	54	C7	G6-1	F	0	0	57.96	360	0.966	6	60	LA	ADX	1				XNCGBLD	Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256952	55	C7	G6-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256953	56	C8	E3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256954	57	C8	F3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256955	58	C8	F3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256956	59	C8	G3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256957	60	C8	G3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256958	61	C8	H3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256959	62	C8	H3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256960	63	C8	H3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256961	64	C8	H3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256962	65	C8	G3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256963	66	C8	G3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256964	67	C8	F3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256965	68	C8	F3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256966	69	C8	E3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256967	70	C8	E3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256968	71	C8	C4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256969	72	C8	E4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256970	73	C8	E4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256971	74	C8	F4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256972	75	C8	F4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256973	76	C8	G4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256974	77	C8	G4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256975	78	C8	H4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256976	79	C8	H4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256977	80	C8	H4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256978	81	C8	H4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256979	82	C8	G4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00074	451500387-0002	256980	83	C8	G4-4	ND

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%	
TS-00074	451500387-0002	256993	96	C8	GS-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00074	451500387-0002	256994	97	C8	GS-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00074	451500387-0002	256995	98	C8	H5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00074	451500387-0002	256996	99	C8	H5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00074	451500387-0002	256997	100	C8	H5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00074	451500387-0002	256998	101	C8	H5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00074	451500387-0002	256999	102	C8	GS-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00074	451500387-0002	257000	103	C8	GS-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00074	451500387-0002	257001	104	C8	FS-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00074	451500387-0002	257002	105	C8	FS-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00074	451500387-0002	257003	106	C8	ES-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257004	1	B10	C3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257005	2	B10	C3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257006	3	B10	E3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257007	4	B10	E3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257008	5	B10	F3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257009	6	B10	F3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257010	7	B10	G3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257011	8	B10	G3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257012	9	B10	H3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257013	10	B10	H3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257014	11	B10	E3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257015	12	B10	H3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257016	13	B10	H3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257017	14	B10	G3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257018	15	B10	G3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257019	16	B10	F3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257020	17	B10	F3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257021	18	B10	E3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257022	19	B10	E3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257023	20	B10	C3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257024	21	B10	C3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257025	22	B10	C4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257026	23	B10	C4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257027	24	B10	E4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257028	25	B10	E4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257029	26	B10	F4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257030	27	B10	F4-2	F	1	1	16.583	103	0.322	2	51.5	LA	ADX	1	1	1		NaK, WRTA; Photo 594	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257031	28	B10	G4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257032	29	B10	G4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257033	30	B10	H4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257034	31	B10	H4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257035	32	B10	K4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257036	33	B10	K4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257037	34	B10	H4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257038	35	B10	G4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257039	36	B10	G4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257040	37	B10	F4-3	F	2	2	8.533	53	0.483	3	17.666667	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257041	38	B10	F4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257042	39	B10	E4-3	F	3	3	5.152	32	0.4025	2.5	12.8	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257043	40	B10	E4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257044	41	B10	C4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257045	42	B10	C4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257046	43	B10	C5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257047	44	B10	C5-2	F	4	4	9.338	58	1.2075	7.5	7.7333333	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257048	45	B10	E5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257049	46	B10	E5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257050	47	B10	F5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257051	48	B10	F5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257052	49	B10	G5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257053	50	B10	G5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257054	51	B10	H5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257055	52	B10	H5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257056	53	B10	E5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257057	54	C1	H5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257058	55	C1	H5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257059	56	C1	G5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257060	57	C1	G5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257061	58	C1	F5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257062	59	C1	F5-4	F	5	5	10.143	63	0.805	5	12.6	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257063	60	C1	E5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257064	61	C1	E5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257065	62	C1	C5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257066	63	C1	C5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257067	64	C1	C5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257068	65	C1	C5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257069	66	C1	E5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257070	67	C1	E5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257071	68	C1	F5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257072	69	C1	F5-2	F	6	6	10.948	68	1.2075	7.5	9.0666667	LA	ADX	1	1	1		KK, TR; Photo #595	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257073	70	C1	G5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257074	71	C1	G5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257075	72	C1	H5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257076	73	C1	H5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257077	74	C1	K5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257078	75	C1	K4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257079	76	C1	H4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257080	77	C1	H4-4	F	7	7	11.592	72	3.542	22	3.2727273	LA	ADX	1				NaK, WRTA; Fiber not doubled in la	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257081	78	C1	G4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257082	79	C1	G4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257083	80	C1	F4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257084	81	C1	F4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257085	82	C1	E4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257086	83	C1	E4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257087	84	C1	C4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257088	85	C1	C4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257089	86	C1	C4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257090	87	C1	C4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257091	88	C1	E4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257092	89	C1	E4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257093	90	C1	F4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257094	91	C1	F4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257095	92	C1	G4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257096	93	C1	G4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257097	94	C1	H4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257098	95	C1	H4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257099	96	C1	K4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257100	97	C1	K3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257101	98	C1	H3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257102	99	C1	H3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257103	100	C1	G3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257104	101	C1	G3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257105	102	C1	F3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257106	103	C1	F3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257107	104	C1	E3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257108	105	C1	E3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00076	451500387-0004	257109	106	C1	C3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257110	1	C4	G2-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257111	2	C4	G2-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257112	3	C4	F2-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257113	4	C4	F2-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257114	5	C4	E2-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257115	6	C4	E2-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257116	7	C4	C3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257117	8	C4	C3-2	F	1	1	21.574	134	1.288	8	16.75	LA	ADX	1	596	1		NaK, WRTA; Photo #596	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257118	9	C4	E3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257119	10	C4	E3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257120	11	C4	F3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257121	12	C4	F3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257122	13	C4	G3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257123	14	C4	G3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257124	15	C4	H3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257125	16	C4	H3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257126	17	C4	K3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257127	18	C4	H3-3	MD11	2														Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257128	19	C4	H3-3	MF		2	9.016	56	0.4025	2.5	22.4	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257129	20	C4	H3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257130	21	C4	G3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257131	22	C4	F3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257132	23	C4	E3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257133	24	C4	E3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257134	25	C4	C3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257135	26	C4	C3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257136	27	C4	C4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257137	28	C4	E4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257138	29	C4	E4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257139	30	C4	F4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257140	31	C4	F4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257141	32	C4	G4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257142	33	C4	G4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257143	34	C4	H4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257144	35	C4	H4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257145	36	C4	K4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257146	37	C4	K4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257147	38	C4	H4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257148	39	C4	H4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257149	40	C4	G4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257150	41	C4	G4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257151	42	C4	F4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257152	43	C4	F4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257153	44	C4	E4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257154	45	C4	E4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257155	46	C4	C4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257156	47	C4	C4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257157	48	C4	C5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257158	49	C4	E5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257159	50	C4	E5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257160	51	C4	F5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257161	52	C4	F5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257162	53	C4	G5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257163	54	C4	G5-2	F	3	3	5.957	37	0.4025	2.5	14.8	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257164	55	C4	G5-2	MD11	4														Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257165	56	C4	G5-2	MF		4	8.855	55	1.771	11	5	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:44	CDM Smith	N. Ross				
TS-00077	451500387-0005	257166	57	C4	H5-1	ND															Air	10/23/2015 10:44	CDM Smith	N.

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00077	451500387-0005	257183	74	C5	E5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257184	75	C5	C5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257185	76	C5	C5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257186	77	C5	C5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257187	78	C5	C5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257188	79	C5	E5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257189	80	C5	E5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257190	81	C5	F5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257191	82	C5	F5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257192	83	C5	G5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257193	84	C5	G5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257194	85	C5	H5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257195	86	C5	H5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257196	87	C5	K5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257197	88	C5	K4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257198	89	C5	H4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257199	90	C5	H4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257200	91	C5	G4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257201	92	C5	G4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257202	93	C5	F4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257203	94	C5	F4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257204	95	C5	E4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257205	96	C5	E4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257206	97	C5	C4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257207	98	C5	C4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257208	99	C5	C4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257209	100	C5	C4-2	T	0	0	27.048	168	2.898	18	9.3333333	LA	ADX	1		1		XNCGBLD	Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257210	101	C5	E4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257211	102	C5	E4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257212	103	C5	F4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257213	104	C5	F4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257214	105	C5	G4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257215	106	C5	G4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257216	107	C5	H4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257217	108	C5	H4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257218	109	C5	K4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257219	110	C5	K3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257220	111	C5	H3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257221	112	C5	H3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257222	113	C5	G3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257223	114	C5	G3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257224	115	C5	F3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257225	116	C5	F3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257226	117	C5	E3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257227	118	C5	E3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257228	119	C5	C3-3	T	0	0	18.515	115	6.44	40	2.875	LA	ADX	1		1		Does not meet AR	Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257229	120	C5	C3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257230	121	C5	C3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257231	122	C5	C3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257232	123	C5	E3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257233	124	C5	E3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257234	125	C5	F3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257235	126	C5	F3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257236	127	C5	G3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257237	128	C5	G3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257238	129	C5	H3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257239	130	C5	H3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257240	131	C5	G2-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257241	132	C5	G2-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257242	133	C5	F2-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257243	134	C5	F2-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257244	135	C5	E2-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257245	136	C5	E2-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257246	137	C6	G2-3	ND														Additional analysis 10/16/15	Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257247	138	C6	G2-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257248	139	C6	F2-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257249	140	C6	F2-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257250	141	C6	E2-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257251	142	C6	E2-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257252	143	C6	C2-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257253	144	C6	C3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257254	145	C6	C3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257255	146	C6	E3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257256	147	C6	E3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257257	148	C6	F3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257258	149	C6	F3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257259	150	C6	G3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257260	151	C6	G3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257261	152	C6	H3-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257262	153	C6	H3-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257263	154	C6	K3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257264	155	C6	H3-3	T	5	5	22.54	140	1.449	9	15.555556	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257265	156	C6	H3-3	T	6	6	52.164	324	0.644	4	81	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257266	157	C6	H3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257267	158	C6	G3-3	MD11	7														Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257268	159	C6	G3-3	MF		7	8.05	50	0.644	4	12.5	LA	ADX	1				NaK, WRTA	Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257269	160	C6	G3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257270	161	C6	F3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257271	162	C6	F3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257272	163	C6	E3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257273	164	C6	E3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257274	165	C6	C3-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257275	166	C6	C3-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257276	167	C6	C4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257277	168	C6	C4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257278	169	C6	E4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257279	170	C6	E4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257280	171	C6	F4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257281	172	C6	F4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257282	173	C6	G4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257283	174	C6	G4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257284	175	C6	H4-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257285	176	C6	H4-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257286	177	C6	K4-1	T	0	0	35.42	220	4.025	25	8.8	LA	ADX	1				XNCGBLD	Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257287	178	C6	K4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257288	179	C6	H4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257289	180	C6	G4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257290	181	C6	G4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257291	182	C6	F4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257292	183	C6	F4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257293	184	C6	E4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257294	185	C6	E4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257295	186	C6	C4-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257296	187	C6	C4-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257297	188	C6	C5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257298	189	C6	C5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257299	190	C6	E5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257300	191	C6	E5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257301	192	C6	F5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257302	193	C6	F5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257303	194	C6	G5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257304	195	C6	G5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257305	196	C6	H5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257306	197	C6	H5-2	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257307	198	C6	K5-1	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257308	199	C6	H5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257309	200	C6	H5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257310	201	C6	G5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257311	202	C6	G5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257312	203	C6	F5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257313	204	C6	F5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257314	205	C6	E5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257315	206	C6	E5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257316	207	C6	C5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257317	208	C6	C5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257318	209	C7	H5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257319	210	C7	H5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257320	211	C7	G5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257321	212	C7	G5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257322	213	C7	F5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257323	214	C7	F5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257324	215	C7	E5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257325	216	C7	E5-4	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00077	451500387-0005	257326	217	C7	C5-3	ND															Air	10/23/2015 10:44	CDM Smith	N. Ross			
TS-00079	451500387-0007	263418	1	C8	H3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263419	2	C8	H3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263420	3	C8	G3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263421	4	C8	G3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263422	5	C8	F3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263423	6	C8	F3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263424	7	C8	E3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263425	8	C8	E3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263426	9	C8	C3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263427	10	C8	C3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263428	11	C8	C3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263429	12	C8	C3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263430	13	C8	E3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263431	14	C8	E3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263432	15	C8	F3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263433	16	C8	F3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263434	17	C8	G3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263435	18	C8	G3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263436	19	C8	H3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263437	20	C8	H3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263438	21	C8	C4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263439	22	C8	E4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263440	23	C8	E4-2	T	1	1	5.152	32	1.288	8	4	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263441	24	C8	F4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263442	25	C8	F4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263443	26	C8	G4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263444	27	C8	G4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263445	28	C8	H4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263446	29	C8	H4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263447	30	C8	K4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263448	31	C8	K4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263449	32	C8	H4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263450	33	C8	H4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263451	34	C8	G4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263452	35	C8	G4-4	ND															Air

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	AnalysisDateTimeSamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00079	451500387-0007	263464	47	C8	G5-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263465	48	C8	G5-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263466	49	C8	H5-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263467	50	C8	H5-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263468	51	C8	K5-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263469	52	C8	H5-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263470	53	C8	H5-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263471	54	C8	G5-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263472	55	C8	G5-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263473	56	C8	F5-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263474	57	C8	F5-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263475	58	C8	E5-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263476	59	C8	E5-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263477	60	C8	C5-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263478	61	C8	C5-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263479	62	C8	C6-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263480	63	C8	C6-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263481	64	C8	E6-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263482	65	C8	E6-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263483	66	C8	F6-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263484	67	C8	F6-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263485	68	C8	G6-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263486	69	C8	G6-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263487	70	C8	H6-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263488	71	C8	H6-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263489	72	C8	G2-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263490	73	C8	F2-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263491	74	C8	F2-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263492	75	C8	E2-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263493	76	C8	E2-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263494	77	C8	C2-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263495	78	C9	G2-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263496	79	C9	G2-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263497	80	C9	F2-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263498	81	C9	F2-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263499	82	C9	E2-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263500	83	C9	E2-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263501	84	C9	C2-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263502	85	C9	C3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263503	86	C9	C3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263504	87	C9	E3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263505	88	C9	E3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263506	89	C9	F3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263507	90	C9	F3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263508	91	C9	G3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263509	92	C9	G3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263510	93	C9	H3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263511	94	C9	H3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263512	95	C9	H3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263513	96	C9	H3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263514	97	C9	G3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263515	98	C9	G3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263516	99	C9	F3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263517	100	C9	F3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263518	101	C9	E3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263519	102	C9	E3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263520	103	C9	C3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263521	104	C9	C3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263522	105	C9	B3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263523	106	C9	B3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263524	107	C9	C4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263525	108	C9	C4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263526	109	C9	E4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263527	110	C9	E4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263528	111	C9	F4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263529	112	C9	F4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263530	113	C9	G4-1	MD11	2														Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263531	114	C9	G4-1	MFO		2	10.143	63	1.127	7	9	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:48	CDM Smith	N. Ross	Structure type for total structure #2 is MFO, not MF, according to benchsheet (page 8).	12/29/2015	
TS-00079	451500387-0007	263532	115	C9	G4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263533	116	C9	H4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263534	117	C9	H4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263535	118	C9	K4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263536	119	C9	K4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263537	120	C9	H4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263538	121	C9	H4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263539	122	C9	G4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263540	123	C9	G4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263541	124	C9	F4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263542	125	C9	F4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263543	126	C9	E4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263544	127	C9	E4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263545	128	C9	C4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263546	129	C9	C4-4	T	3	3	43.953	273	0.805	5	54.6	LA	ADX	1	1	1		NaK, WRTA; Photo #597	Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263547	130	C9	C5-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263548	131	C9	C5-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263549	132	C9	E5-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263550	133	C9	E5-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263551	134	C9	F5-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263552	135	C9	F5-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263553	136	C9	G5-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263554	137	C9	G5-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263555	138	C9	H5-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263556	139	C9	H5-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263557	140	C9	G5-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263558	141	C9	G5-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263559	142	C9	F5-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263560	143	C9	F5-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263561	144	C9	E5-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263562	145	C9	E5-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263563	146	C9	C5-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263564	147	C9	C5-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263565	148	C9	C6-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263566	149	C9	C6-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263567	150	C9	E6-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263568	151	C9	E6-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263569	152	C9	F6-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263570	153	C9	F6-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263571	154	C9	G6-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263572	155	C9	G6-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263573	156	C9	H6-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263574	157	C10	G2-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263575	158	C10	G2-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263576	159	C10	F2-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263577	160	C10	F2-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263578	161	C10	E2-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263579	162	C10	E2-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263580	163	C10	C2-3	F	4	4	24.955	155	0.805	5	31	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263581	164	C10	C3-1	F	5	5	11.431	71	0.483	3	23.666667	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263582	165	C10	C3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263583	166	C10	E3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263584	167	C10	E3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263585	168	C10	F3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263586	169	C10	F3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263587	170	C10	G3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263588	171	C10	G3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263589	172	C10	H3-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263590	173	C10	H3-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263591	174	C10	H3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263592	175	C10	H3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263593	176	C10	G3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263594	177	C10	G3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263595	178	C10	F3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263596	179	C10	F3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263597	180	C10	E3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263598	181	C10	E3-4	F	6	6	5.313	33	0.805	5	6.6	LA	ADX	1				NaK, WRTA	Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263599	182	C10	C3-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263600	183	C10	C3-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263601	184	C10	C4-1	F	7	7	16.905	105	1.449	9	11.666667	LA	ADX	1				NaK, WRTA	Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263602	185	C10	C4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263603	186	C10	E4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263604	187	C10	E4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263605	188	C10	F4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263606	189	C10	F4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263607	190	C10	G4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263608	191	C10	G4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263609	192	C10	H4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263610	193	C10	H4-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263611	194	C10	K4-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263612	195	C10	K4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263613	196	C10	H4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263614	197	C10	H4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263615	198	C10	G4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263616	199	C10	G4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263617	200	C10	F4-3	MD11	8														Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263618	201	C10	F4-3	MF		8	7.728	48	0.322	2	24	LA	ADX	1				NaK, WRTA	Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263619	202	C10	F4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263620	203	C10	E4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263621	204	C10	E4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263622	205	C10	C4-3	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263623	206	C10	C4-4	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263624	207	C10	C5-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263625	208	C10	C5-2	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00079	451500387-0007	263626	209	C10	E5-1	ND															Air	10/23/2015 10:48	CDM Smith	N. Ross			
TS-00081	451500387-0009	263627	1	D7	C3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263628	2	D7	C3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263629	3	D7	E3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263630	4	D7	E3-2	T	1	1	5.796	36	0.483	3	12	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263631	5	D7	F3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263632	6	D7	G3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263633	7	D7	G3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263634	8	D7	H3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263635	9	D7	H3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263636	10	D7	H3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263637	11	D7	H3-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263638	12	D7	G3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263639	13	D7	G3-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263640	14	D7	F3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263641	15	D7	F3-4	ND															Air	10/23/2015

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00081	451500387-0009	263652	26	D7	F4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263653	27	D7	G4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263654	28	D7	G4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263655	29	D7	H4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263656	30	D7	H4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263657	31	D7	K4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263658	32	D7	H4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263659	33	D7	H4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263660	34	D7	G4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263661	35	D7	G4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263662	36	D7	F4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263663	37	D7	F4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263664	38	D7	E4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263665	39	D7	E4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263666	40	D7	C4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263667	41	D7	C4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263668	42	D7	C5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263669	43	D7	C5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263670	44	D7	E5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross	Grid_grid opening is D7_E5-1, not D7_D5-1, according to benchsheet (page 4).	12/29/2015	
TS-00081	451500387-0009	263671	45	D7	E5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross	Grid_grid opening is D7_E5-2, not D7_D5-2, according to benchsheet (page 4).	12/29/2015	
TS-00081	451500387-0009	263672	46	D7	F5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263673	47	D7	F5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263674	48	D7	G5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263675	49	D7	G5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263676	50	D7	H5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263677	51	D7	H5-2	F	3	3	12.075	75	2.415	15	5	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263678	52	D7	H5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263679	53	D7	H5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263680	54	D7	G5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263681	55	D7	G5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263682	56	D7	F5-3	F	4	4	11.753	73	0.805	5	14.6	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263683	57	D7	F5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263684	58	D7	E5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263685	59	D7	E5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263686	60	D7	C5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263687	61	D7	C6-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263688	62	D7	C6-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263689	63	D7	E6-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263690	64	D7	E6-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263691	65	D7	F6-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263692	66	D7	F6-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263693	67	D7	G6-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263694	68	D7	G6-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263695	69	D7	H6-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263696	70	D8	H2-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263697	71	D8	H2-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263698	72	D8	G2-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263699	73	D8	G2-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263700	74	D8	F2-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263701	75	D8	F2-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263702	76	D8	E2-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263703	77	D8	E2-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263704	78	D8	C2-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263705	79	D8	C3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263706	80	D8	C3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263707	81	D8	E3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263708	82	D8	E3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263709	83	D8	F3-1	F	5	5	13.685	85	0.966	6	14.166667	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263710	84	D8	F3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263711	85	D8	G3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263712	86	D8	G3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263713	87	D8	H3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263714	88	D8	H3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263715	89	D8	H3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263716	90	D8	H3-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263717	91	D8	G3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263718	92	D8	G3-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263719	93	D8	F3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263720	94	D8	F3-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263721	95	D8	E3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263722	96	D8	E3-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263723	97	D8	C3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263724	98	D8	C4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263725	99	D8	E4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263726	100	D8	E4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263727	101	D8	F4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263728	102	D8	F4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263729	103	D8	G4-1	F	6	6	14.49	90	4.025	25	3.6	LA	ADX	1		1		KK, TR	Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263730	104	D8	G4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263731	105	D8	H4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263732	106	D8	H4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263733	107	D8	H4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263734	108	D8	H4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263735	109	D8	G4-3	F	7	7	8.533	53	2.254	14	3.7857143	LA	ADX	1				NaK, WRTA	Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263736	110	D8	G4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263737	111	D8	F4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263738	112	D8	F4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263739	113	D8	E4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263740	114	D8	E4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263741	115	D8	C4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263742	116	D8	E5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263743	117	D8	E5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263744	118	D8	F5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263745	119	D8	F5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263746	120	D8	G5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263747	121	D8	G5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263748	122	D8	H5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263749	123	D8	H5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263750	124	D8	H5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263751	125	D8	G5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263752	126	D8	G5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263753	127	D8	F5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263754	128	D8	F5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263755	129	D8	E5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263756	130	D8	E5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263757	131	D8	C5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263758	132	D8	C5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263759	133	D9	G2-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263760	134	D9	G2-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263761	135	D9	F2-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263762	136	D9	F2-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263763	137	D9	E2-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263764	138	D9	E2-4	F	8	8	10.143	63	0.483	3	21	LA	ADX	1				NaK, WRTA	Air	10/23/2015 10:50	CDM Smith	N. Ross	The EDXA observation for total structure #8 is NaK, not NaX, according to benchsheet (page 10).	12/29/2015	
TS-00081	451500387-0009	263765	139	D9	C2-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263766	140	D9	E3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263767	141	D9	F3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263768	142	D9	F3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263769	143	D9	G3-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263770	144	D9	G3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263771	145	D9	H3-1	F	9	9	16.1	100	0.966	6	16.666667	LA	ADX	1				NaK, WRTA	Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263772	146	D9	H3-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263773	147	D9	H3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263774	148	D9	H3-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263775	149	D9	G3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263776	150	D9	F3-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263777	151	D9	E3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263778	152	D9	E3-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263779	153	D9	C3-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263780	154	D9	C3-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263781	155	D9	C4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263782	156	D9	C4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263783	157	D9	E4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263784	158	D9	E4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263785	159	D9	F4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263786	160	D9	F4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263787	161	D9	G4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263788	162	D9	G4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263789	163	D9	H4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263790	164	D9	H4-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263791	165	D9	H4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263792	166	D9	H4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263793	167	D9	G4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263794	168	D9	F4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263795	169	D9	F4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263796	170	D9	E4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263797	171	D9	E4-4	F	10	10	26.726	166	1.61	10	16.6	LA	ADX	1				NaK, WRTA	Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263798	172	D9	C4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263799	173	D9	C4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263800	174	D9	C5-1	F	11	11	16.583	103	0.805	5	20.6	LA	ADX	1				NaK, WRTA; XCB/NCGBLD	Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263801	175	D9	C5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263802	176	D9	E5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263803	177	D9	E5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263804	178	D9	F5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263805	179	D9	G5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263806	180	D9	G5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263807	181	D9	H5-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263808	182	D9	H5-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263809	183	D9	H5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263810	184	D9	H5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263811	185	D9	G5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263812	186	D9	G5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263813	187	D9	F5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263814	188	D9	F5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263815	189	D9	E5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263816	190	D9	E5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263817	191	D9	C5-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263818	192	D9	C5-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263819	193	D9	C6-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263820	194	D9	C6-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263821	195	D9	E6-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263822	196	D9	E6-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263823	197	D9	F6-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263824	198	D9	F6-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263825	199	D9	G6-2	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263826	200	D9	H6-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263827	201	D10	C4-1	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00081	451500387-0009	263837	211	D10	G4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263838	212	D10	G4-4	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00081	451500387-0009	263839	213	D10	F4-3	ND															Air	10/23/2015 10:50	CDM Smith	N. Ross			
TS-00084	451500387-0012	257327	1	D2	H5-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257328	2	D2	H5-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257329	3	D2	G5-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257330	4	D2	G5-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257331	5	D2	F5-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257332	6	D2	F5-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257333	7	D2	E5-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257334	8	D2	E5-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257335	9	D2	C5-1	MD11	1														Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257336	10	D2	C5-1	MF		1	50.715	315	1.61	10	31.5	LA	ADX	1	1	1		NaK, WRTA; Photo #598	Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257337	11	D2	C5-2	F	2	2	38.64	240	1.932	12	20	LA	ADX	1		1		NaK, WRTA; XGBLD	Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257338	12	D2	E5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257339	13	D2	E5-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257340	14	D2	F5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257341	15	D2	F5-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257342	16	D2	G5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257343	17	D2	G5-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257344	18	D2	H5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257345	19	D2	H5-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257346	20	D2	K5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257347	21	D2	K4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257348	22	D2	H4-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257349	23	D2	H4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257350	24	D2	G4-3	F	3	3	48.3	300	1.6225	22.5	13.333333	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257351	25	D2	G4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257352	26	D2	F4-3	F	4	4	8.533	53	0.483	3	17.666667	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257353	27	D2	F4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257354	28	D2	E4-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257355	29	D2	E4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257356	30	D2	C4-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257357	31	D2	C4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257358	32	D2	C4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257359	33	D2	C4-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257360	34	D2	E4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257361	35	D2	E4-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257362	36	D2	F4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257363	37	D2	F4-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257364	38	D2	G4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257365	39	D2	G4-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257366	40	D2	H4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257367	41	D2	H4-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257368	42	D2	K4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257369	43	D2	K3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257370	44	D2	H3-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257371	45	D2	H3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257372	46	D2	G3-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257373	47	D2	G3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257374	48	D2	F3-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257375	49	D2	F3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257376	50	D2	E3-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257377	51	D2	E3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257378	52	D2	C3-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257379	53	D2	C3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257380	54	D2	C3-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257381	55	D2	E3-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257382	56	D3	E3-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257383	57	D3	E3-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257384	58	D3	F3-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257385	59	D3	F3-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257386	60	D3	G3-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257387	61	D3	G3-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257388	62	D3	H3-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257389	63	D3	H3-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257390	64	D3	K3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257391	65	D3	H3-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257392	66	D3	H3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257393	67	D3	G3-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257394	68	D3	G3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257395	69	D3	F3-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257396	70	D3	F3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257397	71	D3	E3-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257398	72	D3	E3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257399	73	D3	C3-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257400	74	D3	C3-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257401	75	D3	C4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257402	76	D3	C4-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257403	77	D3	E4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257404	78	D3	F4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257405	79	D3	F4-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257406	80	D3	G4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257407	81	D3	G4-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257408	82	D3	H4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257409	83	D3	H4-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257410	84	D3	K4-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257411	85	D3	K4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257412	86	D3	H4-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257413	87	D3	H4-4	I	5	5	20.93	130	4.347	27	4.8148148	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257414	88	D3	H4-4	B	6	6	15.456	96	1.288	8	12	LA	ADX	1				NaK, WRTA	Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257415	89	D3	G4-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257416	90	D3	G4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257417	91	D3	F4-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257418	92	D3	F4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257419	93	D3	E4-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257420	94	D3	E4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257421	95	D3	C4-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257422	96	D3	C4-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257423	97	D3	C5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257424	98	D3	C5-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257425	99	D3	E5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257426	100	D3	E5-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257427	101	D3	F5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257428	102	D3	F5-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257429	103	D3	G5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257430	104	D3	G5-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257431	105	D3	H5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257432	106	D3	H5-2	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257433	107	D3	K5-1	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257434	108	D3	H5-3	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00084	451500387-0012	257435	109	D3	H5-4	ND															Air	10/23/2015 10:47	CDM Smith	N. Ross			
TS-00087	451500389-0003	264910	1	D6	G2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264911	2	D6	G2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264912	3	D6	F2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264913	4	D6	F2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264914	5	D6	E2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264915	6	D6	E2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264916	7	D6	C3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264917	8	D6	C3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264918	9	D6	E3-1	F	1	1	18.676	116	0.483	3	38.666667	LA	ADX	1	599	1		NaK, WRTA; XGBLD	Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264919	10	D6	E3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264920	11	D6	F3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264921	12	D6	F3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264922	13	D6	G3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264923	14	D6	G3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264924	15	D6	H3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264925	16	D6	H3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264926	17	D6	H3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264927	18	D6	H3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264928	19	D6	G3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264929	20	D6	G3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264930	21	D6	F3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264931	22	D6	F3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264932	23	D6	E3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264933	24	D6	E3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264934	25	D6	C3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264935	26	D6	C3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264936	27	D6	C4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264937	28	D6	C4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264938	29	D6	E4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264939	30	D6	E4-2	MD11	2														Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264940	31	D6	E4-2	MB		2	34.615	215	1.288	8	26.875	LA	ADX	1		1		NaK, WRTA	Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264941	32	D6	F4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264942	33	D6	F4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264943	34	D6	G4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264944	35	D6	G4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264945	36	D6	H4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264946	37	D6	H4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264947	38	D6	H4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264948	39	D6	H4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264949	40	D6	G4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264950	41	D6	G4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264951	42	D6	F4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264952	43	D6	F4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264953	44	D6	E4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264954	45	D6	E4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264955	46	D6	C4-3	I	0	0	86.94	540	4.025	25	21.6	LA	ADX	1				XNCOBLD	Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264956	47	D6	C4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264957	48	D6	C5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264958	49	D6	C5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264959	50	D6	E5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264960	51	D6	E5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264961	52	D6	F5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264962	53	D6	F5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264963	54	D7	G2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264964	55	D7	G2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264965	56	D7	F2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264966	57	D7	F2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264967	58	D7	E2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264968	59	D7	E2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264969	60	D7	E3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264970	61	D7	E3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264971	62	D7	F3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264972	63	D7	F3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264973	64	D7	G3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264974	65	D7	G3-2	ND													

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00087	451500389-0003	264988	79	D7	F4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264989	80	D7	F4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264990	81	D7	F4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264991	82	D7	G4-1	F	4	4	17.71	110	0.966	6	18.333333	LA	ADX	1		1		NaK, WRTA	Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264992	83	D7	G4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264993	84	D7	H4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264994	85	D7	H4-2	F	5	5	9.66	60	0.644	4	15	LA	ADX	1		1		NaK, WRTA	Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264995	86	D7	H4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264996	87	D7	H4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264997	88	D7	G4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264998	89	D7	G4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	264999	90	D7	F4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265000	91	D7	F4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265001	92	D7	E4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265002	93	D7	E4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265003	94	D7	C4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265004	95	D7	C4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265005	96	D7	C5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265006	97	D7	C5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265007	98	D7	E5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265008	99	D7	E5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265009	100	D7	F5-1	F	6	6	6.762	42	1.2075	7.5	5.6	LA	ADX	1				NaK, WRTA	Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265010	101	D7	F5-1	F	7	7	13.846	86	1.288	8	10.75	LA	ADX	1				NaK, WRTA; XGBLD	Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265011	102	D7	F5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265012	103	D7	G5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265013	104	D7	H5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265014	105	D7	H5-3	F	8	8	14.49	90	2.0125	12.5	7.2	LA	ADX	1				NaK, WRTA	Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265015	106	D7	H5-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00087	451500389-0003	265016	107	D7	G5-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00088	451500389-0004	264114	1	E10	C6-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264115	2	E10	E6-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264116	3	E10	E6-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264117	4	E10	F6-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264118	5	E10	F6-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264119	6	E10	G6-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264120	7	E10	G6-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264121	8	E10	H6-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264122	9	E10	H5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264123	10	E10	H5-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264124	11	E10	G5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264125	12	E10	G5-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264126	13	E10	F5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264127	14	E10	F5-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264128	15	E10	E5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264129	16	E10	E5-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264130	17	E10	C5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264131	18	E10	C5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264132	19	E10	C5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264133	20	E10	E5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264134	21	E10	E5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264135	22	E10	F5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264136	23	E10	F5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264137	24	E10	G5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264138	25	E10	G5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264139	26	E10	H5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264140	27	E10	H5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264141	28	E10	K5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264142	29	E10	K4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264143	30	E10	H4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264144	31	E10	H4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264145	32	E10	G4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264146	33	E10	G4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264147	34	E10	F4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264148	35	E10	F4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264149	36	E10	E4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264150	37	E10	E4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264151	38	E10	C4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264152	39	E10	C4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264153	40	E10	C4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264154	41	E10	C4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264155	42	E10	E4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264156	43	E10	E4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264157	44	E10	F4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264158	45	E10	F4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264159	46	E10	G4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264160	47	E10	G4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264161	48	E10	H4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264162	49	E10	H4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264163	50	E10	K4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264164	51	E10	K3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264165	52	E10	H3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264166	53	E10	H3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264167	54	E10	G3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264168	55	E10	G3-4	F	1	1	20.125	125	0.805	5	25	LA	ADX	1	591	1		NaK, WRTA	Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264169	56	E10	F3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264170	57	E10	F3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264171	58	E10	E3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264172	59	E10	E3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264173	60	E10	C3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264174	61	E10	C3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264175	62	E10	C3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264176	63	E10	E3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264177	64	E10	E3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264178	65	E10	F3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264179	66	E10	F3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264180	67	E10	G3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264181	68	E10	G3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264182	69	E10	H3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264183	70	E10	G2-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264184	71	E10	G2-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264185	72	E10	F2-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264186	73	E10	F2-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264187	74	E10	E2-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264188	75	E10	E2-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264189	76	A1	G2-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264190	77	A1	G2-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264191	78	A1	F2-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264192	79	A1	F2-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264193	80	A1	E2-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264194	81	A1	E2-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264195	82	A1	C2-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264196	83	A1	C3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264197	84	A1	C3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264198	85	A1	E3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264199	86	A1	E3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264200	87	A1	F3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264201	88	A1	F3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264202	89	A1	G3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264203	90	A1	G3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264204	91	A1	H3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264205	92	A1	H3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264206	93	A1	K3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264207	94	A1	H3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264208	95	A1	H3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264209	96	A1	G3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264210	97	A1	G3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264211	98	A1	F3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264212	99	A1	F3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264213	100	A1	E3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264214	101	A1	E3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264215	102	A1	C3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264216	103	A1	C3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264217	104	A1	C4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264218	105	A1	C4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264219	106	A1	E4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264220	107	A1	E4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264221	108	A1	F4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264222	109	A1	F4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264223	110	A1	G4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264224	111	A1	G4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264225	112	A1	H4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264226	113	A1	H4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264227	114	A1	K4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264228	115	A1	K4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264229	116	A1	H4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264230	117	A1	H4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264231	118	A1	G4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264232	119	A1	G4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264233	120	A1	F4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264234	121	A1	F4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264235	122	A1	E4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264236	123	A1	E4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264237	124	A1	C4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264238	125	A1	C4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264239	126	A1	C5-1	M/D11	2														Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264240	127	A1	C5-1	MFO		2	23.345	145	0.966	6	24.166667	LA	ADX	1	592	1		XX, TR	Air	10/23/2015 15:37	CDM Smith	N. Ross	Structure type for total structure #2 should be MFO, not MFO (the letter O not the number zero).	12/29/2015	
TS-00088	451500389-0004	264241	128	A1	C5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264242	129	A1	E5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264243	130	A1	E5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264244	131	A1	F5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264245	132	A1	F5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264246	133	A1	G5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264247	134	A1	G5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264248	135	A1	H5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264249	136	A1	H5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264250	137	A1	K5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264251	138	A1	H5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264252	139	A1	H5-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264253	140	A1	G5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264254	141	A1	G5-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264255	142	A1	F5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264256	143	A1	F5-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264257	144	A1	E5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264258	145	A1	E5-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264259	146	A1	C5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264260	147	A1	C5-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264261	148	A2	H5-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264262	149	A2	G5-3	ND															Air	10/23/2015 15:37	CDM

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00088	451500389-0004	264272	159	A2	E5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264273	160	A2	E5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264274	161	A2	F5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264275	162	A2	F5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264276	163	A2	G5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264277	164	A2	G5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264278	165	A2	H5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264279	166	A2	H5-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264280	167	A2	K5-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264281	168	A2	K4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264282	169	A2	H4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264283	170	A2	H4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264284	171	A2	G4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264285	172	A2	F4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264286	173	A2	F4-4	F	4	4	13.202	82	0.322	2	41	LA	ADX	1		1		NuK, WRTA	Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264287	174	A2	E4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264288	175	A2	E4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264289	176	A2	C4-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264290	177	A2	C4-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264291	178	A2	C4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264292	179	A2	C4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264293	180	A2	E4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264294	181	A2	E4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264295	182	A2	F4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264296	183	A2	F4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264297	184	A2	G4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264298	185	A2	G4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264299	186	A2	H4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264300	187	A2	H4-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264301	188	A2	K4-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264302	189	A2	K3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264303	190	A2	H3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264304	191	A2	H3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264305	192	A2	G3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264306	193	A2	G3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264307	194	A2	F3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264308	195	A2	F3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264309	196	A2	E3-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264310	197	A2	E3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264311	198	A2	C3-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264312	199	A2	C3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264313	200	A2	C3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264314	201	A2	E3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264315	202	A2	E3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264316	203	A2	F3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264317	204	A2	F3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264318	205	A2	G3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264319	206	A2	G3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264320	207	A2	H3-1	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264321	208	A2	H3-2	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264322	209	A2	G2-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264323	210	A2	G2-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264324	211	A2	F2-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264325	212	A2	F2-4	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00088	451500389-0004	264326	213	A2	E2-3	ND															Air	10/23/2015 15:37	CDM Smith	N. Ross			
TS-00091	451500389-0007	264327	1	D10	G2-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264328	2	D10	G2-4	F	1	1	42.343	263	2.093	13	20.230769	LA	ADX	1	600	1		NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264329	3	D10	F2-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264330	4	D10	F2-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264331	5	D10	E2-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264332	6	D10	E2-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264333	7	D10	C3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264334	8	D10	C3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264335	9	D10	E3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264336	10	D10	E3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264337	11	D10	F3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264338	12	D10	F3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264339	13	D10	G3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264340	14	D10	G3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264341	15	D10	H3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264342	16	D10	H3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264343	17	D10	H3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264344	18	D10	H3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264345	19	D10	G3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264346	20	D10	G3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264347	21	D10	F3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264348	22	D10	F3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264349	23	D10	E3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264350	24	D10	E3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264351	25	D10	C3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264352	26	D10	C3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264353	27	D10	C4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264354	28	D10	C4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264355	29	D10	E4-1	F	2	2	17.388	108	1.2075	7.5	14.4	LA	ADX	1		1		NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264356	30	D10	E4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264357	31	D10	F4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264358	32	D10	F4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264359	33	D10	G4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264360	34	D10	G4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264361	35	D10	H4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264362	36	D10	H4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264363	37	D10	H4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264364	38	D10	G4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264365	39	D10	G4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264366	40	D10	F4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264367	41	D10	F4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264368	42	D10	E4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264369	43	D10	E4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264370	44	D10	C4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264371	45	D10	C4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264372	46	D10	C5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264373	47	D10	C5-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264374	48	D10	E5-1	F	3	3	5.635	35	0.805	5	11.666667	LA	ADX	1		1		NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross	Width for total structure #3 is 5, not 3, according to benchsheet (page 4).	12/29/2015	
TS-00091	451500389-0007	264375	49	D10	E5-2	F	4	4	15.617	97	1.288	8	12.125	LA	ADX	1		1		NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264376	50	D10	F5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264377	51	D10	F5-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264378	52	D10	G5-1	F	5	5	38.64	240	6.44	40	6	LA	ADX	1		1		NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264379	53	D10	G5-2	MD22	6														Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264380	54	D10	G5-2	MF		6	202.86	1260	2.898	18	70	LA	ADX	1	602			NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264381	55	D10	G5-2	MF		7	10.143	63	0.805	5	12.6	LA	ADX	1				NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264382	56	E1	G2-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264383	57	E1	G2-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264384	58	E1	F2-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264385	59	E1	F2-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264386	60	E1	E2-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264387	61	E1	E2-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264388	62	E1	C3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264389	63	E1	C3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264390	64	E1	E3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264391	65	E1	E3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264392	66	E1	F3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264393	67	E1	F3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264394	68	E1	G3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264395	69	E1	G3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264396	70	E1	H3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264397	71	E1	H3-2	F	7	8	7.406	46	0.483	3	15.333333	LA	ADX	1				NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264398	72	E1	H3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264399	73	E1	H3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264400	74	E1	G3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264401	75	E1	G3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264402	76	E1	F3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264403	77	E1	F3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264404	78	E1	E3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264405	79	E1	E3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264406	80	E1	C3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264407	81	E1	C3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264408	82	E1	C4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264409	83	E1	C4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264410	84	E1	E4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264411	85	E1	E4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264412	86	E1	F4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264413	87	E1	F4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264414	88	E1	G4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264415	89	E1	G4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264416	90	E1	H4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264417	91	E1	H4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264418	92	E1	H4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264419	93	E1	H4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264420	94	E1	G4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264421	95	E1	G4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264422	96	E1	F4-3	CD22	8														Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264423	97	E1	F4-3	CF		9	17.71	110	3.381	21	5.2380952	LA	ADX	1				NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264424	98	E1	F4-3	CF		10	15.778	98	0.4025	2.5	39.2	LA	ADX	1				NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264425	99	E1	F4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264426	100	E1	E4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264427	101	E1	E4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264428	102	E1	C4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264429	103	E1	C4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264430	104	E1	C5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264431	105	E1	C5-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264432	106	E1	E5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264433	107	E1	E5-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264434	108	E1	F5-1	MD11	9														Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264435	109	E1	F5-1	MFO		11	10.948	68	0.4025	2.5	27.2	LA	ADX	1				NuK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross	Structure type for total structure #11 should be MFO, not MF0 (the letter O not the number zero).	12/29/2015	
TS-00091	451500389-0007	264436	110	E1	F5-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00091	451500389-0007	264437	111	E1	G5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264438	1	E4	G2-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264439	2	E4	G2-4	F	1	1	78.89	490	3.22	20	24.5	LA	ADX	1	601	1		NuK, WRTA; XGBLD	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264440	3	E4	F2-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264441	4	E4	F2-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264442	5	E4	E2-3	F	2	2	30.59	190	1.449	9	21.111111	LA	ADX	1		1		NuK, WRTA; XGBLD	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264443	6	E4	E2-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264444	7	E4	C3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264445	8	E4	C3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross	

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00093	451500389-0009	264458	21	E4	G3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264459	22	E4	F3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264460	23	E4	F3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264461	24	E4	E3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264462	25	E4	E3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264463	26	E4	C3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264464	27	E4	C3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264465	28	E4	C4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264466	29	E4	C4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264467	30	E4	E4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264468	31	E4	E4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264469	32	E4	F4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264470	33	E4	F4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264471	34	E4	G4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264472	35	E4	G4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264473	36	E4	H4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264474	37	E4	H4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264475	38	E4	K4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264476	39	E4	K4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264477	40	E4	H4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264478	41	E4	H4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264479	42	E4	G4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264480	43	E4	G4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264481	44	E4	F4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264482	45	E4	F4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264483	46	E4	E4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264484	47	E4	E4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264485	48	E4	C4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264486	49	E4	C4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264487	50	E4	C5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264488	51	E4	C5-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264489	52	E4	E5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264490	53	E4	E5-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264491	54	E5	H5-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264492	55	E5	H5-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264493	56	E5	G5-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264494	57	E5	G5-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264495	58	E5	F5-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264496	59	E5	F5-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264497	60	E5	E5-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264498	61	E5	E5-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264499	62	E5	C5-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264500	63	E5	C5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264501	64	E5	C5-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264502	65	E5	E5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264503	66	E5	E5-2	7	4	4	93.38	580	2.415	15	38.666667	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264504	67	E5	F5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264505	68	E5	F5-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264506	69	E5	G5-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264507	70	E5	H5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264508	71	E5	H5-2	MD11	5														Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264509	72	E5	H5-2	MF		5	16.1	100	0.322	2	50	LA	ADX	1		1		NaK, WRTA	Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264510	73	E5	K5-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264511	74	E5	K4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264512	75	E5	H4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264513	76	E5	H4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264514	77	E5	F4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264515	78	E5	F4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264516	79	E5	E4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264517	80	E5	E4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264518	81	E5	C4-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264519	82	E5	C4-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264520	83	E5	C4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264521	84	E5	C4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264522	85	E5	E4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264523	86	E5	E4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264524	87	E5	F4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264525	88	E5	F4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264526	89	E5	G4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264527	90	E5	G4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264528	91	E5	H4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264529	92	E5	H4-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264530	93	E5	K4-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264531	94	E5	K3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264532	95	E5	H3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264533	96	E5	H3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264534	97	E5	G3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264535	98	E5	G3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264536	99	E5	F3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264537	100	E5	E3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264538	101	E5	E3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264539	102	E5	C3-3	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264540	103	E5	C3-4	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264541	104	E5	C3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264542	105	E5	E3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264543	106	E5	F3-1	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00093	451500389-0009	264544	107	E5	F3-2	ND															Air	10/23/2015 15:38	CDM Smith	N. Ross			
TS-00095	451500389-0011	265017	1	E8	G2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265018	2	E8	G2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265019	3	E8	F2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265020	4	E8	F2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265021	5	E8	E2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265022	6	E8	E2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265023	7	E8	E3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265024	8	E8	E3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265025	9	E8	F3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265026	10	E8	F3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265027	11	E8	G3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265028	12	E8	G3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265029	13	E8	H3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265030	14	E8	H3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265031	15	E8	H3-3	MD11	0														Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265032	16	E8	H3-3	MF		0	32.2	200	0.5635	3.5	57.142857	LA	ADX	1				XNCGRLD	Air	1/21/16 8:11 AM	CDM Smith	N. Ross	Reason for noncountable structure in grid_grid opening E8_H3-3 was not provided in the comments.	12/29/2015	
TS-00095	451500389-0011	265033	17	E8	H3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265034	18	E8	G3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265035	19	E8	G3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265036	20	E8	F3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265037	21	E8	F3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265038	22	E8	E3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265039	23	E8	E3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265040	24	E8	C3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265041	25	E8	C3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265042	26	E8	C4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265043	27	E8	C4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265044	28	E8	E4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265045	29	E8	E4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265046	30	E8	F4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265047	31	E8	F4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265048	32	E8	G4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265049	33	E8	G4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265050	34	E8	H4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265051	35	E8	H4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265052	36	E8	H4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265053	37	E8	H4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265054	38	E8	G4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265055	39	E8	G4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265056	40	E8	F4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265057	41	E8	F4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265058	42	E8	E4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265059	43	E8	E4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265060	44	E8	C4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265061	45	E8	C5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265062	46	E8	C5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265063	47	E8	E5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265064	48	E8	E5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265065	49	E8	F5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265066	50	E8	F5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265067	51	E8	G5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265068	52	E8	G5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265069	53	E8	H5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265070	54	E8	H5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265071	55	E9	G2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265072	56	E9	G2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265073	57	E9	F2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265074	58	E9	F2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265075	59	E9	E2-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265076	60	E9	E2-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265077	61	E9	E3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265078	62	E9	E3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265079	63	E9	F3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265080	64	E9	F3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265081	65	E9	G3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265082	66	E9	G3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265083	67	E9	H3-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265084	68	E9	H3-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265085	69	E9	H3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265086	70	E9	H3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265087	71	E9	G3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265088	72	E9	G3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265089	73	E9	F3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265090	74	E9	F3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265091	75	E9	E3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265092	76	E9	E3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265093	77	E9	C3-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265094	78	E9	C3-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265095	79	E9	C4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265096	80	E9	C4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265097	81	E9	E4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265098	82	E9	E4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265099	83	E9	F4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265100	84	E9	F4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265101	85	E9	G4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265102	86	E9	G4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265103	87	E9	H4-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265104	88	E9	H4-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265105	89	E9	H4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265106	90	E9	H4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265107	91	E9	G4-3	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265108	92	E9	G4-4	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00095	451500389-0011	265117	101	E9	E5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265118	102	E9	E5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265119	103	E9	F5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265120	104	E9	F5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265121	105	E9	G5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265122	106	E9	G5-2	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00095	451500389-0011	265123	107	E9	H5-1	ND															Air	1/21/16 8:11 AM	CDM Smith	N. Ross			
TS-00097	221506264-0001	255764	1	C1	A9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255765	2	C1	A7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255766	3	C1	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255767	4	C1	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255768	5	C1	A1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255769	6	C1	B10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255770	7	C1	B8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255771	8	C1	B6	T	1	1	14.1		0.72		19.583333	LA	ADX	1	1	1		NoX, WRTA; 1573-Morph; 1574- Dif	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255772	9	C1	B4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255773	10	C1	B2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255774	11	C1	C9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255775	12	C1	C7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255776	13	C1	C5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255777	14	C1	C3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255778	15	C1	C1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255779	16	C1	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255780	17	C1	D8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255781	18	C1	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255782	19	C1	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255783	20	C1	D2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255784	21	C1	F10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255785	22	C1	F8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255786	23	C1	F6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255787	24	C1	F4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255788	25	C1	F2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255789	26	C1	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255790	27	C1	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255791	28	C1	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255792	29	C1	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255793	30	C1	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255794	31	C1	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255795	32	C1	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255796	33	C1	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255797	34	C1	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255798	35	C1	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255799	36	C1	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255800	37	C1	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255801	38	C1	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255802	39	C1	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255803	40	C1	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255804	41	C1	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255805	42	C1	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255806	43	C2	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255807	44	C2	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255808	45	C2	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255809	46	C2	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255810	47	C2	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255811	48	C2	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255812	49	C2	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255813	50	C2	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255814	51	C2	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255815	52	C2	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255816	53	C2	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255817	54	C2	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255818	55	C2	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255819	56	C2	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255820	57	C2	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255821	58	C2	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255822	59	C2	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255823	60	C2	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255824	61	C2	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255825	62	C2	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255826	63	C2	F10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255827	64	C2	F8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255828	65	C2	F4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255829	66	C2	F2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255830	67	C2	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255831	68	C2	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255832	69	C2	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255833	70	C2	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255834	71	C2	A2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255835	72	C2	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255836	73	C2	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255837	74	C2	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255838	75	C2	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255839	76	C2	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255840	77	C2	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255841	78	C2	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255842	79	C2	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255843	80	C2	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255844	81	C2	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00097	221506264-0001	255845	82	C2	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255846	1	C3	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255847	2	C3	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255848	3	C3	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255849	4	C3	J3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255850	5	C3	J1	F	1	1	8.5		1.5		5.6666667	LA	ADX	1	1	1		XX, WRTA; 1577-Morph;1578-Diff;	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255851	6	C3	I10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255852	7	C3	I8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255853	8	C3	I6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255854	9	C3	I4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255855	10	C3	I2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255856	11	C3	H9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255857	12	C3	H7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255858	13	C3	H5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255859	14	C3	H3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255860	15	C3	H1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255861	16	C3	G10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255862	17	C3	G8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255863	18	C3	G6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255864	19	C3	G4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255865	20	C3	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255866	21	C3	F9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255867	22	C3	F7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255868	23	C3	F3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255869	24	C3	F1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255870	25	C3	A9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255871	26	C3	A7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255872	27	C3	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255873	28	C3	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255874	29	C3	A1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255875	30	C3	B10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255876	31	C3	B8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255877	32	C3	B6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255878	33	C3	B4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255879	34	C3	B2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255880	35	C3	C9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255881	36	C3	C7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255882	37	C3	C5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255883	38	C3	C3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255884	39	C3	C1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255885	40	C3	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255886	41	C3	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255887	42	C4	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255888	43	C4	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255889	44	C4	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255890	45	C4	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255891	46	C4	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255892	47	C4	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255893	48	C4	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255894	49	C4	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255895	50	C4	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255896	51	C4	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255897	52	C4	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255898	53	C4	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255899	54	C4	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255900	55	C4	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255901	56	C4	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255902	57	C4	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255903	58	C4	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255904	59	C4	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255905	60	C4	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255906	61	C4	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255907	62	C4	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255908	63	C4	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255909	64	C4	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255910	65	C4	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255911	66	C4	A2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255912	67	C4	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255913	68	C4	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255914	69	C4	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255915	70	C4	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255916	71	C4	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255917	72	C4	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255918	73	C4	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255919	74	C4	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255920	75	C4	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255921	76	C4	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255922	77	C4	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255923	78	C4	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255924	79	C4	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255925	80	C4	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255926	81	C4	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00099	221506264-0003	255927	82	C4	E10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00101	221506264-0005	255938	1	C5	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00101	221506264-0005	255939	2	C5	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00101	221506264-0005	255940	3	C5	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00101	221506264-0005	255941	4	C5	J3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00101

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%	
TS-00101	221506264-0005	255957	20	C5	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255958	21	C5	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255959	22	C5	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255960	23	C5	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255961	24	C5	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255962	25	C5	A2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255963	26	C5	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255964	27	C5	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255965	28	C5	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255966	29	C5	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255967	30	C5	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255968	31	C5	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255969	32	C5	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255970	33	C5	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255971	34	C5	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255972	35	C5	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255973	36	C5	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255974	37	C5	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255975	38	C5	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255976	39	C5	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255977	40	C5	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255978	41	C5	E4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255979	42	C6	A2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255980	43	C6	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255981	44	C6	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255982	45	C6	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255983	46	C6	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255984	47	C6	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255985	48	C6	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255986	49	C6	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255987	50	C6	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255988	51	C6	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255989	52	C6	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255990	53	C6	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255991	54	C6	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255992	55	C6	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255993	56	C6	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255994	57	C6	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255995	58	C6	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255996	59	C6	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255997	60	C6	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255998	61	C6	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	255999	62	C6	J1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256000	63	C6	J3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256001	64	C6	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256002	65	C6	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256003	66	C6	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256004	67	C6	I2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256005	68	C6	I4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256006	69	C6	I6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256007	70	C6	I8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256008	71	C6	I10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256009	72	C6	H1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256010	73	C6	H3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256011	74	C6	H5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256012	75	C6	H7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256013	76	C6	H9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256014	77	C6	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256015	78	C6	G4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256016	79	C6	G6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256017	80	C6	G8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256018	81	C6	G10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00101	221506264-0005	256019	82	C6	F9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263840	1	C7	A2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263841	2	C7	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263842	3	C7	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263843	4	C7	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263844	5	C7	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263845	6	C7	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263846	7	C7	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263847	8	C7	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263848	9	C7	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263849	10	C7	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263850	11	C7	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263851	12	C7	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263852	13	C7	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263853	14	C7	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263854	15	C7	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263855	16	C7	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263856	17	C7	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263857	18	C7	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263858	19	C7	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263859	20	C7	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263860	21	C7	J1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263861	22	C7	J3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263862	23	C7	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263863	24	C7	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263864	25	C7	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263865	26	C7	I2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263866	27	C7	I4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263867	28	C7	I6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263868	29	C7	I8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263869	30	C7	I10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263870	31	C7	H1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263871	32	C7	H3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263872	33	C7	H5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263873	34	C7	H7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263874	35	C7	H9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263875	36	C7	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263876	37	C7	G4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263877	38	C7	G6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263878	39	C7	G8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263879	40	C7	G10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263880	41	C7	F9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263881	42	C8	A1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263882	43	C8	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263883	44	C8	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263884	45	C8	A7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263885	46	C8	A9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263886	47	C8	B2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263887	48	C8	B4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263888	49	C8	B6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263889	50	C8	B8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263890	51	C8	B10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263891	52	C8	C1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263892	53	C8	C3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263893	54	C8	C5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263894	55	C8	C7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263895	56	C8	C9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263896	57	C8	D2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263897	58	C8	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263898	59	C8	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263899	60	C8	D8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263900	61	C8	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263901	62	C8	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263902	63	C8	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263903	64	C8	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263904	65	C8	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263905	66	C8	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263906	67	C8	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263907	68	C8	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263908	69	C8	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263909	70	C8	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263910	71	C8	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263911	72	C8	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263912	73	C8	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263913	74	C8	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263914	75	C8	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263915	76	C8	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263916	77	C8	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263917	78	C8	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263918	79	C8	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263919	80	C8	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00103	221506264-0007	263920	81	C8	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256101	1	C9	A2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256102	2	C9	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256103	3	C9	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256104	4	C9	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256105	5	C9	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256106	6	C9	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256107	7	C9	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256108	8	C9	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256109	9	C9	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256110	10	C9	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256111	11	C9	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256112	12	C9	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256113	13	C9	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256114	14	C9	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256115	15	C9	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256116	16	C9	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256117	17	C9	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256118	18	C9	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256119	19	C9	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256120	20	C9	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256121	21	C9	E2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256122	22	C9	E4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256123	23	C9	E6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256124	24	C9	E10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256125	25	C9	F1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256126	26	C9	F3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256127	27	C9	F7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256128	28	C9	F9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256129	29	C9	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256130	30	C9	G4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)				
TS-00105	221506264-0009	256131	31

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00105	221506264-0009	256147	47	C10	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256148	48	C10	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256149	49	C10	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256150	50	C10	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256151	51	C10	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256152	52	C10	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256153	53	C10	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256154	54	C10	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256155	55	C10	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256156	56	C10	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256157	57	C10	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256158	58	C10	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256159	59	C10	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256160	60	C10	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256161	61	C10	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256162	62	C10	E1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256163	63	C10	E3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256164	64	C10	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256165	65	C10	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256166	66	C10	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256167	67	C10	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256168	68	C10	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256169	69	C10	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256170	70	C10	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256171	71	C10	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256172	72	C10	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256173	73	C10	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256174	74	C10	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256175	75	C10	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256176	76	C10	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256177	77	C10	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256178	78	C10	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256179	79	C10	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256180	80	C10	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00105	221506264-0009	256181	81	C10	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256182	1	D1	A2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256183	2	D1	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256184	3	D1	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256185	4	D1	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256186	5	D1	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256187	6	D1	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256188	7	D1	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256189	8	D1	B5	7	1	1	6.4		2		3.2	LA	ADX	1	1	1		XX, WRTA; 1579-morph; 1580- diff;	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256190	9	D1	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256191	10	D1	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256192	11	D1	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256193	12	D1	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256194	13	D1	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256195	14	D1	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256196	15	D1	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256197	16	D1	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256198	17	D1	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256199	18	D1	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256200	19	D1	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256201	20	D1	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256202	21	D1	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256203	22	D1	G4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256204	23	D1	G6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256205	24	D1	G8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256206	25	D1	G10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256207	26	D1	H1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256208	27	D1	H3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256209	28	D1	H5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256210	29	D1	H7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256211	30	D1	H9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256212	31	D1	I2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256213	32	D1	I4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256214	33	D1	I6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256215	34	D1	I8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256216	35	D1	I10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256217	36	D1	J1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256218	37	D1	J3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256219	38	D1	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256220	39	D1	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256221	40	D1	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256222	41	D1	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256223	42	D2	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256224	43	D2	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256225	44	D2	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256226	45	D2	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256227	46	D2	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256228	47	D2	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256229	48	D2	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256230	49	D2	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256231	50	D2	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256232	51	D2	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256233	52	D2	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256234	53	D2	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256235	54	D2	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256236	55	D2	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256237	56	D2	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256238	57	D2	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256239	58	D2	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256240	59	D2	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256241	60	D2	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256242	61	D2	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256243	62	D2	F10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256244	63	D2	F8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256245	64	D2	F4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256246	65	D2	F2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256247	66	D2	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256248	67	D2	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256249	68	D2	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256250	69	D2	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256251	70	D2	A2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256252	71	D2	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256253	72	D2	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256254	73	D2	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256255	74	D2	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256256	75	D2	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256257	76	D2	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256258	77	D2	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256259	78	D2	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256260	79	D2	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256261	80	D2	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256262	81	D2	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00107	221506264-0011	256263	82	D2	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256274	1	D5	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256275	2	D5	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256276	3	D5	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256277	4	D5	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256278	5	D5	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256279	6	D5	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256280	7	D5	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256281	8	D5	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256282	9	D5	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256283	10	D5	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256284	11	D5	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256285	12	D5	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256286	13	D5	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256287	14	D5	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256288	15	D5	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256289	16	D5	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256290	17	D5	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256291	18	D5	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256292	19	D5	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256293	20	D5	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256294	21	D5	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256295	22	D5	D8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256296	23	D5	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256297	24	D5	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256298	25	D5	D2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256299	26	D5	C9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256300	27	D5	C7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256301	28	D5	C5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256302	29	D5	C3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256303	30	D5	C1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256304	31	D5	B10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256305	32	D5	B8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256306	33	D5	B6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256307	34	D5	B4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256308	35	D5	B2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256309	36	D5	A9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256310	37	D5	A7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256311	38	D5	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256312	39	D5	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256313	40	D5	A1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256314	41	D5	E1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256315	42	D6	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256316	43	D6	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256317	44	D6	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256318	45	D6	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256319	46	D6	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256320	47	D6	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256321	48	D6	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256322	49	D6	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256323	50	D6	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256324	51	D6	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256325	52	D6	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256326	53	D6	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256327	54	D6	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256328	55	D6	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256329	56	D6	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256330	57	D6	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256331	58	D6	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256332	59	D6	G5	ND															Air	10/

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00109	221506265-0001	256347	74	D6	B6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256348	75	D6	B4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256349	76	D6	B2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256350	77	D6	A9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256351	78	D6	A7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256352	79	D6	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256353	80	D6	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256354	81	D6	A1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256355	82	D6	E9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00109	221506265-0001	256356	83	D6	E9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256357	1	D7	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256358	2	D7	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256359	3	D7	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256360	4	D7	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256361	5	D7	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256362	6	D7	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256363	7	D7	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256364	8	D7	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256365	9	D7	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256366	10	D7	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256367	11	D7	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256368	12	D7	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256369	13	D7	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256370	14	D7	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256371	15	D7	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256372	16	D7	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256373	17	D7	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256374	18	D7	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256375	19	D7	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256376	20	D7	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256377	21	D7	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256378	22	D7	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256379	23	D7	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256380	24	D7	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256381	25	D7	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256382	26	D7	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256383	27	D7	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256384	28	D7	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256385	29	D7	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256386	30	D7	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256387	31	D7	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256388	32	D7	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256389	33	D7	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256390	34	D7	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256391	35	D7	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256392	36	D7	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256393	37	D7	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256394	38	D7	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256395	39	D7	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256396	40	D7	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256397	41	D7	E10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256398	42	D7	E8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256399	43	D8	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256400	44	D8	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256401	45	D8	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256402	46	D8	J3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256403	47	D8	J1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256404	48	D8	I8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256405	49	D8	I6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256406	50	D8	I4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256407	51	D8	I2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256408	52	D8	H9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256409	53	D8	H7	F	1	1	50.2		2.5		20.08	LA	ADX	1	1	1		NaK, WRTA; 1579-Morph; 1580-Diff	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256410	54	D8	H5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256411	55	D8	H3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256412	56	D8	H1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256413	57	D8	G8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256414	58	D8	G6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256415	59	D8	G4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256416	60	D8	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256417	61	D8	F9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256418	62	D8	F7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256419	63	D8	F5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256420	64	D8	F3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256421	65	D8	F1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256422	66	D8	E8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256423	67	D8	E6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256424	68	D8	E4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256425	69	D8	E2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256426	70	D8	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256427	71	D8	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256428	72	D8	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256429	73	D8	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256430	74	D8	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256431	75	D8	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256432	76	D8	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256433	77	D8	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256434	78	D8	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256435	79	D8	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256436	80	D8	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256437	81	D8	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256438	82	D8	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256439	83	D8	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00111	221506265-0003	256440	84	D8	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256440	1	D9	A1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256441	2	D9	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256442	3	D9	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256443	4	D9	A7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256444	5	D9	A9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256445	6	D9	B2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256446	7	D9	B4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256447	8	D9	B6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256448	9	D9	B8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256449	10	D9	B10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256450	11	D9	C1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256451	12	D9	C3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256452	13	D9	C5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256453	14	D9	C7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256454	15	D9	C9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256455	16	D9	D2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256456	17	D9	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256457	18	D9	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256458	19	D9	D8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256459	20	D9	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256460	21	D9	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256461	22	D9	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256462	23	D9	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256463	24	D9	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256464	25	D9	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256465	26	D9	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256466	27	D9	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256467	28	D9	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256468	29	D9	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256469	30	D9	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256470	31	D9	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256471	32	D9	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256472	33	D9	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256473	34	D9	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256474	35	D9	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256475	36	D9	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256476	37	D9	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256477	38	D9	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256478	39	D9	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256479	40	D9	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256480	41	D9	F3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256481	42	D10	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256482	43	D10	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256483	44	D10	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256484	45	D10	J3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256485	46	D10	J1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256486	47	D10	I10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256487	48	D10	I8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256488	49	D10	I6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256489	50	D10	I4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256490	51	D10	I2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256491	52	D10	H9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256492	53	D10	H7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256493	54	D10	H5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256494	55	D10	H3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256495	56	D10	H1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256496	57	D10	G10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256497	58	D10	G8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256498	59	D10	G6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256499	60	D10	G4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256500	61	D10	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256501	62	D10	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256502	63	D10	D8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256503	64	D10	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256504	65	D10	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256505	66	D10	D2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256506	67	D10	C9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256507	68	D10	C7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256508	69	D10	C5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256509	70	D10	C3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256510	71	D10	C1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256511	72	D10	B10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256512	73	D10	B8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256513	74	D10	B6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256514	75	D10	B4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256515	76	D10	B2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256516	77	D10	A9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256517	78	D10	A7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256518	79	D10	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256519	80	D10	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256520	81	D10	A1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00113	221506265-0005	256521	82	D10	E7	ND															Air

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00115	221506265-0007	256537	15	E1	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256538	16	E1	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256539	17	E1	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256540	18	E1	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256541	19	E1	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256542	20	E1	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256543	21	E1	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256544	22	E1	G4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256545	23	E1	G6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256546	24	E1	G8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256547	25	E1	G10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256548	26	E1	H1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256549	27	E1	H3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256550	28	E1	H5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256551	29	E1	H7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256552	30	E1	H9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256553	31	E1	I2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256554	32	E1	I4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256555	33	E1	I6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256556	34	E1	I8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256557	35	E1	I10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256558	36	E1	J1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256559	37	E1	J3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256560	38	E1	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256561	39	E1	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256562	40	E1	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256563	41	E2	A2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256564	42	E2	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256565	43	E2	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256566	44	E2	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256567	45	E2	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256568	46	E2	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256569	47	E2	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256570	48	E2	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256571	49	E2	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256572	50	E2	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256573	51	E2	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256574	52	E2	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256575	53	E2	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256576	54	E2	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256577	55	E2	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256578	56	E2	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256579	57	E2	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256580	58	E2	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256581	59	E2	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256582	60	E2	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256583	61	E2	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256584	62	E2	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256585	63	E2	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256586	64	E2	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256587	65	E2	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256588	66	E2	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256589	67	E2	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256590	68	E2	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256591	69	E2	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256592	70	E2	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256593	71	E2	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256594	72	E2	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256595	73	E2	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256596	74	E2	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256597	75	E2	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256598	76	E2	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256599	77	E2	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256600	78	E2	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256601	79	E2	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256602	80	E2	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256603	81	E9	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256604	82	E9	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256605	83	E9	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256606	84	E9	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256607	85	E9	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256608	86	E9	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256609	87	E9	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256610	88	E9	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256611	89	E9	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256612	90	E9	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256613	91	E9	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256614	92	E9	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256615	93	E9	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256616	94	E9	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256617	95	E9	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256618	96	E9	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256619	97	E9	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256620	98	E9	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256621	99	E9	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256622	100	E9	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256623	101	E9	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256624	102	E9	D8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256625	103	E9	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256626	104	E9	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256627	105	E9	D2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256628	106	E9	C9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256629	107	E9	C7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256630	108	E9	C5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256631	109	E9	C3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256632	110	E9	C1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256633	111	E9	B10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256634	112	E9	B8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256635	113	E9	B6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256636	114	E9	B4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256637	115	E9	B2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256638	116	E9	A9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256639	117	E9	A7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256640	118	E9	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256641	119	E9	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256642	120	E9	A1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256643	121	E9	E9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00115	221506265-0007	256644	122	E9	E7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256645	1	E3	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256646	2	E3	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256647	3	E3	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256648	4	E3	J3	F	1	1	11		0.82		±3.414634	LA	ADX	1	1	1		NwK, WRTA; 1585-Morph; 1586-Diff	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256649	5	E3	J1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256650	6	E3	I10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256651	7	E3	I8	B	0	0	250.4		1.9		±31.78947	NAM	NAM	1	1	1		XNCGB; Observed length recorded	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256652	8	E3	I6	F	2	2	47.4		1.5		31.6	LA	ADX	1	1	1		NwX, WRTA; 1589-Morph; 1590-Diff	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256653	9	E3	I4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256654	10	E3	I2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256655	11	E3	I2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256656	12	E3	H9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256657	13	E3	H7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256658	14	E3	H5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256659	15	E3	H3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256660	16	E3	H1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256661	17	E3	G10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256662	18	E3	G8	ND														NAM in E3:I8 extends to this GID; c	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256663	19	E3	G6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256664	20	E3	G4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256665	21	E3	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256666	22	E3	F9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256667	23	E3	F7	F	3	3	67.2		0.56		120	LA	ADX	1	1	1		NwK, WRTA; 1591-Morph; 1592- Dif	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256668	24	E3	F3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256669	25	E3	F1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256670	26	E3	E10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256671	27	E3	E8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256672	28	E3	E4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256673	29	E3	E2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256674	30	E3	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256675	31	E3	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256676	32	E3	D5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256677	33	E3	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256678	34	E3	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256679	35	E3	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256680	36	E3	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256681	37	E3	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256682	38	E3	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256683	39	E3	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256684	40	E3	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256685	41	E3	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256686	42	E4	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256687	43	E4	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256688	44	E4	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256689	45	E4	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256690	46	E4	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256691	47	E4	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256692	48	E4	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256693	49	E4	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256694	50	E4	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256695	51	E4	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256696	52	E4	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256697	53	E4	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256698	54	E4	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256699	55	E4	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256700	56	E4	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256701	57	E4	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256702	58	E4	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256703	59	E4	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256704	60	E4	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256705	61	E4	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256706	62	E4	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256707	63	E4	D8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256708	64	E4	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256709	65	E4	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256710	66	E4	D2	ND														

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00117	221506265-0009	256727	83	E10	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256728	84	E10	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256729	85	E10	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256730	86	E10	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256731	87	E10	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256732	88	E10	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256733	89	E10	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256734	90	E10	J3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256735	91	E10	J1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256736	92	E10	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256737	93	E10	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256738	94	E10	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256739	95	E10	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256740	96	E10	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256741	97	E10	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256742	98	E10	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256743	99	E10	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256744	100	E10	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256745	101	E10	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256746	102	E10	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256747	103	E10	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256748	104	E10	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256749	105	E10	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256750	106	E10	A2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256751	107	E10	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256752	108	E10	B7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256753	109	E10	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256754	110	E10	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256755	111	E10	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256756	112	E10	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256757	113	E10	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256758	114	E10	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256759	115	E10	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256760	116	E10	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256761	117	E10	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256762	118	E10	D8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256763	119	E10	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256764	120	E10	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256765	121	E10	D2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00117	221506265-0009	256766	122	E10	E3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256767	1	E5	A1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256768	2	E5	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256769	3	E5	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256770	4	E5	A7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256771	5	E5	A9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256772	6	E5	B2	F	1	1	10.6		1.1		9.6363636	LA	ADX	1	1	1		NaX, WRTA; 1595-Morph; 1596-Diff	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256773	7	E5	B4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256774	8	E5	B6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256775	9	E5	B8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256776	10	E5	B10	F	2	2	44.8		1.32		33.939394	LA	ADX	1	1	1		NaX, WRTA; 1597-Morph; 1598-Diff	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256777	11	E5	C1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256778	12	E5	C3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256779	13	E5	C5	F	3	3	13.2		1.1		12	LA	ADX	1	1	1		NaX, WRTA; 1599 Diff	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256780	14	E5	C7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256781	15	E5	C9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256782	16	E5	D2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256783	17	E5	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256784	18	E5	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256785	19	E5	D8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256786	20	E5	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256787	21	E5	F1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256788	22	E5	F3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256789	23	E5	F5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256790	24	E5	F7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256791	25	E5	F9	F	4	4	26.32		1.03		25.553398	LA	ADX	1	1	1		NaX, WRTA; 1560 Diff	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256792	26	E5	G2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256793	27	E5	G4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256794	28	E5	G6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256795	29	E5	G8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256796	30	E5	G10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256797	31	E5	H1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256798	32	E5	H3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256799	33	E5	H5	F	5	5	13		1.3		10	LA	ADX	1	1	1		NaX, WRTA; 1561-Diff	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256800	34	E5	H7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256801	35	E5	H9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256802	36	E5	I2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256803	37	E5	I4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256804	38	E5	I6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256805	39	E5	I8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256806	40	E5	I10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256807	41	E5	J1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256808	42	E5	J3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256809	43	E5	J5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256810	44	E5	J7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256811	45	E5	J9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256812	46	E6	A2	F	6	6	5.5		0.53		10.377358	LA	ADX	1				KX, WRTA; Large Cu peak; near grid	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256813	47	E6	A4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256814	48	E6	A6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256815	49	E6	A8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256816	50	E6	A10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256817	51	E6	B1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256818	52	E6	B3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256819	53	E6	B5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256820	54	E6	B7	F	7	7	22.6		1.98		11.414141	LA	ADX	1				NaX, WRTA	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256821	55	E6	B9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256822	56	E6	C2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256823	57	E6	C4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256824	58	E6	C6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256825	59	E6	C8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256826	60	E6	C10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256827	61	E6	D1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256828	62	E6	D3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256829	63	E6	D5	F	8	8	6.7		1.5		4.4666667	LA	ADX	1				NaX, WRTA	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256830	64	E6	D7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256831	65	E6	D9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256832	66	E6	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256833	67	E6	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256834	68	E6	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256835	69	E6	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256836	70	E6	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256837	71	E6	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256838	72	E6	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256839	73	E6	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256840	74	E6	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256841	75	E6	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256842	76	E6	I1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256843	77	E6	I3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256844	78	E6	I5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256845	79	E6	I7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256846	80	E6	I9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256847	81	E6	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256848	82	E6	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256849	83	E6	J6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256850	84	E6	J8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256851	85	E6	J10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256852	86	F1	A1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256853	87	F1	A3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256854	88	F1	A5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256855	89	F1	A7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256856	90	F1	A9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256857	91	F1	B2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256858	92	F1	B4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256859	93	F1	B6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256860	94	F1	B8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256861	95	F1	B10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256862	96	F1	C1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256863	97	F1	C3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256864	98	F1	C5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256865	99	F1	C7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256866	100	F1	C9	F	9	9	5.9		0.86		6.8604651	LA	ADX	1				KX, WRTA	Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256867	101	F1	D2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256868	102	F1	D4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256869	103	F1	D6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256870	104	F1	D8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256871	105	F1	D10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256872	106	F1	E1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256873	107	F1	E3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256874	108	F1	F2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256875	109	F1	F4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256876	110	F1	G1	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256877	111	F1	G3	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256878	112	F1	G5	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256879	113	F1	G7	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256880	114	F1	G9	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256881	115	F1	H2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256882	116	F1	H4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256883	117	F1	H6	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256884	118	F1	H8	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256885	119	F1	H10	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256886	120	F1	J2	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00119	221506265-0011	256887	121	F1	J4	ND															Air	10/23/2015 7:33	CDM Smith	N. Ross (DDE)			
TS-00121	A150502-01	255270	1	A12	F2-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255271	2	A12	E2-4	B	1	1	11		0.7		15.714286	LA	ADX	1		1		NaX, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255272	3	A12	E2-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255273	4	A12	C2-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255274	5	A12	H3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255275	6	A12	H3-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255276	7	A12	G3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255277	8	A12	G3-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255278	9	A12	F3-4	B	2	2	18		0.7		25.714286	LA	ADX	1		1		NaX, WRTA; XGRLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255279	10	A12	F3-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00121	A150502-01	255299	30	A12	K4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255300	31	A12	K4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255301	32	A12	H4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255302	33	A12	H4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255303	34	A12	G4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255304	35	A12	G4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255305	36	A12	F4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255306	37	A12	F4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255307	38	A12	E4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255308	39	A12	E4-1	B	5	6	30		3		10	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255309	40	A12	C4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255310	41	A12	C4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255311	42	A12	B4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255312	43	A12	B4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255313	44	A12	K4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255314	45	A12	K4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255315	46	A12	H4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255316	47	A12	H4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255317	48	A12	G4-6	B	6	7	6		0.3		20	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255318	49	A12	G4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255319	50	A12	F4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255320	51	A12	F4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255321	52	A12	E4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255322	53	A12	E4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255323	54	A12	C4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255324	55	A12	C4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255325	56	A12	B4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255326	57	A12	B4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255327	58	A12	K5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255328	59	A12	H5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255329	60	A12	H5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255330	61	A12	G5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255331	62	A12	G5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255332	63	A12	F5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255333	64	A12	F5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255334	65	A12	E5-4	B	0	0	22		1		22	LA	ADX	1				, XNCGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255335	66	A12	E5-4	B	0	0	11		0.6		18.333333	LA	ADX	1				, XNCGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255336	67	A12	E5-1	B	7	8	48		1		48	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255337	68	A12	C5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255338	69	A12	C5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255339	70	A12	B5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255340	71	A12	B5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255341	72	A12	H5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255342	73	A12	G5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255343	74	A12	G5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255344	75	A12	F5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255345	76	A12	F5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255346	77	A12	E5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255347	78	A12	E5-3	B	8	9	25		2		12.5	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255348	79	A12	C5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255349	80	A12	C5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255350	81	A12	G6-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255351	82	A12	G6-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255352	83	A12	F6-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255353	84	A12	F6-1	B	0	0	16		1.1		14.545455	LA	ADX	1				, XNCGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255354	85	A12	E6-4	B	9	10	82		0.8		102.5	LA	ADX	1				NaK, WRTA; XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255355	86	A12	E6-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255356	87	A12	C6-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255357	88	A12	C6-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255358	89	B12	F2-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255359	90	B12	F2-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255360	91	B12	E2-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255361	92	B12	E2-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255362	93	B12	C2-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255363	94	B12	G2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255364	95	B12	G2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255365	96	B12	F2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255366	97	B12	F2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255367	98	B12	E2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255368	99	B12	E2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255369	100	B12	C2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255370	101	B12	C2-3	B	10	11	8		1.5		5.3333333	LA	ADX	1	1			NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255371	102	B12	H3-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255372	103	B12	G3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255373	104	B12	G3-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255374	105	B12	F3-4	B	11	12	36		1.4		25.714286	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255375	106	B12	F3-1	B	12	13	6		0.4		15	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255376	107	B12	E3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255377	108	B12	E3-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255378	109	B12	C3-4	MD11	13														Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255379	110	B12	C3-4	MB		14	11		0.6		18.333333	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255380	111	B12	C3-1	B	14	15	6		1.2		5	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255381	112	B12	K3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255382	113	B12	H3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255383	114	B12	H3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255384	115	B12	G3-6	CD22	15														Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255385	116	B12	G3-6	CB		16	30		0.4		75	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255386	117	B12	G3-6	CB		17	7.5		0.6		12.5	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255387	118	B12	G3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255388	119	B12	F3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255389	120	B12	F3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255390	121	B12	E3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255391	122	B12	E3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255392	123	B12	C3-6	B	0	0	88		2		44	LA	ADX	1				, XNCGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255393	124	B12	C3-6	B	16	18	8		0.4		20	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255394	125	B12	C3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255395	126	B12	B3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255396	127	B12	H4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255397	128	B12	H4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255398	129	B12	G4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255399	130	B12	G4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255400	131	B12	F4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255401	132	B12	F4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255402	133	B12	E4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255403	134	B12	E4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255404	135	B12	C4-4	B	17	19	16		0.6		26.666667	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255405	136	B12	C4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255406	137	B12	B4-4	B	18	20	7		0.5		14	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255407	138	B12	B4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255408	139	B12	K4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255409	140	B12	H4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255410	141	B12	H4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255411	142	B12	G4-6	B	19	21	37		0.9		41.111111	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255412	143	B12	G4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255413	144	B12	F4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255414	145	B12	F4-3	B	20	22	9		1.5		6	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255415	146	B12	E4-6	B	21	23	12		1.7		7.0588235	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255416	147	B12	E4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255417	148	B12	E4-3	B	22	24	29		3.5		8.2857143	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00121	A150502-01	255418	149	B12	C4-6	B	23	25	84		1.3		64.615385	LA	ADX	1				NaK, WRTA, XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			EF
TS-00123	A150502-03	255419	1	B13	G2-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255420	2	B13	G2-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255421	3	B13	F2-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255422	4	B13	F2-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255423	5	B13	E2-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255424	6	B13	E2-1	B	1	1	96		1.7		56.470588	LA	ADX	1	1	1		NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255425	7	B13	K2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255426	8	B13	H2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255427	9	B13	H2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255428	10	B13	G2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255429	11	B13	G2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255430	12	B13	F2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255431	13	B13	F2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255432	14	B13	E2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255433	15	B13	E2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255434	16	B13	C2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255435	17	B13	C2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255436	18	B13	K3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255437	19	B13	K3-1	B	2	2	15		1		15	LA	ADX	1		1		NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255438	20	B13	K3-1	B	3	3	29		1.4		20.714286	LA	ADX	1		1		NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255439	21	B13	H3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255440	22	B13	H3-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255441	23	B13	G3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255442	24	B13	G3-1	B	4	4	10		1.4		7.1428571	LA	ADX	1		1		NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255443	25	B13	F3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255444	26	B13	F3-1	B	5	5	16		0.9		17.777778	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255445	27	B13	E3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255446	28	B13	E3-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255447	29	B13	C3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255448	30	B13	C3-1	B	0	0	42		4.6		9.1304348	LA	ADX	1				, XNCGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255449	31	B13	B3-4	B	6	6	34		5		6.8	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255450	32	B13	B3-4	F	7	7	5.2		0.25		20.8	LA	ADX	1				NaK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255451	33	B13	K3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255452	34	B13	K3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255453	35	B13	H3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255454	36	B13	H3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255455	37	B13	G3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255456	38	B13	G3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255457	39	B13	F3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255458	40	B13	F3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255459	41	B13	E3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255460	42	B13	E3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255461	43	B13	C3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255462	44	B13	C3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255463	45	B13	B3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255464	46	B13	B3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255465	47	B13	L4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255466	48	B13	K4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255467	49	B13	K4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255468	50	B13	H4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255469	51	B13	H4-1	ND															Air

ATTACHMENT 1B. DATA SUMMARY OF STRUCTURE INFORMATION - TRESPASSER ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Length_Revised	Width	Width_Revised	AR	Mineral Class	Structure Identification	Sketch	Photo	EDS	CMNotCounted	Structure Comment	Media Type	AnalysisDateTimeStamp	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
TS-00123	A150502-03	255489	71	B13	B4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255490	72	B13	K5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255491	73	B13	H5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255492	74	B13	H5-1	CD11	11														Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255493	75	B13	H5-1	MB		11	8.3		0.6		13.833333	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255494	76	B13	G5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255495	77	B13	G5-1	B	12	12	25		0.7		35.714286	LA	ADX	1				NwK, WRTA; XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross	Mineral ID and EDXA observation for total structure #12 were not recorded on the benchsheet (page 6).	1/6/2016	
TS-00123	A150502-03	255496	78	B13	F5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255497	79	B13	F5-1	MD54	13														Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255498	80	B13	F5-1	MF		13	25		0.4		62.5	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255499	81	B13	F5-1	MB		14	11		0.8		13.75	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255500	82	B13	F5-1	MB		15	12		1.9		6.3157895	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255501	83	B13	F5-1	MF		16	10		0.4		25	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255502	84	B13	F5-1	MB		0	4.9		0.6		8.1666667	LA	ADX	1					Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255503	85	C13	G2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255504	86	C13	G2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255505	87	C13	F2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255506	88	C13	F2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255507	89	C13	E2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255508	90	C13	E2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255509	91	C13	C2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255510	92	C13	C2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255511	93	C13	H3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255512	94	C13	G3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255513	95	C13	G3-1	B	0	0	50		1.9		26.315789	LA	ADX	1				XNCGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255514	96	C13	F3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255515	97	C13	F3-1	B	14	17	18		1.1		16.363636	LA	ADX	1				NwK, WRTA; XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255516	98	C13	C3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255517	99	C13	C3-1	CD22	15														Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255518	100	C13	C3-1	CB		18	130		1		130	LA	ADX	1				NwK, WRTA; XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255519	101	C13	C3-1	CF		19	7.8		0.4		19.5	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255520	102	C13	B3-4	ND	0	0	14		5		2.8	LA	ADX	1				AR <3:1	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255521	103	C13	K3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255522	104	C13	H3-6	F	0	0	17		0.3		56.666667	LA	ADX	1				XNCGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255523	105	C13	H3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255524	106	C13	G3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255525	107	C13	G3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255526	108	C13	F3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255527	109	C13	F3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255528	110	C13	E3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255529	111	C13	E3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255530	112	C13	C3-6	MD41	16														Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255531	113	C13	C3-6	MF		20	11		0.8		13.75	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255532	114	C13	C3-6	MF		0	2		0.5		4	LA	ADX	1					Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255533	115	C13	C3-6	MF		0	1.9		0.4		4.75	LA	ADX	1					Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255534	116	C13	C3-6	MF		0	4.1		0.2		20.5	LA	ADX	1					Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255535	117	C13	C3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255536	118	C13	B3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255537	119	C13	B3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255538	120	C13	K4-1	CD33	17														Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255539	121	C13	K4-1	CB		21	96		1		96	LA	ADX	1				NwK, WRTA; XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255540	122	C13	K4-1	CB		22	38		0.8		47.5	LA	ADX	1				NwK, WRTA; XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255541	123	C13	K4-1	CB		23	21		2		10.5	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255542	124	C13	H4-4	F	18	24	8.5		0.6		14.166667	LA	ADX	1				NwK, WRTA; XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255543	125	C13	H4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255544	126	C13	G4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00123	A150502-03	255545	127	C13	G4-1	F	19	25	11.5		0.7		16.428571	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255546	1	B14	H6-3	F	1	1	19		0.3		63.333333	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255547	2	B14	G6-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255548	3	B14	G6-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255549	4	B14	F6-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255550	5	B14	F6-3	B	2	2	13.5		1		13.5	LA	ADX	1	1	1		NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255551	6	B14	E6-6	B	3	3	34		1.2		28.333333	LA	ADX	1		1		NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255552	7	B14	E6-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255553	8	B14	K6-1	CD22	4														Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255554	9	B14	K6-1	CB		4	136		3.3		41.212121	LA	ADX	1		1		NwK, WRTA; XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255555	10	B14	K6-1	CB		5	36		0.7		51.428571	LA	ADX	1		1		NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255556	11	B14	H6-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255557	12	B14	H6-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255558	13	B14	G6-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255559	14	B14	G6-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255560	15	B14	F6-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255561	16	B14	F6-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255562	17	B14	E6-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255563	18	B14	E6-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255564	19	B14	C6-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255565	20	B14	C6-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255566	21	B14	K5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255567	22	B14	K5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255568	23	B14	H5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255569	24	B14	H5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255570	25	B14	G5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255571	26	B14	G5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255572	27	B14	F5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255573	28	B14	F5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255574	29	B14	E5-6	F	5	6	16		0.4		40	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255575	30	B14	E5-3	B	6	7	17		0.5		34	LA	ADX	1		1		NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255576	31	B14	C5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255577	32	B14	C5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255578	33	B14	B5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255579	34	B14	L5-1	MD63	7														Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255580	35	B14	L5-1	MF		8	18.5		0.9		20.555556	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255581	36	B14	L5-1	MB		9	14		1.2		11.666667	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255582	37	B14	L5-1	MF		10	6.7		0.4		16.75	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255583	38	B14	L5-1	MF		0	12		0.5		24	LA	ADX	1				XNCGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255584	39	B14	L5-1	MF		0	4.4		0.3		14.666667	LA	ADX	1					Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255585	40	B14	L5-1	MF		0	2.3		0.4		5.75	LA	ADX	1					Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255586	41	B14	K5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255587	42	B14	K5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255588	43	B14	H5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255589	44	B14	H5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255590	45	B14	G5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255591	46	B14	G5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255592	47	B14	F5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255593	48	B14	F5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255594	49	B14	E5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255595	50	B14	E5-1	F	8	11	11		0.5		22	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255596	51	B14	C5-4	F	9	12	55		4.1		13.414634	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255597	52	B14	C5-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255598	53	B14	B5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255599	54	A15	B3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255600	55	A15	B3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255601	56	A15	B3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255602	57	A15	B4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255603	58	A15	B4-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255604	59	A15	B4-4	B	10	13	8.5		1.2		7.0833333	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255605	60	A15	B4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255606	61	A15	B5-1	F	0	0	18		0.4		45	LA	ADX	1				XNCGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255607	62	A15	B5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255608	63	A15	B5-4	B	11	14	74		0.8		92.5	LA	ADX	1				NwK, WRTA; XGBLD	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255609	64	A15	B5-6	F	12	15	11.2		0.3		37.333333	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255610	65	A15	B6-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255611	66	A15	C2-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255612	67	A15	C2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255613	68	A15	C3-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255614	69	A15	C3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255615	70	A15	C3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255616	71	A15	C3-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255617	72	A15	C4-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255618	73	A15	C4-3	MD22	13														Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255619	74	A15	C4-3	MF		16	16		0.3		53.333333	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255620	75	A15	C4-3	MF		17	13.5		1.4		9.6428571	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255621	76	A15	C4-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255622	77	A15	C4-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255623	78	A15	C5-1	B	14	18	20.5		1.5		13.666667	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255624	79	A15	C5-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255625	80	A15	C5-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255626	81	A15	C5-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255627	82	A15	C6-1	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255628	83	A15	C6-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255629	84	A15	C6-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255630	85	A15	C6-6	MD11	15														Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255631	86	A15	C6-6	MF		19	10.8		0.5		21.6	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255632	87	A15	E2-3	F	16	20	7.5		1		7.5	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255633	88	A15	E3-1	F	17	21	15		0.3		50	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255634	89	A15	E3-3	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255635	90	A15	E3-4	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255636	91	A15	E3-6	B	18	22	46		2.5		18.4	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255637	92	A15	E2-6	ND															Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255638	93	A15	E4-1	B	19	23	34		1		34	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255639	94	A15	E4-1	CD22	20														Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255640	95	A15	E4-1	CF		24	10.5		0.5		21	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			
TS-00125	A150502-05	255641	96	A15	E4-1	CF		25	13.5		1.2		11.25	LA	ADX	1				NwK, WRTA	Air	10/22/2015 7:41	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00051	041519128-0002	260536	1	L1	J9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260537	2	L1	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260538	3	L1	H5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260539	4	L1	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260540	5	L1	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260541	6	L1	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260542	7	L1	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260543	8	L1	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260544	9	L1	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260545	10	L1	A6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260546	11	L2	J7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260547	12	L2	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260548	13	L2	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260549	14	L2	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260550	15	L2	F3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260551	16	L2	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260552	17	L2	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260553	18	L2	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260554	19	L2	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260555	20	L2	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260556	21	L3	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260557	22	L3	E9	MD11	1													Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260558	23	L3	E9	MF		1	5.4	0.25	21.6	LA		ADX	1	1	1		NaK, WRTA; Asbestos_516	Air	CDM Smith	N. Ross/DDE			
UB-00051	041519128-0002	260559	24	L3	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260560	1	L5	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260561	2	L5	A6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260562	3	L5	A8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260563	4	L5	A10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260564	5	L5	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260565	6	L5	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260566	7	L5	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260567	8	L5	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260568	9	L5	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260569	10	L5	C6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260570	11	L5	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260571	12	L5	C10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260572	13	L5	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260573	14	L5	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260574	15	L5	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260575	16	L5	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260576	17	L5	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260577	18	L5	E2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260578	19	L5	E4	F	1	1	6.9	0.4	17.25	LA		ADX	1	1	1		NaK, WRTA; Asbestos_522	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260579	20	L5	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260580	21	L5	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260581	22	L5	F3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260582	23	L5	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260583	24	L5	G2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260584	25	L5	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260585	26	L5	G8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260586	27	L5	G10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260587	28	L5	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260588	29	L5	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260589	30	L5	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260590	31	L5	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260591	32	L5	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260592	33	L5	J5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260593	34	L5	J3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260594	35	L5	J1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260595	36	L6	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260596	37	L6	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260597	38	L6	A6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260598	39	L6	A8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260599	40	L6	A10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260600	41	L6	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260601	42	L6	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260602	43	L6	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260603	44	L6	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260604	45	L6	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260605	46	L6	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260606	47	L6	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260607	48	L6	C6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260608	49	L6	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260609	50	L6	C10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260610	51	L6	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260611	52	L6	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260612	53	L6	E2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260613	54	L6	E4	F	2	2	5.4	0.35	15.428571	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260614	55	L6	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260615	56	L6	E8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260616	57	L6	E10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260617	58	L6	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260618	59	L6	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260619	60	L6	F5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260620	61	L6	F3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260621	62	L6	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260622	63	L6	G2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260623	64	L6	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260624	65	L6	G6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260625	66	L6	G8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260626	67	L6	H9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260627	68	L6	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260628	69	L6	H5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260629	70	L6	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260630	71	L6	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260631	72	L6	I2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260632	73	L6	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260633	74	L6	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260634	75	L6	J9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260635	76	L6	J7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260636	77	L6	J5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260637	78	L6	J3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260638	79	L6	J1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260639	80	L7	A7	ND													; Analysis continued 7/9/2015	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260640	81	L7	A9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260641	82	L7	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260642	83	L7	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260643	84	L7	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260644	85	L7	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260645	86	L7	B2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260646	87	L7	C1	F	3	3	35.2	1.9	18.526316	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260647	88	L7	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260648	89	L7	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260649	90	L7	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260650	91	L7	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260651	92	L7	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260652	93	L7	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260653	94	L7	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260654	95	L7	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260655	96	L7	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260656	97	L7	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260657	98	L7	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260658	99	L7	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260659	100	L7	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260660	101	L7	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260661	102	L7	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260662	103	L7	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260663	104	L7	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260664	105	L7	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260665	106	L7	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260666	107	L7	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260667	108	L7	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260668	109	L7	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260669	110	L7	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260670	111	L7	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260671	112	L7	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260672	113	L7	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260673	114	L7	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260674	115	L7	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260675	116	L7	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260676	117	L7	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260677	118	L7	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260678	119	L7	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260679	120	L7	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260680	121	L7	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260681	122	L7	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260682	123	L7	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260683	124	L7	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260684	125	L8	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260685	126	L8	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260686	127	L8	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260687	128	L8	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260688	129	L8	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260689	130	L8	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260690	131	L8	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260691	132	L8	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260692	133	L8	I7	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00052	041519128-0003	260693	134	L8	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260694	135	L8	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260695	136	L8	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260696	137	L8	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260697	138	L8	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260698	139	L8	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260699	140	L8	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260700	141	L8	E5	F	4	4	75	4.5	16.666667	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260701	142	L8	E5	F	5	5	7.2	0.9	8	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260702	143	L8	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260703	144	L8	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260704	145	L8	D6	F	6	6	24.2	5	4.84	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260705	146	L8	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260706	147	L8	C1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260707	148	L8	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260708	149	L8	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260709	150	L8	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260710	151	L8	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260711	152	L8	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260712	153	L8	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260713	154	L8	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260714	155	L8	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260715	156	L8	B2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260716	157	L8	A1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260717	158	L8	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260718	159	L8	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260719	160	P1	J9	ND													; Analysis continued on 7/10/2015	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260720	161	P1	J7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260721	162	P1	J5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260722	163	P1	J3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260723	164	P1	J1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260724	165	P1	I2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260725	166	P1	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260726	167	P1	I6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260727	168	P1	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260728	169	P1	I10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260729	170	P1	H9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260730	171	P1	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260731	172	P1	H5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260732	173	P1	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260733	174	P1	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260734	175	P1	G2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260735	176	P1	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260736	177	P1	G8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260737	178	P1	G10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260738	179	P1	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260739	180	P1	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260740	181	P1	F5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260741	182	P1	F3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260742	183	P1	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260743	184	P1	E2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260744	185	P1	E4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260745	186	P1	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260746	187	P1	E8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260747	188	P1	E10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260748	189	P1	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260749	190	P1	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260750	191	P1	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260751	192	P1	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260752	193	P1	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260753	194	P1	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260754	195	P1	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260755	196	P1	C6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260756	197	P1	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260757	198	P1	C10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260758	199	P1	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260759	200	P1	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260760	201	P1	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260761	202	P1	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260762	203	P1	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260763	204	P1	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260764	205	P1	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260765	206	P1	A8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260766	207	P1	A10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260767	208	P2	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260768	209	P2	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260769	210	P2	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260770	211	P2	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260771	212	P2	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260772	213	P2	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260773	214	P2	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260774	215	P2	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260775	216	P2	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260776	217	P2	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260777	218	P2	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260778	219	P2	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260779	220	P2	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260780	221	P2	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260781	222	P2	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260782	223	P2	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260783	224	P2	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260784	225	P2	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260785	226	P2	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260786	227	P2	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260787	228	P2	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260788	229	P2	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260789	230	P2	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260790	231	P2	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260791	232	P2	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260792	233	P2	E5	F	7	7	5.2	0.25	20.8	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260793	234	P2	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260794	235	P2	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260795	236	P2	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260796	237	P2	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260797	238	P2	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260798	239	P2	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260799	240	P2	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260800	241	P2	C1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260801	242	P2	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260802	243	P2	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260803	244	P2	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260804	245	P2	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260805	246	P2	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260806	247	P2	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260807	248	P2	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260808	249	P2	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260809	250	P2	B2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260810	251	P2	A1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260811	252	P2	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260812	253	P2	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260813	254	P2	A7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260814	255	P2	A9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260815	256	P3	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260816	257	P3	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260817	258	P3	A8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260818	259	P3	A10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260819	260	P3	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260820	261	P3	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260821	262	P3	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260822	263	P3	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260823	264	P3	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260824	265	P3	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260825	266	P3	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260826	267	P3	C6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260827	268	P3	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260828	269	P3	C10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260829	270	P3	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260830	271	P3	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260831	272	P3	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260832	273	P3	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260833	274	P3	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260834	275	P3	E4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260835	276	P3	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260836	277	P3	E8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260837	278	P3	E10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260838	279	P3	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260839	280	P3	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260840	281	P3	F5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260841	282	P3	G2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260842	283	P3	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260843	284	P3	G6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260844	285	P3	G8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260845	286	P3	G10	MD11	8													Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260846	287	P3	G10	MFO		8	5.4	0.25	21.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260847	288	P3	H9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260848	289	P3	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260849	290	P3	H5	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00052	041519128-0003	260850	291	P3	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260851	292	P3	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260852	293	P3	I2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260853	294	P3	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260854	295	P3	I6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260855	296	P3	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260856	297	P3	I10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260857	298	P3	J9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260858	299	P3	J7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260859	300	P3	J5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260860	301	P3	J3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260861	302	P3	J1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260862	303	P4	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260863	304	P4	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260864	305	P4	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260865	306	P4	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260866	307	P4	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260867	308	P4	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260868	309	P4	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260869	310	P4	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260870	311	P4	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260871	312	P4	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260872	313	P4	H8	F	9	9	14.5	0.85	17.058824	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260873	314	P4	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260874	315	P4	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260875	316	P4	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260876	317	P4	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260877	318	P4	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260878	319	P4	G5	F	10	10	11.4	1.7	6.7058824	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260879	320	P4	G7	F	11	11	5.8	0.35	16.571429	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260880	321	P4	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260881	322	P4	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260882	323	P4	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260883	324	P4	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260884	325	P4	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260885	326	P4	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260886	327	P4	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260887	328	P4	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260888	329	P4	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260889	330	P4	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260890	331	P4	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260891	332	P4	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260892	333	P4	D6	MD11	12													Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260893	334	P4	D6	MFO		12	14.2	0.55	25.818182	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260894	335	P4	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260895	336	P4	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260896	337	P4	C1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260897	338	P4	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260898	339	P4	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260899	340	P4	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260900	341	P4	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260901	342	P4	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260902	343	P4	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260903	344	P4	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00052	041519128-0003	260904	345	P4	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260905	1	M1	J1	F	0	0	12.8	0.6	21.333333	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260906	2	M1	J3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260907	3	M1	J5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260908	4	M1	J7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260909	5	M1	J9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260910	6	M1	I10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260911	7	M1	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260912	8	M1	I6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260913	9	M1	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260914	10	M1	I2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260915	11	M1	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260916	12	M1	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260917	13	M1	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260918	14	M1	H9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260919	15	M1	G10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260920	16	M1	G8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260921	17	M1	G6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260922	18	M1	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260923	19	M1	G2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260924	20	M1	F3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260925	21	M1	F5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260926	22	M1	F7	F	1	1	34.2	3	11.4	LA		ADX	1	1	1		NaK, WRTA; Asbestos_525	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260927	23	M1	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260928	24	M1	E10	MD11	2													Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260929	25	M1	E10	MFO		2	5.8	0.45	12.888889	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260930	26	M1	E8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260931	27	M1	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260932	28	M1	E4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260933	29	M1	E2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260934	30	M1	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260935	31	M1	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260936	32	M1	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260937	33	M1	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260938	34	M1	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260939	35	M1	C10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260940	36	M1	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260941	37	M1	C6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260942	38	M1	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260943	39	M1	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260944	40	M1	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260945	41	M1	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260946	42	M1	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260947	43	M1	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260948	44	M1	A10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260949	45	M1	A8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260950	46	M1	A6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260951	47	M1	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260952	48	M1	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260953	49	M2	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260954	50	M2	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260955	51	M2	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260956	52	M2	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260957	53	M2	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260958	54	M2	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260959	55	M2	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260960	56	M2	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260961	57	M2	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260962	58	M2	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260963	59	M2	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260964	60	M2	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260965	61	M2	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260966	62	M2	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260967	63	M2	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260968	64	M2	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260969	65	M2	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260970	66	M2	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260971	67	M2	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260972	68	M2	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260973	69	M2	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260974	70	M2	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260975	71	M2	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260976	72	M2	C10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260977	73	M2	C8	B	3	3	11.2	0.9	12.444444	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260978	74	M2	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260979	75	M2	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260980	76	M2	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260981	77	M2	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260982	78	M2	A8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260983	79	M2	A6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260984	80	M2	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260985	81	M2	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260986	82	M3	B1	F	4	4	26.4	1	26.4	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260987	83	M3	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260988	84	M3	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260989	85	M3	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260990	86	M3	C10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260991	87	M3	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260992	88	M3	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260993	89	M3	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260994	90	M3	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260995	91	M3	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260996	92	M3	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260997	93	M3	D9	MD11	5													Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260998	94	M3	D9	MF		5	15.3	0.25	61.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	260999	95	M3	E10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261000	96	M3	E8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261001	97	M3	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261002	98	M3	E2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261003	99	M3	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261004	100	M3	F3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261005	101	M3	F5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261006	102	M3	F7	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00054	041519128-0005	261007	103	M3	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261008	104	M3	G10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261009	105	M3	G6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261010	106	M3	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261011	107	M3	G2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261012	108	M3	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261013	109	M3	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261014	110	M3	I10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261015	111	M3	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261016	112	M3	I6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261017	113	M3	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261018	114	M3	I2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261019	115	M3	J1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261020	116	M3	J3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261021	117	M3	J5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261022	118	M3	J7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261023	119	M3	J9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261024	120	M4	J1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261025	121	M4	J3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261026	122	M4	J7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261027	123	M4	I10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261028	124	M4	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261029	125	M4	I6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261030	126	M4	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261031	127	M4	I2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261032	128	M4	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261033	129	M4	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261034	130	M4	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261035	131	M4	H9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261036	132	M4	G8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261037	133	M4	G6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261038	134	M4	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261039	135	M4	G2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261040	136	M4	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261041	137	M4	F3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261042	138	M4	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261043	139	M4	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261044	140	M4	E10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261045	141	M4	E8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261046	142	M4	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261047	143	M4	E4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261048	144	M4	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261049	145	M4	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261050	146	M4	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261051	147	M4	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261052	148	M4	C6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261053	149	M4	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261054	150	M4	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261055	151	M4	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261056	152	M4	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261057	153	M4	A10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261058	154	M4	A6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261059	155	M4	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261060	156	M4	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261061	157	P6	J2	F	6	6	9.8	0.75	13.066667	LA		ADX	1				NaK, WRTA; Analysis continued on	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261062	158	P6	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261063	159	P6	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261064	160	P6	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261065	161	P6	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261066	162	P6	I7	F	7	7	6.6	0.3	22	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261067	163	P6	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261068	164	P6	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261069	165	P6	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261070	166	P6	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261071	167	P6	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261072	168	P6	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261073	169	P6	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261074	170	P6	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261075	171	P6	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261076	172	P6	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261077	173	P6	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261078	174	P6	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261079	175	P6	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261080	176	P6	F4	F	8	8	7.8	0.9	8.6666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261081	177	P6	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261082	178	P6	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261083	179	P6	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261084	180	P6	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261085	181	P6	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261086	182	P6	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261087	183	P6	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261088	184	P6	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261089	185	P6	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261090	186	P6	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261091	187	P6	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261092	188	P6	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261093	189	P6	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261094	190	P6	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261095	191	P6	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261096	192	P6	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261097	193	P6	B2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261098	194	P6	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261099	195	P6	B6	F	9	9	48	0.8	60	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261100	196	P6	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261101	197	P6	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261102	198	P6	A9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261103	199	P6	A7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261104	200	P6	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261105	201	P6	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261106	202	P6	A1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261107	203	P7	A10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261108	204	P7	A8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261109	205	P7	A6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261110	206	P7	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261111	207	P7	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261112	208	P7	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261113	209	P7	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261114	210	P7	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261115	211	P7	B9	F	10	10	21	0.65	32.307692	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261116	212	P7	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261117	213	P7	C6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261118	214	P7	C4	F	11	11	9.1	0.5	18.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261119	215	P7	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261120	216	P7	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261121	217	P7	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261122	218	P7	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261123	219	P7	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261124	220	P7	E10	F	12	12	23.8	1.4	17	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261125	221	P7	E8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261126	222	P7	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261127	223	P7	E2	F	0	0	14.8	0.3	49.333333	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261128	224	P7	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261129	225	P7	F3	MD11	13													Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261130	226	P7	F3	MFO		13	6.1	0.25	24.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE	Structure type for total structure #13 should be MFO, not MDFO.	11/12/2015	
UB-00054	041519128-0005	261131	227	P7	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261132	228	P7	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261133	229	P7	G10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261134	230	P7	G8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261135	231	P7	G6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261136	232	P7	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261137	233	P7	G2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261138	234	P7	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261139	235	P7	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261140	236	P7	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261141	237	P7	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261142	238	P7	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261143	239	P7	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261144	240	P7	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261145	241	P7	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261146	242	P7	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261147	243	P7	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261148	244	P7	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261149	245	P7	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261150	246	P8	A9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261151	247	P8	A7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261152	248	P8	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261153	249	P8	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261154	250	P8	A1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261155	251	P8	B2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261156	252	P8	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261157	253	P8	B6	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00054	041519128-0005	261158	254	P8	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261159	255	P8	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261160	256	P8	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261161	257	P8	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261162	258	P8	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261163	259	P8	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261164	260	P8	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261165	261	P8	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261166	262	P8	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261167	263	P8	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261168	264	P8	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261169	265	P8	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261170	266	P8	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261171	267	P8	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261172	268	P8	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261173	269	P8	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261174	270	P8	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261175	271	P8	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261176	272	P8	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261177	273	P8	G9	MD11	14													Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261178	274	P8	G9	MFO		14	10.7	0.25	42.8	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261179	275	P8	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261180	276	P8	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261181	277	P8	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261182	278	P8	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261183	279	P8	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261184	280	P8	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261185	281	P8	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261186	282	P8	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261187	283	P8	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261188	284	P8	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261189	285	P8	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261190	286	P8	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261191	287	P8	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261192	288	P8	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261193	289	P8	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261194	290	P8	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261195	291	P9	J1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261196	292	P9	J3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261197	293	P9	J5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261198	294	P9	J9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261199	295	P9	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261200	296	P9	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261201	297	P9	I6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261202	298	P9	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261203	299	P9	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261204	300	P9	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261205	301	P9	H5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261206	302	P9	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261207	303	P9	H9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261208	304	P9	G10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261209	305	P9	G8	F	15	15	10.3	0.7	14.714286	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261210	306	P9	G6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261211	307	P9	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261212	308	P9	G2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261213	309	P9	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261214	310	P9	F3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261215	311	P9	F5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261216	312	P9	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261217	313	P9	F9	MD11	16													Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261218	314	P9	F9	MFO		16	11.6	0.25	46.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261219	315	P9	E10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261220	316	P9	E8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261221	317	P9	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261222	318	P9	E4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261223	319	P9	E2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261224	320	P9	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261225	321	P9	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261226	322	P9	D5	F	17	17	9.4	0.25	37.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261227	323	P9	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261228	324	P9	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261229	325	P9	C10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261230	326	P9	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261231	327	P9	C6	MD11	18													Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261232	328	P9	C6	MFO		18	11.7	0.9	13	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261233	329	P9	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261234	330	P9	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261235	331	P9	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261236	332	P9	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261237	333	P9	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261238	334	P9	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261239	335	P9	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261240	336	P9	A10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261241	337	P9	A8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261242	338	P9	A6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261243	339	P9	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261244	340	P10	A1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261245	341	P10	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261246	342	P10	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261247	343	P10	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261248	344	P10	A6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261249	345	P10	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261250	346	P10	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261251	347	P10	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261252	348	P10	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261253	349	P10	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261254	350	P10	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261255	351	P10	C6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261256	352	P10	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261257	353	P10	C10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261258	354	P10	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261259	355	P10	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261260	356	P10	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261261	357	P10	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261262	358	P10	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261263	359	P10	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261264	360	P10	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261265	361	P10	E10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261266	362	P10	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261267	363	P10	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261268	364	P10	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261269	365	P10	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261270	366	P10	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261271	367	P10	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261272	368	P10	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261273	369	P10	J1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261274	370	P10	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261275	371	P10	J3	F	0	0	40.6	0.8	50.75	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261276	372	P10	J5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261277	373	P10	J9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00054	041519128-0005	261278	374	P10	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00057	041519133-0002	244118	1	J1	A7	F	1	1	13.9	0.96	14.479167	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244119	2	J1	A5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244120	3	J1	A3	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244121	4	J1	A1	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244122	5	J1	B2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244123	6	J1	B4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244124	7	J1	B6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244125	8	J1	B8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244126	9	J1	B10	F	2	2	6.1	0.25	24.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244127	10	J1	C9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244128	11	J1	C7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244129	12	J1	C5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244130	13	J1	C3	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244131	14	J1	D2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244132	15	J1	D4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244133	16	J1	D6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244134	17	J1	D8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244135	18	J1	D10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244136	19	J1	E9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244137	20	J1	E7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244138	21	J1	E5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244139	22	J1	F4	MD11	3													Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244140	23	J1	F4	MFO		3	6.4	0.25	25.6	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244141	24	J1	F6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244142	25	J1	F8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244143	26	J1	F10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244144	27	J1	G9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244145	28	J1	G7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244146	29	J1	G5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244147	30	J1	G3	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244148	31	J1	G1	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244149	32	J1	H2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244150	33	J1	H4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244151	34	J1	H6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244152	35	J1	H8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244153	36	J1	H10	ND														Air	CDM Smith	N. Ross/DDE			EF

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00057	041519133-0002	244154	37	J1	I9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244155	38	J1	I7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244156	39	J1	I5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244157	40	J1	I3	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244158	41	J1	I1	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244159	42	J1	J2	MD11	4													Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244160	43	J1	J2	MFO		4	18.3	0.72	25.416667	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244161	44	J1	J4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244162	45	J1	J6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244163	46	J1	J8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244164	47	J1	J10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244165	48	J2	J10	ND													; Additional analysis 7/13/15	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244166	49	J2	J8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244167	50	J2	J6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244168	51	J2	J4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244169	52	J2	J2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244170	53	J2	I1	F	5	5	5.1	0.25	20.4	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244171	54	J2	I3	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244172	55	J2	I5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244173	56	J2	I7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244174	57	J2	I9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244175	58	J2	H10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244176	59	J2	H8	MD11	6													Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244177	60	J2	H8	MFO		6	6.1	0.6	10.166667	LA		ADX	1	1	1		NaK, WRTA; 010802D	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244178	61	J2	H6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244179	62	J2	H4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244180	63	J2	H2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244181	64	J2	G1	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244182	65	J2	G3	F	7	7	10.1	0.48	21.041667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244183	66	J2	G5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244184	67	J2	G7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244185	68	J2	G9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244186	69	J2	F10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244187	70	J2	F8	F	8	8	5.9	0.72	8.1944444	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244188	71	J2	F6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244189	72	J2	F4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244190	73	J2	E1	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244191	74	J2	E3	F	9	9	9.4	0.48	19.583333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244192	75	J2	E5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244193	76	J2	E7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244194	77	J2	E9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244195	78	J2	D10	F	10	10	23.5	2.01	11.691542	LA		ADX	1				NaK, WRTA; XCGBLD	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244196	79	J2	D8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244197	80	J2	D6	F	11	11	7.5	1.2	6.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244198	81	J2	D4	F	12	12	22.6	1.08	20.925926	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244199	82	J2	D2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244200	83	J2	C1	F	13	13	24.9	1.2	20.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244201	84	J2	C3	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244202	85	J2	C5	F	14	14	12	1.44	8.3333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244203	86	J2	C7	F	15	15	28	0.96	29.166667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244204	87	J2	C9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244205	88	J2	B10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244206	89	J2	B8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244207	90	J2	B6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244208	91	J2	B4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244209	92	J2	B2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244210	93	J2	A1	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244211	94	J2	A3	F	16	16	19.8	2.35	8.4255319	LA		AX	1				XX, WRTA; No SAED	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244212	95	J2	A5	B	17	17	39.1	3.98	9.8241206	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244213	96	J2	A7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244214	97	J2	A9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244215	98	J3	J2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244216	99	J3	J4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244217	100	J3	J6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244218	101	J3	J8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244219	102	J3	J10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244220	103	J3	I9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244221	104	J3	I7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244222	105	J3	I5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244223	106	J3	I3	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244224	107	J3	I1	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244225	108	J3	H2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244226	109	J3	H4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244227	110	J3	H6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244228	111	J3	H8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244229	112	J3	G9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244230	113	J3	G7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244231	114	J3	G5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244232	115	J3	G3	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244233	116	J3	G1	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244234	117	J3	F2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244235	118	J3	F4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244236	119	J3	F6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244237	120	J3	F8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244238	121	J3	F10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244239	122	J3	E9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244240	123	J3	E7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244241	124	J3	E5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244242	125	J3	E3	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244243	126	J3	E1	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244244	127	J3	D2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244245	128	J3	D4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244246	129	J3	D6	F	18	18	7.1	1.44	4.9305556	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244247	130	J3	D8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244248	131	J3	C9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244249	132	J3	C7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244250	133	J3	C5	F	19	19	6.1	1.32	4.6212121	LA		ADX	1	1			NaK, WRTA; 010800D	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244251	134	J3	C5	F	20	20	5.1	0.48	10.625	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244252	135	J3	C3	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244253	136	J3	B2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244254	137	J3	B4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244255	138	J3	B6	F	21	21	6.1	0.96	6.3541667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244256	139	J3	B8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244257	140	J3	B10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244258	141	J3	A9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244259	142	J3	A7	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244260	143	J3	A5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244261	144	N1	J2	ND													; Additional analysis 7/14/15	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244262	145	N1	J4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244263	146	N1	J6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244264	147	N1	J8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244265	148	N1	J10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244266	149	N1	I9	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244267	150	N1	I7	MD22	22													Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244268	151	N1	I7	MFO		22	14.9	0.48	31.041667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244269	152	N1	I7	MFO		23	12	1.2	10	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244270	153	N1	I5	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244271	154	N1	I3	F	23	24	26.4	4.24	6.2264151	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244272	155	N1	I1	B	24	25	13.7	0.96	14.270833	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244273	156	N1	H2	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244274	157	N1	H4	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244275	158	N1	H6	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244276	159	N1	H8	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244277	160	N1	H10	ND														Air	CDM Smith	N. Ross/DDE			EF
UB-00057	041519133-0002	244278	161	N1	G9	F	25	26	11.8	1.2	9.8333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			EF
UB-00059	041519133-0004	244279	1	N6	A9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244280	2	N6	A7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244281	3	N6	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244282	4	N6	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244283	5	N6	A1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244284	6	N6	B2	B	0	0	20.3	0.72	28.194444	LA		ADX	1		1		; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244285	7	N6	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244286	8	N6	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244287	9	N6	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244288	10	N6	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244289	11	N6	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244290	12	N6	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244291	13	N6	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244292	14	N6	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244293	15	N6	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244294	16	N6	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244295	17	N6	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244296	18	N6	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244297	19	N6	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244298	20	N6	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244299	21	N6	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244300	22	N6	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244301	23	N6	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244302	24	N6	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244303	25	N6	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244304	26	N6	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244305	27	N6	G3	F	1	1	10.4	0.36	28.888889	LA		ADX	1	1	1		NaK, WRTA; 010811D	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244306	28	N6	G1	ND													; Additional analysis 7/15/15	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244307	29	N6	H2	F	2	2	10.6	0.48	22.083333	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244308	30	N6	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244309	31	N6	H6	F	3	3	5.7	0.48	11.875	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244310	32	N6	H8	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00059	041519133-0004	244311	33	N6	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244312	34	N6	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244313	35	N6	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244314	36	N6	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244315	37	N6	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244316	38	N6	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244317	39	N6	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244318	40	N6	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244319	41	N6	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244320	42	N6	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244321	43	N6	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244322	44	N7	J8	F	4	4	14.9	1.44	10.347222	LA		ADX	1	1	1		NaK, WRTA; 010815D	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244323	45	N7	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244324	46	N7	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244325	47	N7	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244326	48	N7	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244327	49	N7	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244328	50	N7	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244329	51	N7	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244330	52	N7	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244331	53	N7	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244332	54	N7	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244333	55	N7	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244334	56	N7	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244335	57	N7	G3	B	5	5	24.1	1.88	12.819149	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244336	58	N7	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244337	59	N7	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244338	60	N7	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244339	61	N7	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244340	62	N7	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244341	63	N7	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244342	64	N7	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244343	65	N7	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244344	66	N7	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244345	67	N7	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244346	68	N7	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244347	69	N7	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244348	70	N7	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244349	71	N7	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244350	72	N7	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244351	73	N7	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244352	74	N7	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244353	75	N7	C1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244354	76	N7	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244355	77	N7	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244356	78	N7	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244357	79	N7	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244358	80	N7	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244359	81	N7	B8	B	6	6	24.8	2.36	10.508475	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244360	82	N7	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244361	83	N7	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244362	84	N7	B2	F	7	7	19.6	0.36	54.444444	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244363	85	N7	B2	MD11	8													Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244364	86	N7	B2	MFO		8	21.3	0.96	22.1875	LA		ADX	1				NaK, WRTA; XCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244365	87	N7	A1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244366	88	N7	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244367	89	N7	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244368	90	N7	A7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244369	91	N7	A9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244370	92	N8	J2	F	9	9	9.4	1.2	7.8333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244371	93	N8	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244372	94	N8	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244373	95	N8	J8	F	10	10	5.2	0.48	10.833333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244374	96	N8	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244375	97	N8	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244376	98	N8	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244377	99	N8	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244378	100	N8	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244379	101	N8	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244380	102	N8	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244381	103	N8	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244382	104	N8	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244383	105	N8	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244384	106	N8	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244385	107	N8	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244386	108	N8	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244387	109	N8	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244388	110	N8	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244389	111	N8	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244390	112	N8	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244391	113	N8	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244392	114	N8	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244393	115	N8	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244394	116	N8	E9	ND													; Additional analysis 7/16/15	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244395	117	N8	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244396	118	N8	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244397	119	N8	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244398	120	N8	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244399	121	N8	D2	F	0	0	19.8	1.68	11.785714	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244400	122	N8	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244401	123	N8	D6	MD11	11													Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244402	124	N8	D6	MFO		11	8.3	0.25	33.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244403	125	N8	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244404	126	N8	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244405	127	N8	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244406	128	N8	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244407	129	N8	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244408	130	N8	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244409	131	N8	C1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244410	132	N8	B2	MD11	0													Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244411	133	N8	B2	MFO		0	27.4	1.2	22.833333	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244412	134	N8	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244413	135	N8	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244414	136	N8	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244415	137	N8	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244416	138	N8	A9	MD11	12													Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244417	139	N8	A9	MFO		12	11.1	1.2	9.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244418	140	N8	A9	F	13	13	7.4	0.25	29.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244419	141	N8	A7	F	14	14	9.4	1.68	5.5952381	LA		ADX	1				XX, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244420	142	N8	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244421	143	N8	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244422	144	N8	A1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244423	145	N9	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244424	146	N9	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244425	147	N9	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244426	148	N9	J4	F	15	15	6.8	1.2	5.6666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244427	149	N9	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244428	150	N9	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244429	151	N9	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244430	152	N9	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244431	153	N9	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244432	154	N9	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244433	155	N9	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244434	156	N9	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244435	157	N9	H6	F	16	16	40.2	0.48	83.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244436	158	N9	H6	MD11	17													Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244437	159	N9	H6	MFO		17	7.3	0.25	29.2	LA		ADX	1				XX, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244438	160	N9	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244439	161	N9	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244440	162	N9	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244441	163	N9	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244442	164	N9	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244443	165	N9	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244444	166	N9	F10	F	18	18	7.4	0.96	7.7083333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244445	167	N9	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244446	168	N9	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244447	169	N9	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244448	170	N9	F2	F	19	19	8.5	1.68	5.0595238	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244449	171	N9	E1	F	20	20	17.5	2.36	7.4152542	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244450	172	N9	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244451	173	N9	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244452	174	N9	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244453	175	N9	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244454	176	N9	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244455	177	N9	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244456	178	N9	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244457	179	N9	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244458	180	N9	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244459	181	N9	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244460	182	N9	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244461	183	N9	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244462	184	N9	C9	F	21	21	13.9	0.96	14.479167	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244463	185	J7	A9	ND													; Additional analysis 7/17/15	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244464	186	J7	A7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244465	187	J7	A5	F	22	22	46.1	4.16	11.081731	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244466	188	J7	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244467	189	J7	A1	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00059	041519133-0004	244468	190	J7	B2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244469	191	J7	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244470	192	J7	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244471	193	J7	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244472	194	J7	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244473	195	J7	C7	F	23	23	12.5	0.36	34.722222	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244474	196	J7	C7	MD11	24													Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244475	197	J7	C7	MFO		24	7.6	0.48	15.833333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244476	198	J7	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244477	199	J7	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244478	200	J7	C1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244479	201	J7	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244480	202	J7	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244481	203	J7	D8	MD11	25													Air	CDM Smith	N. Ross/DDE			
UB-00059	041519133-0004	244482	204	J7	D8	MFO		25	18.4	0.48	38.333333	LA		ADX	1				NaK, WRTA; XCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244483	1	O1	A10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244484	2	O1	A8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244485	3	O1	A6	F	1	1	22.5	0.8	28.125	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244486	4	O1	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244487	5	O1	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244488	6	O1	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244489	7	O1	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244490	8	O1	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244491	9	O1	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244492	10	O1	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244493	11	O1	C10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244494	12	O1	C8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244495	13	O1	C6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244496	14	O1	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244497	15	O1	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244498	16	O1	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244499	17	O1	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244500	18	O1	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244501	19	O1	D7	F	2	2	25.3	0.8	31.625	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244502	20	O1	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244503	21	O1	E10	F	3	3	5.9	0.7	8.4285714	LA		ADX	1	1	1		XX, AC; Asbestos_537	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244504	22	O1	E8	F	4	4	8.2	0.45	18.222222	LA		ADX	1	1	1		NaK, WRTA; Analysis continued on	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244505	23	O1	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244506	24	O1	E2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244507	25	O1	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244508	26	O1	F5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244509	27	O1	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244510	28	O1	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244511	29	O1	G10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244512	30	O1	G8	F	5	5	15.7	1	15.7	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244513	31	O1	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244514	32	O1	H1	MD11	6													Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244515	33	O1	H1	MFO		6	10.8	0.5	21.6	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244516	34	O1	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244517	35	O1	H5	F	7	7	14.7	0.75	19.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244518	36	O1	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244519	37	O1	H9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244520	38	O1	I10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244521	39	O1	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244522	40	O1	I6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244523	41	O1	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244524	42	O1	I2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244525	43	O1	J1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244526	44	O1	J3	F	8	8	11.5	2.4	4.7916667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244527	45	O1	J3	MD11	9													Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244528	46	O1	J3	MFO		9	12.7	0.6	21.166667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244529	47	O1	J5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244530	48	O1	J9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244531	49	O2	A1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244532	50	O2	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244533	51	O2	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244534	52	O2	A7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244535	53	O2	A9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244536	54	O2	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244537	55	O2	B8	F	0	0	71.4	3.4	21	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244538	56	O2	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244539	57	O2	B2	MD11	10													Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244540	58	O2	B2	MF		10	26.6	1.7	15.647059	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244541	59	O2	C1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244542	60	O2	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244543	61	O2	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244544	62	O2	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244545	63	O2	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244546	64	O2	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244547	65	O2	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244548	66	O2	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244549	67	O2	D4	F	11	11	31.3	4.7	6.6595745	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244550	68	O2	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244551	69	O2	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244552	70	O2	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244553	71	O2	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244554	72	O2	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244555	73	O2	E9	F	12	12	11.9	2.4	4.9583333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244556	74	O2	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244557	75	O2	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244558	76	O2	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244559	77	O2	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244560	78	O2	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244561	79	O2	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244562	80	O2	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244563	81	O2	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244564	82	O2	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244565	83	O2	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244566	84	O2	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244567	85	O2	H8	F	13	13	26.8	4.2	6.3809524	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244568	86	O2	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244569	87	O2	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244570	88	O2	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244571	89	O2	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244572	90	O2	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244573	91	O2	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244574	92	O2	I7	F	14	14	12.5	0.75	16.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244575	93	O2	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244576	94	O2	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244577	95	O2	J8	F	15	15	18.6	3.4	5.4705882	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244578	96	O2	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244579	97	O2	J4	MD11	16													Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244580	98	O2	J4	MFO		16	5.2	0.7	7.4285714	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244581	99	O2	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244582	100	O3	A1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244583	101	O3	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244584	102	O3	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244585	103	O3	A7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244586	104	O3	A9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244587	105	O3	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244588	106	O3	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244589	107	O3	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244590	108	O3	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244591	109	O3	B2	MD11	17													Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244592	110	O3	B2	MFO		17	8.2	0.55	14.909091	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244593	111	O3	C1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244594	112	O3	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244595	113	O3	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244596	114	O3	C7	MD11	18													Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244597	115	O3	C7	MFO		18	8.6	0.8	10.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244598	116	O3	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244599	117	O3	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244600	118	O3	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244601	119	O3	D6	F	19	19	9.7	0.25	38.8	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244602	120	O3	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244603	121	O3	D2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244604	122	O3	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244605	123	O3	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244606	124	O3	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244607	125	O3	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244608	126	O3	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244609	127	O3	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244610	128	O3	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244611	129	O3	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244612	130	O3	G1	F	20	20	8.3	0.25	33.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244613	131	O3	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244614	132	O3	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244615	133	O3	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244616	134	O3	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244617	135	O3	H10	MD11	21													Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244618	136	O3	H10	MFO		21	21.6	0.8	27	LA		ADX	1		1		XX, AC	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244619	137	O3	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244620	138	O3	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244621	139	O3	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244622	140	O3	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244623	141	O3	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244624	142	O3	I5	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00061	041519133-0006	244625	143	O3	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244626	144	O3	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244627	145	O3	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244628	146	O3	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244629	147	O3	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244630	148	O3	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244631	149	O3	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244632	150	O4	J10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244633	151	O4	J8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244634	152	O4	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244635	153	O4	J4	F	22	22	6	0.5	12	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244636	154	O4	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244637	155	O4	I1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244638	156	O4	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244639	157	O4	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244640	158	O4	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244641	159	O4	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244642	160	O4	H10	F	23	23	25.7	1.3	19.769231	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244643	161	O4	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244644	162	O4	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244645	163	O4	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244646	164	O4	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244647	165	O4	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244648	166	O4	G3	F	24	24	26.7	1.8	14.833333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244649	167	O4	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244650	168	O4	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244651	169	O4	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244652	170	O4	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244653	171	O4	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244654	172	O4	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244655	173	O4	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244656	174	O4	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244657	175	O4	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00061	041519133-0006	244658	176	O4	E5	F	25	25	5.8	1.2	4.8333333	LA		ADX	1		1		XX, AC	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243125	1	S4	A10	F	1	1	10.4	0.5	20.8	LA		ADX	1	1	1		NaK, WRTA; Asbestos_543	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243126	2	S4	A8	F	2	2	8.4	0.25	33.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243127	3	S4	A6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243128	4	S4	A4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243129	5	S4	A2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243130	6	S4	B5	F	3	3	8.8	1.1	8	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243131	7	S4	B7	MD11	4												; Analysis continued on 7/14/2015	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243132	8	S4	B7	MF		4	11.1	0.45	24.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243133	9	S4	B9	F	5	5	5.8	0.25	23.2	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243134	10	S4	C10	F	0	0	10	2.7	3.7037037	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243135	11	S4	C8	F	6	6	5.5	0.4	13.75	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243136	12	S4	C8	F	0	0	5.4	0.5	10.8	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243137	13	S4	C6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243138	14	S4	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243139	15	S4	C2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243140	16	S4	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243141	17	S4	D3	F	7	7	5.6	0.45	12.444444	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243142	18	S4	D5	F	8	8	15.2	0.45	33.777778	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243143	19	S4	D5	MD11	9													Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243144	20	S4	D5	MF		9	10.6	0.25	42.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243145	21	S4	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243146	22	S4	D9	F	0	0	24.8	0.7	35.428571	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243147	23	S4	D9	F	10	10	15.4	0.7	22	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243148	24	S4	E10	F	11	11	14.2	1.4	10.142857	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243149	25	S4	E8	F	12	12	8.5	0.3	28.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243150	26	S4	E6	F	13	13	5.2	0.3	17.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243151	27	S4	E6	F	14	14	6.2	0.9	6.8888889	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243152	28	J1	J1	ND													; Analysis continued on 7/15/2015	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243153	29	J1	J3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243154	30	J1	J5	B	15	15	5.8	0.3	19.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243155	31	J1	J7	F	16	16	5.3	0.25	21.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243156	32	J1	J9	B	17	17	22.4	0.55	40.727273	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243157	33	J1	I10	F	18	18	7.2	0.25	28.8	LA		ADX	1				XK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243158	34	J1	I10	MD11	19													Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243159	35	J1	I10	MFO		19	5.1	0.55	9.2727273	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243160	36	J1	I8	F	20	20	6.4	0.45	14.222222	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243161	37	J1	I8	F	21	21	44.2	1.4	31.571429	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243162	38	J1	I6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243163	39	J1	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243164	40	J1	I2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243165	41	J1	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243166	42	J1	H5	F	22	22	8.7	0.8	10.875	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243167	43	J1	H7	F	23	23	5.8	0.8	7.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243168	44	J1	H9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243169	45	J1	G10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243170	46	J1	G8	F	24	24	11.4	0.3	38	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243171	47	J1	G6	F	0	0	17	2.2	7.7272727	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243172	48	J1	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00069	041519141-0002	243173	49	J1	G2	F	25	25	8.4	0.55	15.272727	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259765	1	T1	J4	MD11	1													Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259766	2	T1	J4	MF		1	35.6	0.4	89	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259767	3	T1	J4	MD11	2													Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259768	4	T1	J4	MF		2	25	0.45	55.555556	LA		ADX	1	1			NaK, WRTA; XGBLD, Asbestos_568	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259769	5	T1	I9	MD11	3													Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259770	6	T1	I9	MF		3	17.3	0.5	34.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259771	7	T1	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259772	8	T1	I5	F	0	0	6.2	0.3	20.666667	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259773	9	T1	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259774	10	T1	H6	F	4	4	34.4	2.5	13.76	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259775	11	T1	H8	F	5	5	13.8	0.55	25.090909	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259776	12	T1	H10	F	6	6	5.2	0.8	6.5	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259777	13	T1	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259778	14	T1	G7	F	7	7	5.4	0.75	7.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259779	15	T1	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259780	16	T1	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259781	17	T1	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259782	18	T1	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259783	19	T1	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259784	20	T1	F6	F	8	8	16.8	0.25	67.2	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259785	21	T1	F8	F	9	9	5.1	1.2	4.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259786	22	T1	F8	F	10	10	5.3	0.3	17.666667	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259787	23	T1	F8	F	11	11	5.9	0.4	14.75	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259788	24	T1	F10	F	12	12	5.5	0.3	18.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259789	25	T1	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259790	26	T1	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259791	27	T1	E5	F	13	13	12.4	1.2	10.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259792	28	T1	E5	F	14	14	9.5	0.25	38	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259793	29	T2	A9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259794	30	T2	A5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259795	31	T2	A3	F	15	15	14.2	1.2	11.833333	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259796	32	T2	B2	F	16	16	5.2	0.8	6.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259797	33	T2	B6	F	17	17	9.6	0.3	32	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259798	34	T2	B6	F	18	18	5.4	0.4	13.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259799	35	T2	B8	F	19	19	6.6	0.5	13.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259800	36	T2	B10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259801	37	T2	C9	F	20	20	16.4	0.7	23.428571	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259802	38	T2	C7	F	21	21	5.1	0.3	17	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259803	39	T2	C7	MD11	22													Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259804	40	T2	C7	MF		22	8.7	0.4	21.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259805	41	T2	C7	F	23	23	8.7	0.5	17.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259806	42	T2	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259807	43	T2	C3	F	24	24	5.6	0.5	11.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00071	041519141-0004	259808	44	T2	C3	F	25	25	8	0.45	17.777778	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243218	1	H5	J2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243219	2	H5	I6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243220	3	H5	H9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243221	4	H5	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243222	5	H5	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243223	6	H5	E8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243224	7	H5	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243225	8	H5	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243226	9	H5	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243227	10	H5	A3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243228	11	H6	A6	F	1	1	6.8	0.3	22.666667	LA		ADX	1	1	1		NaK, WRTA; Asbestos_541	Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243229	12	H6	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243230	13	H6	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243231	14	H6	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243232	15	H6	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243233	16	H6	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243234	17	H6	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243235	18	H6	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243236	19	H6	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243237	20	H6	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243238	21	H7	J6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243239	22	H7	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243240	23	H7	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243241	24	H7	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243242	25	H7	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243243	26	H7	E4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243244	27	H7	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00073	041519141-0006	243245	28	H7	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245028	1	D1	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245029	2	D1	I7	ND														Air	CDM Smith	N. Ross/DDE			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00107	041519144-0002	245030	3	D1	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245031	4	D1	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245032	5	D1	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245033	6	D1	F5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245034	7	D1	F3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245035	8	D1	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245036	9	D2	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245037	10	D2	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245038	11	D2	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245039	12	D2	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245040	13	D2	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245041	14	D2	G6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245042	15	D2	G8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00107	041519144-0002	245043	16	D2	I2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245044	1	D4	I9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245045	2	D4	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245046	3	D4	I5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245047	4	D4	I3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245048	5	D4	G1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245049	6	D4	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245050	7	D4	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245051	8	D4	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245052	9	D5	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245053	10	D5	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245054	11	D5	C7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245055	12	D5	C9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245056	13	D5	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245057	14	D5	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245058	15	D5	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00109	041519144-0004	245059	16	D5	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245070	1	D7	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245071	2	D7	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245072	3	D7	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245073	4	D7	D10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245074	5	D7	D8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245075	6	D7	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245076	7	D7	D4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245077	8	D7	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245078	9	D8	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245079	10	D8	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245080	11	D8	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245081	12	D8	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245082	13	D8	E9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245083	14	D9	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245084	15	D9	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00111	041519144-0006	245085	16	D9	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245086	1	E1	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245087	2	E1	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245088	3	E1	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245089	4	E1	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245090	5	E1	H2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245091	6	E1	F1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245092	7	E1	F3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245093	8	E1	F5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245094	9	E2	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245095	10	E2	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245096	11	E2	F6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245097	12	E2	F4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245098	13	E2	F2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245099	14	E2	B2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245100	15	E2	B4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00113	041519144-0008	245101	16	E2	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245102	1	E4	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245103	2	E4	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245104	3	E4	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245105	4	E4	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245106	5	E5	B1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245107	6	E5	B3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245108	7	E5	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245109	8	E5	D1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245110	9	E5	D3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245111	10	E5	D5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245112	11	E6	H1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245113	12	E6	H3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245114	13	E6	H5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245115	14	E6	H7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245116	15	E6	H9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00115	041519144-0010	245117	16	E6	J4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245118	1	E7	E10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245119	2	E7	E8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245120	3	E7	E6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245121	4	E7	E4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245122	5	E7	E2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245123	6	E7	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245124	7	E7	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245125	8	E7	B5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245126	9	E8	G9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245127	10	E8	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245128	11	E8	G5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245129	12	E8	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245130	13	E8	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245131	14	E8	E3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245132	15	E8	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00117	041519144-0012	245133	16	E8	E7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245278	1	S1	I4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245279	2	S1	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245280	3	S1	F7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245281	4	S1	G3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245282	5	S1	E1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245283	6	S1	C3	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245284	7	S1	D6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245285	8	S1	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245286	9	S2	B6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245287	10	S2	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245288	11	S2	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245289	12	S2	C1	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245290	13	S2	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245291	14	S2	H6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245292	15	S2	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00119	041519151-0002	245293	16	S2	I2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245294	1	S7	B9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245295	2	S7	D7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245296	3	S7	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245297	4	S7	E3	F	1	1	13.2	0.48	27.5	LA		ADX	1	1	1		NaK, WRTA; 010871D	Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245298	5	S7	G6	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245299	6	S7	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245300	7	S7	I10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245301	8	S7	J5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245302	9	S6	I7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245303	10	S6	H10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245304	11	S6	F8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245305	12	S6	G2	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245306	13	S6	E4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245307	14	S6	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245308	15	S6	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00121	041519151-0004	245309	16	S6	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245310	1	T1	B8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245311	2	T1	C5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245312	3	T1	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245313	4	T1	F9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245314	5	T1	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245315	6	T1	G7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245316	7	T1	I8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245317	8	T1	H4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245318	9	T2	J9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245319	10	T2	H8	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245320	11	T2	G4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245321	12	T2	E5	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245322	13	T2	F10	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245323	14	T2	D9	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245324	15	T2	B7	ND														Air	CDM Smith	N. Ross/DDE			
UB-00123	041519151-0006	245325	16	T2	C4	ND														Air	CDM Smith	N. Ross/DDE			
UB-00043	38995150088-1461655	245344	1	D4	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245345	2	D4	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245346	3	D4	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245347	4	D4	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245348	5	D4	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245349	6	D4	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245350	7	D4	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245351	8	D4	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245352	9	D4	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245353	10	D5	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245354	11	D5	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245355	12	D5	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245356	13	D5	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245357	14	D5	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00043	38995150088-1461655	245358	15	D5	H5-1	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00043	389951500B8-1461655	245359	16	D5	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00043	389951500B8-1461655	245360	17	D5	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00043	389951500B8-1461655	245361	18	D5	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246296	1	A8	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246297	2	A8	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246298	3	A8	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246299	4	A8	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246300	5	A8	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246301	6	A8	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246302	7	A8	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246303	8	A8	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246304	9	A8	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246305	10	A8	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246306	11	A8	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246307	12	A8	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246308	13	A8	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246309	14	A8	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246310	15	A8	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246311	16	A8	H5-4	F	1	1	5.313	0.322	16.5	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246312	17	A8	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246313	18	A8	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246314	19	A8	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246315	20	A9	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246316	21	A9	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246317	22	A9	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246318	23	A9	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246319	24	A9	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246320	25	A9	H5-2	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246321	26	A9	G5-2	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246322	27	A9	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246323	28	A9	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246324	29	A9	C5-2	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246325	30	A9	C4-4	F	2	2	6.762	0.322	21	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246326	31	A9	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246327	32	A9	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246328	33	A9	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246329	34	A9	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246330	35	A9	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246331	36	A9	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00045	389951500B8-1461657	246332	37	A9	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246333	1	B1	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246334	2	B1	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246335	3	B1	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246336	4	B1	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246337	5	B1	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246338	6	B1	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246339	7	B1	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246340	8	B1	F4-2	F	1	1	5.313	0.322	16.5	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246341	9	B1	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246342	10	B1	E4-2	F	2	2	6.762	0.966	7	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246343	11	B2	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246344	12	B2	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246345	13	B2	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246346	14	B2	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246347	15	B2	F3-4	F	3	3	8.533	0.805	10.6	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246348	16	B2	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246349	17	B2	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246350	18	B2	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246351	19	B2	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246352	20	B2	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00046	389951500B8-1461658	246353	21	B2	G5-2	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246354	1	B4	E4-2	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246355	2	B4	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246356	3	B4	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246357	4	B4	G4-1	F	1	1	8.855	0.4025	22	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246358	5	B4	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246359	6	B4	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246360	7	B4	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246361	8	B4	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246362	9	B4	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246363	10	B4	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246364	11	B5	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246365	12	B5	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246366	13	B5	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246367	14	B5	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246368	15	B5	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246369	16	B5	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246370	17	B5	G3-3	F	2	2	12.719	0.5635	22.571429	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246371	18	B5	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246372	19	B5	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246373	20	B5	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00047	389951500B8-1461659	246374	21	B5	C3-3	ND														Air	CDM Smith	N. Ross			
UB-00048	389951500B8-1461660	246375	1	B7	H4-3	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246376	2	B7	H4-4	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246377	3	B7	G4-3	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246378	4	B7	G4-4	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246379	5	B7	F4-3	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246380	6	B7	F4-4	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246381	7	B7	E4-3	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246382	8	B7	E4-4	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246383	9	B7	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246384	10	B7	F4-2	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246385	11	B8	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246386	12	B8	E4-2	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246387	13	B8	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246388	14	B8	F4-2	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246389	15	B8	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246390	16	B8	G4-2	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246391	17	B8	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246392	18	B8	H4-2	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246393	19	B8	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00048	389951500B8-1461660	246394	20	B8	G5-2	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245362	1	D7	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245363	2	D7	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245364	3	D7	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245365	4	D7	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245366	5	D7	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245367	6	D7	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245368	7	D7	F4-2	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245369	8	D7	E4-2	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245370	9	D7	C4-2	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245371	10	D8	C4-2	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245372	11	D8	E4-2	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245373	12	D8	F4-2	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245374	13	D8	G4-2	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245375	14	D8	G5-2	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245376	15	D8	F5-2	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245377	16	D8	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00049	389951500B8-1461661	245378	17	D8	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00062	389951500B8-1461662	262696	1	A3	H2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262697	2	A3	G2-3	F	1	1	5.313	0.966	5.5	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262698	3	A3	G2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262699	4	A3	F2-3	F	2	2	5.635	0.322	17.5	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262700	5	A3	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262701	6	A3	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262702	7	A3	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262703	8	A3	C2-3	MD11	3													Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262704	9	A3	C2-3	MF		3	18.998	1.61	11.8	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262705	10	A3	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262706	11	A3	C3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262707	12	A3	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262708	13	A3	F3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262709	14	A3	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262710	15	A3	G3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262711	16	A3	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262712	17	A3	H3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262713	18	A3	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262714	19	A3	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262715	20	A3	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262716	21	A3	F3-3	F	4	4	15.456	0.805	19.2	OA		ADX	1	1	1		NaK, NR	Air	CDM Smith	N. Ross	Structure type for total structure #4 should be "F", not "R", according to benchsheet.	12/8/2015	
UB-00062	389951500B8-1461662	262717	22	A3	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262718	23	A3	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262719	24	A3	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262720	25	A3	C3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262721	26	A3	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262722	27	A3	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500B8-1461662	262723	28	A3	C4-2	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00062	389951508 9-1461662	262724	29	A3	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262725	30	A3	E4-2	F	5	5	6.44	0.805	8	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262726	31	A3	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262727	32	A3	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262728	33	A3	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262729	34	A3	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262730	35	A3	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262731	36	A3	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262732	37	A3	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262733	38	A3	G4-3	F	6	6	16.744	0.4025	41.6	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262734	39	A3	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262735	40	A3	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262736	41	A3	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262737	42	A3	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262738	43	A3	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262739	44	A3	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262740	45	A3	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262741	46	A3	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262742	47	A3	C5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262743	48	A3	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262744	49	A3	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262745	50	A3	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262746	51	A3	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262747	52	A3	G5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262748	53	A3	H5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262749	54	A3	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262750	55	A3	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262751	56	A3	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262752	57	A3	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262753	58	A3	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262754	59	A3	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262755	60	A3	E5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262756	61	A3	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262757	62	A3	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262758	63	A3	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262759	64	A3	C6-1	F	7	7	10.304	2.0125	5.12	LA		ADX	1		1		XK, AC	Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262760	65	A3	C6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262761	66	A3	E6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262762	67	A3	E6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262763	68	A3	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262764	69	A3	F6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262765	70	A3	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262766	71	A3	G6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262767	72	A3	C2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262768	73	A3	B3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262769	74	A3	B3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262770	75	A3	B3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262771	76	A3	B4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262772	77	A3	B4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262773	78	A3	B4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262774	79	A3	B4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262775	80	A3	B5-1	MD11	8													Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262776	81	A3	B5-1	MFO		8	9.016	0.4025	22.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262777	82	A3	B5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262778	83	A4	H2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262779	84	A4	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262780	85	A4	G2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262781	86	A4	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262782	87	A4	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262783	88	A4	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262784	89	A4	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262785	90	A4	C2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262786	91	A4	C2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262787	92	A4	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262788	93	A4	C3-2	F	9	9	7.245	0.4025	18	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262789	94	A4	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262790	95	A4	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262791	96	A4	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262792	97	A4	F3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262793	98	A4	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262794	99	A4	G3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262795	100	A4	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262796	101	A4	H3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262797	102	A4	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262798	103	A4	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262799	104	A4	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262800	105	A4	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262801	106	A4	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262802	107	A4	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262803	108	A4	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262804	109	A4	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262805	110	A4	C3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262806	111	A4	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262807	112	A4	C4-1	F	10	10	37.03	4.025	9.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262808	113	A4	C4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262809	114	A4	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262810	115	A4	E4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262811	116	A4	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262812	117	A4	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262813	118	A4	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262814	119	A4	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262815	120	A4	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262816	121	A4	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262817	122	A4	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262818	123	A4	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262819	124	A4	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262820	125	A4	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262821	126	A4	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262822	127	A4	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262823	128	A4	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262824	129	A4	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262825	130	A4	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262826	131	A4	C5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262827	132	A4	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262828	133	A4	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262829	134	A4	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262830	135	A4	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262831	136	A4	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262832	137	A4	G5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262833	138	A4	H5-1	F	11	11	8.372	0.4025	20.8	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262834	139	A4	H5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262835	140	A4	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262836	141	A4	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262837	142	A4	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262838	143	A4	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262839	144	A4	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262840	145	A4	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262841	146	A4	E5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262842	147	A4	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262843	148	A4	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262844	149	A4	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262845	150	A4	B5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262846	151	A4	C6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262847	152	A4	C6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262848	153	A4	E6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262849	154	A4	E6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262850	155	A4	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262851	156	A4	F6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262852	157	A4	G6-1	F	0	0	13.202	0.644	20.5	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262853	158	A4	G6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262854	159	A4	H6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262855	160	A4	B3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262856	161	A4	B3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262857	162	A4	B4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262858	163	A4	B4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262859	164	A4	B4-3	F	12	12	9.66	0.5635	17.142857	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262860	165	A4	B4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262861	166	A4	B5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262862	167	A4	B5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262863	168	A5	H2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262864	169	A5	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262865	170	A5	G2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262866	171	A5	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262867	172	A5	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262868	173	A5	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262869	174	A5	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262870	175	A5	C2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262871	176	A5	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262872	177	A5	C3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262873	178	A5	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262874	179	A5	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262875	180	A5	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262876	181	A5	F3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262877	182	A5	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262878	183	A5	H3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262879	184	A5	H3-3	F	13	13	11.27	0.4025	28	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951508 9-1461662	262880	185	A5	H3-4	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00062	389951500891461662	262881	186	A5	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262882	187	A5	G3-4	MD11	14													Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262883	188	A5	G3-4	MFO		14	8.372	0.4025	20.8	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262884	189	A5	E3-3	MD11	15													Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262885	190	A5	E3-3	MFO		15	9.66	0.4025	24	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262886	191	A5	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262887	192	A5	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262888	193	A5	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262889	194	A5	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262890	195	A5	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262891	196	A5	C4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262892	197	A5	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262893	198	A5	F4-1	MD11	16													Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262894	199	A5	F4-1	MFO		16	16.1	0.322	50	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262895	200	A5	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262896	201	A5	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262897	202	A5	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262898	203	A5	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262899	204	A5	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262900	205	A5	K4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262901	206	A5	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262902	207	A5	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262903	208	A5	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262904	209	A5	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262905	210	A5	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262906	211	A5	E4-3	MD11	0													Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262907	212	A5	E4-3	MF		0	48.3	4.025	12	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262908	213	A5	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262909	214	A5	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262910	215	A5	C4-4	F	17	17	8.211	0.483	17	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262911	216	A5	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262912	217	A5	C5-2	MD22	18													Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262913	218	A5	C5-2	MFO		18	6.44	0.644	10	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262914	219	A5	C5-2	MF		19	6.44	1.127	5.7142857	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262915	220	A5	C5-2	MD11	19													Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262916	221	A5	C5-2	MFO		20	6.923	0.4025	17.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262917	222	A5	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262918	223	A5	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262919	224	A5	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262920	225	A5	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262921	226	A5	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262922	227	A5	G5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262923	228	A5	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262924	229	A5	H5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262925	230	A5	K5-1	F	20	21	6.762	0.483	14	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262926	231	A5	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262927	232	A5	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262928	233	A5	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262929	234	A5	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262930	235	A5	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262931	236	A5	E5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262932	237	A5	E5-4	MD11	21													Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262933	238	A5	E5-4	MF		22	56.35	2.415	23.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262934	239	A5	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262935	240	A5	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262936	241	A5	C6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262937	242	A5	C6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262938	243	A5	E6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262939	244	A5	E6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262940	245	A5	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262941	246	A5	F6-2	F	22	23	32.2	1.61	20	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262942	247	A5	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262943	248	A5	G6-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262944	249	A5	H6-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262945	250	A5	B3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262946	251	A5	B3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262947	252	A5	B4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262948	253	A5	B4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262949	254	A5	B4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262950	255	A5	B4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262951	256	A5	B5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262952	257	A5	B5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262953	258	A5	B5-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262954	259	E5	H2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262955	260	E5	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262956	261	E5	G2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262957	262	E5	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262958	263	E5	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262959	264	E5	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262960	265	E5	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262961	266	E5	C2-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262962	267	E5	C2-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262963	268	E5	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262964	269	E5	C3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262965	270	E5	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262966	271	E5	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262967	272	E5	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262968	273	E5	F3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262969	274	E5	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262970	275	E5	G3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262971	276	E5	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262972	277	E5	H3-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262973	278	E5	H3-3	F	23	24	6.44	0.322	20	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262974	279	E5	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262975	280	E5	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262976	281	E5	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262977	282	E5	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262978	283	E5	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262979	284	E5	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262980	285	E5	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262981	286	E5	C3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262982	287	E5	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262983	288	E5	B3-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262984	289	E5	B3-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262985	290	E5	B4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262986	291	E5	B4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262987	292	E5	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262988	293	E5	C4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262989	294	E5	E4-1	MD11	24													Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262990	295	E5	E4-1	MF		25	8.533	0.483	17.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262991	296	E5	E4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262992	297	E5	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262993	298	E5	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262994	299	E5	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262995	300	E5	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262996	301	E5	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262997	302	E5	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262998	303	E5	K4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	262999	304	E5	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263000	305	E5	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263001	306	E5	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263002	307	E5	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263003	308	E5	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263004	309	E5	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263005	310	E5	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263006	311	E5	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263007	312	E5	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263008	313	E5	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263009	314	E5	B4-3	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263010	315	E5	B5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263011	316	E5	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263012	317	E5	C5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263013	318	E5	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263014	319	E5	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263015	320	E5	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263016	321	E5	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263017	322	E5	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263018	323	E5	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00062	389951500891461662	263019	324	E5	H5-2	F	25	26	32.2	1.61	20	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246719	1	D6	C6-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246720	2	D6	E6-1	F	1	1	20.93	0.483	43.333333	LA		ADX	1	1	1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246721	3	D6	E6-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246722	4	D6	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246723	5	D6	F6-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246724	6	D6	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246725	7	D6	G6-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246726	8	D6	H6-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246727	9	D6	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246728	10	D6	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246729	11	D6	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246730	12	D6	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246731	13	D6	F5-3	F	2	2	9.338	1.0465	8.9230769	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246732	14	D6	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246733	15	D6	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246734	16	D6	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246735	17	D6	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246736	18	D6	C5-1	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00065	389951500891461665	246737	19	D6	C5-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246738	20	D6	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246739	21	D6	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246740	22	D6	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246741	23	D6	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246742	24	D6	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246743	25	D6	G5-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246744	26	D6	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246745	27	D6	H5-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246746	28	D6	K5-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246747	29	D6	K4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246748	30	D6	H4-3	F	3	3	16.583	1.288	12.875	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246749	31	D6	H4-4	MD11	4													Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246750	32	D6	H4-4	MF		4	15.295	1.449	10.555556	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246751	33	D6	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246752	34	D6	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246753	35	D6	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246754	36	D6	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246755	37	D6	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246756	38	D6	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246757	39	D6	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246758	40	D6	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246759	41	D6	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246760	42	D6	C4-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246761	43	D6	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246762	44	D6	E4-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246763	45	D6	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246764	46	D6	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246765	47	D6	G4-1	F	5	5	53.13	1.771	30	LA		ADX	1		1		NaK, WRTA; XGB	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246766	48	D6	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246767	49	D6	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246768	50	D6	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246769	51	D6	K4-1	F	0	0	19.964	1.288	15.5	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246770	52	D6	K3-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246771	53	D6	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246772	54	D6	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246773	55	D6	G3-3	F	6	6	10.626	0.644	16.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246774	56	D6	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246775	57	D6	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246776	58	D6	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246777	59	D6	E3-4	F	7	7	12.075	0.644	18.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246778	60	D6	C3-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246779	61	D6	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246780	62	D6	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246781	63	D6	C3-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246782	64	D6	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246783	65	D6	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246784	66	D6	F3-1	F	8	8	9.982	0.483	20.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246785	67	D6	F3-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246786	68	D6	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246787	69	D6	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246788	70	D6	H3-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246789	71	D6	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246790	72	D6	G2-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246791	73	D6	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246792	74	D6	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246793	75	D6	E2-3	F	9	9	7.406	0.4025	18.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246794	76	D6	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246795	77	D6	C2-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246796	78	D7	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246797	79	D7	G2-4	F	10	10	8.05	0.5635	14.285714	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246798	80	D7	G2-4	F	11	11	12.558	0.644	19.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246799	81	D7	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246800	82	D7	F2-4	F	12	12	8.4525	0.5635	15	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246801	83	D7	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246802	84	D7	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246803	85	D7	C2-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246804	86	D7	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246805	87	D7	C3-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246806	88	D7	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246807	89	D7	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246808	90	D7	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246809	91	D7	G3-1	F	13	13	6.923	0.483	14.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246810	92	D7	G3-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246811	93	D7	H3-1	F	14	14	38.64	0.322	120	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246812	94	D7	H3-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246813	95	D7	K3-4	F	15	15	10.465	0.483	21.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246814	96	D7	H3-3	F	16	16	16.583	0.5635	29.428571	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246815	97	D7	H3-4	F	17	17	13.685	1.0465	13.076923	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246816	98	D7	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246817	99	D7	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246818	100	D7	F3-3	F	18	18	10.787	0.805	13.4	OA		ADX	1	1	1		NaK, NR	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246819	101	D7	F3-3	F	19	19	59.57	3.6225	16.444444	OA		ADX	1		1		NaK, NR; XGBLD	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246820	102	D7	F3-3	F	20	20	8.211	0.322	25.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246821	103	D7	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246822	104	D7	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246823	105	D7	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246824	106	D7	C3-3	F	21	21	11.592	0.483	24	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246825	107	D7	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246826	108	D7	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246827	109	D7	C4-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246828	110	D7	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246829	111	D7	E4-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246830	112	D7	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246831	113	D7	F4-2	F	22	22	5.635	0.966	5.8333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246832	114	D7	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246833	115	D7	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246834	116	D7	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246835	117	D7	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246836	118	D7	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246837	119	D7	K4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246838	120	D7	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246839	121	D7	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246840	122	D7	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246841	123	D7	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246842	124	D7	F4-3	F	23	23	25.76	1.771	14.545455	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246843	125	D7	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246844	126	D7	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246845	127	D7	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246846	128	D7	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246847	129	D7	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246848	130	D7	C5-2	F	24	24	7.245	0.322	22.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246849	131	D7	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246850	132	D7	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246851	133	D7	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246852	134	D7	F5-2	F	25	25	5.957	0.644	9.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246853	135	D7	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246854	136	D7	H5-1	F	26	26	6.279	1.2075	5.2	OA		ADX	1		1		NaK, NR	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246855	137	D7	H5-2	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246856	138	D7	K5-1	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246857	139	D7	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246858	140	D7	H5-4	MD22	27													Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246859	141	D7	H5-4	MF		27	35.42	2.576	13.75	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00065	389951500891461665	246860	142	D7	H5-4	MF		28	25.76	0.4025	64	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263020	1	E7	C6-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263021	2	E7	C6-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263022	3	E7	E6-1	F	1	1	6.923	1.2075	5.7333333	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263023	4	E7	E6-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263024	5	E7	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263025	6	E7	F6-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263026	7	E7	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263027	8	E7	G6-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263028	9	E7	H6-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263029	10	E7	H5-3	F	2	2	8.05	0.322	25	OA		ADX	1	1	1		NaK, NR	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263030	11	E7	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263031	12	E7	G5-3	F	3	3	53.13	0.966	55	LA		ADX	1		1		NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263032	13	E7	G5-4	F	4	4	10.626	0.805	13.2	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263033	14	E7	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263034	15	E7	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263035	16	E7	E5-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263036	17	E7	E5-4	F	5	5	5.313	0.4025	13.2	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263037	18	E7	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263038	19	E7	C5-4	F	6	6	11.431	0.5635	20.285714	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263039	20	E7	C5-4	F	7	7	6.601	0.4025	16.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263040	21	E7	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263041	22	E7	C5-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263042	23	E7	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263043	24	E7	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263044	25	E7	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263045	26	E7	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263046	27	E7	H5-1	F	8	8	6.601	0.5635	11.714286	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263047	28	E7	H5-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263048	29	E7	K5-1	F	9	9	8.372	0.483	17.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263049	30	E7	K4-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263050	31	E7	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263051	32	E7	H4-4	F	10	10	6.44	1.127	5.7142857	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389951500891461667	263052	33	E7	G4-3	F	11	11	5.474	1.2075	4.5333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)
Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00067	389955150089-1461667	263053	34	E7	G4-4	F	12	12	19.32	1.288	15	LA		ADX	1				NaX, WRTA; XGBLD	Air	CDM Smith	N. Ross	For total structure #12, EDXA is NaX, not NaK according to benchsheet.	12/8/2015	
UB-00067	389955150089-1461667	263054	35	E7	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263055	36	E7	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263056	37	E7	E4-3	F	13	13	8.211	0.483	17	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263057	38	E8	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263058	39	E8	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263059	40	E8	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263060	41	E8	F3-2	F	14	14	6.118	0.4025	15.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263061	42	E8	G3-1	F	15	15	5.474	0.483	11.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263062	43	E8	G3-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263063	44	E8	H3-1	F	16	16	6.279	0.644	9.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263064	45	E8	H3-2	F	17	17	5.957	0.4025	14.8	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263065	46	E8	K3-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263066	47	E8	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263067	48	E8	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263068	49	E8	G3-3	F	18	18	10.465	0.966	10.833333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263069	50	E8	G3-4	F	19	19	10.465	2.576	4.0625	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263070	51	E8	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263071	52	E8	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263072	53	E8	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263073	54	E8	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263074	55	E8	C3-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263075	56	E8	C4-2	F	20	20	10.787	1.288	8.375	LA		ADX	1				NaX, WRTA	Air	CDM Smith	N. Ross	For total structure #20, EDXA is NaX, not NaK according to benchsheet.	12/8/2015	
UB-00067	389955150089-1461667	263076	57	E8	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263077	58	E8	E4-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263078	59	E8	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263079	60	E8	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263080	61	E8	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263081	62	E8	G4-2	F	21	21	10.143	1.2075	8.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263082	63	E8	G4-2	F	22	22	6.44	0.322	20	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263083	64	E8	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263084	65	E8	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263085	66	E8	K4-4	F	23	23	9.66	0.483	20	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263086	67	E8	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263087	68	E8	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263088	69	E8	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263089	70	E8	G4-4	F	24	24	6.118	0.4025	15.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263090	71	E8	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263091	72	E8	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263092	73	E8	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263093	74	E8	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263094	75	E8	C4-3	F	25	25	11.753	0.644	18.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263095	76	E8	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00067	389955150089-1461667	263096	77	E8	C5-1	F	0	0	11.27	1.2075	9.3333333	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross	The last grid opening on page 6 is C5-1, not C5-2.	12/8/2015	
UB-00067	389955150089-1461667	263097	78	E8	C5-1	F	26	26	24.633	1.2075	20.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross	The last grid opening on page 6 is C5-1, not C5-2.	12/8/2015	
UB-00083	389955150090-1461669	263098	1	A8	C6-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263099	2	A8	C6-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263100	3	A8	E6-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263101	4	A8	E6-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263102	5	A8	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263103	6	A8	F6-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263104	7	A8	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263105	8	A8	G6-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263106	9	A8	H6-1	F	1	1	10.465	0.5635	18.571429	OA		ADX	1		1		NaX, NR	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263107	10	A8	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263108	11	A8	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263109	12	A8	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263110	13	A8	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263111	14	A8	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263112	15	A8	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263113	16	A8	E5-3	F	2	2	7.245	0.644	11.25	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263114	17	A8	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263115	18	A8	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263116	19	A8	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263117	20	A8	B5-2	ND														Air	CDM Smith	N. Ross	Grid_grid opening is A8_B5-2, not A8_B5-3 according to benchsheet (page 2).	12/8/2015	
UB-00083	389955150090-1461669	263118	21	A8	C5-1	MD11	3													Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263119	22	A8	C5-1	MF		3	6.118	0.322	19	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263120	23	A8	C5-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263121	24	A8	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263122	25	A8	E5-2	MD11	4													Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263123	26	A8	E5-2	MF		4	9.66	0.4025	24	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263124	27	A8	F5-1	F	5	5	9.016	1.449	6.2222222	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263125	28	A8	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263126	29	A8	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263127	30	A8	G5-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263128	31	A8	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263129	32	A8	H5-2	F	6	6	11.914	1.0465	11.384615	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263130	33	A8	K5-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263131	34	A8	K4-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263132	35	A8	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263133	36	A8	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263134	37	A8	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263135	38	A8	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263136	39	A8	F4-3	F	7	7	8.855	0.5635	15.714286	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263137	40	A8	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263138	41	A8	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263139	42	A8	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263140	43	A8	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263141	44	A8	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263142	45	A8	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263143	46	A8	C4-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263144	47	A8	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263145	48	A8	E4-2	MD11	8													Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263146	49	A8	E4-2	MF		8	13.846	0.322	43	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263147	50	A8	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263148	51	A8	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263149	52	A8	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263150	53	A8	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263151	54	A8	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263152	55	A8	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263153	56	A8	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263154	57	A8	K3-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263155	58	A8	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263156	59	A8	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263157	60	A8	G3-3	F	9	9	14.651	0.805	18.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263158	61	A8	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263159	62	A8	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263160	63	A8	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263161	64	A8	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263162	65	A8	C3-3	F	10	10	35.42	2.0125	17.6	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263163	66	A8	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263164	67	A8	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263165	68	A8	C3-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263166	69	A8	E3-1	F	11	11	9.66	0.805	12	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263167	70	A8	E3-1	F	12	12	9.821	1.449	6.7777778	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263168	71	A8	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263169	72	A8	G3-2	F	13	13	6.44	1.288	5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263170	73	A9	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263171	74	A9	G2-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263172	75	A9	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263173	76	A9	F2-4	F	14	14	11.27	1.127	10	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263174	77	A9	F2-4	MD11	15													Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263175	78	A9	F2-4	MF		15	5.474	0.5635	9.7142857	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389955150090-1461669	263176	79	A9	E2-3	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00083	389951500901461669	263177	80	A9	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263178	81	A9	C2-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263179	82	A9	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263180	83	A9	C3-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263181	84	A9	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263182	85	A9	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263183	86	A9	F3-1	F	16	16	9.338	0.483	19.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263184	87	A9	F3-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263185	88	A9	G3-1	F	17	17	8.694	0.4025	21.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263186	89	A9	G3-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263187	90	A9	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263188	91	A9	H3-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263189	92	A9	H3-3	F	18	18	15.295	0.805	19	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263190	93	A9	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263191	94	A9	G3-3	F	19	19	11.592	1.449	8	LA		ADX	1				XK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263192	95	A9	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263193	96	A9	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263194	97	A9	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263195	98	A9	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263196	99	A9	E3-4	F	20	20	14.168	0.805	17.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263197	100	A9	C3-3	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263198	101	A9	C3-4	F	21	21	6.923	0.805	8.6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263199	102	A9	C4-1	F	22	22	11.592	1.61	7.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263200	103	A9	C4-2	F	23	23	10.626	0.4025	26.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263201	104	A9	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263202	105	A9	E4-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263203	106	A9	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263204	107	A9	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263205	108	A9	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263206	109	A9	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263207	110	A9	H4-1	F	24	24	9.499	0.644	14.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263208	111	A9	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263209	112	A9	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00083	389951500901461669	263210	113	A9	K4-4	F	25	25	6.762	0.5635	12	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247052	1	B9	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247053	2	B9	G2-4	F	1	1	8.855	0.805	11	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247054	3	B9	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247055	4	B9	F2-4	F	2	2	15.295	1.288	11.875	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247056	5	B9	F2-4	F	3	3	8.694	0.5635	15.428571	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247057	6	B9	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247058	7	B9	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247059	8	B9	C2-3	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247060	9	B9	C2-4	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247061	10	B9	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247062	11	B9	C3-2	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247063	12	B9	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247064	13	B9	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247065	14	B9	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247066	15	B9	F3-2	F	4	4	7.728	0.322	24	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247067	16	B9	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247068	17	B9	G3-2	F	0	0	28.98	2.0125	14.4	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247069	18	B9	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247070	19	B9	H3-2	F	5	5	8.533	1.2075	7.0666667	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247071	20	B9	K3-4	F	6	6	7.728	0.5635	13.714286	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247072	21	B9	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247073	22	B9	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247074	23	B9	G3-3	F	7	7	11.27	0.322	35	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247075	24	B9	G3-4	F	8	8	5.152	0.483	10.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247076	25	B9	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247077	26	B9	F3-4	F	9	9	18.193	1.288	14.125	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247078	27	B9	F3-4	F	10	10	6.44	1.127	5.7142857	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247079	28	B9	E3-3	F	11	11	7.406	0.322	23	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247080	29	B9	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247081	30	B9	C3-3	F	0	0	53.774	2.415	22.266667	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247082	31	B9	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247083	32	B9	B3-3	MD11	12													Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247084	33	B9	B3-3	MF		12	9.982	0.322	31	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247085	34	B9	B3-3	MD11	13													Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247086	35	B9	B3-3	MF		13	5.635	1.127	5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247087	36	B9	B3-3	F	14	14	5.0715	0.805	6.3	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247088	37	B10	H2-4	MD22	15													Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247089	38	B10	H2-4	MF		15	13.202	0.644	20.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247090	39	B10	H2-4	MF		16	9.66	0.483	20	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247091	40	B10	G2-3	F	16	17	6.601	0.4025	16.4	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247092	41	B10	G2-4	MD11	17													Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247093	42	B10	G2-4	MF		18	14.007	0.322	43.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247094	43	B10	F2-3	F	18	19	5.2325	0.322	16.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247095	44	B10	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247096	45	B10	E2-3	F	19	20	6.118	0.483	12.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247097	46	B10	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247098	47	B10	C2-3	F	20	21	5.0715	1.288	3.9375	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247099	48	B10	C2-3	F	21	22	26.565	3.059	8.6842105	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247100	49	B10	C2-3	MD11	22													Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247101	50	B10	C2-3	MF		23	5.152	0.322	16	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247102	51	B10	C2-3	F	23	24	9.177	0.483	19	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247103	52	B10	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247104	53	B10	C3-2	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247105	54	B10	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247106	55	B10	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00085	389951500901461671	247107	56	B10	F3-1	F	24	25	6.44	0.7245	8.8888889	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247108	1	C10	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247109	2	C10	G2-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247110	3	C10	F2-3	F	0	0	21.896	0.483	45.333333	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247111	4	C10	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247112	5	C10	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247113	6	C10	E2-4	F	1	1	37.03	2.576	14.375	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247114	7	C10	C2-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247115	8	C10	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247116	9	C10	C3-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247117	10	C10	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247118	11	C10	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247119	12	C10	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247120	13	C10	F3-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247121	14	C10	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247122	15	C10	G3-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247123	16	C10	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247124	17	C10	H3-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247125	18	C10	K3-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247126	19	C10	H3-3	F	2	2	5.152	0.483	10.666667	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247127	20	C10	H3-4	MD11	3													Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247128	21	C10	H3-4	MF		3	8.05	0.322	25	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247129	22	C10	G3-3	F	4	4	12.88	0.644	20	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247130	23	C10	G3-3	MD11	5													Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247131	24	C10	G3-3	MF		5	19.32	0.805	24	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247132	25	C10	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247133	26	C10	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247134	27	C10	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247135	28	C10	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247136	29	C10	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247137	30	C10	C3-3	F	6	6	5.635	0.644	8.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247138	31	C10	C3-4	F	7	7	5.635	1.127	5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247139	32	C10	B3-3	F	8	8	12.719	1.61	7.9	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247140	33	C10	B4-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247141	34	C10	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247142	35	C10	C4-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247143	36	C10	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247144	37	C10	E4-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247145	38	C10	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247146	39	C10	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247147	40	C10	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247148	41	C10	G4-2	F	9	9	7.084	0.483	14.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247149	42	C10	H4-1	F	10	10	8.05	0.4025	20	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247150	43	C10	H4-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247151	44	C10	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247152	45	C10	K4-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247153	46	C10	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247154	47	C10	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247155	48	C10	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247156	49	C10	G4-4	F	11	11	20.93	1.61	13	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247157	50	C10	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247158	51	C10	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247159	52	C10	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247160	53	C10	E4-4	F	12	12	14.812	0.483	30.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247161	54	C10	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247162	55	C10	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247163	56	C10	B4-3	F	13	13	9.66	0.966	10	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247164	57	D1	H2-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247165	58	D1	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247166	59	D1	G2-4	F	14	14	6.923	0.4025	17.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247167	60	D1	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247168	61	D1	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247169	62	D1	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247170	63	D1	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247171	64	D1	C2-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247172	65	D1	C2-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247173	66	D1	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247174	67	D1	C3-2	MD11	15													Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00087	389951500901461673	247175	68	D1	C3-2	MF		15	9.016	0.805	11.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247176	69	D1	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247177	70	D1	E3-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247178	71	D1	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247179	72	D1	F3-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247180	73	D1	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247181	74	D1	G3-2	F	16	16	5.313	0.483	11	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247182	75	D1	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247183	76	D1	H3-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247184	77	D1	K3-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247185	78	D1	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247186	79	D1	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247187	80	D1	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247188	81	D1	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247189	82	D1	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247190	83	D1	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247191	84	D1	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247192	85	D1	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247193	86	D1	C3-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247194	87	D1	B4-2	F	17	17	8.533	0.5635	15.142857	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247195	88	D1	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247196	89	D1	C4-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247197	90	D1	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247198	91	D1	E4-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247199	92	D1	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247200	93	D1	F4-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247201	94	D1	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247202	95	D1	G4-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247203	96	D1	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247204	97	D1	H4-2	F	18	18	8.694	1.288	6.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247205	98	D1	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247206	99	D1	K4-2	F	19	19	9.982	0.8855	11.272727	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247207	100	D1	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247208	101	D1	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247209	102	D1	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247210	103	D1	G4-4	MD11	20													Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247211	104	D1	G4-4	MF		20	12.88	1.2075	10.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247212	105	D1	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247213	106	D1	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247214	107	D1	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247215	108	D1	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247216	109	D1	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247217	110	D1	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247218	111	D1	B4-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247219	112	D1	B5-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247220	113	D1	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247221	114	D1	C5-2	F	21	21	8.05	0.805	10	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247222	115	D1	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247223	116	D1	E5-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247224	117	D1	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247225	118	D1	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247226	119	D1	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247227	120	D1	G5-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247228	121	D1	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247229	122	D1	H5-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247230	123	D1	K5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247231	124	D1	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247232	125	D1	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247233	126	D1	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247234	127	D1	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247235	128	D1	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247236	129	D1	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247237	130	D1	E5-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247238	131	D1	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247239	132	D1	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247240	133	D1	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247241	134	D1	B5-3	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247242	135	D1	C6-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247243	136	D1	C6-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247244	137	D1	E6-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247245	138	D1	E6-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247246	139	D1	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247247	140	D1	F6-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247248	141	D1	G6-1	F	22	22	6.762	0.644	10.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247249	142	D1	G6-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247250	143	D1	H6-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247251	144	C10	B5-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247252	145	C10	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247253	146	C10	C5-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247254	147	C10	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247255	148	C10	E5-2	MD11	23													Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247256	149	C10	E5-2	MF		23	6.762	0.483	14	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247257	150	C10	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247258	151	C10	F5-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247259	152	C10	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247260	153	C10	G5-2	F	24	24	6.44	0.322	20	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247261	154	C10	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247262	155	C10	H5-2	ND														Air	CDM Smith	N. Ross			
UB-00087	389951500901461673	247263	156	C10	K5-1	F	25	25	7.245	0.644	11.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00089	389951500901461675	245379	1	D10	C4-2	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245380	2	D10	E4-2	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245381	3	D10	F4-2	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245382	4	D10	G4-2	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245383	5	D10	H4-2	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245384	6	D10	C4-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245385	7	D10	E5-2	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245386	8	D10	F5-2	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245387	9	D10	H4-4	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245388	10	D10	G5-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245389	11	E1	C4-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245390	12	E1	E4-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245391	13	E1	F4-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245392	14	E1	G4-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245393	15	E1	H4-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245394	16	E1	G3-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245395	17	E1	F3-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245396	18	E1	E3-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245397	19	E1	C3-3	ND														Air	CDM Smith	T. Miller			
UB-00089	389951500901461675	245398	20	E1	H3-3	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245409	1	E6	C4-3	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245410	2	E6	E4-3	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245411	3	E6	G4-4	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245412	4	E6	H4-4	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245413	5	E6	H3-4	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245414	6	E6	G3-4	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245415	7	E6	F3-4	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245416	8	E6	E3-4	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245417	9	E6	C3-4	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245418	10	E6	F5-4	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245419	11	E7	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245420	12	E7	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245421	13	E7	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245422	14	E7	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245423	15	E7	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245424	16	E7	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245425	17	E7	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245426	18	E7	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245427	19	E7	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00092	389951500911461678	245428	20	E7	C4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245429	1	E9	C4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245430	2	E9	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245431	3	E9	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245432	4	E9	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245433	5	E9	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245434	6	E9	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245435	7	E9	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245436	8	E9	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245437	9	E9	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245438	10	E9	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245439	11	E10	C4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245440	12	E10	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245441	13	E10	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245442	14	E10	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245443	15	E10	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245444	16	E10	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245445	17	E10	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245446	18	E10	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245447	19	E10	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00094	389951500911461680	245448	20	E10	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500911461681	245449	1	A2	C4-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500911461681	245450	2	A2	C4-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500911461681	245451	3	A2	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500911461681	245452	4	A2	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500911461681	245453	5	A2	F4-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500911461681	245454	6	A2	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500911461681	245455	7	A2	G4-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500911461681	245456	8	A2	H4-1	ND														Air	CDM Smith	T. Miller			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00095	389951500091-1461681	245457	9	A2	H4-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245458	10	A2	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245459	11	A2	C5-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245460	12	A2	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245461	13	A2	E5-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245462	14	A2	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245463	15	A2	F5-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245464	16	A2	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245465	17	A2	G5-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245466	18	A2	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245467	19	A2	H5-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245468	20	A2	H4-3	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245469	21	A3	C4-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245470	22	A3	C4-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245471	23	A3	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245472	24	A3	E4-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245473	25	A3	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245474	26	A3	F4-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245475	27	A3	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245476	28	A3	G4-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245477	29	A3	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245478	30	A3	H4-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245479	31	A3	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245480	32	A3	C5-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245481	33	A3	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245482	34	A3	E5-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245483	35	A3	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245484	36	A3	F5-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245485	37	A3	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245486	38	A3	G5-2	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245487	39	A3	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00095	389951500091-1461681	245488	40	A3	H5-2	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245489	1	A5	C4-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245490	2	A5	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245491	3	A5	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245492	4	A5	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245493	5	A5	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245494	6	A5	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245495	7	A5	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245496	8	A5	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245497	9	A5	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245498	10	A5	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245499	11	A6	C4-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245500	12	A6	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245501	13	A6	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245502	14	A6	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245503	15	A6	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245504	16	A6	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245505	17	A6	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245506	18	A6	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245507	19	A6	C5-2	ND														Air	CDM Smith	T. Miller			
UB-00101	389951500091-1461684	245508	20	A6	E5-4	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245509	1	A6	C4-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245510	2	A6	C4-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245511	3	A6	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245512	4	A6	E4-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245513	5	A6	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245514	6	A6	F4-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245515	7	A6	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245516	8	A6	G4-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245517	9	A6	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245518	10	A6	H4-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245519	11	A6	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245520	12	A6	C5-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245521	13	A6	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245522	14	A6	E5-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245523	15	A6	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245524	16	A6	F5-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245525	17	A6	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245526	18	A6	G5-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245527	19	A6	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245528	20	A6	H5-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245529	21	A7	C4-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245530	22	A7	C4-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245531	23	A7	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245532	24	A7	E4-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245533	25	A7	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245534	26	A7	F4-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245535	27	A7	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245536	28	A7	G4-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245537	29	A7	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245538	30	A7	H4-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245539	31	A7	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245540	32	A7	C5-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245541	33	A7	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245542	34	A7	E5-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245543	35	A7	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245544	36	A7	F5-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245545	37	A7	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245546	38	A7	G5-2	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245547	39	A7	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00102	389951500091-1461685	245548	40	A7	H5-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245549	1	A8	C4-1	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245550	2	A8	C4-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245551	3	A8	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245552	4	A8	E4-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245553	5	A8	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245554	6	A8	F4-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245555	7	A8	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245556	8	A8	G4-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245557	9	A8	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245558	10	A8	H4-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245559	11	A8	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245560	12	A8	C5-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245561	13	A8	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245562	14	A8	E5-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245563	15	A8	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245564	16	A8	F5-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245565	17	A8	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245566	18	A8	G5-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245567	19	A8	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245568	20	A8	H5-2	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245569	21	A9	H4-3	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245570	22	A9	H4-4	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245571	23	A9	G4-3	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245572	24	A9	G4-4	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245573	25	A9	F4-3	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245574	26	A9	F4-4	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245575	27	A9	E4-3	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245576	28	A9	E4-4	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245577	29	A9	C4-3	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245578	30	A9	C4-4	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245579	31	A9	H3-3	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245580	32	A9	H3-4	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245581	33	A9	G3-3	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245582	34	A9	G3-4	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245583	35	A9	F3-3	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245584	36	A9	F3-4	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245585	37	A9	E3-3	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245586	38	A9	E3-4	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245587	39	A9	C3-3	ND														Air	CDM Smith	T. Miller			
UB-00104	389951500091-1461687	245588	40	A9	C3-4	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245164	1	B9	K5-4	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245165	2	B9	K5-1	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245166	3	B9	H5-4	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245167	4	B9	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245168	5	B9	G5-4	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245169	6	B9	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245170	7	B9	F5-4	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245171	8	B9	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245172	9	B9	E5-4	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245173	10	B9	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245174	11	B9	C5-4	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245175	12	B9	C5-1	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245176	13	B9	B5-4	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245177	14	C9	H4-6	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245178	15	C9	H4-3	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245179	16	C9	G4-6	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245180	17	C9	G4-3	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245181	18	C9	F4-6	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245182	19	C9	F4-3	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245183	20	C9	E4-6	ND														Air	CDM Smith	T. Miller			
UB-00028	A150147-03	245184	21	C9	E4-3	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245185	1	B10	K3-4	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245186	2	B10	K3-1	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245187	3	B10	H3-4	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245188	4	B10	H3-1	ND														Air	CDM Smith	T. Miller			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00030	A150147-05	245189	5	B10	G3-4	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245190	6	B10	G3-1	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245191	7	B10	F3-4	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245192	8	B10	F3-1	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245193	9	B10	E3-4	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245194	10	B10	E3-1	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245195	11	B10	C3-4	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245196	12	B10	C3-1	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245197	13	A11	H6-1	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245198	14	A11	G6-4	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245199	15	A11	G6-1	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245200	16	A11	F6-4	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245201	17	A11	F6-1	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245202	18	A11	E6-4	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245203	19	A11	E6-1	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245204	20	A11	C6-4	ND														Air	CDM Smith	T. Miller			
UB-00030	A150147-05	245205	21	A11	B6-4	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245206	1	C11	K3-6	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245207	2	C11	K3-3	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245208	3	C11	H3-6	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245209	4	C11	H3-3	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245210	5	C11	G3-6	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245211	6	C11	G3-3	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245212	7	C11	F3-6	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245213	8	C11	F3-3	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245214	9	C11	E3-6	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245215	10	C11	E3-3	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245216	11	C11	C3-6	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245217	12	A12	K4-1	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245218	13	A12	H4-4	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245219	14	A12	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245220	15	A12	G4-4	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245221	16	A12	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245222	17	A12	F4-4	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245223	18	A12	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245224	19	A12	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245225	20	A12	C4-4	ND														Air	CDM Smith	T. Miller			
UB-00032	A150147-07	245226	21	A12	A4-4	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245227	1	A13	L3-3	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245228	2	A13	K3-6	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245229	3	A13	K3-3	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245230	4	A13	H3-6	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245231	5	A13	H3-3	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245232	6	A13	G3-6	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245233	7	A13	G3-3	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245234	8	A13	F3-6	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245235	9	A13	F3-3	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245236	10	A13	E3-6	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245237	11	A13	E3-3	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245238	12	A13	C3-6	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245239	13	B13	K4-3	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245240	14	B13	H4-6	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245241	15	B13	H4-3	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245242	16	B13	G4-6	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245243	17	B13	G4-3	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245244	18	B13	F4-6	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245245	19	B13	F4-3	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245246	20	B13	E4-6	ND														Air	CDM Smith	T. Miller			
UB-00034	A150147-09	245247	21	B13	E4-3	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243591	1	A15	K4-4	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243592	2	A15	K4-1	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243593	3	A15	H4-4	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243594	4	A15	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243595	5	A15	G4-4	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243596	6	A15	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243597	7	A15	F4-4	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243598	8	A15	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243599	9	A15	E4-4	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243600	10	A15	E4-1	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243601	11	A15	C4-4	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243602	12	B15	K5-1	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243603	13	B15	H5-4	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243604	14	B15	H5-1	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243605	15	B15	G5-4	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243606	16	B15	G5-1	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243607	17	B15	F5-4	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243608	18	B15	F5-1	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243609	19	B15	E5-4	ND														Air	CDM Smith	T. Miller			
UB-00037	A150228-03	243610	20	B15	E5-1	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243611	1	A16	K3-1	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243612	2	A16	H3-4	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243613	3	A16	H3-1	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243614	4	A16	G3-4	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243615	5	A16	G3-1	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243616	6	A16	F3-4	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243617	7	A16	F3-1	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243618	8	A16	E3-4	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243619	9	A16	E3-1	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243620	10	A16	C3-4	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243621	11	A16	C3-1	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243622	12	B16	K3-6	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243623	13	B16	K3-3	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243624	14	B16	H3-6	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243625	15	B16	H3-3	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243626	16	B16	G3-6	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243627	17	B16	G3-3	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243628	18	B16	F3-6	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243629	19	B16	F3-3	ND														Air	CDM Smith	T. Miller			
UB-00038	A150228-04	243630	20	B16	E3-6	ND														Air	CDM Smith	T. Miller			
UB-00041	A150228-07	243631	1	B17	K3-6	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243632	2	B17	K3-3	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243633	3	B17	H3-6	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243634	4	B17	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243635	5	B17	G3-6	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243636	6	B17	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243637	7	B17	F3-6	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243638	8	B17	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243639	9	B17	E3-6	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243640	10	B17	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243641	11	C17	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243642	12	C17	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243643	13	C17	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243644	14	C17	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243645	15	C17	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243646	16	C17	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243647	17	C17	E4-4	F	1	1	5.3	0.5	10.6	LA		ADX	1	1	1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00041	A150228-07	243648	18	C17	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00042	A150228-08	243649	1	B18	K3-3	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243650	2	B18	H3-6	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243651	3	B18	H3-3	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243652	4	B18	G3-6	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243653	5	B18	G3-3	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243654	6	B18	F3-6	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243655	7	B18	F3-3	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243656	8	B18	E3-6	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243657	9	B18	E3-3	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243658	10	B18	C3-6	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243659	11	B18	C3-3	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243660	12	A19	K4-4	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243661	13	A19	K4-1	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243662	14	A19	H4-4	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243663	15	A19	H4-1	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243664	16	A19	G4-4	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243665	17	A19	G4-1	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243666	18	A19	F4-4	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243667	19	A19	F4-1	ND														Air	CDM Smith	T. Miller			
UB-00042	A150228-08	243668	20	A19	E4-4	ND														Air	CDM Smith	T. Miller			
UB-00075	A150229-02	243679	1	B12	K3-4	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243680	2	B12	K3-1	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243681	3	B12	H3-4	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243682	4	B12	H3-1	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243683	5	B12	G3-4	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243684	6	B12	G3-1	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243685	7	B12	F3-4	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243686	8	B12	F3-1	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243687	9	B12	E3-4	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243688	10	B12	E3-1	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243689	11	B12	C3-4	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243690	12	B12	C3-1	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243691	13	B12	F4-4	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243692	14	B12	F4-1	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243693	15	B12	E4-4	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243694	16	B12	E4-1	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243695	17	B12	C4-4	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243696	18	B12	C4-1	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243697	19	B12	B4-4	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243698	20	B12	B4-1	ND														Air	CDM Smith	T. Miller			EF

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00075	A150229-02	243699	21	A13	H2-3	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243700	22	A13	G2-6	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243701	23	A13	G2-3	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243702	24	A13	F2-6	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243703	25	A13	F2-3	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243704	26	A13	E2-6	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243705	27	A13	E2-3	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243706	28	A13	C2-6	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243707	29	A13	C2-3	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243708	30	A13	B2-6	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243709	31	A13	K3-3	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243710	32	A13	H3-6	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243711	33	A13	H3-3	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243712	34	A13	G3-6	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243713	35	A13	G3-3	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243714	36	A13	F3-6	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243715	37	A13	F3-3	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243716	38	A13	E3-6	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243717	39	A13	E3-3	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243718	40	A13	C3-6	ND														Air	CDM Smith	T. Miller			EF
UB-00075	A150229-02	243719	41	A13	C3-3	ND														Air	CDM Smith	T. Miller			EF
UB-00077	A150229-04	243720	1	A8	H2-1	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243721	2	A8	G2-4	F	1	1	13	0.3	43.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243722	3	A8	G2-1	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243723	4	A8	F2-4	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243724	5	A8	F2-1	F	2	2	6.3	0.4	15.75	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243725	6	A8	F2-1	MD11	3													Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243726	7	A8	F2-1	MB		3	5.5	0.5	11	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243727	8	A8	E2-4	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243728	9	A8	E2-1	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243729	10	A8	K2-3	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243730	11	A8	H2-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243731	12	A8	H2-3	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243732	13	A8	G2-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243733	14	A8	G2-3	F	4	4	7.9	0.5	15.8	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243734	15	A8	G2-3	B	5	5	28	0.5	56	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243735	16	A8	F2-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243736	17	A8	F2-3	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243737	18	A8	E2-6	B	6	6	11.2	1.7	6.5882353	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243738	19	A8	E2-3	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243739	20	A8	C2-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243740	21	A8	C2-3	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243741	22	A8	K3-1	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243742	23	A8	H3-4	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243743	24	A8	H3-1	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243744	25	A8	G3-4	MD11	7													Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243745	26	A8	G3-4	MF		7	19	0.4	47.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243746	27	A8	G3-1	B	8	8	13.5	1	13.5	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243747	28	A8	F3-4	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243748	29	A8	F3-1	CD22	9													Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243749	30	A8	F3-1	CB		9	13	0.5	26	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243750	31	A8	F3-1	CF		10	10.4	0.9	11.555556	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243751	32	A8	E3-4	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243752	33	A8	E3-1	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243753	34	A8	C3-4	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243754	35	A8	C3-1	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243755	36	A8	B3-4	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243756	37	A8	K3-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243757	38	A8	K3-3	F	10	11	10	0.4	25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243758	39	A8	H3-6	B	11	12	7	0.25	28	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243759	40	A8	H3-3	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243760	41	A8	G3-6	F	12	13	7.7	0.8	9.625	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243761	42	A8	G3-6	B	13	14	5.6	0.8	7	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243762	43	B8	G2-1	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243763	44	B8	F2-4	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243764	45	B8	F2-1	B	14	15	8	1	8	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243765	46	B8	F2-1	F	15	16	10.2	0.3	34	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243766	47	B8	E2-4	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243767	48	B8	E2-1	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243768	49	B8	H2-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243769	50	B8	H2-3	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243770	51	B8	G2-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243771	52	B8	G2-3	MD11	16													Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243772	53	B8	G2-3	MF		17	14	0.7	20	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243773	54	B8	G2-3	MD11	17													Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243774	55	B8	G2-3	MB		18	8	0.3	26.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243775	56	B8	G2-3	F	18	19	5.8	0.4	14.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243776	57	B8	F2-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243777	58	B8	F2-3	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243778	59	B8	E2-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243779	60	B8	E2-3	F	0	0	14	0.25	56	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243780	61	B8	E2-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243781	62	B8	C2-3	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243782	63	B8	H3-4	MD11	19													Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243783	64	B8	H3-4	MF		20	9.1	0.4	22.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243784	65	B8	H3-1	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243785	66	B8	F3-4	MD11	20													Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243786	67	B8	F3-4	MF		21	6	0.3	20	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243787	68	B8	F3-1	F	0	0	32	0.5	64	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243788	69	B8	E3-4	F	21	22	11.2	0.4	28	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243789	70	B8	E3-1	MD11	22													Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243790	71	B8	E3-1	MF		23	6	0.6	10	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243791	72	B8	H3-6	ND														Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243792	73	B8	H3-3	MD11	23													Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243793	74	B8	H3-3	MB		24	7	0.5	14	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243794	75	B8	G3-6	MD11	24													Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243795	76	B8	G3-6	MF		25	10	0.4	25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00077	A150229-04	243796	77	B8	G3-6	B	25	26	6.7	0.3	22.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			EF
UB-00078	A150229-05	262405	1	A1	G2-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262406	2	A1	F2-4	MD11	1													Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262407	3	A1	F2-4	MB		1	6	1	6	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262408	4	A1	F2-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262409	5	A1	H2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262410	6	A1	H2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262411	7	A1	G2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262412	8	A1	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262413	9	A1	F2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262414	10	A1	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262415	11	A1	E2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262416	12	A1	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262417	13	A1	K3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262418	14	A1	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262419	15	A1	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262420	16	A1	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262421	17	A1	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262422	18	A1	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262423	19	A1	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262424	20	A1	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262425	21	A1	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262426	22	A1	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262427	23	A1	G3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262428	24	A1	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262429	25	A1	F3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262430	26	A1	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262431	27	A1	E3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262432	28	A1	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262433	29	A1	C3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262434	30	A1	C3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262435	31	A1	B3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262436	32	A1	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262437	33	A1	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262438	34	A1	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262439	35	A1	G4-4	B	2	2	19	1.3	14.615385	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262440	36	A1	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262441	37	A1	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262442	38	A1	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262443	39	A1	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262444	40	A1	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262445	41	A1	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262446	42	A1	C4-1	F	3	3	9	0.5	18	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262447	43	A1	K4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262448	44	A1	H4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262449	45	A1	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262450	46	A1	G4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262451	47	A1	F4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262452	48	A1	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262453	49	A1	E4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262454	50	A1	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262455	51	A1	C4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262456	52	A1	K5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262457	53	A1	K5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262458	54	A1	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262459	55	A1	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262460	56	A1	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262461	57	A1	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262462	58	A1	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262463	59	A1	F5-1	MD11	4													Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00078	A150229-05	262464	60	A1	F5-1	MB		4	10	0.8	12.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262465	61	A1	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262466	62	A1	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262467	63	A1	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262468	64	A1	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262469	65	A1	B5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262470	66	A1	B5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262471	67	A1	K5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262472	68	A1	H5-6	B	5	5	10.1	1	10.1	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross	For total structure #5, the structure comment in the EDD is missing the comment "XGBLD", based on the benchsheet (page 6).	12/3/2015	
UB-00078	A150229-05	262473	69	A1	H5-6	B	6	6	17	0.5	34	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262474	70	A1	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262475	71	A1	G5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262476	72	A1	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262477	73	A1	F5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262478	74	A1	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262479	75	A1	E5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262480	76	A1	E5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262481	77	A1	C5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262482	78	A1	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262483	79	A1	B5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262484	80	A1	H6-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262485	81	A1	G6-4	MD11	7													Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262486	82	A1	G6-4	MB		7	24	1.8	13.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262487	83	A1	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262488	84	B1	G2-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262489	85	B1	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262490	86	B1	H2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262491	87	B1	H2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262492	88	B1	G2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262493	89	B1	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262494	90	B1	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262495	91	B1	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262496	92	B1	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262497	93	B1	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262498	94	B1	F4	B	8	8	11	1	11	OA		ADX	1	1			NaX, NR; Magnesio-riebeckite	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262499	95	B1	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262500	96	B1	K3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262501	97	B1	K3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262502	98	B1	H3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262503	99	B1	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262504	100	B1	G3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262505	101	B1	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262506	102	B1	F3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262507	103	B1	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262508	104	B1	E3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262509	105	B1	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262510	106	B1	C3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262511	107	B1	C3-3	B	9	9	25	1	25	LA		ADX	1				NaK, WRTA; XGBLD	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262512	108	B1	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262513	109	B1	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262514	110	B1	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262515	111	B1	G4-4	B	10	10	8.9	0.4	22.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262516	112	B1	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262517	113	B1	F4-4	B	11	11	46	6	7.6666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262518	114	B1	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262519	115	B1	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262520	116	B1	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262521	117	B1	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262522	118	B1	K4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262523	119	B1	H4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262524	120	B1	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262525	121	B1	G4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262526	122	B1	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262527	123	B1	F4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262528	124	B1	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262529	125	B1	E4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262530	126	B1	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262531	127	B1	C4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262532	128	B1	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262533	129	B1	B4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262534	130	B1	B4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262535	131	B1	K5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262536	132	B1	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262537	133	B1	H5-1	B	12	12	12	0.3	40	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262538	134	B1	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262539	135	B1	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262540	136	B1	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262541	137	B1	F5-1	B	13	13	90	7	12.857143	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262542	138	B1	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262543	139	B1	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262544	140	B1	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262545	141	B1	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262546	142	B1	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262547	143	B1	G5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262548	144	B1	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262549	145	B1	F5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262550	146	B1	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262551	147	B1	E5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262552	148	B1	E5-3	B	14	14	14	3	4.6666667	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262553	149	B1	C5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262554	150	B1	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262555	151	B1	B5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262556	152	B1	G6-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262557	153	B1	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262558	154	B1	F6-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262559	155	B1	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262560	156	B1	E6-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262561	157	B1	E6-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262562	158	B1	C6-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262563	159	B1	C6-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262564	160	C1	G2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262565	161	C1	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262566	162	C1	F2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262567	163	C1	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262568	164	C1	E2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262569	165	C1	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262570	166	C1	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262571	167	C1	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262572	168	C1	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262573	169	C1	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262574	170	C1	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262575	171	C1	E3-1	B	15	15	20	1.5	13.333333	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262576	172	C1	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262577	173	C1	C3-1	B	16	16	12	1	12	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262578	174	C1	H3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262579	175	C1	H3-3	B	17	17	23	2	11.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262580	176	C1	G3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262581	177	C1	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262582	178	C1	F3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262583	179	C1	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262584	180	C1	E3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262585	181	C1	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262586	182	C1	C3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262587	183	C1	C3-3	B	18	18	21	3	7	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262588	184	C1	H4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262589	185	C1	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262590	186	C1	G4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262591	187	C1	G4-3	MD22	19													Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262592	188	C1	G4-3	MB		19	33	3	11	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262593	189	C1	G4-3	MB		20	26	2	13	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262594	190	C1	F4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262595	191	C1	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262596	192	C1	E4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262597	193	C1	K5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262598	194	C1	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262599	195	C1	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262600	196	C1	G5-4	MD11	20													Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262601	197	C1	G5-4	MB		21	6	1	6	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262602	198	A2	F2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262603	199	A2	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262604	200	A2	E2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262605	201	A2	E2-3	B	21	22	9.2	1.6	5.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262606	202	A2	C2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262607	203	A2	G3-1	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)
Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00078	A150229-05	262608	204	A2	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262609	205	A2	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262610	206	A2	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262611	207	A2	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262612	208	A2	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262613	209	A2	C3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262614	210	A2	B3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262615	211	A2	B3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262616	212	A2	A3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262617	213	A2	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262618	214	A2	G3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262619	215	A2	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262620	216	A2	F3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262621	217	A2	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262622	218	A2	E3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262623	219	A2	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262624	220	A2	C3-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262625	221	A2	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262626	222	A2	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262627	223	A2	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262628	224	A2	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262629	225	A2	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262630	226	A2	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262631	227	A2	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262632	228	A2	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262633	229	A2	B4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262634	230	A2	B4-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262635	231	A2	A4-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262636	232	A2	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262637	233	A2	G4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262638	234	A2	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262639	235	A2	F4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262640	236	A2	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262641	237	A2	E4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262642	238	A2	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262643	239	A2	C4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262644	240	A2	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262645	241	A2	B4-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262646	242	A2	B4-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262647	243	A2	A4-6	B	22	23	35	1.2	29.16667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262648	244	A2	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262649	245	A2	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262650	246	A2	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262651	247	A2	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262652	248	A2	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262653	249	A2	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262654	250	A2	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262655	251	A2	E5-1	B	23	24	8.5	0.5	17	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262656	252	A2	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262657	253	A2	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262658	254	A2	B5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262659	255	A2	B5-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262660	256	A2	A5-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262661	257	A2	G5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262662	258	A2	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262663	259	A2	F5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262664	260	A2	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262665	261	A2	E5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262666	262	A2	E5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262667	263	A2	C5-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262668	264	A2	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262669	265	A2	G6-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262670	266	A2	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262671	267	A2	F6-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262672	268	A2	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262673	269	A2	E6-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262674	270	A2	E6-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262675	271	A2	C6-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262676	272	A2	C6-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262677	273	B2	G2-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262678	274	B2	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262679	275	B2	F2-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262680	276	B2	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262681	277	B2	E2-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262682	278	B2	C2-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262683	279	B2	H2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262684	280	B2	H2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262685	281	B2	G2-6	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262686	282	B2	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262687	283	B2	K3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262688	284	B2	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262689	285	B2	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262690	286	B2	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262691	287	B2	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262692	288	B2	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262693	289	B2	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262694	290	B2	E3-4	B	24	25	13	2.5	5.2	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00078	A150229-05	262695	291	B2	L4-1	B	25	26	8	0.4	20	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243797	1	A5	G2-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243798	2	A5	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243799	3	A5	F2-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243800	4	A5	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243801	5	A5	E2-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243802	6	A5	H2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243803	7	A5	G2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243804	8	A5	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243805	9	A5	F2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243806	10	A5	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243807	11	A5	E2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243808	12	A5	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243809	13	A5	C2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243810	14	A5	H3-4	B	1	1	6	0.5	12	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243811	15	A5	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243812	16	A5	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243813	17	A5	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243814	18	A5	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243815	19	A5	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243816	20	A5	E3-4	MD11	2													Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243817	21	A5	E3-4	MB		2	14	1	14	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243818	22	A5	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243819	23	A5	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243820	24	A5	K3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243821	25	A5	H3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243822	26	A5	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243823	27	A5	G3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243824	28	A5	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243825	29	A5	F3-6	B	3	3	9.5	0.4	23.75	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243826	30	A5	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243827	31	A5	E3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243828	32	A5	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243829	33	A5	C3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243830	34	A5	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243831	35	A5	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243832	36	A5	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243833	37	A5	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243834	38	A5	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243835	39	A5	F4-4	B	4	4	21	1	21	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243836	40	A5	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243837	41	A5	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243838	42	A5	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243839	43	A5	C4-4	MD11	5													Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243840	44	A5	C4-4	MB		5	7	0.7	10	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243841	45	A5	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243842	46	A5	B4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243843	47	A5	B4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243844	48	A5	K4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243845	49	A5	K4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243846	50	A5	H4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243847	51	A5	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243848	52	A5	G4-6	MD11	6													Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243849	53	A5	G4-6	MB		6	5.2	0.7	7.4285714	LA		ADX	1		1		NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243850	54	A5	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243851	55	A5	F4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243852	56	A5	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243853	57	A5	E4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243854	58	A5	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243855	59	A5	C4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243856	60	A5	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243857	61	A5	B4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243858	62	A5	B4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243859	63	A5	K5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243860	64	A5	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243861	65	A5	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243862	66	A5	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243863	67	A5	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243864	68	A5	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243865	69	A5	F5-1	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)
Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00081	A150229-08	243866	70	A5	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243867	71	A5	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243868	72	A5	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243869	73	A5	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243870	74	A5	B5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243871	75	A5	B5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243872	76	A5	H5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243873	77	A5	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243874	78	A5	G5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243875	79	A5	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243876	80	A5	F5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243877	81	A5	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243878	82	A5	E5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243879	83	A5	E5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243880	84	A5	C5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243881	85	A5	H6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243882	86	A5	G6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243883	87	A5	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243884	88	A5	F6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243885	89	A5	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243886	90	A5	E6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243887	91	A5	E6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243888	92	A5	C6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243889	93	B5	F1-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243890	94	B5	F1-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243891	95	B5	G2-4	MD11	7													Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243892	96	B5	G2-4	MB		7	12	1.7	7.0588235	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243893	97	B5	G2-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243894	98	B5	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243895	99	B5	F2-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243896	100	B5	E2-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243897	101	B5	E2-1	B	8	8	13	1	13	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243898	102	B5	C2-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243899	103	B5	H2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243900	104	B5	G2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243901	105	B5	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243902	106	B5	F2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243903	107	B5	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243904	108	B5	E2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243905	109	B5	E2-3	B	9	9	6	0.7	8.5714286	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243906	110	B5	C2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243907	111	B5	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243908	112	B5	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243909	113	B5	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243910	114	B5	G3-1	MD11	10													Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243911	115	B5	G3-1	MB		10	6	1	6	OA		ADX	1				NaK, NR; Magnesio-riebeckite	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243912	116	B5	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243913	117	B5	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243914	118	B5	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243915	119	B5	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243916	120	B5	C3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243917	121	B5	C3-1	B	11	11	54	1	54	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243918	122	B5	B3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243919	123	B5	K3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243920	124	B5	H3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243921	125	B5	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243922	126	B5	G3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243923	127	B5	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243924	128	B5	F3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243925	129	B5	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243926	130	B5	E3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243927	131	B5	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243928	132	B5	C3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243929	133	B5	C3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243930	134	B5	B3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243931	135	B5	B3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243932	136	B5	A3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243933	137	B5	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243934	138	B5	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243935	139	B5	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243936	140	B5	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243937	141	B5	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243938	142	B5	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243939	143	B5	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243940	144	B5	E4-4	B	0	0	28	1.1	25.454545	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243941	145	B5	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243942	146	B5	C4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243943	147	B5	C4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243944	148	B5	B4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243945	149	B5	B4-1	B	12	12	13	1	13	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243946	150	B5	A4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243947	151	B5	K4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243948	152	B5	H4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243949	153	B5	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243950	154	B5	G4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243951	155	B5	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243952	156	B5	F4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243953	157	B5	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243954	158	B5	E4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243955	159	B5	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243956	160	B5	C4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243957	161	B5	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243958	162	B5	B4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243959	163	B5	B4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243960	164	B5	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243961	165	B5	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243962	166	B5	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243963	167	B5	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243964	168	B5	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243965	169	B5	F5-1	B	13	13	17	0.3	56.666667	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243966	170	B5	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243967	171	B5	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243968	172	B5	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243969	173	B5	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243970	174	B5	B5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243971	175	B5	B5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243972	176	B5	G6-6	B	0	0	52	1.5	34.666667	LA		ADX	1				; XNCGBLD	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243973	177	B5	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243974	178	B5	F5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243975	179	B5	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243976	180	B5	E5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243977	181	B5	E5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243978	182	B5	C5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243979	183	B5	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243980	184	B5	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243981	185	B5	F6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243982	186	B5	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243983	187	B5	E6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243984	188	B5	E6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243985	189	C5	G2-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243986	190	C5	G2-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243987	191	C5	F2-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243988	192	C5	F2-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243989	193	C5	K2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243990	194	C5	H2-6	B	14	14	5.5	0.7	7.8571429	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243991	195	C5	H2-6	B	15	15	17	1	17	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243992	196	C5	H2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243993	197	C5	G2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243994	198	C5	G2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243995	199	C5	F2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243996	200	C5	F2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243997	201	C5	E2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243998	202	C5	E2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	243999	203	C5	C2-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244000	204	C5	K3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244001	205	C5	K3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244002	206	C5	H3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244003	207	C5	H3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244004	208	C5	G3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244005	209	C5	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244006	210	C5	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244007	211	C5	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244008	212	C5	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244009	213	C5	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244010	214	C5	L3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244011	215	C5	K3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244012	216	C5	K3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244013	217	C5	H3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244014	218	C5	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244015	219	C5	G3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244016	220	C5	G3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244017	221	C5	F3-6	B	16	16	10	1	10	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244018	222	C5	F3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244019	223	C5	E3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244020	224	C5	E3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244021	225	C5	C3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244022	226	C5	C3-3	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ABS AIR (2015)
Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00081	A150229-08	244023	227	C5	B3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244024	228	C5	L4-1	MD11	17													Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244025	229	C5	L4-1	MB		17	9	0.8	11.25	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244026	230	C5	K4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244027	231	C5	K4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244028	232	C5	H4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244029	233	C5	H4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244030	234	C5	G4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244031	235	C5	G4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244032	236	C5	F4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244033	237	C5	F4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244034	238	C5	E4-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244035	239	C5	E4-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244036	240	C5	L4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244037	241	C5	K4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244038	242	C5	K4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244039	243	C5	H4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244040	244	C5	H4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244041	245	C5	G4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244042	246	C5	G4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244043	247	C5	F4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244044	248	C5	F4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244045	249	C5	E4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244046	250	C5	E4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244047	251	C5	C4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244048	252	C5	C4-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244049	253	C5	B4-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244050	254	C5	L5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244051	255	C5	K5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244052	256	C5	K5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244053	257	C5	H5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244054	258	C5	H5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244055	259	C5	G5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244056	260	C5	G5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244057	261	C5	F5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244058	262	C5	F5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244059	263	C5	E5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244060	264	C5	E5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244061	265	C5	C5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244062	266	C5	C5-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244063	267	C5	B5-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244064	268	C5	K5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244065	269	C5	H5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244066	270	C5	H5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244067	271	C5	G5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244068	272	C5	G5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244069	273	C5	F5-6	MD11	18													Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244070	274	C5	F5-6	MB		18	7	0.4	17.5	LA		ADX	1				NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244071	275	C5	F5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244072	276	C5	E5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244073	277	C5	E5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244074	278	C5	C5-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244075	279	C5	C5-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244076	280	C5	K6-1	B	19	19	8	1	8	LA		ADX	1	1			NaK, WRTA	Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244077	281	C5	H6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244078	282	C5	H6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244079	283	C5	G6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244080	284	C5	G6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244081	285	C5	F6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244082	286	C5	F6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244083	287	C5	E6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244084	288	C5	E6-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244085	289	C5	C6-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244086	290	A6	H2-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244087	291	A6	G3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244088	292	A6	F3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244089	293	A6	F3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244090	294	A6	E3-4	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244091	295	A6	E3-1	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244092	296	A6	H3-6	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244093	297	A6	H3-3	ND														Air	CDM Smith	N. Ross			
UB-00081	A150229-08	244094	298	A6	G3-6	ND														Air	CDM Smith	N. Ross			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ASH (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00125	041519119-0001	249937	1	M1	I3	F	1	1	3.3	0.6	5.5	LA		AX	1		1		NaX, WRTA; No SAED	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249938	2	M1	I3	F	2	2	4.7	0.48	9.7916667	LA		ADX	1	1	1		NaX, WRTA; 010826D	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249939	3	M1	I3	F	3	3	5.2	0.24	21.666667	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249940	4	M1	F2	F	4	4	2.8	0.24	11.666667	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249941	5	M1	F2	F	5	5	7.8	0.6	13	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249942	6	M1	F2	F	6	6	2	0.24	8.3333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249943	7	M1	E4	F	7	7	1.9	0.18	10.555556	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249944	8	M1	E4	F	8	8	2.4	0.72	3.3333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249945	9	M1	E4	F	9	9	2.8	0.36	7.7777778	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249946	10	M1	E4	F	10	10	5	0.48	10.416667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249947	11	M1	E4	F	11	11	3.8	0.48	7.9166667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249948	12	M1	B5	F	12	12	8.3	0.72	11.527778	LA		ADX	1				NaX, WRTA; Additional analysis 7/2	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249949	13	M1	B5	F	13	13	4	0.12	33.333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249950	14	M1	B5	F	14	14	2.7	0.72	3.75	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249951	15	M2	H9	F	15	15	1.4	0.18	7.7777778	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249952	16	M2	H9	F	16	16	4.2	0.24	17.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249953	17	M2	E7	F	17	17	6.8	0.72	9.4444444	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249954	18	M2	D10	F	0	0	3.7	0.24	15.416667	NAM		NAM	1	1	1		; 010832D	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249955	19	M2	D10	F	18	18	8.7	1.44	6.0416667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249956	20	M2	I8	F	19	19	7.1	1.2	5.9166667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249957	21	M2	I8	F	20	20	6.6	0.6	11	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249958	22	M2	I8	F	21	21	5.1	0.72	7.0833333	LA		ADX	1				NaX, WRTA; Additional analysis 7/2	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249959	23	M2	B10	MD11	22													Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249960	24	M2	B10	MFO		22	7.3	0.48	15.208333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249961	25	M2	B10	F	23	23	8.5	2.36	3.6016949	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249962	26	M2	A8	F	24	24	3.6	0.24	15	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249963	27	M2	C5	F	25	25	2.1	0.36	5.8333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249964	28	M2	C5	F	26	26	4.8	0.24	20	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001	249965	29	M2	C5	F	27	27	3.4	0.48	7.0833333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			EF
UB-00125	041519119-0001A	249966	1	N5	A4	F	1	1	3.1	0.2	15.5	LA		ADX	1	1	1		NaX, WRTA; Asbestos_575	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249967	2	N5	A4	F	2	2	5.1	0.25	20.4	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249968	3	N5	A4	F	3	3	2.5	0.2	12.5	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249969	4	N5	A4	F	4	4	1.9	0.4	4.75	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249970	5	N5	C7	F	5	5	8.7	0.7	12.428571	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249971	6	N5	C7	F	6	6	3.4	0.3	11.333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249972	7	N5	C7	MD20	7													Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249973	8	N5	C7	MFO		7	4.9	0.2	24.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249974	9	N5	C7	MFO	8	8	2.2	0.55	4	LA		ADX	1				XK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249975	10	N5	C7	F	8	9	6.2	0.55	11.272727	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249976	11	N5	C7	F	9	10	1.6	0.3	5.3333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249977	12	N5	C7	F	10	11	9.9	0.8	12.375	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249978	13	N5	C7	F	11	12	3.3	0.9	3.6666667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249979	14	N6	A6	F	12	13	3	0.5	6	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249980	15	N6	A6	F	13	14	2.1	0.1	21	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249981	16	N6	A6	F	14	15	5.3	0.25	21.2	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249982	17	N6	A6	F	15	16	1.1	0.2	5.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249983	18	N6	A6	F	16	17	2	0.25	8	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249984	19	N6	A6	F	17	18	2.5	0.3	8.3333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249985	20	N6	D10	MD10	18													Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249986	21	N6	D10	MFO		19	2.7	0.2	13.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249987	22	N6	D10	F	0	0	5.6	0.2	28	LA		ADX	1				; XNCGBLD	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249988	23	N6	E7	F	19	20	4	0.25	16	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249989	24	N6	E7	F	20	21	2.7	0.3	9	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249990	25	N6	E7	MD10	21													Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249991	26	N6	E7	MFO		22	1.1	0.3	3.6666667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249992	27	N6	E7	MD10	22													Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249993	28	N6	E7	MFO		23	2.1	0.2	10.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249994	29	N6	E7	F	23	24	3	0.3	10	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249995	30	N6	E7	F	24	25	2.5	0.7	3.5714286	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249996	31	N6	E7	MD11	25													Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249997	32	N6	E7	MF		26	8.8	0.3	29.333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001A	249998	33	N6	E7	F	26	27	2.8	0.3	9.3333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	249999	1	O5	J3	MD10	1													Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250000	2	O5	J3	MFO		1	3.2	0.25	12.8	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250001	3	O5	J3	F	2	2	1.1	0.2	5.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250002	4	O5	J3	MD10	3													Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250003	5	O5	J3	MFO		3	2.1	0.3	7	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250004	6	O5	J3	F	4	4	6.1	0.35	17.428571	LA		ADX	1	1	1		XK, WRTA; Asbestos_577	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250005	7	O5	J3	F	5	5	3.3	0.3	11	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250006	8	O5	J3	F	6	6	2.7	0.15	18	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250007	9	O5	J3	F	7	7	0.9	0.1	9	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250008	10	O5	J3	F	8	8	1.8	0.1	18	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250009	11	O5	J3	F	9	9	2.1	0.2	10.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250010	12	O5	D6	MD10	10													Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250011	13	O5	D6	MFO		10	2.2	0.2	11	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250012	14	O5	D6	F	11	11	5.6	0.6	9.3333333	LA		ADX	1		1		NaX, WRTA; XGBLD	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250013	15	O6	A5	F	12	12	1.1	0.25	4.4	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250014	16	O6	A5	F	13	13	3	0.35	8.5714286	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250015	17	O6	A5	F	14	14	1	0.3	3.3333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250016	18	O6	A5	F	15	15	3	0.5	6	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250017	19	O6	A5	F	16	16	2.9	0.25	11.6	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250018	20	O6	A5	F	17	17	2.8	0.15	18.666667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250019	21	O6	A5	F	18	18	3.2	0.3	10.666667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250020	22	O6	G8	F	19	19	1.4	0.4	3.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250021	23	O6	G8	B	20	20	3.9	0.2	19.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250022	24	O6	G8	F	21	21	1.4	0.3	4.6666667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250023	25	O6	G8	MD10	22													Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250024	26	O6	G8	MFO		22	1	0.2	5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250025	27	O6	G8	F	23	23	5.6	0.15	37.333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250026	28	O6	G8	F	24	24	2.3	0.3	7.6666667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00125	041519119-0001B	250027	29	O6	G8	F	25	25	0.7	0.2	3.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250028	1	P5	J3	F	1	1	5.3	0.3	17.666667	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250029	2	P5	J3	F	2	2	2.4	0.1	24	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250030	3	P5	I7	ND														Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250031	4	P5	H3	F	3	3	1	0.1	10	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250032	5	P5	H3	F	4	4	2.5	0.8	3.125	LA		ADX	1	1	1		NaX, WRTA; Asbestos_579	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250033	6	P5	H3	F	5	5	2.6	0.15	17.333333	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250034	7	P5	G5	F	6	6	1.4	0.2	7	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250035	8	P5	G5	F	7	7	5.2	1.3	4	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250036	9	P5	G5	MD10	8													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250037	10	P5	G5	MFO		8	2.5	0.3	8.3333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250038	11	P5	G5	MD10	9													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250039	12	P5	G5	MF		9	2.4	0.2	12	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250040	13	P5	G5	B	10	10	3.4	0.25	13.6	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250041	14	P5	F3	F	11	11	1.1	0.2	5.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250042	15	P5	F3	F	12	12	2.2	0.3	7.3333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250043	16	P5	F3	F	13	13	5.5	0.7	7.8571429	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250044	17	P5	F3	F	14	14	9.3	0.3	31	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250045	18	P6	A8	MD10	15													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250046	19	P6	A8	MFO		15	1.4	0.3	4.6666667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250047	20	P6	A8	MD20	16													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250048	21	P6	A8	MFO		16	3.4	0.15	22.666667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250049	22	P6	A8	MFO		17	2	0.1	20	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250050	23	P6	A8	F	17	18	2.2	0.15	14.666667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250051	24	P6	C9	F	18	19	2.5	0.8	3.125	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250052	25	P6	C9	F	19	20	0.9	0.15	6	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250053	26	P6	C9	F	20	21	1.9	0.6	3.1666667	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250054	27	P6	E4	ND														Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250055	28	P6	F10	F	21	22	1.2	0.1	12	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250056	29	P6	G8	F	22	23	1.3	0.3	4.3333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250057	30	P6	G8	F	23	24	1.2	0.1	12	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250058	31	P6	G8	MD11	24													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250059	32	P6	G8	MF		25	6.8	0.1	68	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250060	33	P6	G8	F	25	26	0.9	0.2	4.5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002	250061	34	P6	G8	F	26	27	6.6	0.2	33	LA		ADX	1				NaX, WRTA; XGBLD	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250062	1	Q1	G3	F	1	1	2.4	0.18	13.333333	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250063	2	Q1	G3	F	2	2	21.2	0.48	44.166667	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250064	3	Q1	G3	F	3	3	11.3	0.6	18.833333	LA		ADX	1		1		NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250065	4	Q1	G3	F	4	4	1.4	0.36	3.8888889	LA		ADX	1	1	1		NaX, WRTA; 010840D	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250066	5	Q1	G3	MD10	5													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250067	6	Q1	G3	MFO		5	1.6	0.24	6.6666667	LA		AX	1		1		NaX, WRTA; Matrix Interference	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250068	7	Q1	G3	B	6	6	3.6	0.72	5	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250069	8	Q1	D1	F	7	7	8.6	0.24	35.833333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250070	9	Q1	D1	F	8	8	2.8	0.25	11.2	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250071	10	Q1	D1	F	9	9	2.4	0.24	10	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250072	11	Q1	D1	F	10	10	5.1	0.72	7.0833333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250073	12	Q1	D1	F	11	11	2.7	0.24	11.25	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250074	13	Q1	D1	F	12	12	6.4	0.48	13.333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250075	14	Q1	D1	F	13	13	3.8	0.2	19	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250076	15	Q1	D1	F	14	14	3.7	0.36	10.277778	LA		ADX	1				XK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250077	16	Q1	D1	F	15	15	1	0.12	8.3333333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250078	17	Q2	F7	F	16	16	5.4	0.36	15	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250079	18	Q2	F7	MD10	17													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250080	19	Q2	F7	MFO		17	1.7	0.24	7.0833333	LA		ADX	1				NaX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002A	250081	20	Q2	I10	F	18	18	2.7	0.24	11.25	LA		ADX	1				NaX, WRTA	Ash	CDM Sm

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN ASH (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00126	041519119-0002B	250094	6	R5	I1	MD10	6													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250095	7	R5	I1	MFO		6	3.6	0.7	5.1428571	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250096	8	R5	I1	B	7	7	1.9	0.25	7.6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250097	9	R5	I1	MD10	8													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250098	10	R5	I1	MF		8	2.2	0.3	7.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250099	11	R5	G4	F	9	9	0.9	0.2	4.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250100	12	R5	G4	F	10	10	5.1	0.7	7.2857143	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250101	13	R5	G4	F	11	11	1.3	0.3	4.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250102	14	R5	G4	F	12	12	8.7	0.6	14.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250103	15	R5	G4	F	13	13	1.4	0.3	4.6666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250104	16	R5	G4	F	14	14	8.5	0.55	15.454545	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250105	17	R5	G4	F	15	15	3.8	0.5	7.6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250106	18	R5	G4	F	16	16	10.4	0.3	34.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250107	19	R5	G4	F	17	17	3.8	0.8	4.75	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250108	20	R5	G4	F	18	18	3.4	0.3	11.333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250109	21	R6	C4	F	19	19	2.2	0.2	11	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250110	22	R6	C4	F	20	20	2.5	0.3	8.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250111	23	R6	C4	F	21	21	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250112	24	R6	C4	MD10	22													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250113	25	R6	C4	MF		22	4.6	0.3	15.333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250114	26	R6	C4	F	23	23	2.1	0.25	8.4	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250115	27	R6	F8	F	24	24	7.9	0.9	8.7777778	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250116	28	R6	F8	F	25	25	4.7	0.7	6.7142857	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250117	29	R6	F8	MD10	26													Ash	CDM Smith	N. Ross/DDE			
UB-00126	041519119-0002B	250118	30	R6	F8	MFO		26	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250119	1	S5	J3	F	1	1	3.5	0.5	7	LA		ADX	1	1			NaK, WRTA; Asbestos_583	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250120	2	S5	J3	F	2	2	5.2	0.25	20.8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250121	3	S5	J3	MD11	3													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250122	4	S5	J3	MFO		3	7.3	0.4	18.25	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250123	5	S5	I5	F	4	4	2.1	0.6	3.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250124	6	S5	I5	MD10	5													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250125	7	S5	I5	MFO		5	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250126	8	S5	I5	F	6	6	8.3	0.5	16.6	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250127	9	S5	I5	MD11	7													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250128	10	S5	I5	MF		7	11.1	0.45	24.666667	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250129	11	S5	I5	F	8	8	1.1	0.1	11	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250130	12	S5	I5	F	9	9	2.8	0.2	14	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250131	13	S5	I5	F	10	10	3.4	0.4	8.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250132	14	S5	I5	F	11	11	2.6	0.3	8.6666667	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250133	15	S5	I5	F	12	12	3.4	0.75	4.5333333	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250134	16	S6	J3	F	13	13	1.3	0.15	8.6666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250135	17	S6	J3	F	14	14	2.7	0.35	7.7142857	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250136	18	S6	J3	MD10	15													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250137	19	S6	J3	MF		15	2.3	0.15	15.333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250138	20	S6	J3	F	16	16	16.2	0.75	21.6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250139	21	S6	J3	F	17	17	6.4	0.35	18.285714	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250140	22	S6	E2	F	18	18	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250141	23	S6	D4	F	19	19	2.5	0.3	8.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250142	24	S6	D4	F	20	20	2.9	0.65	4.4615385	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250143	25	S6	D4	F	21	21	2.5	0.15	16.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250144	26	S6	D4	F	22	22	1.4	0.3	4.6666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250145	27	S6	D4	F	23	23	3.4	0.3	11.333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250146	28	S6	B5	MD10	24													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250147	29	S6	B5	MFO		24	2.3	0.5	4.6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250148	30	S6	B5	F	25	25	3.2	0.3	10.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250149	31	S6	B5	F	26	26	0.9	0.1	9	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250150	32	S6	B5	F	27	27	8.6	0.3	28.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250151	33	S6	B5	F	28	28	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250152	34	S6	B5	F	29	29	2.8	0.2	14	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003	250153	35	S6	B5	F	30	30	6	0.5	12	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250154	1	T5	I5	F	1	1	5.6	0.6	9.3333333	LA		ADX	1	1	1		XX, WRTA; 010849D	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250155	2	T5	I5	F	2	2	2.8	0.72	3.8888889	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250156	3	T5	H3	F	3	3	4.2	0.72	5.8333333	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250157	4	T5	H3	F	4	4	4.3	0.36	11.944444	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250158	5	T5	H3	MD10	5													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250159	6	T5	H3	MFO		5	2	0.36	5.5555556	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250160	7	T5	H3	F	6	6	0.7	0.12	5.8333333	LA		ADX	1				XX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250161	8	T5	H3	F	0	0	3.4	0.24	14.166667	LA		ADX	1				; XNCGBLD	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250162	9	T5	G1	F	7	7	1.2	0.24	5	LA		ADX	1				XX, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250163	10	T5	G1	F	8	8	1	0.12	8.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250164	11	T5	G2	F	9	9	10.8	3.27	3.3027523	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250165	12	T5	G3	F	10	10	3.8	0.36	10.555556	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250166	13	T5	E4	MD11	0													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250167	14	T5	E4	MFO		0	5.7	0.36	15.833333	LA		AX	1				; XNCGBLD | M. I.	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250168	15	T5	E4	F	11	11	2.1	0.24	8.75	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250169	16	T5	E4	F	12	12	2.1	0.24	8.75	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250170	17	T5	E4	F	13	13	2.4	0.24	10	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250171	18	T5	E4	F	14	14	3.6	0.84	4.2857143	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250172	19	T5	E4	F	15	15	6.7	0.6	11.166667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250173	20	T5	E4	F	16	16	2	0.6	3.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250174	21	T5	E4	F	0	0	12	1.44	8.3333333	OA		ADX	1	1	1		; 010857D	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250175	22	T5	B3	F	17	17	14.4	1.44	10	LA		ADX	1				NaK, WRTA; Additional analysis 7/2	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250176	23	T5	B3	F	18	18	4.4	0.48	9.1666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250177	24	T5	B3	F	19	19	4	0.36	11.111111	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250178	25	T6	G7	F	20	20	1.2	0.24	5	LA		AX	1				NaK, WRTA; Matrix interference	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250179	26	T6	G7	F	21	21	7.3	0.36	20.277778	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250180	27	T6	G7	F	22	22	8.5	0.24	35.416667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250181	28	T6	G7	F	23	23	2.6	0.48	5.4166667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250182	29	T6	G7	F	24	24	5	0.24	20.833333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250183	30	T6	G7	F	25	25	3.3	0.12	27.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250184	31	T6	G7	F	0	0	2.9	0.48	6.0416667	LA		ADX	1				; XNCGBLD	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003A	250185	32	T6	G7	B	26	26	4.9	0.48	10.208333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250186	1	U5	A8	F	1	1	1.1	0.25	4.4	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250187	2	U5	A8	MD11	2													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250188	3	U5	A8	MF		2	7.2	0.2	36	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250189	4	U5	A8	MD10	3													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250190	5	U5	A8	MFO		3	0.9	0.3	3	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250191	6	U5	B4	F	4	4	2.1	0.2	10.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250192	7	U5	B4	MD10	5													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250193	8	U5	B4	MFO		5	1.8	0.1	18	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250194	9	U5	B4	F	6	6	0.8	0.1	8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250195	10	U5	B4	F	7	7	1.2	0.4	3	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250196	11	U5	B4	F	8	8	6.5	0.3	21.666667	LA		ADX	1	1			NaK, WRTA; Asbestos_585	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250197	12	U5	D7	F	0	0	2.2	0.3	7.3333333	LA		ADX	1				; XNCGBLD	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250198	13	U5	D7	F	9	9	17.6	0.4	44	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250199	14	U5	D7	F	10	10	1.1	0.15	7.3333333	LA		ADX	1		1		NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250200	15	U5	D7	MD10	11													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250201	16	U5	D7	MFO		11	1.3	0.2	6.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250202	17	U5	D7	MD10	12													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250203	18	U5	D7	MFO		12	1.2	0.2	6	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250204	19	U5	D7	MD10	13													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250205	20	U5	D7	MF		13	1.3	0.15	8.6666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250206	21	U5	D7	F	14	14	5.8	0.4	14.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250207	22	U6	I3	F	15	15	2.3	0.55	4.1818182	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250208	23	U6	I3	MD10	16													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250209	24	U6	I3	MFO		16	1.6	0.15	10.666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250210	25	U6	I3	F	17	17	1.3	0.15	8.6666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250211	26	U6	I3	F	18	18	5.8	0.35	16.571429	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250212	27	U6	I3	F	19	19	2.5	0.3	8.3333333	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250213	28	U6	I3	F	20	20	1.1	0.3	3.6666667	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250214	29	U6	E4	MD10	21													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250215	30	U6	E4	MF		21	2.5	0.2	12.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250216	31	U6	E4	F	22	22	1.3	0.1	13	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250217	32	U6	E4	F	23	23	7.3	0.7	10.428571	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250218	33	U6	E4	MD10	24													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250219	34	U6	E4	MFO		24	3.2	0.1	32	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250220	35	U6	E4	F	25	25	1.2	0.25	4.8	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250221	36	U6	E4	MD10	26													Ash	CDM Smith	N. Ross/DDE			
UB-00127	041519119-0003B	250222	37	U6	E4	MFO		26	0.9	0.2	4.5	LA		ADX	1				NaK, WRTA	Ash	CDM Smith	N. Ross/DDE			

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN DUFF (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00003	041515450-0001	241966	1	D5	B8	F	1	1	1.4	0.24	5.8333333	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241967	2	D5	B8	F	2	2	2.4	0.24	10	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241968	3	D5	B8	F	3	3	3.3	0.36	9.1666667	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241969	4	D5	B8	F	4	4	1.6	0.36	4.4444444	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241970	5	D5	F10	F	5	5	10.2	0.72	14.166667	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241971	6	D5	F10	F	6	6	1.4	0.18	7.7777778	LA		ADX	1	1			NaX, WRTA; 010720D	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241972	7	D5	F10	F	7	7	2.4	0.48	5	LA		AX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241973	8	D5	F10	F	8	8	2.4	0.18	13.333333	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241974	9	D5	I7	F	9	9	1.7	0.18	9.4444444	LA		ADX	1				XX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241975	10	D5	I7	F	10	10	3.2	0.36	8.8888889	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241976	11	D5	I7	F	11	11	3.3	0.24	13.75	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241977	12	D5	I7	F	12	12	1.2	0.18	6.6666667	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241978	13	D6	C4	F	13	13	2.7	0.48	5.625	LA		ADX	1				NaX, WRTA; Additional analysis 6/2	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241979	14	D6	C4	F	14	14	2.4	0.24	10	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241980	15	D6	C4	F	15	15	3.6	0.48	7.5	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241981	16	D6	C4	F	16	16	4.8	0.36	13.333333	OA		ADX	1	1	1		XX, AN; 010725D, Anthophyllite	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241982	17	D6	C4	F	17	17	1.2	0.24	5	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241983	18	D6	E2	F	18	18	8.1	0.12	67.5	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241984	19	D6	E2	F	19	19	2.9	0.48	6.0416667	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241985	20	D6	E2	F	20	20	3.5	0.6	5.8333333	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241986	21	D6	H5	F	21	21	4.9	0.24	20.416667	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00003	041515450-0001	241987	22	D6	H5	F	22	22	6.9	1.2	5.75	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00004	041515450-0002	241988	1	E5	C9	F	1	1	6	0.24	25	LA		ADX	1	1	1		NaX, WRTA; 010727D	Duff	CDM Smith	N. Ross/DDE			
UB-00004	041515450-0002	241989	2	E5	C9	F	2	2	31.3	0.12	260.83333	LA		ADX	1		1		NaX, WRTA; XCGBLD	Duff	CDM Smith	N. Ross/DDE			
UB-00004	041515450-0002	241990	3	E5	H7	F	3	3	4.8	0.24	20	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00004	041515450-0002	241991	4	E6	G9	F	4	4	1.8	0.4	4.5	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00004	041515450-0002	241992	5	E6	D8	F	5	5	1.7	0.48	3.5416667	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	241993	1	F1	I4	F	1	1	1.3	0.24	5.4166667	LA		ADX	1	1	1		NaX, WRTA; 010729D	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	241994	2	F1	I4	F	2	2	7.6	0.48	15.833333	LA		ADX	1	1	1		NaX, WRTA; 010731D	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	241995	3	F1	I4	F	3	3	5	0.72	6.9444444	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	241996	4	F1	I4	F	4	4	2.9	0.6	4.8333333	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	241997	5	F1	E2	ND														Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	241998	6	F2	D3	F	5	5	3	0.24	12.5	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	241999	7	F2	G5	F	6	6	5.2	0.72	7.2222222	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	242000	8	F2	G5	F	7	7	1.7	0.18	9.4444444	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	242001	9	F2	G5	F	8	8	22.6	3.6	6.2777778	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	242002	10	F2	G5	F	9	9	5.2	0.36	14.444444	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	242003	11	F3	B3	F	10	10	1.8	0.48	3.75	LA		ADX	1				NaX, WRTA; Additional analysis 6/2	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	242004	12	F3	C6	F	11	11	2.1	0.24	8.75	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	242005	13	F3	E4	F	12	12	2	0.24	8.3333333	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	242006	14	F3	G2	F	13	13	4.3	1.4	3.0714286	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00005	041515450-0003	242007	15	F3	G2	F	14	14	5.8	0.48	12.083333	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00006	041515450-0004	242008	1	G5	H3	F	1	1	5	0.24	20.833333	LA		ADX	1		1		XX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00006	041515450-0004	242009	2	G5	H3	F	2	2	1.2	0.12	10	LA		AX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00006	041515450-0004	242010	3	G5	F6	ND														Duff	CDM Smith	N. Ross/DDE			
UB-00006	041515450-0004	242011	4	G6	E3	F	3	3	6.1	0.36	16.944444	LA		ADX	1	1	1		NaX, WRTA; 010735D	Duff	CDM Smith	N. Ross/DDE			
UB-00006	041515450-0004	242012	5	G6	E3	F	4	4	5	0.48	10.416667	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00006	041515450-0004	242013	6	G6	E3	F	5	5	1.7	0.18	9.4444444	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			
UB-00006	041515450-0004	242014	7	G6	E3	F	6	6	4.6	0.24	19.166667	LA		ADX	1				NaX, WRTA; XCGBLD	Duff	CDM Smith	N. Ross/DDE			
UB-00006	041515450-0004	242015	8	G6	I5	ND														Duff	CDM Smith	N. Ross/DDE			
UB-00007	041515450-0005	242016	1	H5	C8	F	1	1	8.1	0.72	11.25	LA		ADX	1	1	1		NaX, WRTA; 010737D	Duff	CDM Smith	N. Ross/DDE			
UB-00007	041515450-0005	242017	2	H5	G7	F	0	0	4.5	1.2	3.75	NAM		NAM	1		1		; No SAED	Duff	CDM Smith	N. Ross/DDE			
UB-00007	041515450-0005	242018	3	H6	H9	ND														Duff	CDM Smith	N. Ross/DDE			
UB-00007	041515450-0005	242019	4	H6	E7	ND														Duff	CDM Smith	N. Ross/DDE			
UB-00008	041515450-0006	242020	1	I1	I3	F	1	1	1	0.12	8.3333333	LA		ADX	1	1	1		NaX, WRTA; 010739D	Duff	CDM Smith	N. Ross/DDE			EF
UB-00008	041515450-0006	242021	2	I1	I3	F	2	2	5	0.36	13.888889	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
UB-00008	041515450-0006	242022	3	I1	E5	ND														Duff	CDM Smith	N. Ross/DDE			EF
UB-00008	041515450-0006	242023	4	I1	B4	MD31	3													Duff	CDM Smith	N. Ross/DDE			EF
UB-00008	041515450-0006	242024	5	I1	B4	MF		3	9.9	0.6	16.5	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
UB-00008	041515450-0006	242025	6	I1	B4	MFO		4	1.9	0.36	5.2777778	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
UB-00008	041515450-0006	242026	7	I1	B4	MF		5	1.2	0.12	10	LA		ADX	1				NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
UB-00008	041515450-0006	242027	8	I2	D3	F	4	6	2.7	0.6	4.5	LA		ADX	1		1		NaX, WRTA	Duff	CDM Smith	N. Ross/DDE			EF
UB-00008	041515450-0006	242028	9	I2	G5	ND														Duff	CDM Smith	N. Ross/DDE			EF

ATTACHMENT 2 DATA SUMMARY OF STRUCTURE INFORMATION - UNDERSTORY BURN TREE BARK (2015)

Libby Asbestos Superfund Site

Samp No	Lab Sample ID	StructureID	Row Index	Grid	Grid Opening	Structure Type	Primary	Total	Length	Width	AR	Mineral Class	Mineral Desc	Structure Identification	Sketch	Photo	EDS	CHNotCounted	Structure Comment	Media Type	Verifier's Company	Verifier's Name	Comment	Correction Date	DVC - 5%
UB-00012	041515450-0007	242068	1	C5	J6	ND														Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00012	041515450-0007	242069	2	C5	C7	ND														Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00012	041515450-0007	242070	3	C6	J6	ND														Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00012	041515450-0007	242071	4	C6	C7	ND														Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00013	041515450-0008	242072	1	D5	H7	ND														Tree Bark	CDM Smith	N. Ross/DDE			
UB-00013	041515450-0008	242073	2	D5	D4	ND														Tree Bark	CDM Smith	N. Ross/DDE			
UB-00013	041515450-0008	242074	3	D6	J5	ND														Tree Bark	CDM Smith	N. Ross/DDE			
UB-00013	041515450-0008	242075	4	D6	B4	MD11	1													Tree Bark	CDM Smith	N. Ross/DDE			
UB-00013	041515450-0008	242076	5	D6	B4	MF		1	5.4	1	5.4	LA		ADX	1	1	1		NaK, WRTA; Asbestos_487	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00014	041515450-0009	242077	1	E1	A8	F	1	1	3.8	0.75	5.0666667	LA		ADX	1	1	1		NaK, WRTA; Asbestos_491	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00014	041515450-0009	242078	2	E1	H6	F	2	2	0.7	0.15	4.6666667	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00014	041515450-0009	242079	3	E2	B7	ND														Tree Bark	CDM Smith	N. Ross/DDE			
UB-00014	041515450-0009	242080	4	E2	I8	ND														Tree Bark	CDM Smith	N. Ross/DDE			
UB-00015	041515450-0010	242081	1	F1	A6	F	1	1	3.4	0.35	9.7142857	LA		ADX	1	1	1		NaK, WRTA; Asbestos_493	Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242082	2	F1	C9	F	2	2	2.5	0.4	6.25	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242083	3	F1	E4	F	3	3	2.4	0.3	8	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242084	4	F1	F7	ND														Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242085	5	F1	G4	MD10	4													Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242086	6	F1	G4	MF		4	2.4	0.15	16	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242087	7	F1	I8	ND														Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242088	8	F2	A5	F	5	5	1.3	0.2	6.5	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242089	9	F2	C10	ND														Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242090	10	F2	E5	MD10	6													Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242091	11	F2	E5	MF		6	3.5	0.2	17.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242092	12	F2	G5	ND														Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00015	041515450-0010	242093	13	F2	I9	F	7	7	2.3	0.5	4.6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			EF
UB-00016	041515450-0011	251371	1	G5	I2	ND														Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251372	2	G5	F3	F	1	1	2.6	0.35	7.4285714	LA		ADX	1	1	1		NaK, WRTA; Asbestos_495	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251373	3	G5	F3	MD10	2													Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251374	4	G5	F3	MF		2	1.7	0.5	3.4	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251375	5	G5	F3	MD10	3													Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251376	6	G5	F3	MF		3	3.3	0.45	7.3333333	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251377	7	G5	F3	F	4	4	2.7	0.45	6	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251378	8	G5	F3	F	5	5	7.5	0.25	30	LA		ADX	1		1		NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251379	9	G5	F3	F	6	6	3.1	0.3	10.333333	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251380	10	G5	B3	F	7	7	2.8	0.3	9.3333333	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251381	11	G5	B3	MD31	8													Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251382	12	G5	B3	MF		8	5.6	0.4	14	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251383	13	G5	B3	MF		9	2.7	0.2	13.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251384	14	G5	B3	MF		10	2.3	0.2	11.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251385	15	G6	A3	F	9	11	2.6	0.3	8.6666667	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251386	16	G6	F9	MD10	10													Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251387	17	G6	F9	MF		12	1.9	0.2	9.5	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251388	18	G6	F9	MD10	11													Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251389	19	G6	F9	MFO		13	2.1	0.3	7	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251390	20	G6	F9	F	12	14	3.3	0.55	6	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251391	21	G6	I9	F	13	15	3.6	0.5	7.2	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251392	22	G6	I9	MD10	14													Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251393	23	G6	I9	MF		16	2.7	0.3	9	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251394	24	G6	I9	F	15	17	1.4	0.2	7	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			
UB-00016	041515450-0011	251395	25	G6	I9	F	16	18	3.8	0.55	6.9090909	LA		ADX	1				NaK, WRTA	Tree Bark	CDM Smith	N. Ross/DDE			

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - WILDFIRE SOIL (PLM-GRAV) (2015)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	File Revision Number	Media Type	Analysis Lab	Lab Job ID	Receipt Date	Analysis Type	Analysis Method	Instrument	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	LA Conc.	OA Conc.	CH Conc.	Verifier's Company	Verifier's Name	Verified Date
x-NR	SM-30151	0	Soil	EMSL45	451500113	9/11/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	144373	C3	Not QC	451500113-0003	9/21/2015	G. Hernandez	ND	ND	ND	CDM Smith	T. Miller	2/5/2016
	SM-30143	0	Soil	EMSL45	451500113	9/11/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	144373	C2	Not QC	451500113-0002	9/21/2015	G. Hernandez	ND	ND	ND	CDM Smith	T. Miller	2/5/2016

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - WILDFIRE SOIL (PLM-VE) (2015)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	File Revision Number	Media Type	Analysis Lab	Lab Job ID	Receipt Date	Analysis Type	Analysis Method	Instrument	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	Appearance	LA Bin	LA Conc.	OA Conc.	CH Conc.	Analysis Deviation	Verifier's Company	Verifier's Name	Verified Date
x-NR	SM-30143	0	Soil	EMSL45	451500112	9/11/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	227678	FG1	NOT QC	451500112-0002	9/21/2015	G. Hernandez	Tan,soil,fine,homogeneous	A	ND	ND	ND	No	CDM Smith	T. Miller	2/5/2016
	SM-30153	0	Soil	EMSL45	451500112	9/11/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	227678	FG1	NOT QC	451500112-0005	9/21/2015	G. Hernandez	Tan,soil,fine,homogeneous	A	ND	ND	ND	No	CDM Smith	T. Miller	2/5/2016
	SM-30163	0	Soil	EMSL45	451500112	9/11/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	227678	FG1	NOT QC	451500112-0008	9/21/2015	G. Hernandez	Tan,soil,fine,homogeneous	A	ND	ND	ND	No	CDM Smith	T. Miller	2/5/2016

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - AMPHITHEATER REMOVAL SOIL (PLM-GRAV)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Analysis Type	Analysis Method	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	LA Conc.	OA Conc.	CH Conc.	Verifier's Company	Verifier's Name
x-NR	VW-1-01	Surface Soil	EMSL27	271201145	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271201145-0002A	11/9/2012	K. Colberg	0.000073	ND	ND	CDM Smtih	A. Coler
	VW-1-02	Surface Soil	EMSL27	271201145	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271201145-0003A	11/9/2012	K. Colberg	Tr	ND	ND	CDM Smtih	A. Coler
	VW-1-015	Surface Soil	EMSL27	271300465	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271300465-0001A	8/2/2013	K. Colberg	Tr	ND	ND	CDM Smtih	A. Coler

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - AMPHITHEATER REMOVAL SOIL (PLM-VE)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Receipt Date	Analysis Type	Analysis Method	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	Appearance	LA Bin	LA Conc.	OA Conc.	CH Conc.	Analysis Deviation	Optical Property Data for Detected Samples									Verifier's Company	Verifier's Name
																			FbrMorph	FbrColor	SignElong	Pleoch	ExtinctAng	RIalpha	RIgamma	Biref	Optical Comments		
	VW-1-01	Surface Soil	EMSL27	271201145	11/8/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201145-0002	11/9/2012	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.626	1.633	LOW		CDM Smith	A. Coler
	VW-1-02	Surface Soil	EMSL27	271201145	11/8/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201145-0003	11/9/2012	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.626	1.633	LOW		CDM Smith	A. Coler
	VW-1-03	Surface Soil	EMSL27	271201145	11/8/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201145-0004	11/9/2012	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW		CDM Smith	A. Coler
	VW-1-04	Surface Soil	EMSL27	271201145	11/8/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201145-0005	11/9/2012	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		CDM Smith	A. Coler
	VW-1-05	Surface Soil	EMSL27	271201145	11/8/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201145-0006	11/9/2012	K. Colberg	Tan, nonfibrous, homogeneous	B1	Tr	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		CDM Smith	A. Coler
	VW-1-06	Surface Soil	EMSL27	271201145	11/8/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201145-0007	11/9/2012	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.625	1.635	LOW		CDM Smith	A. Coler
	VW-1-007	Surface Soil	EMSL27	271300415	6/26/2013	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	2713000415-0002	7/29/2013	K. Colberg	Tan, fibrous, homogeneous	C	1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.623	1.629	LOW		CDM Smith	A. Coler
	VW-1-008	Surface Soil	EMSL27	271300415	6/26/2013	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	2713000415-0003	7/29/2013	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.627	1.636	LOW		CDM Smith	A. Coler
	VW-1-009	Surface Soil	EMSL27	271300415	6/26/2013	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	2713000415-0004	7/29/2013	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.625	1.629	LOW		CDM Smith	A. Coler
x-NR	VW-1-010	Surface Soil	EMSL27	271300415	6/26/2013	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	2713000415-0005	8/2/2013	K. Colberg	Tan, fibrous, homogeneous	C	2	ND	ND	No	FIBER BUNDLES	BLUE	POSITIVE	Yes	INCLINED	1.625	1.634	LOW		CDM Smith	A. Coler
	VW-1-011	Surface Soil	EMSL27	271300415	6/26/2013	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	2713000415-0006	7/29/2013	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.623	1.636	MEDIUM		CDM Smith	A. Coler
	VW-1-012	Surface Soil	EMSL27	271300415	6/26/2013	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	2713000415-0007	8/2/2013	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.624	1.63	LOW		CDM Smith	A. Coler
	VW-1-013	Surface Soil	EMSL27	271300439	7/1/2013	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271300439-0001	8/2/2013	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.624	1.631	LOW		CDM Smith	A. Coler
	VW-1-014	Surface Soil	EMSL27	271300439	7/1/2013	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271300439-0002	8/2/2013	K. Colberg	Tan, nonfibrous, homogeneous	C	2	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.624	1.634	MEDIUM		CDM Smith	A. Coler
	VW-1-015	Surface Soil	EMSL27	271300465	7/10/2013	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271300465-0001	8/2/2013	K. Colberg	Tan, fibrous homogeneous	C	2	ND	ND	No	FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.625	1.632	LOW		CDM Smith	A. Coler

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - GEOTECH SOIL (PLM-GRAV)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Analysis Type	Analysis Method	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	LA Conc.	OA Conc.	CH Conc.	intID_Analysis	Verifier's Company	Verifier's Name
	GT-10003	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0002	7/25/2014	Tr	ND	ND	25639	CDM Smith	A. Coler
	GT-10004	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0008	7/25/2014	Tr	ND	ND	25640	CDM Smith	A. Coler
	GT-10006	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0014	7/25/2014	Tr	ND	ND	25641	CDM Smith	A. Coler
	GT-10008	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0020	7/25/2014	Tr	ND	ND	25642	CDM Smith	A. Coler
	GT-10009	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0026	7/25/2014	Tr	ND	ND	25643	CDM Smith	A. Coler
	GT-10013	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0038	7/25/2014	ND	ND	ND	25645	CDM Smith	A. Coler
	GT-10014	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0044	7/25/2014	ND	ND	ND	25646	CDM Smith	A. Coler
	GT-10016	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0050	7/25/2014	ND	ND	ND	25647	CDM Smith	A. Coler
	GT-10019	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0056	7/25/2014	ND	ND	ND	25648	CDM Smith	A. Coler
	GT-10021	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0062	7/28/2014	Tr	ND	ND	25649	CDM Smith	A. Coler
	GT-10024	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0073	7/28/2014	Tr	ND	ND	25650	CDM Smith	A. Coler
	GT-10027	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0084	7/28/2014	Tr	ND	ND	25651	CDM Smith	A. Coler
	GT-10029	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0090	7/28/2014	Tr	ND	ND	25652	CDM Smith	A. Coler
	GT-10030	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0096	7/28/2014	19	ND	ND	25653	CDM Smith	A. Coler
	GT-10031	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0102	7/28/2014	ND	ND	ND	25654	CDM Smith	A. Coler
x-NR	GT-10033	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0113	7/28/2014	1.4	ND	ND	25655	CDM Smith	A. Coler
	GT-10036	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0124	7/28/2014	Tr	ND	ND	25656	CDM Smith	A. Coler
	GT-10040	SOIL	EMSL27	271400210	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400210-0136	7/28/2014	ND	ND	ND	25658	CDM Smith	A. Coler
	GT-10048	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0001	6/30/2014	Tr	ND	ND	25331	CDM Smith	A. Coler
	GT-10053	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0002	6/30/2014	Tr	ND	ND	25332	CDM Smith	A. Coler
x-NR	GT-10055	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0003	6/30/2014	Tr	ND	ND	25333	CDM Smith	A. Coler
	GT-10059	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0004	6/30/2014	ND	ND	ND	25334	CDM Smith	A. Coler
	GT-10061	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0005	6/30/2014	Tr	ND	ND	25335	CDM Smith	A. Coler
	GT-10062	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0006	6/30/2014	Tr	ND	ND	25336	CDM Smith	A. Coler
	GT-10063	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0007	6/30/2014	Tr	ND	ND	25337	CDM Smith	A. Coler
	GT-10066	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0008	6/30/2014	Tr	ND	ND	25338	CDM Smith	A. Coler
	GT-10067	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0009	6/30/2014	Tr	ND	ND	25339	CDM Smith	A. Coler
	GT-10068	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0010	6/30/2014	Tr	ND	ND	25340	CDM Smith	A. Coler
	GT-10069	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0011	6/30/2014	ND	ND	ND	25341	CDM Smith	A. Coler
	GT-10080	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0013	6/30/2014	Tr	ND	ND	25343	CDM Smith	A. Coler
	GT-10082	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0014	6/30/2014	ND	ND	ND	25344	CDM Smith	A. Coler
	GT-10085	SOIL	EMSL27	271400216	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400216-0016	6/30/2014	Tr	ND	ND	25346	CDM Smith	A. Coler
	GT-10087	SOIL	EMSL27	271400227	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400227-0001	7/7/2014	Tr	ND	ND	25349	CDM Smith	A. Coler
	GT-10092	SOIL	EMSL27	271400227	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400227-0002	7/7/2014	Tr	ND	ND	25350	CDM Smith	A. Coler
	GT-10095	SOIL	EMSL27	271400227	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400227-0003	7/7/2014	ND	ND	ND	25351	CDM Smith	A. Coler
	GT-10096	SOIL	EMSL27	271400227	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400227-0004	7/7/2014	ND	ND	ND	25352	CDM Smith	A. Coler
x-NR	GT-10099	SOIL	EMSL27	271400227	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400227-0006	7/7/2014	ND	ND	ND	25354	CDM Smith	A. Coler
	GT-10100	SOIL	EMSL27	271400227	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400227-0007	7/7/2014	ND	ND	ND	25355	CDM Smith	A. Coler
	GT-10101	SOIL	EMSL27	271400227	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400227-0008	7/7/2014	Tr	ND	ND	25356	CDM Smith	A. Coler
	GT-10120	SOIL	EMSL27	271400229	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400229-0001	7/2/2014	Tr	ND	ND	25359	CDM Smith	A. Coler
	GT-10121	SOIL	EMSL27	271400229	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400229-0002	7/2/2014	Tr	ND	ND	25360	CDM Smith	A. Coler
	GT-10126	SOIL	EMSL27	271400229	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400229-0003	7/2/2014	Tr	ND	ND	25361	CDM Smith	A. Coler
	GT-10127	SOIL	EMSL27	271400229	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400229-0004	7/2/2014	Tr	ND	ND	25362	CDM Smith	A. Coler
	GT-10128	SOIL	EMSL27	271400229	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271400229-0005	7/2/2014	Tr	ND	ND	25363	CDM Smith	A. Coler

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - GEOTECH SOIL (PLM-VE)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Receipt Date	Analysis Type	Analysis Method	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	Appearance	LA Bin	LA Conc.	OA Conc.	CH Conc.	Analysis Deviation	Analysis Comments	Optical Property Data for Detected Samples									intID_Analysis	Verifier's Company	Verifier's Name	Comment	Date Corrected
																				FbrMorph	FbrColor	SignElong	Pleoch	ExtinctAng	RIalpha	RIgamma	Biref	Optical Comments					
	GT-10003	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0003	6/23/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.63	LOW		25365	CDM Smith	A. Coler		
	GT-10004	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0009	7/23/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.628	1.635	LOW		25366	CDM Smith	A. Coler		
	GT-10006	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0015	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	GRAY	POSITIVE	Yes	INCLINED	1.627	1.637	MEDIUM		25367	CDM Smith	A. Coler		
	GT-10008	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0021	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.627	1.64	MEDIUM		25368	CDM Smith	A. Coler		
	GT-10009	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0027	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.626	1.637	MEDIUM		25369	CDM Smith	A. Coler		
	GT-10013	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0039	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	GRAY	POSITIVE	Yes	INCLINED	1.623	1.632	LOW		25371	CDM Smith	A. Coler		
	GT-10014	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0045	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.637	MEDIUM		25372	CDM Smith	A. Coler		
x-NR	GT-10016	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0051	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.626	1.64	MEDIUM		25373	CDM Smith	A. Coler		
	GT-10019	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0057	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.627	1.64	MEDIUM		25374	CDM Smith	A. Coler		
	GT-10021	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0063	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	GRAY	POSITIVE	Yes	INCLINED	1.626	1.64	MEDIUM		25375	CDM Smith	A. Coler		
	GT-10022	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0068	7/24/2014	K.Colberg	Gray,soil,fine,homogeneous	C	3	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.627	1.637	MEDIUM		25376	CDM Smith	A. Coler		
	GT-10024	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0074	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.629	LOW		25377	CDM Smith	A. Coler		
	GT-10026	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0079	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		NON-ASBESTIFO	COLORLESS	POSITIVE	No	INCLINED	1.627	1.631	LOW		25378	CDM Smith	A. Coler		
	GT-10027	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0085	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.626	1.637	MEDIUM		25379	CDM Smith	A. Coler		
	GT-10029	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0091	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.636	LOW		25380	CDM Smith	A. Coler		
	GT-10030	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0097	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	C	3	ND	ND	No		ASBESTIFORM	GRAY	POSITIVE	Yes	INCLINED	1.627	1.639	MEDIUM		25381	CDM Smith	A. Coler		
	GT-10031	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0103	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.639	MEDIUM		25382	CDM Smith	A. Coler		
	GT-10032	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0108	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.629	1.639	MEDIUM		25383	CDM Smith	A. Coler		
	GT-10033	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0114	7/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.639	MEDIUM		25384	CDM Smith	A. Coler		
	GT-10035	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0119	7/25/2014	K.Colberg	Tan,soil,fine,homogeneous	A	ND	ND	ND	No											25385	CDM Smith	A. Coler		
	GT-10036	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0125	7/25/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.636	MEDIUM		25386	CDM Smith	A. Coler		
	GT-10040	SOIL	EMSL27	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0137	7/25/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.628	1.639	MEDIUM		25388	CDM Smith	A. Coler		
	GT-10041	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0001	6/23/2014	K.Colberg	Tan,soil,fine,homogeneous	C	2	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.623	1.629	LOW		25411	CDM Smith	A. Coler		
	GT-10043	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0002	6/23/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.624	1.628	LOW		25412	CDM Smith	A. Coler		
	GT-10046	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0004	6/23/2014	K.Colberg	Tan,soil,fine,homogeneous	C	3	ND	ND	No		ASBESTIFORM	GRAY	POSITIVE	Yes	INCLINED	1.625	1.634	LOW		25414	CDM Smith	A. Coler		
	GT-10047	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0005	6/23/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.624	1.636	MEDIUM		25415	CDM Smith	A. Coler		
	GT-10048	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0006	6/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.63	LOW		25416	CDM Smith	A. Coler		
	GT-10051	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0007	6/24/2014	K.Colberg	Tan,soil,fine,homogeneous	C	2	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.623	1.634	MEDIUM		25417	CDM Smith	A. Coler		
	GT-10052	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0008	6/24/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.642	MEDIUM		25418	CDM Smith	A. Coler		
	GT-10053	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0009	6/25/2014	K.Colberg	Tan,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.625	1.631	LOW		25419	CDM Smith	A. Coler		
	GT-10055	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0010	6/25/2014	K.Colberg	Tan,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.626	1.64	MEDIUM		25420	CDM Smith	A. Coler		
	GT-10056	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0011	6/25/2014	K.Colberg	Tan,soil,fine,homogeneous	C	2	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.628	1.643	MEDIUM		25421	CDM Smith	A. Coler		
	GT-10057	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0012	6/25/2014	K.Colberg	Tan,soil,fine,homogeneous	C	2	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.623	1.634	MEDIUM		25422	CDM Smith	A. Coler		
	GT-10058	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0013	6/25/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.634	LOW		25423	CDM Smith	A. Coler		
	GT-10059	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0014	6/25/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.635	LOW		25424	CDM Smith	A. Coler		
	GT-10060	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0015	6/25/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW		25425	CDM Smith	A. Coler		
	GT-10061	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0016	6/25/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.643	MEDIUM		25426	CDM Smith	A. Coler		
	GT-10062	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0017	6/25/2014	K.Colberg	Gray,soil,fine,homogeneous	C	2	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.64	MEDIUM		25427	CDM Smith	A. Coler		
x-NR	GT-10063	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0018	6/25/2014	K.Colberg	Gray,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.625	1.643	MEDIUM		25428	CDM Smith	A. Coler		
	GT-10066	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0019	6/26/2014	K.Colberg	Gray,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.639	MEDIUM		25429	CDM Smith	A. Coler		
	GT-10067	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0020	6/26/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.642	MEDIUM		25430	CDM Smith	A. Coler		
	GT-10068	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0021	6/26/2014	K.Colberg	Tan,soil,fine,homogeneous	C	2	ND	ND	No		ASBESTIFORM	GRAY	POSITIVE	Yes	INCLINED	1.624	1.634	MEDIUM		25431	CDM Smith	A. Coler		
	GT-10069	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0022	6/26/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	GRAY	POSITIVE	No	INCLINED	1.626	1.632	LOW		25432	CDM Smith	A. Coler		
	GT-10072	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0024	6/26/2014	K.Colberg	Tan,soil,fine,homogeneous	C	2	ND	ND	No		ASBESTIFORM	GRAY	POSITIVE	Yes	INCLINED	1.626	1.637	MEDIUM		25434	CDM Smith	A. Coler		
	GT-10074	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0025	6/26/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.626	1.634	LOW		25435	CDM Smith	A. Coler		
	GT-10075	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0026	6/26/2014	K.Colberg	Gray,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.639	MEDIUM		25436	CDM Smith	A. Coler		
	GT-10076	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0027	6/27/2014	K.Colberg	Tan,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.634	LOW		25437	CDM Smith	A. Coler		
	GT-10077	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0028	6/27/2014	K.Colberg	Tan,soil,fine,homogeneous	A	ND	ND	ND	No											25438	CDM Smith	A. Coler		
	GT-10078	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0029	6/27/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.638	MEDIUM		25439	CDM Smith	A. Coler		
	GT-10080	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0030	6/27/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.626	1.63	LOW		25440	CDM Smith	A. Coler		
	GT-10082	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0031	6/27/2014	K.Colberg	Tan,soil,fine,homogeneous	A	ND	ND	ND	No											25441	CDM Smith	A. Coler		
	GT-10085	SOIL	EMSL27	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0033	6/27/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.627	1.637	MEDIUM		25443	CDM Smith	A. Coler		
	GT-10086	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0001	7/7/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.642	MEDIUM		25450	CDM Smith	A. Coler		
	GT-10087	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0002	7/7/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.627	1.641	MEDIUM		25451	CDM Smith	A. Coler		
	GT-10088	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0003	7/7/2014	K.Colberg	Tan,soil,fine,homogeneous	A	ND	ND	ND	No											25452	CDM Smith	A. Coler		
	GT-10091	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0004	7/7/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.63	1.635	LOW		25453	CDM Smith	A. Coler		
	GT-10092	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0005	7/7/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.627	1.635	LOW		25454	CDM Smith	A. Coler		
	GT-10093	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0006	7/8/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.636	LOW		25455	CDM Smith	A. Coler		
	GT-10095	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0007	7/8/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		25456	CDM Smith	A. Coler		
	GT-10096	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0008	7/8/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	GREEN	POSITIVE	Yes	INCLINED	1.626	1.639	MEDIUM		25457	CDM Smith	A. Coler		
	GT-10099	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0010	7/8/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.624	1.63	LOW		25459	CDM Smith	A. Coler		
	GT-10100	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0011	7/8/2014	K.Colberg	Tan,soil,fine,homogeneous	A	ND	ND	ND	No											25460	CDM Smith	A. Coler		
	GT-10101	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0012	7/8/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.626	1.639	MEDIUM		25461	CDM Smith	A. Coler		
	GT-10102	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0013	7/8/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.625	1.642	MEDIUM		25462	CDM Smith	A. Coler		
x-NR	GT-10105	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0015	7/8/2014	K.Colberg	Green,soil,fine,homogeneous	C	4	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.625	1.636	MEDIUM		25464	CDM Smith	A. Coler		
	GT-10108	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0016	7/8/2014	K.Colberg	Gray,soil,fine,homogeneous	C	2	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.634	LOW		25465	CDM Smith	A. Coler		
	GT-10110	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0017	7/8/2014	K.Colberg	Tan,soil,fine,homogeneous	C	2	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.625	1.634	LOW		25466	CDM Smith	A. Coler		
	GT-10111	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0018	7/8/2014	K.Colberg	Tan,soil,fine,homogeneous	C	1	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.624	1.631	LOW		25467	CDM Smith	A. Coler		
	GT-10116	SOIL	EMSL27	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0020	7/8/2014	K.Colberg	Tan,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.625	1.638	MEDIUM		25469	CDM Smith	A. Coler		
	GT-10117	SOIL	EMSL27	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0001	7/1/2014	K.Colberg	Tan,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.626	1.631	LOW		25482	CDM Smith	A. Coler		
	GT-10118	SOIL	EMSL27	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0002	7/1/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.623	1.632	LOW		25483	CDM Smith	A. Coler		
	GT-10120	SOIL	EMSL27	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0003	7/1/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.625	1.642	MEDIUM		25484	CDM Smith	A. Coler		
	GT-10121	SOIL	EMSL27	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0004	7/1/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.626	1.639	MEDIUM		25485	CDM Smith	A. Coler		
x-NR	GT-10122	SOIL	EMSL27	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0005	7/1/2014	K.Colberg	Green,soil,coarse,homogeneous	A	ND	ND	ND	No											25486	CDM Smith	A. Coler		
	GT-10123	SOIL	EMSL27	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0006	7/2/2014	K.Colberg	Tan,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	Yes	INCLINED	1.627	1.643	MEDIUM		25487	CDM Smith	A. Coler		
	GT-10126	SOIL	EMSL27	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0008	7/2/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	TAN	POSITIVE	No	INCLINED	1.625	1.634	LOW		25489	CDM Smith	A. Coler	1.643, according to benchsheet	8/29/2014
	GT-10127	SOIL	EMSL27	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0009	7/2/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	GRAY	POSITIVE	Yes	INCLINED	1.626	1.63	LOW		25490	CDM Smith	A. Coler		
	GT-10128	SOIL	EMSL27	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0010	7/2/2014	K.Colberg	Tan,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.63	LOW		25491	CDM Smith	A. Coler		
	GT-10129	SOIL	EMSL27	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - GEOTECH SOIL (PLM-VE)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Receipt Date	Analysis Type	Analysis Method	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	Appearance	LA Bin	LA Conc.	OA Conc.	CH Conc.	Analysis Deviation	Analysis Comments	Optical Property Data for Detected Samples										intID_Analysis	Verifier's Company	Verifier's Name	Comment	Date Corrected
																				FbrMorph	FbrColor	SignElong	Pleoch	ExtinctAng	RIalpha	RIgamma	Biref	Optical Comments					
	GT-10008	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0021A	11/6/2014	P. Carr	Gray,soil,coarse,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		25396	CDM Smith	A. Coler		
	GT-10009	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0027A	11/6/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.629	LOW		25397	CDM Smith	A. Coler		
	GT-10013	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0039A	11/7/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW		25399	CDM Smith	A. Coler		
x-NR	GT-10014	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0045A	11/7/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.641	MEDIUM		25400	CDM Smith	A. Coler		
	GT-10016	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0049A	11/7/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.629	LOW		25401	CDM Smith	A. Coler		
	GT-10019	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0055A	11/7/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.641	MEDIUM		25402	CDM Smith	A. Coler		
	GT-10021	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0061A	11/7/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.645	MEDIUM		25403	CDM Smith	A. Coler		
	GT-10031	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0103A	11/7/2014	P. Carr	Tan,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.628	LOW		25404	CDM Smith	A. Coler		
	GT-10032	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0108A	11/7/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.638	MEDIUM		25405	CDM Smith	A. Coler		
	GT-10033	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0114A	11/7/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.641	MEDIUM		25406	CDM Smith	A. Coler		
	GT-10035	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0119A	11/7/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW		25407	CDM Smith	A. Coler		
	GT-10036	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0125A	11/7/2014	P. Carr	Tan,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.641	MEDIUM		25408	CDM Smith	A. Coler		
	GT-10040	SOIL	EMSL04	271400210	6/19/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400210-0137A	11/7/2014	P. Carr	Tan,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.631	LOW		25410	CDM Smith	A. Coler		
	GT-10074	SOIL	EMSL04	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0025A	11/5/2014	A. Castellano	Brown,soil,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.627	1.63	LOW		25515	CDM Smith	A. Coler		
	GT-10075	SOIL	EMSL04	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0026A	11/5/2014	A. Castellano	Brown,soil,coarse,homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.636	MEDIUM		25516	CDM Smith	A. Coler		
	GT-10076	SOIL	EMSL04	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0027A	11/5/2014	A. Castellano	Brown,soil,coarse,homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.63	LOW		25517	CDM Smith	A. Coler		
	GT-10077	SOIL	EMSL04	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0028A	11/5/2014	A. Castellano	Tan,sand,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.63	LOW		25518	CDM Smith	A. Coler		
x-NR	GT-10078	SOIL	EMSL04	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0029A	11/5/2014	A. Castellano	Brown,soil,fine,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.627	1.639	MEDIUM		25519	CDM Smith	A. Coler		
	GT-10080	SOIL	EMSL04	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0030A	11/5/2014	A. Castellano	Tan,sand,fine,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.639	MEDIUM		25520	CDM Smith	A. Coler		
	GT-10082	SOIL	EMSL04	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0031A	11/5/2014	A. Castellano	Tan,sand,fine,homogeneous	A	ND	ND	ND	No											25521	CDM Smith	A. Coler		
	GT-10085	SOIL	EMSL04	271400217	6/23/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400217-0033A	11/6/2014	P.Carr	Tan,soil,coarse,homogeneous	B1	Tr	ND	ND	No	Leica DM750	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.627	1.64	MEDIUM		25523	CDM Smith	A. Coler		
	GT-10086	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0001B	11/5/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.645	MEDIUM		25526	CDM Smith	A. Coler		
	GT-10087	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0002A	11/5/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.641	MEDIUM		25527	CDM Smith	A. Coler		
	GT-10088	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0003A	11/5/2014	P. Carr	Brown,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.641	MEDIUM		25528	CDM Smith	A. Coler		
	GT-10091	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0004A	11/5/2014	P. Carr	Brown,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.628	LOW		25529	CDM Smith	A. Coler		
	GT-10092	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0005A	11/5/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		25530	CDM Smith	A. Coler		
	GT-10093	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0006A	11/6/2014	P. Carr	Gray,soil,coarse,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.631	LOW		25531	CDM Smith	A. Coler		
	GT-10095	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0007A	11/6/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.628	LOW		25532	CDM Smith	A. Coler		
	GT-10096	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0008A	11/6/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW		25533	CDM Smith	A. Coler		
	GT-10099	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0010A	11/6/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.641	MEDIUM		25535	CDM Smith	A. Coler		
	GT-10100	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0011B	11/6/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.631	LOW		25536	CDM Smith	A. Coler		
	GT-10101	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0012A	11/6/2014	P. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		25537	CDM Smith	A. Coler		
	GT-10102	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0013A	11/6/2014	P. Carr	Brown,soil,coarse,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.641	MEDIUM		25538	CDM Smith	A. Coler		
	GT-10116	SOIL	EMSL04	271400237	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400237-0020B	11/6/2014	P. Carr	Gray,soil,coarse,homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.641	MEDIUM		25540	CDM Smith	A. Coler		
x-NR	GT-10117	SOIL	EMSL04	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0001A	10/27/2014	P. Carr	Gray, soil, coarse, homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.629	LOW		25542	CDM Smith	A. Coler		
	GT-10118	SOIL	EMSL04	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0002A	10/27/2014	P. Carr	Gray, soil, coarse, homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.623	1.631	LOW		25543	CDM Smith	A. Coler		
	GT-10120	SOIL	EMSL04	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0003A	10/27/2014	P. Carr	Brown, soil, coarse, homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.623	1.628	LOW		25544	CDM Smith	A. Coler		
	GT-10121	SOIL	EMSL04	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0004C	10/27/2014	P. Carr	Gray, soil, coarse, homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.631	LOW		25545	CDM Smith	A. Coler		
x-NR	GT-10122	SOIL	EMSL04	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0005A	10/27/2014	P. Carr	Gray, soil, coarse, homogeneous	A	ND	ND	ND	No											25546	CDM Smith	A. Coler		
	GT-10123	SOIL	EMSL04	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0006A	10/27/2014	P. Carr	Gray, soil, coarse, homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.64	MEDIUM		25547	CDM Smith	A. Coler		
	GT-10126	SOIL	EMSL04	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0008A	10/27/2014	P. Carr	Gray, soil, coarse, homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.631	LOW		25549	CDM Smith	A. Coler		
	GT-10127	SOIL	EMSL04	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0009A	10/27/2014	P. Carr	Gray, soil, coarse, homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		25550	CDM Smith	A. Coler		
	GT-10128	SOIL	EMSL04	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0010A	10/27/2014	P. Carr	Gray, soil, coarse, homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.645	MEDIUM		25551	CDM Smith	A. Coler		
	GT-10129	SOIL	EMSL04	271400230	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400230-0011A	10/27/2014	P. Carr	Brown, soil, coarse, homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.641	MEDIUM		25552	CDM Smith	A. Coler		
	GT-10130	SOIL	EMSL04	271400232	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400232-0001A	11/5/2014	M. Klinedinst	Tan/gray,soil,coarse,homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.632	LOW		25564	CDM Smith	A. Coler		
	GT-10132	SOIL	EMSL04	271400232	6/26/2014	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271400232-0002A	11/5/2014	M. Klinedinst	Tan/gray,soil,coarse,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.636	MEDIUM		25565	CDM Smith	A. Coler		

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - PHASE I SEDIMENT, FOREST SOIL & MINE WASTE

Index ID	Media	Fraction Suffix	Analysis Type	Analysis Method	Analysis LabID	Receipt Date	Lab QC Type	Lab SampleID	Analysis Status	Analyst	Analysis Date	Appearance	RefMat	Analysis Comments	Verifier's Company	Verifier	Comments
P1-00062	Forest Soil	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800012-0028	Analyzed	KB	1/23/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00077	Forest Soil	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800024-0006	Analyzed	KB	1/22/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00103	Forest Soil	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800033-0009	Analyzed	KB	1/29/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00128	Forest Soil	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800031-0001	Analyzed	KB	1/28/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00156	Forest Soil	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800030-0005	Analyzed	KB	1/28/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00220	Forest Soil	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800019-0001	Analyzed	KB	1/24/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00232	Solid	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800013-0029	Analyzed	KB	1/25/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00291	Mine Waste	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800012-0007	Analyzed	KB	1/21/2008			LA was found, in trace amounts, inseparable from parent material and was not calculated in total % of LA.	SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00298	Mine Waste	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL04		Not QA	040730895-0002	Analyzed	DB	12/21/2007				SRC	AB	Hard copy lists SOP as SRC-Libby-01(Revision 8); Lab Job number listed in hard copy as 4070730895-0002
P1-00341	Mine Waste	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800013-0039	Analyzed	KB	1/28/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00355	Mine Waste	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800012-0009	Analyzed	KB	1/21/2008			LA was found, in trace amounts, inseparable from parent material and was not calculated in total % of LA.	SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00396	Sediment	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800013-0020	Analyzed	KB	1/25/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00397	Sediment	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800013-0021	Analyzed	KB	1/25/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00400	Sediment	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800013-0024	Analyzed	KB	1/25/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
P1-00427	Solid	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	EMSL27		Not QA	270800024-0008	Analyzed	KB	1/22/2008				SRC	AB	Lab name, SOP version, Status and QA type null on hard copy
GB-120307	Solid	FG1	PLM-VE	SOP-LIBBY-03 (rev 0)	EMSL04	12/14/2007	NOT QA	040730897-040730897-0005		D. Beard	12/21/2007	Gray,Non-Fibrous,Homogeneous	T		SRC	AB	1. Analysis comment not entered in the EDD but decoded in the appearance field. 2. SOP Name/Revision was incorrectly entered in the EDD as v5; Data Manager (SRC) manually changed this field in the project database. 3. Hard copy listed lab job ID under EPA Index ID and EPA Index ID under Lab Sample ID. 4. Sample Appearance coded according to EMSL reporting log; 5. Suffix number was incorrect on benchsheet and EDD and the laboratory revised the benchsheet but not the EDD. The Data Manager (SRC) manually changed this field in the project database.
P1-00034	Forest Soil	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	LD	270800011-270800011-0025		K. Barnes	1/11/2008	Tan, Non-Fiberous, Homogeneous	T		SRC	A. Bacom	Receipt date listed as 1/9/08 on hard copy; Received date 1/8/08 on internal chain of custody; validated based on EMSL sheet which does not include index suffix, analysis method, or refmat
P1-00036	Forest Soil	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800011-270800011-0032		K. Barnes	1/10/2008	Brown, Non-Fiberous, Homogeneous	T		SRC	A. Bacom	Receipt date listed as 1/9/08 on hard copy; Received date 1/8/08 on internal chain of custody
P1-00040	Forest Soil	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	LD	270800011-270800011-0034		K. Barnes	1/11/2008	Tan, Non-Fibrous, Homogeneous	T		SRC	A. Bacom	Receipt date listed as 1/9/08 on hard copy; Received date 1/8/08 on internal chain of custody; validated based on EMSL sheet which does not include index suffix, analysis method, or refmat
P1-00062	Forest Soil	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800011-270800011-0031		K. Barnes	1/10/2008	Brown, Non-Fiberous, Homogeneous	T		SRC	A. Bacom	Receipt date listed as 1/9/08 on hard copy; Received date 1/8/08 on internal chain of custody
P1-00178	Forest Soil	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800011-270800011-0044		K. Barnes	1/10/2008	Tan, Non-Fiberous, Heterogeneous	T		SRC	A. Bacom	Receipt date listed as 1/9/08 on hard copy; Received date 1/8/08 on internal chain of custody
P1-00202	Forest Soil	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/11/2008	Not QA	270800017-270800017-0006		K. Barnes	1/15/2008	Tan, Fiberous, Heterogeneous	T		SRC	A. Bacom	
P1-00214	Forest Soil	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/11/2008	Not QA	270800017-270800017-0003		K. Barnes	1/15/2008	Tan, Fiberous, Heterogeneous	T		SRC	A. Bacom	
P1-00224	Forest Soil	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800011-270800011-0046		K. Barnes	1/10/2008	Tan, Non-Fiberous, Heterogeneous	T		SRC	A. Bacom	Receipt date listed as 1/9/08 on hard copy; Received date 1/8/08 on internal chain of custody
P1-00235	Solid	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800014-270800014-0028		K. Barnes	1/14/2008	Gray, Fiberous, Heterogeneous	T		SRC	A. Bacom	
P1-00340	Mine Waste	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800014-270800014-0048		K. Barnes	1/14/2008	Tan, Fiberous, Heterogeneous	T		SRC	A. Bacom	
P1-00342	Mine Waste	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800014-270800014-0049		K. Barnes	1/14/2008	Tan, Fiberous, Heterogeneous	T		SRC	A. Bacom	
P1-00366	Mine Waste	FG1	PLM-VE	SOP-LIBBY-03 (rev 0)	EMSL04	12/14/2007	NOT QA	040730897-040730897-0004		D. Beard	12/21/2007	Brown, Fibrous, Homogeneous	T		SRC	A. Bacom	1. Analysis comment not entered in the EDD but decoded in the appearance field. 2. SOP Name/Revision was incorrectly entered in the EDD as v5; Data Manager (SRC) manually changed this field in the project database. 3. Hard copy listed lab job ID under EPA Index ID and EPA Index ID under Lab Sample ID. 4. Sample Appearance coded according to EMSL reporting log; 5. Suffix number was incorrect on benchsheet and EDD and the laboratory revised the benchsheet but not the EDD. The Data Manager (SRC) manually changed this field in the project database.
P1-00371	Mine Waste	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800011-270800011-0012		K. Barnes	1/10/2008	Tan, Non-Fiberous, Heterogeneous	T		SRC	A. Bacom	Receipt date listed as 1/9/08 on hard copy; Received date 1/8/08 on internal chain of custody

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - PHASE I SEDIMENT, FOREST SOIL & MINE WASTE

Index ID	Media	Fraction Suffix	Analysis Type	Analysis Method	Analysis LabID	Receipt Date	Lab QC Type	Lab SampleID	Analysis Status	Analyst	Analysis Date	Appearance	RefMat	Analysis Comments	Verifier's Company	Verifier	Comments
P1-00379	Mine Waste	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800014-270800014-0045		K. Barnes	1/14/2008	Gray, Fiberous, Heterogeneous	T		SRC	A. Bacom	
P1-00395	Sediment	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800014-270800014-0001		K. Barnes	1/11/2008	Lt. Green, Fiberous, Heterogeneous	T		SRC	A. Bacom	
P1-00403	Sediment	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800014-270800014-0008		K. Barnes	1/11/2008	Green, Fiberous, Heterogeneous	T		SRC	A. Bacom	
P1-00404	Sediment	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800014-270800014-0009		K. Barnes	1/11/2008	Tan, Non-Fiberous, Heterogeneous	T		SRC	A. Bacom	
P1-00421	Solid	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/8/2008	Not QA	270800011-270800011-0021		K. Barnes	1/10/2008	Tan, Non-Fiberous, Heterogeneous	T		SRC	A. Bacom	Receipt date listed as 1/9/08 on hard copy; Received date 1/8/08 on internal chain of custody
P1-00428	Solid	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/11/2008	Not QA	270800022-270800022-0003		K. Barnes	1/15/2008	White, Non-Fiberous, Homogeneous	T		SRC	A. Bacom	
P1-00431	Solid	FG1	PLM-VE	SOP-Libby-03 Rev 1	EMSL27	1/11/2008	Not QA	270800020-270800020-0002		K. Barnes	1/14/2008	Lt Green, Fiberous, Heterogeneous	T		SRC	A. Bacom	

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - PHASE II SEDIMENT

Index ID	Fract Suffix	Analysis Type	AnalysisMethod	Analysis Lab	Lab Job Number	Receipt Date	Lab QC Type	Lab SampleID	Analysis Status	Analyst	Analysis Date	Appearance	RefMat	Analysis Comments	Verifier's Company	Verifier	Comment
P2-00770	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080002		Not QA	12302080002-1148921	Analyzed	AC	10/2/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-00942	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080002		Not QA	12302080002-1148918	Analyzed	AC	10/2/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-00945	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080002		Not QA	12302080002-1148919	Analyzed	AC	10/2/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-00946	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080002		Not QA	12302080002-1148917	Analyzed	AC	10/2/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-00953	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080004		Not QA	12302080004-1148934	Analyzed	AC	10/1/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-00954	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080002		Not QA	12302080002-1148920	Analyzed	AC	10/2/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-00986	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080008		Not QA	12302080008-1149459	Analyzed	FG	10/20/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-00995	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080008		Not QA	12302080008-1149460	Analyzed	FG	10/20/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-00996	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080008		Not QA	12302080008-1149461	Analyzed	FG	10/20/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-01001	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080010		Not QA	12302080010-1149473	Analyzed	FG	10/20/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-01002	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080010		Not QA	12302080010-1149474	Analyzed	FG	10/20/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-01003	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080010		Not QA	12302080010-1149475	Analyzed	FG	10/20/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-01014	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080010		Not QA	12302080010-1149476	Analyzed	FG	10/20/2008				SRC	N. Ross	SOP revision number null on hard copy
P2-01030	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080012		Not QA	12302080012-1150962	Analyzed	AC	10/30/2008				SRC	N. Ross	SOP revision number "Rev. 2" on hard copy, not "Rev. 1"
P2-01070	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080012		Not QA	12302080012-1150953	Analyzed	AC	10/27/2008				SRC	N. Ross	SOP revision number "Rev. 2" on hard copy, not "Rev. 1"
P2-01071	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080012		Not QA	12302080012-1150954	Analyzed	AC	10/27/2008				SRC	N. Ross	SOP revision number "Rev. 2" on hard copy, not "Rev. 1"
P2-01073	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080012		Not QA	12302080012-1150955	Analyzed	AC	10/30/2008				SRC	N. Ross	SOP revision number "Rev. 2" on hard copy, not "Rev. 1"
P2-01076	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080012		Not QA	12302080012-1150956	Analyzed	AC	10/30/2008				SRC	N. Ross	SOP revision number "Rev. 2" on hard copy, not "Rev. 1"
P2-01077	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080012		Not QA	12302080012-1150957	Analyzed	AC	10/30/2008				SRC	N. Ross	SOP revision number "Rev. 2" on hard copy, not "Rev. 1"
P2-01078	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080012		Not QA	12302080012-1150958	Analyzed	AC	10/30/2008				SRC	N. Ross	SOP revision number "Rev. 2" on hard copy, not "Rev. 1"
P2-01079	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080012		Not QA	12302080012-1150959	Analyzed	AC	10/30/2008				SRC	N. Ross	SOP revision number "Rev. 2" on hard copy, not "Rev. 1"
P2-01080	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080012		Not QA	12302080012-1150960	Analyzed	AC	10/30/2008				SRC	N. Ross	SOP revision number "Rev. 2" on hard copy, not "Rev. 1"
P2-01082	C	PLM-Grav	SRC-LIBBY-01 (Revision 1)	Hygeia	12302080012		Not QA	12302080012-1150961	Analyzed	AC	10/30/2008				SRC	N. Ross	SOP revision number "Rev. 2" on hard copy, not "Rev. 1"
P2-00469	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040817365		Not QA	040817365-0001	Analyzed	MK	9/26/2008				SRC	N. Ross	
P2-00473	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040817357		Not QA	040817357-0001	Analyzed	MK	9/26/2008				SRC	N. Ross	
P2-00489	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040825407		Not QA	040825407-0001	Analyzed	NS	10/9/2008				SRC	N. Ross	
P2-00490	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040817365		Not QA	040817365-0002	Analyzed	MK	9/26/2008				SRC	N. Ross	
P2-00491	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040817365		Not QA	040817365-0003	Analyzed	MK	9/26/2008				SRC	N. Ross	
P2-00492	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040817365		Not QA	040817365-0005	Analyzed	MK	9/30/2008				SRC	N. Ross	
P2-00493	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040817365		Not QA	040817365-0004	Analyzed	MK	9/30/2008				SRC	N. Ross	
P2-00497	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040825421		Not QA	040825421-0001	Analyzed	NS	10/8/2008				SRC	N. Ross	AnalysisBy not entered in EDD; Data Manger (SRC) manually entered the data for this field into the project database.
P2-00511	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040825414		Not QA	040825414-0001	Analyzed	MK	10/8/2008				SRC	N. Ross	
P2-00586	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040817365		Not QA	040817365-0006	Analyzed	MK	9/30/2008				SRC	N. Ross	
P2-00763	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040825421		Not QA	040825421-0002	Analyzed	NS	10/8/2008				SRC	N. Ross	AnalysisBy not entered in EDD; Data Manger (SRC) manually entered the data for this field into the project database.
P2-00860	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040825423		Not QA	040825423-0001	Analyzed	MK	10/8/2008				SRC	N. Ross	
P2-00861	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040825423		Not QA	040825423-0002	Analyzed	MK	10/8/2008				SRC	N. Ross	
P2-00862	C	PLM-Grav	SRC-LIBBY-01 (Revision 2)	EMSL04	040825423		Not QA	040825423-0003	Analyzed	MK	10/8/2008				SRC	N. Ross	
P2-00469	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0003		M. Klinedinst	9/24/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00470	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0002		M. Klinedinst	9/24/2008	Brown,Fibrous,Heterogeneous	T	Cellulose found	SRC	N. Ross	
P2-00472	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0004		N. Stalter	9/24/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00473	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0003		N. Stalter	9/24/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00474	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0007		N. Stalter	9/25/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00475	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0005		N. Stalter	9/25/2008	Brown,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00476	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0008		N. Stalter	9/25/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00477	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0006		N. Stalter	9/25/2008	Brown,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00478	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0001		M. Klinedinst	9/24/2008	Tan,Fibrous,Heterogeneous	T	Cellulose found	SRC	N. Ross	
P2-00483	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0002		N. Stalter	9/24/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00487	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0001		N. Stalter	9/24/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00490	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0005		M. Klinedinst	9/25/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00491	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0006		M. Klinedinst	9/25/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00492	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0008		M. Klinedinst	9/25/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00493	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0007		M. Klinedinst	9/25/2008	Brown,Fibrous,Heterogeneous	T	Cellulose found	SRC	N. Ross	
P2-00494	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0004		M. Klinedinst	9/24/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00580	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0009		N. Stalter	9/25/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00581	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0010		N. Stalter	9/25/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00582	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0011		N. Stalter	9/25/2008	Brown,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00583	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0009		M. Klinedinst	9/25/2008	Tan,Non-Fibrous,Homogenous	T		SRC	N. Ross	
P2-00584	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817340-0	7/11/2008	NOT QA	040817340-040817340-0012		N. Stalter	9/26/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00585	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0010		M. Klinedinst	9/26/2008	Tan,Non-Fibrous,Homogenous	T		SRC	N. Ross	
P2-00586	FG1	PLM-VE	SRC-LIBBY-03 (REV 2)	EMSL04	040817349-0	7/11/2008	NOT QA	040817349-040817349-0011		M. Klinedinst	9/26/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00977	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149457		A. Casas	10/14/2008	Grey Soil	T		SRC	N. Ross	
P2-00986	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149443		A. Casas	10/14/2008	Tan Soil	T		SRC	N. Ross	
P2-00990	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149444		A. Casas	10/14/2008	Grey Soil	T		SRC	N. Ross	
P2-00994	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149451		A. Casas	10/14/2008	Tan Soil	T		SRC	N. Ross	
P2-00995	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149445		A. Casas	10/14/2008	Brown Soil	T		SRC	N. Ross	
P2-00996	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149449		A. Casas	10/14/2008	Brown Soil	T		SRC	N. Ross	
P2-00997	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149458		A. Casas	10/14/2008	Brown Soil	T		SRC	N. Ross	
P2-00998	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149450		A. Casas	10/14/2008	Grey Soil	T		SRC	N. Ross	
P2-00999	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149448		A. Casas	10/14/2008	Grey Soil	T		SRC	N. Ross	
P2-01001	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149462		A. Casas	10/20/2008	Grey Soil	T		SRC	N. Ross	
P2-01002	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149463		A. Casas	10/20/2008	Grey Soil	T		SRC	N. Ross	
P2-01003	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149464		A. Casas	10/20/2008	Grey Soil	T		SRC	N. Ross	
P2-01007	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149452		A. Casas	10/14/2008	Grey Soil	T		SRC	N. Ross	
P2-01008	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149447		A. Casas	10/14/2008	Grey Soil	T		SRC	N. Ross	
P2-01009	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149446		A. Casas	10/14/2008	Grey Soil	T		SRC	N. Ross	
P2-01011	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149453		A. Casas	10/14/2008	Grey Soil	T		SRC	N. Ross	
P2-01013	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149465		A. Casas	10/20/2008	Grey Soil	T		SRC	N. Ross	
P2-01014	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149466		A. Casas	10/20/2008	Tan Soil	T		SRC	N. Ross	
P2-01015	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149467		A. Casas	10/20/2008	Tan Soil	T		SRC	N. Ross	
P2-01016	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149468		A. Casas	10/20/2008	Brown Soil	T		SRC	N. Ross	
P2-01017	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149469		A. Casas	10/20/2008	Tan Soil	T		SRC	N. Ross	
P2-01020	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149454		A. Casas	10/14/2008	Tan Soil	T		SRC	N. Ross	
P2-01023	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149455		A. Casas	10/14/2008	Tan Soil	T		SRC	N. Ross	
P2-01024	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12303080007	10/1/2008	NOT QA	12303080007-1149456		A. Casas	10/14/2008	Grey Soil	T		SRC	N. Ross	
P2-01025	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149470		A. Casas	10/20/2008	Tan Soil	T		SRC	N. Ross	
P2-01026	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149471		A. Casas	10/20/2008	Tan Soil	T		SRC	N. Ross	
P2-01027	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080009	10/1/2008	NOT QA	12302080009-1149472		A. Casas	10/20/2008	Tan Soil	T		SRC	N. Ross	
P2-01028	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150950		G. Hernandez	10/30/2008	Tan Soil	T		SRC	N. Ross	Analysis date should be 10/30/08 in the EDD.
P2-01029	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150951		G. Hernandez	10/30/2008	Grey Soil	T		SRC	N. Ross	Analysis date should be 10/30/08 in the EDD.

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - PHASE II SEDIMENT

Index ID	Fract Suffix	Analysis Type	AnalysisMethod	Analysis Lab	Lab Job Number	Receipt Date	Lab QC Type	Lab SampleID	Analysis Status	Analyst	Analysis Date	Appearance	RefMat	Analysis Comments	Verifier's Company	Verifier	Comment
P2-01030	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150952		G. Hernandez	10/30/2008	Brown Soil	T		SRC	N. Ross	Analysis date should be 10/30/08 in the EDD. "FG1" was not recorded on the benchsheet.
P2-01070	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150937		F. Gutierrez	10/27/2008	Brown Soil	T		SRC	N. Ross	
P2-01071	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150938		F. Gutierrez	10/27/2008	Brown Soil	T		SRC	N. Ross	
P2-01072	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150939		F. Gutierrez	10/27/2008	Brown Soil	T		SRC	N. Ross	
P2-01073	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150940		F. Gutierrez	10/27/2008	Brown Soil	T		SRC	N. Ross	
P2-01074	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150941		F. Gutierrez	10/27/2008	Brown Soil	T		SRC	N. Ross	
P2-01075	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150942		F. Gutierrez	10/27/2008	Brown Soil	T		SRC	N. Ross	
P2-01076	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150943		F. Gutierrez	10/27/2008	Brown Soil	T		SRC	N. Ross	
P2-01077	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150944		F. Gutierrez	10/27/2008	Brown Soil	T		SRC	N. Ross	
P2-01078	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150945		G. Hernandez	10/30/2008	Brown Soil	T		SRC	N. Ross	Analysis date should be 10/30/08 in the EDD.
P2-01079	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150946		G. Hernandez	10/30/2008	Brown Soil	T		SRC	N. Ross	Analysis date should be 10/30/08 in the EDD.
P2-01080	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150947		G. Hernandez	10/30/2008	Brown Soil	T		SRC	N. Ross	Analysis date should be 10/30/08 in the EDD.
P2-01081	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150948		G. Hernandez	10/30/2008	Brown Soil	T		SRC	N. Ross	Analysis date should be 10/30/08 in the EDD.
P2-01082	FG1	PLM-VE	SRC-Libby-03 (rev 2)	Hygeia	12302080011	10/16/2008	NOT QA	12302080011-1150949		G. Hernandez	10/30/2008	Brown Soil	T		SRC	N. Ross	Analysis date should be 10/30/08 in the EDD. The sample number on the benchsheet should be P2-01082, not P2-01081.
P2-00767	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148913		G. Hernandez	9/25/2008	Grey Soil	T		SRC	N. Ross	
P2-00768	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148914		G. Hernandez	9/25/2008	Brown Soil	T		SRC	N. Ross	
P2-00769	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148915		G. Hernandez	9/25/2008	Grey Soil	T		SRC	N. Ross	
P2-00770	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148916		G. Hernandez	9/25/2008	Brown Soil	T		SRC	N. Ross	
P2-00771	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148930		A. Casas	9/26/2008	Tan Soil	T		SRC	N. Ross	
P2-00772	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148931		A. Casas	9/26/2008	Tan Soil	T		SRC	N. Ross	
P2-00773	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148932		A. Casas	9/26/2008	Tan Soil	T		SRC	N. Ross	
P2-00774	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148933		A. Casas	9/26/2008	Brown Soil	T		SRC	N. Ross	
P2-00775	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149425		F. Gutierrez	10/3/2008	Tan Soil	T		SRC	N. Ross	
P2-00776	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149426		F. Gutierrez	10/3/2008	Tan Soil	T		SRC	N. Ross	
P2-00777	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149427		F. Gutierrez	10/3/2008	Grey Soil	T		SRC	N. Ross	
P2-00779	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149428		F. Gutierrez	10/3/2008	Tan Soil	T		SRC	N. Ross	
P2-00941	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148905		G. Hernandez	9/25/2008	Grey Soil	T		SRC	N. Ross	
P2-00942	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148909		G. Hernandez	9/25/2008	Grey Soil	T		SRC	N. Ross	
P2-00943	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148906		G. Hernandez	9/25/2008	Grey Soil	T		SRC	N. Ross	
P2-00944	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148907		G. Hernandez	9/25/2008	Grey Soil	T		SRC	N. Ross	
P2-00945	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148910		G. Hernandez	9/25/2008	Grey Soil	T		SRC	N. Ross	
P2-00946	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148908		G. Hernandez	9/25/2008	Grey Soil	T		SRC	N. Ross	
P2-00948	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148926		A. Casas	9/26/2008	Gray Soil	T		SRC	N. Ross	
P2-00949	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148929		A. Casas	9/26/2008	Brown Soil	T		SRC	N. Ross	
P2-00950	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148922		A. Casas	9/26/2008	Gray Soil	T		SRC	N. Ross	
P2-00951	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148911		G. Hernandez	9/25/2008	Grey Soil	T		SRC	N. Ross	
P2-00952	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148924		A. Casas	9/26/2008	Gray Soil	T		SRC	N. Ross	
P2-00953	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148927		A. Casas	9/26/2008	Gray Soil	T		SRC	N. Ross	
P2-00954	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080001	9/22/2008	NOT QA	12302080001-1148912		G. Hernandez	9/25/2008	Brown Soil	T		SRC	N. Ross	
P2-00961	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149424		F. Gutierrez	10/3/2008	Grey Soil	T		SRC	N. Ross	
P2-00962	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149417		F. Gutierrez	10/3/2008	Grey Soil	T		SRC	N. Ross	
P2-00963	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149423		F. Gutierrez	10/3/2008	Grey Soil	T		SRC	N. Ross	
P2-00964	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148925		A. Casas	9/26/2008	Gray Soil	T		SRC	N. Ross	
P2-00965	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148928		A. Casas	9/26/2008	Gray Soil	T		SRC	N. Ross	
P2-00966	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149413		F. Gutierrez	10/3/2008	Grey Soil	T		SRC	N. Ross	
P2-00968	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149416		F. Gutierrez	10/3/2008	Brown Soil	T		SRC	N. Ross	
P2-00969	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149420		F. Gutierrez	10/3/2008	Grey Soil	T		SRC	N. Ross	
P2-00970	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149419		F. Gutierrez	10/3/2008	Grey Soil	T		SRC	N. Ross	
P2-00971	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149418		F. Gutierrez	10/3/2008	Grey Soil	T		SRC	N. Ross	
P2-00972	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149414		F. Gutierrez	10/3/2008	Grey Soil	T		SRC	N. Ross	
P2-00973	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149422		F. Gutierrez	10/3/2008	Tan Soil	T		SRC	N. Ross	
P2-00974	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149421		F. Gutierrez	10/3/2008	Tan Soil	T		SRC	N. Ross	
P2-00975	FG1	PLM-VE	SRC-Libby-03 (rev. 2)	Hygeia	12302080005	10/1/2008	NOT QA	12302080005-1149415		F. Gutierrez	10/3/2008	Grey Soil	T		SRC	N. Ross	
P2-01010	FG1	PLM-VE	SRC-Libby-03 (Rev. 2)	Hygeia	12302080003	9/22/2008	Not QA	12302080003-1148923		A. Casas	9/26/2008	Brown Soil	T		SRC	N. Ross	
P2-00778	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149440		A. Casas	10/9/2008	Tan Soil	T		SRC	N. Ross	
P2-00978	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149434		A. Casas	10/9/2008	Grey Soil	T		SRC	N. Ross	
P2-00979	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149432		A. Casas	10/9/2008	Grey Soil	T		SRC	N. Ross	
P2-00980	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149435		A. Casas	10/9/2008	Grey Soil	T		SRC	N. Ross	
P2-00981	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149429		A. Casas	10/9/2008	Grey Soil	T		SRC	N. Ross	
P2-00982	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149433		A. Casas	10/9/2008	Grey Soil	T		SRC	N. Ross	
P2-00983	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149430		A. Casas	10/9/2008	Tan Soil	T		SRC	N. Ross	
P2-00987	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149431		A. Casas	10/9/2008	Brown Soil	T		SRC	N. Ross	
P2-00988	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149436		A. Casas	10/9/2008	Grey Soil	T		SRC	N. Ross	
P2-00989	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149439		A. Casas	10/9/2008	Brown Soil	T		SRC	N. Ross	
P2-00991	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149438		A. Casas	10/9/2008	Brown Soil	T		SRC	N. Ross	
P2-00992	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149437		A. Casas	10/9/2008	Brown Soil	T		SRC	N. Ross	
P2-01021	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149441		A. Casas	10/9/2008	Tan Soil	T		SRC	N. Ross	
P2-01022	FG1	PLM-VE	SRC-Libby-03 (rev.2)	Hygeia	12302080006	10/1/2008	NOT QA	12302080006-1149442		A. Casas	10/9/2008	Brown Soil	T		SRC	N. Ross	
P2-00461	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0001		N. Stalter	9/26/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00464	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0002		N. Stalter	9/26/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00465	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0003		N. Stalter	9/26/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00466	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0004		N. Stalter	9/26/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00481	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0017		N. Stalter	9/30/2008	Brown,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00482	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0018		N. Stalter	9/30/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00485	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0015		N. Stalter	9/30/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00486	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0016		N. Stalter	9/30/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00489	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0013		N. Stalter	9/29/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00496	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0012		M.Klinedinst	10/7/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00497	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0011		M.Klinedinst	10/7/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00499	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0014		N. Stalter	9/29/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00501	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0010		M.Klinedinst	10/7/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00503	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0008		M.Klinedinst	10/6/2008	Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00504	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0007		M.Klinedinst	10/6/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00505	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0006		M.Klinedinst	10/6/2008	Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00506	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0005		M.Klinedinst	10/6/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00507	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0003		M.Klinedinst	10/6/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00508	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0004		M.Klinedinst	10/6/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00509	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0022		N. Stalter	10/2/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00511	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0025		N. Stalter	10/3/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00512	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0028		N. Stalter	10/3/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00513	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0024		N. Stalter	10/3/2008	Beige,Fibrous,Heterogeous	T		SRC	N. Ross	

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - PHASE II SEDIMENT

Index ID	Fract Suffix	Analysis Type	AnalysisMethod	Analysis Lab	Lab Job Number	Receipt Date	Lab QC Type	Lab SampleID	Analysis Status	Analyst	Analysis Date	Appearance	RefMat	Analysis Comments	Verifier's Company	Verifier	Comment
P2-00517	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0001		M.Klinedinst	10/5/2008	Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00519	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0009		M.Klinedinst	10/6/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00526	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0002		M.Klinedinst	10/5/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00531	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0006		N. Stalter	9/29/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00532	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0007		N. Stalter	9/29/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00533	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0005		N. Stalter	9/29/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00534	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0008		N. Stalter	9/29/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00536	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0023		N. Stalter	10/2/2008	Brown,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00537	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0026		N. Stalter	10/3/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00538	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0027		N. Stalter	10/3/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00587	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0009		N. Stalter	9/29/2008	Cream,Non-Fibrous,Homogeneous	T	Cellulose	SRC	N. Ross	
P2-00588	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0010		N. Stalter	9/29/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00589	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0011		N. Stalter	9/29/2008	Cream,Non-Fibrous,Homogeneous	T	Cellulose	SRC	N. Ross	
P2-00590	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0012		N. Stalter	9/29/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00591	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0019		N. Stalter	9/30/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00592	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0020		N. Stalter	9/30/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00593	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0021		N. Stalter	10/2/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00594	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0029		N. Stalter	10/3/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00595	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0030		N. Stalter	10/3/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00596	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825050-0	7/24/2008	NOT QA	040825050-040825050-0031		N. Stalter	10/3/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00760	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0016		M.Klinedinst	10/7/2008	Gray,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00761	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0013		M.Klinedinst	10/7/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00762	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0014		M.Klinedinst	10/7/2008	Gray,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00763	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825415-0	7/31/2008	NOT QA	040825415-040825415-0015		M.Klinedinst	10/7/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00764	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825430-0	8/26/2008	NOT QA	040825430-040825430-0008		N. Stalter	10/7/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00765	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825430-0	8/26/2008	NOT QA	040825430-040825430-0009		N. Stalter	10/7/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00766	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825430-0	8/26/2008	NOT QA	040825430-040825430-0010		N. Stalter	10/7/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00860	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825430-0	8/26/2008	NOT QA	040825430-040825430-0001		N. Stalter	10/6/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00861	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825430-0	8/26/2008	NOT QA	040825430-040825430-0002		N. Stalter	10/6/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00862	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825430-0	8/26/2008	NOT QA	040825430-040825430-0003		N. Stalter	10/6/2008	Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00863	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825430-0	8/26/2008	NOT QA	040825430-040825430-0004		N. Stalter	10/6/2008	Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00864	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825430-0	8/26/2008	NOT QA	040825430-040825430-0005		N. Stalter	10/7/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00865	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825430-0	8/26/2008	NOT QA	040825430-040825430-0006		N. Stalter	10/7/2008	Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00866	FG1	PLM-VE	SRC-LIBBY-03 (REVISION 2)	EMSL04	040825430-0	8/26/2008	NOT QA	040825430-040825430-0007		N. Stalter	10/7/2008	Cream,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00498	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0004		M.Klinedinst	10/1/2008	Gray,Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00502	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0003		M.Klinedinst	10/1/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00510	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0012		M.Klinedinst	10/3/2008	Gray,Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00514	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0001		M.Klinedinst	9/30/2008	Brown,Non-Fibrous,Heterogeneouse	T	Cellulose	SRC	N. Ross	
P2-00515	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0007		M.Klinedinst	10/2/2008	Gray,Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00516	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0011		M.Klinedinst	10/3/2008	Gray,Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00518	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0002		M.Klinedinst	9/30/2008	Brown,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00520	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0006		M.Klinedinst	10/1/2008	Gray,Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00522	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0008		M.Klinedinst	10/2/2008	Gray,Tan,Fibrous,Heterogeneous	T	Cellulose	SRC	N. Ross	
P2-00523	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0009		M.Klinedinst	10/2/2008	Gray,Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	
P2-00524	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0010		M.Klinedinst	10/2/2008	Gray,Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00525	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0005		M.Klinedinst	10/1/2008	Gray,Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00597	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0013		M.Klinedinst	10/3/2008	Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00598	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0014		M.Klinedinst	10/3/2008	Tan,Non-Fibrous,Homogeneous	T		SRC	N. Ross	
P2-00599	FG1	PLM-VE	SRC-LIBBY-03 (Revision 2)	EMSL04	040825185-0	7/31/2008	NOT QA	040825185-040825185-0015		M.Klinedinst	10/3/2008	Gray,Tan,Fibrous,Heterogeneous	T		SRC	N. Ross	

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - PHASE V PART A SEDIMENT

DVC	Samp. No	Matrix	Analysis Lab ID	Lab Job Number	Date Received	Analysis Method	Method SOP	Tag	QC Type	Lab Sample ID	Analysis Date	Analyst Name	Sample Appearance	LA Bin	LA Conc.	OA Conc.	CH Conc.	Deviation	Comments	Optical Property Data for Detected Samples								Verifier's Company	Verifier's Name
																				HABIT	FBRCOLOR	ELONG	PLEOCH	EXTINCT	RIALPHA	RIGAMMA	BIREF		
x-NR	P5-10084	Sediment	EMSL27	271201047	10/5/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201047-271201047-0001	10/10/2012	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No		FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW	CDM Smith	A. Coler
x-NR	P5-10094	Sediment	EMSL27	271201047	10/5/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201047-271201047-0002	10/10/2012	K. Colberg	Tan, nonfibrous, homogeneous	B2	<1	ND	ND	No		FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.625	1.631	LOW	CDM Smith	A. Coler
x-NR	P5-10106	Sediment	EMSL27	271201047	10/5/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201047-271201047-0004	10/10/2012	K. Colberg	Tan, nonfibrous, homogeneous	A	ND	ND	ND	No										CDM Smith	A. Coler
x-NR	P5-10107	Sediment	EMSL27	271201047	10/5/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201047-271201047-0005	10/10/2012	K. Colberg	Tan, nonfibrous, homogeneous	A	ND	ND	ND	No										CDM Smith	A. Coler

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - PHASE V PART B SEDIMENT (PLM-GRAV)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Analysis Type	Analysis Method	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	LA Conc.	OA Conc.	CH Conc.	Verifier's Company	Verifier's Name
	P5-20051	Sediment	EMSL27	271200342	PLM-Grav	SRC-LIBBY-01 (Rev 2)	C	Not QC	271200342-0010	5/30/2012	KC	ND	ND	ND	CDM Smith	A. Coler
x-NR	P5-20280	Sediment	EMSL27	271201033	PLM-Grav	SRC-LIBBY-01 (Rev 3)	C	Not QC	271201033-0001A	10/9/2012	KC	0.018	ND	ND	CDM Smith	A. Coler

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - PHASE V PART B SEDIMENT (PLM-VE)

Libby Asbestos Superfund Site

DVC	Samp. No	Matrix	Analysis Lab ID	Lab Job Number	Date Received	Analysis Method	Method SOP	Tag	QC Type	Lab Sample ID	Analysis Date	Analyst Name	Sample Appearance	LA Bin	LA Conc.	OA Conc.	CH Conc.	Deviation	Comments	Optical Property Data for Detected Samples								Verifier's Company	Verifier's Name
																				HABIT	FBRCOLOR	ELONG	PLEOCH	EXTINCT	RIALPHA	RIGAMMA	BIREF		
x-NR	CC1-LT1-R4	Sediment	EMSL27	271200191	5/1/2012	PLM-VE	SRC-LIBBY-03 (Rev 2)	FG1	NOT QC	271200191-0004	5/2/2012	K. Colberg	tan, non-fibrous, homogeneous	C	3	ND	ND			Fiber	Colorless	Positive	No	Inclined	1.623	1.637	Medium	CDM Smith	A. Coler
x-NR	CCP	Sediment	EMSL27	271200197	5/3/2012	PLM-VE	SRC-LIBBY-03 (Rev 2)	FG1	Not QC	271200197-0001	5/7/2012	K. Colberg	Grayish, non-fibrous, homogenous	C	10	ND	ND			Fiber	Colorless	+	No	Inclined	1.624	1.631	Low	CDM Smith	A. Coler
x-NR	MP	Sediment	EMSL27	271200197	5/3/2012	PLM-VE	SRC-LIBBY-03 (Rev 2)	FG1	Not QC	271200197-0003	5/7/2012	K. Colberg	Tan, non-fibrous, homogenous	B2	<1	ND	ND			Fiber	Colorless	+	No	Inclined	1.625	1.631	Low	CDM Smith	A. Coler
x-NR	P5-20051	Sediment	EMSL27	271200342	5/25/2012	PLM-VE	SRC-LIBBY-03 (Rev 2)	FG1	Not QC	271200342-0011	5/30/2012	K. Colberg	Tan, non-fibrous, homogenous	A	ND	ND	ND	No									CDM Smith	A. Coler
x-NR	P5-20280	Sediment	EMSL27	271201033	10/3/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG2	Not QC	271201033-0001	10/9/2012	K. Colberg	Greenish-grey, fibrous, homogeneous	C	4	ND	ND	No		FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW	CDM Smith	A. Coler
x-NR	P5-20284	Sediment	EMSL27	271201033	10/3/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201033-0005	10/9/2012	K. Colberg	Tan, non-fibrous, homogeneous	B1	Tr	ND	ND	No		FIBER BUNDLES	COLORLESS	POSITIVE	No	INCLINED	1.625	1.633	LOW	CDM Smith	A. Coler
x-NR	P5-20286	Sediment	EMSL27	271201033	10/3/2012	PLM-VE	SRC-LIBBY-03 (Rev 3)	FG1	Not QC	271201033-0007	10/9/2012	K. Colberg	Brown, non-fibrous, homogeneous	A	ND	ND	ND	No										CDM Smith	A. Coler
x-NR	REF5	Sediment	EMSL27	271200198	5/3/2012	PLM-VE	SRC-LIBBY-03 (Rev 2)	FG1	Not QC	271200198-0005	5/7/2012	K. Colberg	Tan, non-fibrous, homogenous	A	ND	ND	ND		2% Cellulose									CDM Smith	A. Coler
x-NR	TPTOE2-LT1-R2	Sediment	EMSL27	271200191	5/1/2012	PLM-VE	SRC-LIBBY-03 (Rev 2)	FG1	NOT QC	271200191-0015	5/3/2012	K. Colberg	tan, non-fibrous, homogeneous	C	10	ND	ND			Fiber	Colorless	Positive	No	Inclined	1.625	1.631	Low	CDM Smith	A. Coler
x-NR	TPTOE2-LT2-R5	Sediment	EMSL27	271200191	5/1/2012	PLM-VE	SRC-LIBBY-03 (Rev 2)	FG1	NOT QC	271200191-0023	5/3/2012	K. Colberg	tan, non-fibrous, homogeneous	C	3	ND	ND			Fiber	Colorless	Positive	No	Inclined	1.626	1.631	Low	CDM Smith	A. Coler

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - SLASH PILE BURN SOIL (PLM-GRAV) (2015)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Receipt Date	Analysis Type	Analysis Method	Instrument	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	LA Conc.	OA Conc.	CH Conc.	Analysis Comments	Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
	SB-00013	Soil	EMSL04	041514141	5/15/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Leica DM750P #2,	C	Not QC	041514141-0001	5/18/2015	J.Yurick	Tr	ND	ND	Some fibers length fast. C1 on 11/17/2015 to add comment.	CDM Smith	T. Miller	11/24/2015	Analysis comment on the bench sheet (some fibers length fast) was not entered in the EDD. The analysis method recorded on the bench sheet is SRC-LIBBY-03, Rev. 3, but should be SRC-LIBBY-01, Rev 3.	11/24/2015
NR	SB-00014	Soil	EMSL04	041514141	5/15/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Leica DM750P #2,	C2	Not QC	041514141-0002	5/18/2015	J.Yurick	Tr	ND	ND		CDM Smith	T. Miller	11/24/2015	The analysis method recorded on the bench sheet is SRC-LIBBY-03, Rev. 3, but should be SRC-LIBBY-01, Rev 3.	11/24/2015
	SB-00015	Soil	EMSL04	041514141	5/15/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Leica DM750P #2,	C3	Not QC	041514141-0003	5/18/2015	J.Yurick	Tr	ND	ND		CDM Smith	T. Miller	11/24/2015	The analysis method recorded on the bench sheet is SRC-LIBBY-03, Rev. 3, but should be SRC-LIBBY-01, Rev 3.	11/24/2015
	SB-00201	Soil	EMSL04	041514570	5/20/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Leica DM75OP-2	C	Not QC	041514570-0001	5/22/2015	J.Yurick	Tr	ND	ND	Some fibers length fast	CDM Smith	T. Miller	11/24/2015	The analysis method recorded on the bench sheet is SRC-LIBBY-03, Rev. 3, but should be SRC-LIBBY-01, Rev 3.	11/24/2015
	SB-00202	Soil	EMSL04	041514570	5/20/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Leica DM75OP-2	C3	Not QC	041514570-0002	5/22/2015	J.Yurick	Tr	ND	ND		CDM Smith	T. Miller	11/24/2015	The analysis method recorded on the bench sheet is SRC-LIBBY-03, Rev. 3, but should be SRC-LIBBY-01, Rev 3.	11/24/2015
	SB-00203	Soil	EMSL04	041514570	5/20/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Leica DM75OP-2	C4	Not QC	041514570-0003	5/22/2015	J.Yurick	Tr	ND	ND		CDM Smith	T. Miller	11/24/2015	The analysis method recorded on the bench sheet is SRC-LIBBY-03, Rev. 3, but should be SRC-LIBBY-01, Rev 3.	11/24/2015

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - SLASH PILE BURN SOIL (PLM-VE) (2015)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Receipt Date	Analysis Type	Analysis Method	Instrument	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	Appearance	LA Bin	LA Conc.	OA Conc.	CH Conc.	Analysis Deviation	Optical Property Data for Detected Samples								Verifier's Company	Verifier's Name	Verified Date
																				FbrMorph	FbrColor	SignElong	Pleoch	ExtinctAng	RIalpha	RIgamma	Biref			
	SB-00013	Soil	EMSL04	041514140	5/15/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LeicaDM75OP-2	FG3	NOT QC	041514140-0001	5/15/2015	J. Yurick	Brown,soil,fine,homogeneous	B1	Tr	ND	ND	No	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.636	LOW	CDM Smith	T. Miller	10/20/2015
	SB-00014	Soil	EMSL04	041514140	5/15/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LeicaDM75OP-2	FG1	NOT QC	041514140-0002	5/15/2015	J. Yurick	Brown,soil,fine,homogeneous	B1	Tr	ND	ND	No	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.639	MEDIUM	CDM Smith	T. Miller	10/20/2015
	SB-00015	Soil	EMSL04	041514140	5/15/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LeicaDM75OP-2	FG4	NOT QC	041514140-0003	5/15/2015	J. Yurick	Brown,soil,fine,homogeneous	B2	<1	ND	ND	No	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.634	LOW	CDM Smith	T. Miller	10/20/2015
	SB-00201	Soil	EMSL04	041514566	5/20/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LeicaDM75OP-2	FG3	NOT QC	041514566-0001	5/21/2015	J.Yurick	Brown,soil,coarse,homogeneous	B1	Tr	ND	ND	No	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.634	LOW	CDM Smith	T. Miller	10/20/2015
NR	SB-00202	Soil	EMSL04	041514566	5/20/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LeicaDM75OP-2	FG2	NOT QC	041514566-0002	5/21/2015	J.Yurick	Brown,soil,fine,homogeneous	B1	Tr	ND	ND	No	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.627	LOW	CDM Smith	T. Miller	10/20/2015
	SB-00203	Soil	EMSL04	041514566	5/20/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LeicaDM75OP-2	FG4	NOT QC	041514566-0003	5/21/2015	J.Yurick	Brown,soil,fine,homogeneous	B1	Tr	ND	ND	No	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.63	LOW	CDM Smith	T. Miller	10/20/2015

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - TRESPASSER ABS SOIL (PLM-GRAV) (2015)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Receipt Date	Analysis Type	Analysis Method	Instrument	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	LA Conc.	OA Conc.	CH Conc.	Verifier's Company	Verifier's Name	Verified Date
	TS-00126	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0001	10/5/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00127	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0002	10/5/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00128	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0003	10/7/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00129	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0004	10/7/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00130	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0005	10/7/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
NR	TS-00131	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0006	10/7/2015	P. J. Carr	4.5	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00132	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0007	10/7/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00133	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0008	10/8/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00134	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0009	10/8/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00135	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0010	10/8/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00137	Soil	EMSL04	041529322	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529322-0012	10/8/2015	P. J. Carr	ND	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00138	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0001	10/8/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00139	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0002	10/8/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00140	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0003	10/8/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00141	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0004	10/9/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00142	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0005	10/9/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00143	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0006	10/9/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00144	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0007	10/9/2015	P. J. Carr	6.1	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00145	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0008	10/9/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00146	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0009	10/9/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00148	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0011	10/9/2015	P. J. Carr	18	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00149	Soil	EMSL04	041529335	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	LEICA DM750P Station 24	C	Not QC	041529335-0012	10/9/2015	P. J. Carr	Tr	ND	ND	CDM Smith	T. Miller	11/12/2015
	TS-00150	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0001	10/17/2015	W.Nguyen	Tr	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00151	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0002	10/17/2015	W.Nguyen	Tr	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00152	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0003	10/17/2015	W.Nguyen	Tr	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00153	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0004	10/17/2015	W.Nguyen	11	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00154	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0005	10/17/2015	W.Nguyen	Tr	ND	ND	CDM Smith	T. Miller	11/3/2015
NR	TS-00156	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0006	10/17/2015	W.Nguyen	31	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00157	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0007	10/17/2015	W.Nguyen	Tr	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00158	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0008	10/17/2015	W.Nguyen	Tr	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00160	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0010	10/17/2015	W.Nguyen	9.7	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00281	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0011	10/19/2015	D.Nading	28	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00282	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0012	10/19/2015	D.Nading	Tr	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00283	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0013	10/19/2015	D.Nading	ND	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00284	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0014	10/19/2015	D.Nading	ND	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00285	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0015	10/19/2015	D.Nading	ND	ND	ND	CDM Smith	T. Miller	11/3/2015
	TS-00286	Soil	EMSL22	221506242	9/30/2015	PLM-Grav	SRC-LIBBY-01 (Rev 3)	Olympus BH-2 Scope 3	C	Not QC	221506242-0016	10/19/2015	D.Nading	ND	ND	ND	CDM Smith	T. Miller	11/3/2015

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - TRESPASSER ABS SOIL (PLM-VE) (2015)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Receipt Date	Analysis Type	Analysis Method	Instrument	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	Appearance	LA Bin	LA Conc.	OA Conc.	CH Conc.	Analysis Deviation	Analysis Comments	Optical Property Data for Detected Samples									Verifier's Company	Verifier's Name	Verified Date	Comment	Correction Date
																					FbrMorph	FbrColor	SignElong	Pleoch	ExtinctAng	Rlalpha	Rlgamma	Biref	Optical Comments					
	TS-00126	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0001	10/2/2015	P.J. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00127	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0002	10/2/2015	P.J. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00128	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0003	10/2/2015	P.J. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.631	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00129	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0004	10/2/2015	P.J. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.634	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00130	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0005	10/2/2015	P.J. Carr	Gray,soil,coarse,homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.634	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00131	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0006	10/2/2015	P.J. Carr	Gray,soil,coarse,homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.631	1.641	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00132	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0007	10/2/2015	P.J. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00133	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0008	10/5/2015	P.J. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.629	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00134	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0009	10/5/2015	P.J. Carr	Gray,soil,coarse,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.634	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00135	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0010	10/5/2015	P.J. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.631	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00137	Soil	EMSL04	041529321	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529321-0012	10/5/2015	P.J. Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.629	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00138	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0001	10/12/2015	P.J.Carr	gray,soil,coarse,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00139	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0002	10/12/2015	P.J.Carr	gray,soil,coarse,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.634	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00140	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0003	10/12/2015	P.J.Carr	gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.631	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00141	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0004	10/12/2015	P.J.Carr	gray,soil,coarse,homogeneous	C	1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		CDM Smith	T. Miller	11/12/2015		
NR	TS-00142	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0005	10/12/2015	P.J.Carr	gray,soil,coarse,homogeneous	B2	<1	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.631	1.645	MEDIUM		CDM Smith	T. Miller	11/12/2015		
	TS-00143	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0006	10/12/2015	P.J.Carr	gray,soil,coarse,homogeneous	C	2	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00144	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0007	10/12/2015	P.J.Carr	gray,soil,coarse,homogeneous	C	3	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00145	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0008	10/12/2015	P.J.Carr	gray,soil,coarse,homogeneous	C	2	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.628	1.636	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00146	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0009	10/12/2015	P.J.Carr	gray,soil,coarse,homogeneous	C	2	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.641	MEDIUM		CDM Smith	T. Miller	11/12/2015		
	TS-00148	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0011	10/12/2015	P.J.Carr	gray,soil,coarse,homogeneous	C	10	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00149	Soil	EMSL04	041529333	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P Station 24	FG1	NOT QC	041529333-0012	10/13/2015	P.J.Carr	gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW		CDM Smith	T. Miller	11/12/2015		
	TS-00150	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0001	10/7/2015	W.Nguyen	Gray,soil,fine,homogeneous	B2	<1	ND	ND	No	Nikon Labphot Pol Scope 5	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.621	1.634	MEDIUM		CDM Smith	T. Miller	1/27/2016		
	TS-00151	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0002	10/8/2015	W.Nguyen	Gray,soil,fine,homogeneous	B2	<1	ND	ND	No	Nikon Labphot Pol Scope 5	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.62	1.632	MEDIUM		CDM Smith	T. Miller	1/27/2016		
	TS-00152	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0003	10/8/2015	W.Nguyen	Tan,soil,fine,homogeneous	B2	<1	ND	ND	No	Nikon Labphot Pol Scope 5	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.621	1.634	MEDIUM		CDM Smith	T. Miller	1/27/2016		
NR	TS-00153	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0004	10/8/2015	W.Nguyen	Gray,soil,fine,homogeneous	C	25	ND	ND	No	Nikon Labphot Pol Scope 5	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.62	1.634	MEDIUM		CDM Smith	T. Miller	1/27/2016		
	TS-00154	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0005	10/8/2015	W.Nguyen	Brown,soil,fine,homogeneous	B2	<1	ND	ND	No	Nikon Labphot Pol Scope 5	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.62	1.63	MEDIUM		CDM Smith	T. Miller	1/27/2016		
	TS-00156	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0006	10/8/2015	W.Nguyen	Tan,soil,fine,homogeneous	C	2	ND	ND	No	Nikon Labphot Pol Scope 5	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.62	1.634	MEDIUM		CDM Smith	T. Miller	1/27/2016		
	TS-00157	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0007	10/8/2015	W.Nguyen	Brown,soil,fine,homogeneous	B2	<1	ND	ND	No	Nikon Labphot Pol Scope 5	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.622	1.634	MEDIUM		CDM Smith	T. Miller	1/27/2016		
	TS-00158	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0008	10/8/2015	W.Nguyen	Brown,soil,fine,homogeneous	C	5	ND	ND	No	Nikon Labphot Pol Scope 5	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.62	1.634	MEDIUM		CDM Smith	T. Miller	1/27/2016		
	TS-00160	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0010	10/8/2015	W.Nguyen	Brown,soil,fine,homogeneous	C	5	ND	ND	No	Nikon Labphot Pol Scope 5	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.621	1.634	MEDIUM		CDM Smith	T. Miller	1/27/2016	Comment 4 (PLM-1) was circled on the benchsheet, but was not entered in the EDD. An additional comment was added to the bottom of the benchsheet, but was not entered in the EDD.	1/27/2016
	TS-00281	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0011	10/8/2015	D.Nading	Brown,soil,fine,homogeneous	B2	<1	ND	ND	No	Olympus BH-2 Scope 3	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.625	1.636	MEDIUM		CDM Smith	T. Miller	1/27/2016		
	TS-00282	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0012	10/8/2015	D.Nading	Brown,soil,fine,homogeneous	B1	Tr	ND	ND	No	Olympus BH-2 Scope 3	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.636	MEDIUM	Some fibers length fast	CDM Smith	T. Miller	1/27/2016	Comment 2 (Some fibers length fast) was circled on the benchsheet, but was not entered in the EDD.	1/27/2016
	TS-00283	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0013	10/8/2015	D.Nading	Gray/Brown,soil,fine,homogeneou	B1	Tr	ND	ND	No	Olympus BH-2 Scope 3	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.639	MEDIUM	Some fibers length fast	CDM Smith	T. Miller	1/27/2016	Comment 2 (Some fibers length fast) was circled on the benchsheet, but was not entered in the EDD.	1/27/2016
	TS-00284	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0014	10/8/2015	D.Nading	Gray,soil,fine,homogeneous	A	ND	ND	ND	No	Olympus BH-2 Scope 3										CDM Smith	T. Miller	1/27/2016		
	TS-00285	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0015	10/8/2015	D.Nading	Gray,soil,fine,homogeneous	B1	Tr	ND	ND	No	Olympus BH-2 Scope 3	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.639	MEDIUM	Some fibers length fast	CDM Smith	T. Miller	1/27/2016	Comment 2 (Some fibers length fast) was circled on the benchsheet, but was not entered in the EDD.	1/27/2016
	TS-00286	Soil	EMSL22	221506241	9/30/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	2 instruments used, see comments.	FG1	NOT QC	221506241-0016	10/8/2015	D.Nading	Gray,soil,fine,homogeneous	A	ND	ND	ND	No	Olympus BH-2 Scope 3										CDM Smith	T. Miller	1/27/2016		

ATTACHMENT 3. DATA SUMMARY OF ANALYTICAL INFORMATION - UNDERSTORY BURN (PLM-VE) (2015)

Libby Asbestos Superfund Site

DVC - 5%	Index ID	Media Type	Analysis Lab	Lab Job ID	Receipt Date	Analysis Type	Analysis Method	Instrument	Fract Suffix	Lab QC Type	Lab Sample ID	Analysis Date	Analysis By	Appearance	LA Bin	LA Conc.	OA Conc.	CH Conc.	Analysis Deviation	Analysis Comments	Optical Property Data for Detected Samples									Verifier's Company	Verifier's Name	Verified Date	Comment	Date Corrected
																					FbrMorph	FbrColor	SignElong	Pleoch	ExtinctAng	RIalpha	RIgamma	Biref	Optical Comments					
	UB-00009	Soil	EMSL04	041515591	6/1/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	Leica DM750P #24	FG1	NOT QC	041515591-0001	6/5/2015	P.J.Carr	Brown, Soil, Coarse, Homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW		CDM Smith	T. Miller	10/20/2015		
	UB-00010	Soil	EMSL04	041515591	6/1/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	Leica DM750P #24	FG2	NOT QC	041515591-0002	6/5/2015	P.J.Carr	Brown, Soil, Coarse, Homogeneous	B1	Tr	ND	ND	No	C1 on 12/1/2015 to add comment.	ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.629	LOW	Some fibers length fast.	CDM Smith	T. Miller	12/2/2015	The Analysis Comment (some fibers length fast), was not entered in the EDD.	12/2/2015
NR	UB-00011	Soil	EMSL04	041515591	6/1/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	Leica DM750P #24	FG3	NOT QC	041515591-0003	6/5/2015	P.J.Carr	Gray, Soil, Coarse, Homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.631	LOW	Some fibers length fast.	CDM Smith	T. Miller	12/2/2015	The Analysis Comment (some fibers length fast), was not entered in the EDD.	12/2/2015
	UB-00097	Soil	EMSL04	041519104	7/1/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P-Station24	FG1	NOT QC	041519104-0001	7/6/2015	P.J.Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.624	1.629	LOW		CDM Smith	T. Miller	10/20/2015		
	UB-00098	Soil	EMSL04	041519104	7/1/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P-Station24	FG2	NOT QC	041519104-0002	7/6/2015	P.J.Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.629	LOW		CDM Smith	T. Miller	10/20/2015		
	UB-00099	Soil	EMSL04	041519104	7/1/2015	PLM-VE	SRC-LIBBY-03 (Rev 3)	LEICA DM750P-Station24	FG3	NOT QC	041519104-0003	7/6/2015	P.J.Carr	Gray,soil,coarse,homogeneous	B1	Tr	ND	ND	No		ASBESTIFORM	COLORLESS	POSITIVE	No	INCLINED	1.626	1.641	MEDIUM		CDM Smith	T. Miller	10/20/2015		

ATTACHMENT 4. DATA SUMMARY OF RESULT INFORMATION - PHASE I SEDIMENT, FOREST SOIL & MINE WASTE

Index ID	Analysis Type	Lab QC Type	Result ASB	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P1-00366	PLM-VE	NOT QA	4288	2039	LA_MF	LA	1	<	%		SRC	A. Bacom	Entered correctly in to EDD, hard copy contains a "-" under mass fract (%)
P1-00366	PLM-VE	NOT QA	4293	2039	LA_Bin	LA		B2			SRC	A. Bacom	
P1-00366	PLM-VE	NOT QA	4298	2039	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00366	PLM-VE	NOT QA	4303	2039	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00366	PLM-VE	NOT QA	4308	2039	OA_type	OA					SRC	A. Bacom	
P1-00371	PLM-VE	Not QA	2448	1692	LA_MF	LA	1	<	%		SRC	A. Bacom	
P1-00371	PLM-VE	Not QA	2520	1692	LA_Bin	LA		B2			SRC	A. Bacom	
P1-00371	PLM-VE	Not QA	2592	1692	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00371	PLM-VE	Not QA	2664	1692	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00371	PLM-VE	Not QA	2736	1692	OA_type	OA					SRC	A. Bacom	
P1-00421	PLM-VE	Not QA	2457	1701	LA_MF	LA	1	<	%		SRC	A. Bacom	
P1-00421	PLM-VE	Not QA	2529	1701	LA_Bin	LA		B2			SRC	A. Bacom	
P1-00421	PLM-VE	Not QA	2601	1701	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00421	PLM-VE	Not QA	2673	1701	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00421	PLM-VE	Not QA	2745	1701	OA_type	OA					SRC	A. Bacom	
P1-00062	PLM-VE	Not QA	2467	1711	LA_MF	LA		ND	%		SRC	A. Bacom	
P1-00062	PLM-VE	Not QA	2539	1711	LA_Bin	LA		A			SRC	A. Bacom	
P1-00062	PLM-VE	Not QA	2611	1711	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00062	PLM-VE	Not QA	2683	1711	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00062	PLM-VE	Not QA	2755	1711	OA_type	OA					SRC	A. Bacom	
P1-00036	PLM-VE	Not QA	2468	1712	LA_MF	LA		ND	%		SRC	A. Bacom	
P1-00036	PLM-VE	Not QA	2540	1712	LA_Bin	LA		A			SRC	A. Bacom	
P1-00036	PLM-VE	Not QA	2612	1712	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00036	PLM-VE	Not QA	2684	1712	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00036	PLM-VE	Not QA	2756	1712	OA_type	OA					SRC	A. Bacom	
P1-00178	PLM-VE	Not QA	2480	1724	LA_MF	LA		ND	%		SRC	A. Bacom	
P1-00178	PLM-VE	Not QA	2552	1724	LA_Bin	LA		A			SRC	A. Bacom	
P1-00178	PLM-VE	Not QA	2624	1724	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00178	PLM-VE	Not QA	2696	1724	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00178	PLM-VE	Not QA	2768	1724	OA_type	OA					SRC	A. Bacom	
P1-00224	PLM-VE	Not QA	2482	1726	LA_MF	LA		Tr	%		SRC	A. Bacom	
P1-00224	PLM-VE	Not QA	2554	1726	LA_Bin	LA		B1			SRC	A. Bacom	
P1-00224	PLM-VE	Not QA	2626	1726	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00224	PLM-VE	Not QA	2698	1726	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00224	PLM-VE	Not QA	2770	1726	OA_type	OA					SRC	A. Bacom	
P1-00034	PLM-VE	LD	2488	1732	LA_MF	LA		ND	%		SRC	A. Bacom	validated based on EMSL form
P1-00034	PLM-VE	LD	2560	1732	LA_Bin	LA		A			SRC	A. Bacom	validated based on EMSL form
P1-00034	PLM-VE	LD	2632	1732	CH_AF	CH		ND	%		SRC	A. Bacom	validated based on EMSL form
P1-00034	PLM-VE	LD	2704	1732	OA_AF	OA		ND	%		SRC	A. Bacom	validated based on EMSL form
P1-00034	PLM-VE	LD	2776	1732	OA_type	OA					SRC	A. Bacom	validated based on EMSL form
P1-00040	PLM-VE	LD	2497	1741	LA_MF	LA		ND	%		SRC	A. Bacom	
P1-00040	PLM-VE	LD	2569	1741	LA_Bin	LA		A			SRC	A. Bacom	
P1-00040	PLM-VE	LD	2641	1741	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00040	PLM-VE	LD	2713	1741	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00040	PLM-VE	LD	2785	1741	OA_type	OA					SRC	A. Bacom	
P1-00395	PLM-VE	Not QA	2797	1753	LA_MF	LA	4		%		SRC	A. Bacom	
P1-00395	PLM-VE	Not QA	2849	1753	LA_Bin	LA		C			SRC	A. Bacom	
P1-00395	PLM-VE	Not QA	2901	1753	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00395	PLM-VE	Not QA	2953	1753	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00395	PLM-VE	Not QA	3005	1753	OA_type	OA					SRC	A. Bacom	
P1-00403	PLM-VE	Not QA	2804	1760	LA_MF	LA	1	<	%		SRC	A. Bacom	
P1-00403	PLM-VE	Not QA	2856	1760	LA_Bin	LA		B2			SRC	A. Bacom	
P1-00403	PLM-VE	Not QA	2908	1760	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00403	PLM-VE	Not QA	2960	1760	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00403	PLM-VE	Not QA	3012	1760	OA_type	OA					SRC	A. Bacom	
P1-00404	PLM-VE	Not QA	2805	1761	LA_MF	LA		ND	%		SRC	A. Bacom	
P1-00404	PLM-VE	Not QA	2857	1761	LA_Bin	LA		A			SRC	A. Bacom	
P1-00404	PLM-VE	Not QA	2909	1761	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00404	PLM-VE	Not QA	2961	1761	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00404	PLM-VE	Not QA	3013	1761	OA_type	OA					SRC	A. Bacom	
P1-00235	PLM-VE	Not QA	2824	1780	LA_MF	LA	1	<	%		SRC	A. Bacom	
P1-00235	PLM-VE	Not QA	2876	1780	LA_Bin	LA		B2			SRC	A. Bacom	
P1-00235	PLM-VE	Not QA	2928	1780	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00235	PLM-VE	Not QA	2980	1780	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00235	PLM-VE	Not QA	3032	1780	OA_type	OA					SRC	A. Bacom	
P1-00379	PLM-VE	Not QA	2841	1797	LA_MF	LA	1	<	%		SRC	A. Bacom	
P1-00379	PLM-VE	Not QA	2893	1797	LA_Bin	LA		B2			SRC	A. Bacom	
P1-00379	PLM-VE	Not QA	2945	1797	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00379	PLM-VE	Not QA	2997	1797	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00379	PLM-VE	Not QA	3049	1797	OA_type	OA					SRC	A. Bacom	
P1-00340	PLM-VE	Not QA	2844	1800	LA_MF	LA		ND	%		SRC	A. Bacom	
P1-00340	PLM-VE	Not QA	2896	1800	LA_Bin	LA		A			SRC	A. Bacom	
P1-00340	PLM-VE	Not QA	2948	1800	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00340	PLM-VE	Not QA	3000	1800	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00340	PLM-VE	Not QA	3052	1800	OA_type	OA					SRC	A. Bacom	
P1-00342	PLM-VE	Not QA	2845	1801	LA_MF	LA	1	<	%		SRC	A. Bacom	
P1-00342	PLM-VE	Not QA	2897	1801	LA_Bin	LA		B2			SRC	A. Bacom	
P1-00342	PLM-VE	Not QA	2949	1801	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00342	PLM-VE	Not QA	3001	1801	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00342	PLM-VE	Not QA	3053	1801	OA_type	OA					SRC	A. Bacom	
P1-00214	PLM-VE	Not QA	3129	1821	LA_MF	LA		ND	%		SRC	A. Bacom	
P1-00214	PLM-VE	Not QA	3139	1821	LA_Bin	LA		A			SRC	A. Bacom	
P1-00214	PLM-VE	Not QA	3149	1821	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00214	PLM-VE	Not QA	3159	1821	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00214	PLM-VE	Not QA	3169	1821	OA_type	OA					SRC	A. Bacom	
P1-00202	PLM-VE	Not QA	3132	1824	LA_MF	LA	1	<	%		SRC	A. Bacom	
P1-00202	PLM-VE	Not QA	3142	1824	LA_Bin	LA		B2			SRC	A. Bacom	
P1-00202	PLM-VE	Not QA	3152	1824	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00202	PLM-VE	Not QA	3162	1824	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00202	PLM-VE	Not QA	3172	1824	OA_type	OA					SRC	A. Bacom	
P1-00431	PLM-VE	Not QA	3228	1840	LA_MF	LA	4		%		SRC	A. Bacom	

ATTACHMENT 4. DATA SUMMARY OF RESULT INFORMATION - PHASE I SEDIMENT, FOREST SOIL & MINE WASTE

Index ID	Analysis Type	Lab QC Type	Result ASB	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P1-00431	PLM-VE	Not QA	3230	1840	LA_Bin	LA		C			SRC	A. Bacom	
P1-00431	PLM-VE	Not QA	3232	1840	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00431	PLM-VE	Not QA	3234	1840	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00431	PLM-VE	Not QA	3236	1840	OA_type	OA					SRC	A. Bacom	
P1-00428	PLM-VE	Not QA	3289	1853	LA_MF	LA		ND	%		SRC	A. Bacom	
P1-00428	PLM-VE	Not QA	3292	1853	LA_Bin	LA		A			SRC	A. Bacom	
P1-00428	PLM-VE	Not QA	3295	1853	CH_AF	CH		ND	%		SRC	A. Bacom	
P1-00428	PLM-VE	Not QA	3298	1853	OA_AF	OA		ND	%		SRC	A. Bacom	
P1-00428	PLM-VE	Not QA	3301	1853	OA_type	OA					SRC	A. Bacom	
P1-00291	PLM-Grav	Not QA	3736	1904	LA %	LA	0.0071		%		SRC	A. Bacom	
P1-00291	PLM-Grav	Not QA	3780	1904	C %	C		ND	%		SRC	A. Bacom	
P1-00291	PLM-Grav	Not QA	3824	1904	OA %	OA		ND	%		SRC	A. Bacom	
P1-00291	PLM-Grav	Not QA	3868	1904	OA Type	OA					SRC	A. Bacom	
P1-00355	PLM-Grav	Not QA	3738	1906	LA %	LA	0.0027		%		SRC	A. Bacom	
P1-00355	PLM-Grav	Not QA	3782	1906	C %	C		ND	%		SRC	A. Bacom	
P1-00355	PLM-Grav	Not QA	3826	1906	OA %	OA		ND	%		SRC	A. Bacom	
P1-00355	PLM-Grav	Not QA	3870	1906	OA Type	OA					SRC	A. Bacom	
P1-00062	PLM-Grav	Not QA	3757	1925	LA %	LA		ND	%		SRC	A. Bacom	
P1-00062	PLM-Grav	Not QA	3801	1925	C %	C		ND	%		SRC	A. Bacom	
P1-00062	PLM-Grav	Not QA	3845	1925	OA %	OA		ND	%		SRC	A. Bacom	
P1-00062	PLM-Grav	Not QA	3889	1925	OA Type	OA					SRC	A. Bacom	
P1-00220	PLM-Grav	Not QA	4081	1983	LA %	LA		ND	%		SRC	A. Bacom	
P1-00220	PLM-Grav	Not QA	4091	1983	C %	C		ND	%		SRC	A. Bacom	
P1-00220	PLM-Grav	Not QA	4101	1983	OA %	OA		ND	%		SRC	A. Bacom	
P1-00220	PLM-Grav	Not QA	4111	1983	OA Type	OA					SRC	A. Bacom	
P1-00140	PLM-Grav	Not QA	4078	1990	LA %	LA	0.0132		%		SRC	A. Bacom	(not included in 10%)
P1-00140	PLM-Grav	Not QA	4088	1990	C %	C		ND	%		SRC	A. Bacom	(not included in 10%)
P1-00140	PLM-Grav	Not QA	4098	1990	OA %	OA		ND	%		SRC	A. Bacom	(not included in 10%)
P1-00140	PLM-Grav	Not QA	4108	1990	OA Type	OA					SRC	A. Bacom	(not included in 10%)
P1-00077	PLM-Grav	Not QA	4118	1998	LA %	LA		ND	%		SRC	A. Bacom	
P1-00077	PLM-Grav	Not QA	4126	1998	C %	C		ND	%		SRC	A. Bacom	
P1-00077	PLM-Grav	Not QA	4134	1998	OA %	OA		ND	%		SRC	A. Bacom	
P1-00077	PLM-Grav	Not QA	4142	1998	OA Type	OA					SRC	A. Bacom	
P1-00427	PLM-Grav	Not QA	4120	2000	LA %	LA		ND	%		SRC	A. Bacom	
P1-00427	PLM-Grav	Not QA	4128	2000	C %	C		ND	%		SRC	A. Bacom	
P1-00427	PLM-Grav	Not QA	4136	2000	OA %	OA		ND	%		SRC	A. Bacom	
P1-00427	PLM-Grav	Not QA	4144	2000	OA Type	OA					SRC	A. Bacom	
P1-00156	PLM-Grav	Not QA	4169	2010	LA %	LA		ND	%		SRC	A. Bacom	
P1-00156	PLM-Grav	Not QA	4179	2010	C %	C		ND	%		SRC	A. Bacom	
P1-00156	PLM-Grav	Not QA	4189	2010	OA %	OA		ND	%		SRC	A. Bacom	
P1-00156	PLM-Grav	Not QA	4199	2010	OA Type	OA					SRC	A. Bacom	
P1-00128	PLM-Grav	Not QA	4209	2016	LA %	LA		ND	%		SRC	A. Bacom	
P1-00128	PLM-Grav	Not QA	4218	2016	C %	C		ND	%		SRC	A. Bacom	
P1-00128	PLM-Grav	Not QA	4227	2016	OA %	OA		ND	%		SRC	A. Bacom	
P1-00128	PLM-Grav	Not QA	4236	2016	OA Type	OA					SRC	A. Bacom	
P1-00103	PLM-Grav	Not QA	4253	2034	LA %	LA		ND	%		SRC	A. Bacom	
P1-00103	PLM-Grav	Not QA	4263	2034	C %	C		ND	%		SRC	A. Bacom	
P1-00103	PLM-Grav	Not QA	4273	2034	OA %	OA		ND	%		SRC	A. Bacom	
P1-00103	PLM-Grav	Not QA	4283	2034	OA Type	OA					SRC	A. Bacom	
GB-120307	PLM-VE	NOT QA	4289	2040	LA_MF	LA		ND	%		SRC	A. Bacom	
GB-120307	PLM-VE	NOT QA	4294	2040	LA_Bin	LA		A			SRC	A. Bacom	
GB-120307	PLM-VE	NOT QA	4299	2040	CH_AF	CH		ND	%		SRC	A. Bacom	
GB-120307	PLM-VE	NOT QA	4304	2040	OA_AF	OA		ND	%		SRC	A. Bacom	
GB-120307	PLM-VE	NOT QA	4309	2040	OA_type	OA					SRC	A. Bacom	
P1-00396	PLM-Grav	Not QA	5017	2092	LA %	LA		Tr	%		SRC	A. Bacom	
P1-00396	PLM-Grav	Not QA	5058	2092	C %	C		ND	%		SRC	A. Bacom	
P1-00396	PLM-Grav	Not QA	5099	2092	OA %	OA		ND	%		SRC	A. Bacom	
P1-00396	PLM-Grav	Not QA	5140	2092	OA Type	OA					SRC	A. Bacom	
P1-00397	PLM-Grav	Not QA	5018	2093	LA %	LA		Tr	%		SRC	A. Bacom	
P1-00397	PLM-Grav	Not QA	5059	2093	C %	C		ND	%		SRC	A. Bacom	
P1-00397	PLM-Grav	Not QA	5100	2093	OA %	OA		ND	%		SRC	A. Bacom	
P1-00397	PLM-Grav	Not QA	5141	2093	OA Type	OA					SRC	A. Bacom	
P1-00298	PLM-Grav	Not QA	4575	2053	LA %	LA	0.0126		%		SRC	A. Bacom	
P1-00298	PLM-Grav	Not QA	4579	2053	C %	C		ND	%		SRC	A. Bacom	
P1-00298	PLM-Grav	Not QA	4583	2053	OA %	OA		ND	%		SRC	A. Bacom	
P1-00298	PLM-Grav	Not QA	4587	2053	OA Type	OA					SRC	A. Bacom	
P1-00400	PLM-Grav	Not QA	5021	2096	LA %	LA		Tr	%		SRC	A. Bacom	
P1-00400	PLM-Grav	Not QA	5062	2096	C %	C		ND	%		SRC	A. Bacom	
P1-00400	PLM-Grav	Not QA	5103	2096	OA %	OA		ND	%		SRC	A. Bacom	
P1-00400	PLM-Grav	Not QA	5144	2096	OA Type	OA					SRC	A. Bacom	
P1-00232	PLM-Grav	Not QA	5026	2101	LA %	LA		Tr	%		SRC	A. Bacom	
P1-00232	PLM-Grav	Not QA	5067	2101	C %	C		ND	%		SRC	A. Bacom	
P1-00232	PLM-Grav	Not QA	5108	2101	OA %	OA		ND	%		SRC	A. Bacom	
P1-00232	PLM-Grav	Not QA	5149	2101	OA Type	OA					SRC	A. Bacom	
P1-00341	PLM-Grav	Not QA	5036	2111	LA %	LA	0.0082		%		SRC	A. Bacom	
P1-00341	PLM-Grav	Not QA	5077	2111	C %	C		ND	%		SRC	A. Bacom	
P1-00341	PLM-Grav	Not QA	5118	2111	OA %	OA		ND	%		SRC	A. Bacom	
P1-00341	PLM-Grav	Not QA	5159	2111	OA Type	OA					SRC	A. Bacom	

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IndexID	Analysis Type	Result ASB ID	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P2-00473	PLM-Grav	26287	8748	LA %	LA		ND	%		SRC	NR	
P2-00473	PLM-Grav	26288	8748	C %	C		ND	%		SRC	NR	
P2-00473	PLM-Grav	26289	8748	OA %	OA		ND	%		SRC	NR	
P2-00473	PLM-Grav	26290	8748	OA Type	OA					SRC	NR	
P2-00469	PLM-Grav	26291	8749	LA %	LA		Tr	%		SRC	NR	
P2-00469	PLM-Grav	26297	8749	C %	C		ND	%		SRC	NR	
P2-00469	PLM-Grav	26303	8749	OA %	OA		ND	%		SRC	NR	
P2-00469	PLM-Grav	26309	8749	OA Type	OA					SRC	NR	
P2-00490	PLM-Grav	26292	8750	LA %	LA		Tr	%		SRC	NR	
P2-00490	PLM-Grav	26298	8750	C %	C		ND	%		SRC	NR	
P2-00490	PLM-Grav	26304	8750	OA %	OA		ND	%		SRC	NR	
P2-00490	PLM-Grav	26310	8750	OA Type	OA					SRC	NR	
P2-00491	PLM-Grav	26293	8751	LA %	LA	2.626969292		%		SRC	NR	LA weight on hard copy written as "g" instead of "mg". % in EDD calculated incorrectly
P2-00491	PLM-Grav	26299	8751	C %	C		ND	%		SRC	NR	
P2-00491	PLM-Grav	26305	8751	OA %	OA		ND	%		SRC	NR	
P2-00491	PLM-Grav	26311	8751	OA Type	OA					SRC	NR	
P2-00493	PLM-Grav	26294	8752	LA %	LA		Tr	%		SRC	NR	
P2-00493	PLM-Grav	26300	8752	C %	C		ND	%		SRC	NR	
P2-00493	PLM-Grav	26306	8752	OA %	OA		ND	%		SRC	NR	
P2-00493	PLM-Grav	26312	8752	OA Type	OA					SRC	NR	
P2-00492	PLM-Grav	26295	8753	LA %	LA	5.661639962		%		SRC	NR	LA weight on hard copy written as "g" instead of "mg". % in EDD calculated incorrectly
P2-00492	PLM-Grav	26301	8753	C %	C		ND	%		SRC	NR	
P2-00492	PLM-Grav	26307	8753	OA %	OA		ND	%		SRC	NR	
P2-00492	PLM-Grav	26313	8753	OA Type	OA					SRC	NR	
P2-00586	PLM-Grav	26296	8754	LA %	LA		Tr	%		SRC	NR	
P2-00586	PLM-Grav	26302	8754	C %	C		ND	%		SRC	NR	
P2-00586	PLM-Grav	26308	8754	OA %	OA		ND	%		SRC	NR	
P2-00586	PLM-Grav	26314	8754	OA Type	OA					SRC	NR	
P2-00489	PLM-Grav	26315	8755	LA %	LA		Tr	%		SRC	NR	
P2-00489	PLM-Grav	26316	8755	C %	C		ND	%		SRC	NR	
P2-00489	PLM-Grav	26317	8755	OA %	OA		ND	%		SRC	NR	
P2-00489	PLM-Grav	26318	8755	OA Type	OA					SRC	NR	
P2-00511	PLM-Grav	26319	8756	LA %	LA		ND	%		SRC	NR	
P2-00511	PLM-Grav	26320	8756	C %	C		ND	%		SRC	NR	
P2-00511	PLM-Grav	26321	8756	OA %	OA		ND	%		SRC	NR	
P2-00511	PLM-Grav	26322	8756	OA Type	OA					SRC	NR	
P2-00497	PLM-Grav	26323	8757	LA %	LA	0.385155466		%		SRC	NR	LA weight on hard copy written as "g" instead of "mg". % in EDD calculated incorrectly
P2-00497	PLM-Grav	26325	8757	C %	C		ND	%		SRC	NR	
P2-00497	PLM-Grav	26327	8757	OA %	OA		ND	%		SRC	NR	
P2-00497	PLM-Grav	26329	8757	OA Type	OA					SRC	NR	
P2-00763	PLM-Grav	26324	8758	LA %	LA	0.420151334		%		SRC	NR	LA weight on hard copy written as "g" instead of "mg". % in EDD calculated incorrectly
P2-00763	PLM-Grav	26326	8758	C %	C		ND	%		SRC	NR	
P2-00763	PLM-Grav	26328	8758	OA %	OA		ND	%		SRC	NR	
P2-00763	PLM-Grav	26330	8758	OA Type	OA					SRC	NR	
P2-00860	PLM-Grav	26331	8759	LA %	LA		ND	%		SRC	NR	
P2-00860	PLM-Grav	26334	8759	C %	C		ND	%		SRC	NR	
P2-00860	PLM-Grav	26337	8759	OA %	OA		ND	%		SRC	NR	
P2-00860	PLM-Grav	26340	8759	OA Type	OA					SRC	NR	
P2-00861	PLM-Grav	26332	8760	LA %	LA		ND	%		SRC	NR	
P2-00861	PLM-Grav	26335	8760	C %	C		ND	%		SRC	NR	
P2-00861	PLM-Grav	26338	8760	OA %	OA		ND	%		SRC	NR	
P2-00861	PLM-Grav	26341	8760	OA Type	OA					SRC	NR	
P2-00862	PLM-Grav	26333	8761	LA %	LA		ND	%		SRC	NR	
P2-00862	PLM-Grav	26336	8761	C %	C		ND	%		SRC	NR	
P2-00862	PLM-Grav	26339	8761	OA %	OA		ND	%		SRC	NR	
P2-00862	PLM-Grav	26342	8761	OA Type	OA					SRC	NR	
P2-00946	PLM-Grav	26343	8762	LA %	LA		Tr	%		SRC	NR	
P2-00946	PLM-Grav	26348	8762	C %	C		ND	%		SRC	NR	
P2-00946	PLM-Grav	26353	8762	OA %	OA		ND	%		SRC	NR	
P2-00946	PLM-Grav	26358	8762	OA Type	OA					SRC	NR	
P2-00942	PLM-Grav	26344	8763	LA %	LA		Tr	%		SRC	NR	
P2-00942	PLM-Grav	26349	8763	C %	C		ND	%		SRC	NR	
P2-00942	PLM-Grav	26354	8763	OA %	OA		ND	%		SRC	NR	
P2-00942	PLM-Grav	26359	8763	OA Type	OA					SRC	NR	
P2-00945	PLM-Grav	26345	8764	LA %	LA	4.964788732		%		SRC	NR	LA weight on hard copy written as "g" instead of "mg" but was correctly entered in the EDD.
P2-00945	PLM-Grav	26350	8764	C %	C		ND	%		SRC	NR	
P2-00945	PLM-Grav	26355	8764	OA %	OA		ND	%		SRC	NR	
P2-00945	PLM-Grav	26360	8764	OA Type	OA					SRC	NR	
P2-00954	PLM-Grav	26346	8765	LA %	LA		Tr	%		SRC	NR	

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IndexID	Analysis Type	Result ASB ID	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P2-00954	PLM-Grav	26351	8765	C %	C		ND	%		SRC	NR	
P2-00954	PLM-Grav	26356	8765	OA %	OA		ND	%		SRC	NR	
P2-00954	PLM-Grav	26361	8765	OA Type	OA					SRC	NR	
P2-00770	PLM-Grav	26347	8766	LA %	LA	4.269340974		%		SRC	NR	LA weight on hard copy written as "g" instead of "mg" but was correctly entered in the EDD.
P2-00770	PLM-Grav	26352	8766	C %	C		ND	%		SRC	NR	
P2-00770	PLM-Grav	26357	8766	OA %	OA		ND	%		SRC	NR	
P2-00770	PLM-Grav	26362	8766	OA Type	OA					SRC	NR	
P2-00953	PLM-Grav	26363	8767	LA %	LA		Tr	%		SRC	NR	
P2-00953	PLM-Grav	26364	8767	C %	C		ND	%		SRC	NR	
P2-00953	PLM-Grav	26365	8767	OA %	OA		ND	%		SRC	NR	
P2-00953	PLM-Grav	26366	8767	OA Type	OA					SRC	NR	
P2-00986	PLM-Grav	26367	8768	LA %	LA		ND	%		SRC	NR	
P2-00986	PLM-Grav	26370	8768	C %	C		ND	%		SRC	NR	
P2-00986	PLM-Grav	26373	8768	OA %	OA		ND	%		SRC	NR	
P2-00986	PLM-Grav	26376	8768	OA Type	OA					SRC	NR	
P2-00995	PLM-Grav	26368	8769	LA %	LA		ND	%		SRC	NR	
P2-00995	PLM-Grav	26371	8769	C %	C		ND	%		SRC	NR	
P2-00995	PLM-Grav	26374	8769	OA %	OA		ND	%		SRC	NR	
P2-00995	PLM-Grav	26377	8769	OA Type	OA					SRC	NR	
P2-00996	PLM-Grav	26369	8770	LA %	LA		ND	%		SRC	NR	
P2-00996	PLM-Grav	26372	8770	C %	C		ND	%		SRC	NR	
P2-00996	PLM-Grav	26375	8770	OA %	OA		ND	%		SRC	NR	
P2-00996	PLM-Grav	26378	8770	OA Type	OA					SRC	NR	
P2-01001	PLM-Grav	26379	8771	LA %	LA	18.56373429	Tr	%		SRC	NR	Lab should confirm that this is a % and not Tr.
P2-01001	PLM-Grav	26383	8771	C %	C		ND	%		SRC	NR	
P2-01001	PLM-Grav	26387	8771	OA %	OA		ND	%		SRC	NR	
P2-01001	PLM-Grav	26391	8771	OA Type	OA					SRC	NR	
P2-01002	PLM-Grav	26380	8772	LA %	LA		ND	%		SRC	NR	
P2-01002	PLM-Grav	26384	8772	C %	C		ND	%		SRC	NR	
P2-01002	PLM-Grav	26388	8772	OA %	OA		ND	%		SRC	NR	
P2-01002	PLM-Grav	26392	8772	OA Type	OA					SRC	NR	
P2-01003	PLM-Grav	26381	8773	LA %	LA		Tr	%		SRC	NR	
P2-01003	PLM-Grav	26385	8773	C %	C		ND	%		SRC	NR	
P2-01003	PLM-Grav	26389	8773	OA %	OA		ND	%		SRC	NR	
P2-01003	PLM-Grav	26393	8773	OA Type	OA					SRC	NR	
P2-01014	PLM-Grav	26382	8774	LA %	LA		ND	%		SRC	NR	
P2-01014	PLM-Grav	26386	8774	C %	C		ND	%		SRC	NR	
P2-01014	PLM-Grav	26390	8774	OA %	OA		ND	%		SRC	NR	
P2-01014	PLM-Grav	26394	8774	OA Type	OA					SRC	NR	
P2-01070	PLM-Grav	26395	8775	LA %	LA		Tr	%		SRC	NR	
P2-01070	PLM-Grav	26405	8775	C %	C		ND	%		SRC	NR	
P2-01070	PLM-Grav	26415	8775	OA %	OA		ND	%		SRC	NR	
P2-01070	PLM-Grav	26425	8775	OA Type	OA					SRC	NR	
P2-01071	PLM-Grav	26396	8776	LA %	LA	2.089635854		%		SRC	NR	
P2-01071	PLM-Grav	26406	8776	C %	C		ND	%		SRC	NR	
P2-01071	PLM-Grav	26416	8776	OA %	OA		ND	%		SRC	NR	
P2-01071	PLM-Grav	26426	8776	OA Type	OA					SRC	NR	
P2-01073	PLM-Grav	26397	8777	LA %	LA		Tr	%		SRC	NR	
P2-01073	PLM-Grav	26407	8777	C %	C		ND	%		SRC	NR	
P2-01073	PLM-Grav	26417	8777	OA %	OA		ND	%		SRC	NR	
P2-01073	PLM-Grav	26427	8777	OA Type	OA					SRC	NR	
P2-01076	PLM-Grav	26398	8778	LA %	LA		ND	%		SRC	NR	
P2-01076	PLM-Grav	26408	8778	C %	C		ND	%		SRC	NR	
P2-01076	PLM-Grav	26418	8778	OA %	OA		ND	%		SRC	NR	
P2-01076	PLM-Grav	26428	8778	OA Type	OA					SRC	NR	
P2-01077	PLM-Grav	26399	8779	LA %	LA		ND	%		SRC	NR	
P2-01077	PLM-Grav	26409	8779	C %	C		ND	%		SRC	NR	
P2-01077	PLM-Grav	26419	8779	OA %	OA		ND	%		SRC	NR	
P2-01077	PLM-Grav	26429	8779	OA Type	OA					SRC	NR	
P2-01078	PLM-Grav	26400	8780	LA %	LA		ND	%		SRC	NR	
P2-01078	PLM-Grav	26410	8780	C %	C		ND	%		SRC	NR	
P2-01078	PLM-Grav	26420	8780	OA %	OA		ND	%		SRC	NR	
P2-01078	PLM-Grav	26430	8780	OA Type	OA					SRC	NR	
P2-01079	PLM-Grav	26401	8781	LA %	LA	10.59684685		%		SRC	NR	
P2-01079	PLM-Grav	26411	8781	C %	C		ND	%		SRC	NR	
P2-01079	PLM-Grav	26421	8781	OA %	OA		ND	%		SRC	NR	
P2-01079	PLM-Grav	26431	8781	OA Type	OA					SRC	NR	
P2-01080	PLM-Grav	26402	8782	LA %	LA		Tr	%		SRC	NR	
P2-01080	PLM-Grav	26412	8782	C %	C		ND	%		SRC	NR	
P2-01080	PLM-Grav	26422	8782	OA %	OA		ND	%		SRC	NR	
P2-01080	PLM-Grav	26432	8782	OA Type	OA					SRC	NR	
P2-01082	PLM-Grav	26403	8783	LA %	LA		ND	%		SRC	NR	
P2-01082	PLM-Grav	26413	8783	C %	C		ND	%		SRC	NR	
P2-01082	PLM-Grav	26423	8783	OA %	OA		ND	%		SRC	NR	
P2-01082	PLM-Grav	26433	8783	OA Type	OA					SRC	NR	

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IndexID	Analysis Type	Result ASB ID	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P2-01030	PLM-Grav	26404	8784	LA %	LA		Tr	%		SRC	NR	
P2-01030	PLM-Grav	26414	8784	C %	C		ND	%		SRC	NR	
P2-01030	PLM-Grav	26424	8784	OA %	OA		ND	%		SRC	NR	
P2-01030	PLM-Grav	26434	8784	OA Type	OA					SRC	NR	
P2-00461	PLM-VE	17258	5994	LA_MF	LA	1	<	%		SRC	NR	
P2-00461	PLM-VE	17292	5994	LA_Bin	LA		B2			SRC	NR	
P2-00461	PLM-VE	17326	5994	CH_AF	CH		ND	%		SRC	NR	
P2-00461	PLM-VE	17360	5994	OA_AF	OA		ND	%		SRC	NR	
P2-00461	PLM-VE	17394	5994	OA_type	OA					SRC	NR	
P2-00464	PLM-VE	17259	5995	LA_MF	LA		Tr	%		SRC	NR	
P2-00464	PLM-VE	17293	5995	LA_Bin	LA		B1			SRC	NR	
P2-00464	PLM-VE	17327	5995	CH_AF	CH		ND	%		SRC	NR	
P2-00464	PLM-VE	17361	5995	OA_AF	OA		ND	%		SRC	NR	
P2-00464	PLM-VE	17395	5995	OA_type	OA					SRC	NR	
P2-00465	PLM-VE	17260	5996	LA_MF	LA		Tr	%		SRC	NR	
P2-00465	PLM-VE	17294	5996	LA_Bin	LA		B1			SRC	NR	
P2-00465	PLM-VE	17328	5996	CH_AF	CH		ND	%		SRC	NR	
P2-00465	PLM-VE	17362	5996	OA_AF	OA		ND	%		SRC	NR	
P2-00465	PLM-VE	17396	5996	OA_type	OA					SRC	NR	
P2-00466	PLM-VE	17261	5997	LA_MF	LA		Tr	%		SRC	NR	
P2-00466	PLM-VE	17295	5997	LA_Bin	LA		B1			SRC	NR	
P2-00466	PLM-VE	17329	5997	CH_AF	CH		ND	%		SRC	NR	
P2-00466	PLM-VE	17363	5997	OA_AF	OA		ND	%		SRC	NR	
P2-00466	PLM-VE	17397	5997	OA_type	OA					SRC	NR	
P2-00533	PLM-VE	17262	5998	LA_MF	LA	1	<	%		SRC	NR	
P2-00533	PLM-VE	17296	5998	LA_Bin	LA		B2			SRC	NR	
P2-00533	PLM-VE	17330	5998	CH_AF	CH		ND	%		SRC	NR	
P2-00533	PLM-VE	17364	5998	OA_AF	OA		ND	%		SRC	NR	
P2-00533	PLM-VE	17398	5998	OA_type	OA					SRC	NR	
P2-00531	PLM-VE	17263	5999	LA_MF	LA		Tr	%		SRC	NR	
P2-00531	PLM-VE	17297	5999	LA_Bin	LA		B1			SRC	NR	
P2-00531	PLM-VE	17331	5999	CH_AF	CH		ND	%		SRC	NR	
P2-00531	PLM-VE	17365	5999	OA_AF	OA		ND	%		SRC	NR	
P2-00531	PLM-VE	17399	5999	OA_type	OA					SRC	NR	
P2-00532	PLM-VE	17264	6000	LA_MF	LA		Tr	%		SRC	NR	
P2-00532	PLM-VE	17298	6000	LA_Bin	LA		B1			SRC	NR	
P2-00532	PLM-VE	17332	6000	CH_AF	CH		ND	%		SRC	NR	
P2-00532	PLM-VE	17366	6000	OA_AF	OA		ND	%		SRC	NR	
P2-00532	PLM-VE	17400	6000	OA_type	OA					SRC	NR	
P2-00534	PLM-VE	17265	6001	LA_MF	LA		Tr	%		SRC	NR	
P2-00534	PLM-VE	17299	6001	LA_Bin	LA		B1			SRC	NR	
P2-00534	PLM-VE	17333	6001	CH_AF	CH		ND	%		SRC	NR	
P2-00534	PLM-VE	17367	6001	OA_AF	OA		ND	%		SRC	NR	
P2-00534	PLM-VE	17401	6001	OA_type	OA					SRC	NR	
P2-00587	PLM-VE	17266	6002	LA_MF	LA		ND	%		SRC	NR	
P2-00587	PLM-VE	17300	6002	LA_Bin	LA		A			SRC	NR	
P2-00587	PLM-VE	17334	6002	CH_AF	CH		ND	%		SRC	NR	
P2-00587	PLM-VE	17368	6002	OA_AF	OA		ND	%		SRC	NR	
P2-00587	PLM-VE	17402	6002	OA_type	OA					SRC	NR	
P2-00588	PLM-VE	17267	6003	LA_MF	LA	1	<	%		SRC	NR	
P2-00588	PLM-VE	17301	6003	LA_Bin	LA		B2			SRC	NR	
P2-00588	PLM-VE	17335	6003	CH_AF	CH		ND	%		SRC	NR	
P2-00588	PLM-VE	17369	6003	OA_AF	OA		ND	%		SRC	NR	
P2-00588	PLM-VE	17403	6003	OA_type	OA					SRC	NR	
P2-00589	PLM-VE	17268	6004	LA_MF	LA		ND	%		SRC	NR	
P2-00589	PLM-VE	17302	6004	LA_Bin	LA		A			SRC	NR	
P2-00589	PLM-VE	17336	6004	CH_AF	CH		ND	%		SRC	NR	
P2-00589	PLM-VE	17370	6004	OA_AF	OA		ND	%		SRC	NR	
P2-00589	PLM-VE	17404	6004	OA_type	OA					SRC	NR	
P2-00590	PLM-VE	17269	6005	LA_MF	LA		Tr	%		SRC	NR	
P2-00590	PLM-VE	17303	6005	LA_Bin	LA		B1			SRC	NR	
P2-00590	PLM-VE	17337	6005	CH_AF	CH		ND	%		SRC	NR	
P2-00590	PLM-VE	17371	6005	OA_AF	OA		ND	%		SRC	NR	
P2-00590	PLM-VE	17405	6005	OA_type	OA					SRC	NR	
P2-00489	PLM-VE	17270	6006	LA_MF	LA	1	<	%		SRC	NR	
P2-00489	PLM-VE	17304	6006	LA_Bin	LA		B2			SRC	NR	
P2-00489	PLM-VE	17338	6006	CH_AF	CH		ND	%		SRC	NR	
P2-00489	PLM-VE	17372	6006	OA_AF	OA		ND	%		SRC	NR	
P2-00489	PLM-VE	17406	6006	OA_type	OA					SRC	NR	
P2-00499	PLM-VE	17271	6007	LA_MF	LA	1	<	%		SRC	NR	
P2-00499	PLM-VE	17305	6007	LA_Bin	LA		B2			SRC	NR	
P2-00499	PLM-VE	17339	6007	CH_AF	CH		ND	%		SRC	NR	
P2-00499	PLM-VE	17373	6007	OA_AF	OA		ND	%		SRC	NR	
P2-00499	PLM-VE	17407	6007	OA_type	OA					SRC	NR	
P2-00485	PLM-VE	17272	6008	LA_MF	LA	1	<	%		SRC	NR	
P2-00485	PLM-VE	17306	6008	LA_Bin	LA		B2			SRC	NR	
P2-00485	PLM-VE	17340	6008	CH_AF	CH		ND	%		SRC	NR	
P2-00485	PLM-VE	17374	6008	OA_AF	OA		ND	%		SRC	NR	
P2-00485	PLM-VE	17408	6008	OA_type	OA					SRC	NR	

ATTACHMENT 4. DATA SUMMARY OF RESULT INFORMATION - PHASE II SEDIMENT

IndexID	Analysis Type	Result ASB ID	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P2-00486	PLM-VE	17273	6009	LA_MF	LA	1	<	%		SRC	NR	
P2-00486	PLM-VE	17307	6009	LA_Bin	LA		B2			SRC	NR	
P2-00486	PLM-VE	17341	6009	CH_AF	CH		ND	%		SRC	NR	
P2-00486	PLM-VE	17375	6009	OA_AF	OA		ND	%		SRC	NR	
P2-00486	PLM-VE	17409	6009	OA_type	OA					SRC	NR	
P2-00481	PLM-VE	17274	6010	LA_MF	LA		Tr	%		SRC	NR	
P2-00481	PLM-VE	17308	6010	LA_Bin	LA		B1			SRC	NR	
P2-00481	PLM-VE	17342	6010	CH_AF	CH		ND	%		SRC	NR	
P2-00481	PLM-VE	17376	6010	OA_AF	OA		ND	%		SRC	NR	
P2-00481	PLM-VE	17410	6010	OA_type	OA					SRC	NR	
P2-00482	PLM-VE	17275	6011	LA_MF	LA		Tr	%		SRC	NR	
P2-00482	PLM-VE	17309	6011	LA_Bin	LA		B1			SRC	NR	
P2-00482	PLM-VE	17343	6011	CH_AF	CH		ND	%		SRC	NR	
P2-00482	PLM-VE	17377	6011	OA_AF	OA		ND	%		SRC	NR	
P2-00482	PLM-VE	17411	6011	OA_type	OA					SRC	NR	
P2-00591	PLM-VE	17276	6012	LA_MF	LA		ND	%		SRC	NR	
P2-00591	PLM-VE	17310	6012	LA_Bin	LA		A			SRC	NR	
P2-00591	PLM-VE	17344	6012	CH_AF	CH		ND	%		SRC	NR	
P2-00591	PLM-VE	17378	6012	OA_AF	OA		ND	%		SRC	NR	
P2-00591	PLM-VE	17412	6012	OA_type	OA					SRC	NR	
P2-00592	PLM-VE	17277	6013	LA_MF	LA		ND	%		SRC	NR	
P2-00592	PLM-VE	17311	6013	LA_Bin	LA		A			SRC	NR	
P2-00592	PLM-VE	17345	6013	CH_AF	CH		ND	%		SRC	NR	
P2-00592	PLM-VE	17379	6013	OA_AF	OA		ND	%		SRC	NR	
P2-00592	PLM-VE	17413	6013	OA_type	OA					SRC	NR	
P2-00593	PLM-VE	17278	6014	LA_MF	LA	1	<	%		SRC	NR	
P2-00593	PLM-VE	17312	6014	LA_Bin	LA		B2			SRC	NR	
P2-00593	PLM-VE	17346	6014	CH_AF	CH		ND	%		SRC	NR	
P2-00593	PLM-VE	17380	6014	OA_AF	OA		ND	%		SRC	NR	
P2-00593	PLM-VE	17414	6014	OA_type	OA					SRC	NR	
P2-00509	PLM-VE	17279	6015	LA_MF	LA	1	<	%		SRC	NR	
P2-00509	PLM-VE	17313	6015	LA_Bin	LA		B2			SRC	NR	
P2-00509	PLM-VE	17347	6015	CH_AF	CH		ND	%		SRC	NR	
P2-00509	PLM-VE	17381	6015	OA_AF	OA		ND	%		SRC	NR	
P2-00509	PLM-VE	17415	6015	OA_type	OA					SRC	NR	
P2-00536	PLM-VE	17280	6016	LA_MF	LA		Tr	%		SRC	NR	
P2-00536	PLM-VE	17314	6016	LA_Bin	LA		B1			SRC	NR	
P2-00536	PLM-VE	17348	6016	CH_AF	CH		ND	%		SRC	NR	
P2-00536	PLM-VE	17382	6016	OA_AF	OA		ND	%		SRC	NR	
P2-00536	PLM-VE	17416	6016	OA_type	OA					SRC	NR	
P2-00513	PLM-VE	17281	6017	LA_MF	LA		Tr	%		SRC	NR	
P2-00513	PLM-VE	17315	6017	LA_Bin	LA		B1			SRC	NR	
P2-00513	PLM-VE	17349	6017	CH_AF	CH		ND	%		SRC	NR	
P2-00513	PLM-VE	17383	6017	OA_AF	OA		ND	%		SRC	NR	
P2-00513	PLM-VE	17417	6017	OA_type	OA					SRC	NR	
P2-00511	PLM-VE	17282	6018	LA_MF	LA		Tr	%		SRC	NR	
P2-00511	PLM-VE	17316	6018	LA_Bin	LA		B1			SRC	NR	
P2-00511	PLM-VE	17350	6018	CH_AF	CH		ND	%		SRC	NR	
P2-00511	PLM-VE	17384	6018	OA_AF	OA		ND	%		SRC	NR	
P2-00511	PLM-VE	17418	6018	OA_type	OA					SRC	NR	
P2-00537	PLM-VE	17283	6019	LA_MF	LA		Tr	%		SRC	NR	
P2-00537	PLM-VE	17317	6019	LA_Bin	LA		B1			SRC	NR	
P2-00537	PLM-VE	17351	6019	CH_AF	CH		ND	%		SRC	NR	
P2-00537	PLM-VE	17385	6019	OA_AF	OA		ND	%		SRC	NR	
P2-00537	PLM-VE	17419	6019	OA_type	OA					SRC	NR	
P2-00538	PLM-VE	17284	6020	LA_MF	LA		Tr	%		SRC	NR	
P2-00538	PLM-VE	17318	6020	LA_Bin	LA		B1			SRC	NR	
P2-00538	PLM-VE	17352	6020	CH_AF	CH		ND	%		SRC	NR	
P2-00538	PLM-VE	17386	6020	OA_AF	OA		ND	%		SRC	NR	
P2-00538	PLM-VE	17420	6020	OA_type	OA					SRC	NR	
P2-00512	PLM-VE	17285	6021	LA_MF	LA	1	<	%		SRC	NR	
P2-00512	PLM-VE	17319	6021	LA_Bin	LA		B2			SRC	NR	
P2-00512	PLM-VE	17353	6021	CH_AF	CH		ND	%		SRC	NR	
P2-00512	PLM-VE	17387	6021	OA_AF	OA		ND	%		SRC	NR	
P2-00512	PLM-VE	17421	6021	OA_type	OA					SRC	NR	
P2-00594	PLM-VE	17286	6022	LA_MF	LA		ND	%		SRC	NR	
P2-00594	PLM-VE	17320	6022	LA_Bin	LA		A			SRC	NR	
P2-00594	PLM-VE	17354	6022	CH_AF	CH		ND	%		SRC	NR	
P2-00594	PLM-VE	17388	6022	OA_AF	OA		ND	%		SRC	NR	
P2-00594	PLM-VE	17422	6022	OA_type	OA					SRC	NR	
P2-00595	PLM-VE	17287	6023	LA_MF	LA		ND	%		SRC	NR	
P2-00595	PLM-VE	17321	6023	LA_Bin	LA		A			SRC	NR	
P2-00595	PLM-VE	17355	6023	CH_AF	CH		ND	%		SRC	NR	
P2-00595	PLM-VE	17389	6023	OA_AF	OA		ND	%		SRC	NR	
P2-00595	PLM-VE	17423	6023	OA_type	OA					SRC	NR	
P2-00596	PLM-VE	17288	6024	LA_MF	LA	1	<	%		SRC	NR	
P2-00596	PLM-VE	17322	6024	LA_Bin	LA		B2			SRC	NR	
P2-00596	PLM-VE	17356	6024	CH_AF	CH		ND	%		SRC	NR	
P2-00596	PLM-VE	17390	6024	OA_AF	OA		ND	%		SRC	NR	

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IndexID	Analysis Type	Result ASB ID	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P2-00596	PLM-VE	17424	6024	OA_type	OA					SRC	NR	
P2-00487	PLM-VE	16802	5942	LA_MF	LA	3		%		SRC	NR	
P2-00487	PLM-VE	16815	5942	LA_Bin	LA		C			SRC	NR	
P2-00487	PLM-VE	16841	5942	OA_AF	OA		ND	%		SRC	NR	
P2-00483	PLM-VE	16803	5943	LA_MF	LA	1	<	%		SRC	NR	
P2-00483	PLM-VE	16816	5943	LA_Bin	LA		B2			SRC	NR	
P2-00483	PLM-VE	16842	5943	OA_AF	OA		ND	%		SRC	NR	
P2-00473	PLM-VE	16804	5944	LA_MF	LA		Tr	%		SRC	NR	
P2-00473	PLM-VE	16817	5944	LA_Bin	LA		B1			SRC	NR	
P2-00473	PLM-VE	16843	5944	OA_AF	OA		ND	%		SRC	NR	
P2-00472	PLM-VE	16806	5945	LA_MF	LA		Tr	%		SRC	NR	
P2-00472	PLM-VE	16819	5945	LA_Bin	LA		B1			SRC	NR	
P2-00472	PLM-VE	16845	5945	OA_AF	OA		ND	%		SRC	NR	
P2-00475	PLM-VE	16807	5946	LA_MF	LA		Tr	%		SRC	NR	
P2-00475	PLM-VE	16820	5946	LA_Bin	LA		B1			SRC	NR	
P2-00475	PLM-VE	16846	5946	OA_AF	OA		ND	%		SRC	NR	
P2-00477	PLM-VE	16808	5947	LA_MF	LA	1	<	%		SRC	NR	
P2-00477	PLM-VE	16821	5947	LA_Bin	LA		B2			SRC	NR	
P2-00477	PLM-VE	16847	5947	OA_AF	OA		ND	%		SRC	NR	
P2-00474	PLM-VE	16809	5948	LA_MF	LA		ND	%		SRC	NR	
P2-00474	PLM-VE	16822	5948	LA_Bin	LA		A			SRC	NR	
P2-00474	PLM-VE	16848	5948	OA_AF	OA		ND	%		SRC	NR	
P2-00476	PLM-VE	16810	5949	LA_MF	LA		Tr	%		SRC	NR	
P2-00476	PLM-VE	16823	5949	LA_Bin	LA		B1			SRC	NR	
P2-00476	PLM-VE	16849	5949	OA_AF	OA		ND	%		SRC	NR	
P2-00580	PLM-VE	16811	5950	LA_MF	LA		ND	%		SRC	NR	
P2-00580	PLM-VE	16824	5950	LA_Bin	LA		A			SRC	NR	
P2-00580	PLM-VE	16850	5950	OA_AF	OA		ND	%		SRC	NR	
P2-00581	PLM-VE	16812	5951	LA_MF	LA		ND	%		SRC	NR	
P2-00581	PLM-VE	16825	5951	LA_Bin	LA		A			SRC	NR	
P2-00581	PLM-VE	16851	5951	OA_AF	OA		ND	%		SRC	NR	
P2-00582	PLM-VE	16813	5952	LA_MF	LA		Tr	%		SRC	NR	
P2-00582	PLM-VE	16826	5952	LA_Bin	LA		B1			SRC	NR	
P2-00582	PLM-VE	16852	5952	OA_AF	OA		ND	%		SRC	NR	
P2-00584	PLM-VE	16866	5953	OA_type	OA					SRC	NR	
P2-00584	PLM-VE	16814	5953	LA_MF	LA		ND	%		SRC	NR	
P2-00584	PLM-VE	16827	5953	LA_Bin	LA		A			SRC	NR	
P2-00584	PLM-VE	16840	5953	CH_AF	CH		ND	%		SRC	NR	
P2-00584	PLM-VE	16853	5953	OA_AF	OA		ND	%		SRC	NR	
P2-00506	PLM-VE	17592	6065	LA_MF	LA		Tr	%		SRC	NR	
P2-00506	PLM-VE	17611	6065	LA_Bin	LA		B1			SRC	NR	
P2-00506	PLM-VE	17630	6065	CH_AF	CH		ND	%		SRC	NR	
P2-00506	PLM-VE	17649	6065	OA_AF	OA		ND	%		SRC	NR	
P2-00506	PLM-VE	17668	6065	OA_type	OA					SRC	NR	
P2-00505	PLM-VE	17593	6066	LA_MF	LA		Tr	%		SRC	NR	
P2-00505	PLM-VE	17612	6066	LA_Bin	LA		B1			SRC	NR	
P2-00505	PLM-VE	17631	6066	CH_AF	CH		ND	%		SRC	NR	
P2-00505	PLM-VE	17650	6066	OA_AF	OA		ND	%		SRC	NR	
P2-00505	PLM-VE	17669	6066	OA_type	OA					SRC	NR	
P2-00504	PLM-VE	17594	6067	LA_MF	LA		Tr	%		SRC	NR	
P2-00504	PLM-VE	17613	6067	LA_Bin	LA		B1			SRC	NR	
P2-00504	PLM-VE	17632	6067	CH_AF	CH		ND	%		SRC	NR	
P2-00504	PLM-VE	17651	6067	OA_AF	OA		ND	%		SRC	NR	
P2-00504	PLM-VE	17670	6067	OA_type	OA					SRC	NR	
P2-00503	PLM-VE	17595	6068	LA_MF	LA		Tr	%		SRC	NR	
P2-00503	PLM-VE	17614	6068	LA_Bin	LA		B1			SRC	NR	
P2-00503	PLM-VE	17633	6068	CH_AF	CH		ND	%		SRC	NR	
P2-00503	PLM-VE	17652	6068	OA_AF	OA		ND	%		SRC	NR	
P2-00503	PLM-VE	17671	6068	OA_type	OA					SRC	NR	
P2-00519	PLM-VE	17596	6069	LA_MF	LA		Tr	%		SRC	NR	
P2-00519	PLM-VE	17615	6069	LA_Bin	LA		B1			SRC	NR	
P2-00519	PLM-VE	17634	6069	CH_AF	CH		ND	%		SRC	NR	
P2-00519	PLM-VE	17653	6069	OA_AF	OA		ND	%		SRC	NR	
P2-00519	PLM-VE	17672	6069	OA_type	OA					SRC	NR	
P2-00501	PLM-VE	17597	6070	LA_MF	LA		Tr	%		SRC	NR	
P2-00501	PLM-VE	17616	6070	LA_Bin	LA		B1			SRC	NR	
P2-00501	PLM-VE	17635	6070	CH_AF	CH		ND	%		SRC	NR	
P2-00501	PLM-VE	17654	6070	OA_AF	OA		ND	%		SRC	NR	
P2-00501	PLM-VE	17673	6070	OA_type	OA					SRC	NR	
P2-00497	PLM-VE	17598	6071	LA_MF	LA	1	<	%		SRC	NR	
P2-00497	PLM-VE	17617	6071	LA_Bin	LA		B2			SRC	NR	
P2-00497	PLM-VE	17636	6071	CH_AF	CH		ND	%		SRC	NR	
P2-00497	PLM-VE	17655	6071	OA_AF	OA		ND	%		SRC	NR	
P2-00497	PLM-VE	17674	6071	OA_type	OA					SRC	NR	
P2-00496	PLM-VE	17599	6072	LA_MF	LA	1	<	%		SRC	NR	
P2-00496	PLM-VE	17618	6072	LA_Bin	LA		B2			SRC	NR	
P2-00496	PLM-VE	17637	6072	CH_AF	CH		ND	%		SRC	NR	
P2-00496	PLM-VE	17656	6072	OA_AF	OA		ND	%		SRC	NR	
P2-00496	PLM-VE	17675	6072	OA_type	OA					SRC	NR	

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IndexID	Analysis Type	Result ASB ID	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P2-00761	PLM-VE	17600	6073	LA_MF	LA		Tr	%		SRC	NR	
P2-00761	PLM-VE	17619	6073	LA_Bin	LA		B1			SRC	NR	
P2-00761	PLM-VE	17638	6073	CH_AF	CH		ND	%		SRC	NR	
P2-00761	PLM-VE	17657	6073	OA_AF	OA		ND	%		SRC	NR	
P2-00761	PLM-VE	17676	6073	OA_type	OA					SRC	NR	
P2-00762	PLM-VE	17601	6074	LA_MF	LA		ND	%		SRC	NR	
P2-00762	PLM-VE	17620	6074	LA_Bin	LA		A			SRC	NR	
P2-00762	PLM-VE	17639	6074	CH_AF	CH		ND	%		SRC	NR	
P2-00762	PLM-VE	17658	6074	OA_AF	OA		ND	%		SRC	NR	
P2-00762	PLM-VE	17677	6074	OA_type	OA					SRC	NR	
P2-00763	PLM-VE	17602	6075	LA_MF	LA	1	<	%		SRC	NR	
P2-00763	PLM-VE	17621	6075	LA_Bin	LA		B2			SRC	NR	
P2-00763	PLM-VE	17640	6075	CH_AF	CH		ND	%		SRC	NR	
P2-00763	PLM-VE	17659	6075	OA_AF	OA		ND	%		SRC	NR	
P2-00763	PLM-VE	17678	6075	OA_type	OA					SRC	NR	
P2-00760	PLM-VE	17603	6076	LA_MF	LA		ND	%		SRC	NR	
P2-00760	PLM-VE	17622	6076	LA_Bin	LA		A			SRC	NR	
P2-00760	PLM-VE	17641	6076	CH_AF	CH		ND	%		SRC	NR	
P2-00760	PLM-VE	17660	6076	OA_AF	OA		ND	%		SRC	NR	
P2-00760	PLM-VE	17679	6076	OA_type	OA					SRC	NR	
P2-00860	PLM-VE	17683	6080	LA_MF	LA		Tr	%		SRC	NR	
P2-00860	PLM-VE	17695	6080	LA_Bin	LA		B1			SRC	NR	
P2-00860	PLM-VE	17707	6080	CH_AF	CH		ND	%		SRC	NR	
P2-00860	PLM-VE	17719	6080	OA_AF	OA		ND	%		SRC	NR	
P2-00860	PLM-VE	17731	6080	OA_type	OA					SRC	NR	
P2-00470	PLM-VE	16478	5920	LA_MF	LA	1	<	%		SRC	NR	
P2-00470	PLM-VE	16489	5920	LA_Bin	LA		B2			SRC	NR	
P2-00470	PLM-VE	16500	5920	CH_AF	CH		ND	%		SRC	NR	
P2-00470	PLM-VE	16511	5920	OA_AF	OA		ND	%		SRC	NR	
P2-00470	PLM-VE	16522	5920	OA_type	OA					SRC	NR	
P2-00469	PLM-VE	16479	5921	LA_MF	LA	2		%		SRC	NR	
P2-00469	PLM-VE	16490	5921	LA_Bin	LA		C			SRC	NR	
P2-00469	PLM-VE	16512	5921	OA_AF	OA		ND	%		SRC	NR	
P2-00494	PLM-VE	16480	5922	LA_MF	LA		Tr	%		SRC	NR	
P2-00494	PLM-VE	16491	5922	LA_Bin	LA		B1			SRC	NR	
P2-00494	PLM-VE	16513	5922	OA_AF	OA		ND	%		SRC	NR	
P2-00490	PLM-VE	16481	5923	LA_MF	LA	3		%		SRC	NR	
P2-00490	PLM-VE	16492	5923	LA_Bin	LA		C			SRC	NR	
P2-00490	PLM-VE	16514	5923	OA_AF	OA		ND	%		SRC	NR	
P2-00491	PLM-VE	16482	5924	LA_MF	LA	3		%		SRC	NR	
P2-00491	PLM-VE	16493	5924	LA_Bin	LA		C			SRC	NR	
P2-00491	PLM-VE	16515	5924	OA_AF	OA		ND	%		SRC	NR	
P2-00493	PLM-VE	16483	5925	LA_MF	LA		Tr	%		SRC	NR	
P2-00493	PLM-VE	16494	5925	LA_Bin	LA		B1			SRC	NR	
P2-00493	PLM-VE	16516	5925	OA_AF	OA		ND	%		SRC	NR	
P2-00492	PLM-VE	16484	5926	LA_MF	LA	2		%		SRC	NR	
P2-00492	PLM-VE	16495	5926	LA_Bin	LA		C			SRC	NR	
P2-00492	PLM-VE	16517	5926	OA_AF	OA		ND	%		SRC	NR	
P2-00583	PLM-VE	16485	5927	LA_MF	LA		ND	%		SRC	NR	
P2-00583	PLM-VE	16496	5927	LA_Bin	LA		A			SRC	NR	
P2-00583	PLM-VE	16518	5927	OA_AF	OA		ND	%		SRC	NR	
P2-00478	PLM-VE	16477	5919	LA_MF	LA	1	<	%		SRC	NR	
P2-00478	PLM-VE	16488	5919	LA_Bin	LA		B2			SRC	NR	
P2-00478	PLM-VE	16510	5919	OA_AF	OA		ND	%		SRC	NR	
P2-00585	PLM-VE	16486	5928	LA_MF	LA		ND	%		SRC	NR	
P2-00585	PLM-VE	16497	5928	LA_Bin	LA		A			SRC	NR	
P2-00585	PLM-VE	16519	5928	OA_AF	OA		ND	%		SRC	NR	
P2-00586	PLM-VE	16487	5929	LA_MF	LA	1	<	%		SRC	NR	
P2-00586	PLM-VE	16498	5929	LA_Bin	LA		B2			SRC	NR	
P2-00586	PLM-VE	16520	5929	OA_AF	OA		ND	%		SRC	NR	
P2-00861	PLM-VE	17684	6081	LA_MF	LA		Tr	%		SRC	NR	
P2-00861	PLM-VE	17696	6081	LA_Bin	LA		B1			SRC	NR	
P2-00861	PLM-VE	17708	6081	CH_AF	CH		ND	%		SRC	NR	
P2-00861	PLM-VE	17720	6081	OA_AF	OA		ND	%		SRC	NR	
P2-00861	PLM-VE	17732	6081	OA_type	OA					SRC	NR	
P2-00862	PLM-VE	17685	6082	LA_MF	LA		Tr	%		SRC	NR	
P2-00862	PLM-VE	17697	6082	LA_Bin	LA		B1			SRC	NR	
P2-00862	PLM-VE	17709	6082	CH_AF	CH		ND	%		SRC	NR	
P2-00862	PLM-VE	17721	6082	OA_AF	OA		ND	%		SRC	NR	
P2-00862	PLM-VE	17733	6082	OA_type	OA					SRC	NR	
P2-00863	PLM-VE	17686	6083	LA_MF	LA		ND	%		SRC	NR	
P2-00863	PLM-VE	17698	6083	LA_Bin	LA		A			SRC	NR	
P2-00863	PLM-VE	17710	6083	CH_AF	CH		ND	%		SRC	NR	
P2-00863	PLM-VE	17722	6083	OA_AF	OA		ND	%		SRC	NR	
P2-00863	PLM-VE	17734	6083	OA_type	OA					SRC	NR	
P2-00864	PLM-VE	17687	6084	LA_MF	LA		Tr	%		SRC	NR	
P2-00864	PLM-VE	17699	6084	LA_Bin	LA		B1			SRC	NR	
P2-00864	PLM-VE	17711	6084	CH_AF	CH		ND	%		SRC	NR	
P2-00864	PLM-VE	17723	6084	OA_AF	OA		ND	%		SRC	NR	

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IndexID	Analysis Type	Result ASB ID	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P2-00864	PLM-VE	17735	6084	OA_type	OA					SRC	NR	
P2-00865	PLM-VE	17688	6085	LA_MF	LA		Tr	%		SRC	NR	
P2-00865	PLM-VE	17700	6085	LA_Bin	LA		B1			SRC	NR	
P2-00865	PLM-VE	17712	6085	CH_AF	CH		ND	%		SRC	NR	
P2-00865	PLM-VE	17724	6085	OA_AF	OA		ND	%		SRC	NR	
P2-00865	PLM-VE	17736	6085	OA_type	OA					SRC	NR	
P2-00866	PLM-VE	17689	6086	LA_MF	LA		ND	%		SRC	NR	
P2-00866	PLM-VE	17701	6086	LA_Bin	LA		A			SRC	NR	
P2-00866	PLM-VE	17713	6086	CH_AF	CH		ND	%		SRC	NR	
P2-00866	PLM-VE	17725	6086	OA_AF	OA		ND	%		SRC	NR	
P2-00866	PLM-VE	17737	6086	OA_type	OA					SRC	NR	
P2-00764	PLM-VE	17690	6087	LA_MF	LA		ND	%		SRC	NR	
P2-00764	PLM-VE	17702	6087	LA_Bin	LA		A			SRC	NR	
P2-00764	PLM-VE	17714	6087	CH_AF	CH		ND	%		SRC	NR	
P2-00764	PLM-VE	17726	6087	OA_AF	OA		ND	%		SRC	NR	
P2-00764	PLM-VE	17738	6087	OA_type	OA					SRC	NR	
P2-00765	PLM-VE	17691	6088	LA_MF	LA		ND	%		SRC	NR	
P2-00765	PLM-VE	17703	6088	LA_Bin	LA		A			SRC	NR	
P2-00765	PLM-VE	17715	6088	CH_AF	CH		ND	%		SRC	NR	
P2-00765	PLM-VE	17727	6088	OA_AF	OA		ND	%		SRC	NR	
P2-00765	PLM-VE	17739	6088	OA_type	OA					SRC	NR	
P2-00766	PLM-VE	17692	6089	LA_MF	LA		ND	%		SRC	NR	
P2-00766	PLM-VE	17704	6089	LA_Bin	LA		A			SRC	NR	
P2-00766	PLM-VE	17716	6089	CH_AF	CH		ND	%		SRC	NR	
P2-00766	PLM-VE	17728	6089	OA_AF	OA		ND	%		SRC	NR	
P2-00766	PLM-VE	17740	6089	OA_type	OA					SRC	NR	
P2-00514	PLM-VE	17173	5977	LA_MF	LA		Tr	%		SRC	NR	
P2-00514	PLM-VE	17190	5977	LA_Bin	LA		B1			SRC	NR	
P2-00514	PLM-VE	17207	5977	CH_AF	CH		ND	%		SRC	NR	
P2-00514	PLM-VE	17224	5977	OA_AF	OA		ND	%		SRC	NR	
P2-00514	PLM-VE	17241	5977	OA_type	OA					SRC	NR	
P2-00518	PLM-VE	17174	5978	LA_MF	LA	1	<	%		SRC	NR	
P2-00518	PLM-VE	17191	5978	LA_Bin	LA		B2			SRC	NR	
P2-00518	PLM-VE	17208	5978	CH_AF	CH		ND	%		SRC	NR	
P2-00518	PLM-VE	17225	5978	OA_AF	OA		ND	%		SRC	NR	
P2-00518	PLM-VE	17242	5978	OA_type	OA					SRC	NR	
P2-00502	PLM-VE	17175	5979	LA_MF	LA	1	<	%		SRC	NR	
P2-00502	PLM-VE	17192	5979	LA_Bin	LA		B2			SRC	NR	
P2-00502	PLM-VE	17209	5979	CH_AF	CH		ND	%		SRC	NR	
P2-00502	PLM-VE	17226	5979	OA_AF	OA		ND	%		SRC	NR	
P2-00502	PLM-VE	17243	5979	OA_type	OA					SRC	NR	
P2-00498	PLM-VE	17176	5980	LA_MF	LA		Tr	%		SRC	NR	
P2-00498	PLM-VE	17193	5980	LA_Bin	LA		B1			SRC	NR	
P2-00498	PLM-VE	17210	5980	CH_AF	CH		ND	%		SRC	NR	
P2-00498	PLM-VE	17227	5980	OA_AF	OA		ND	%		SRC	NR	
P2-00498	PLM-VE	17244	5980	OA_type	OA					SRC	NR	
P2-00525	PLM-VE	17177	5981	LA_MF	LA		Tr	%		SRC	NR	
P2-00525	PLM-VE	17194	5981	LA_Bin	LA		B1			SRC	NR	
P2-00525	PLM-VE	17211	5981	CH_AF	CH		ND	%		SRC	NR	
P2-00525	PLM-VE	17228	5981	OA_AF	OA		ND	%		SRC	NR	
P2-00525	PLM-VE	17245	5981	OA_type	OA					SRC	NR	
P2-00520	PLM-VE	17178	5982	LA_MF	LA		Tr	%		SRC	NR	
P2-00520	PLM-VE	17195	5982	LA_Bin	LA		B1			SRC	NR	
P2-00520	PLM-VE	17212	5982	CH_AF	CH		ND	%		SRC	NR	
P2-00520	PLM-VE	17229	5982	OA_AF	OA		ND	%		SRC	NR	
P2-00520	PLM-VE	17246	5982	OA_type	OA					SRC	NR	
P2-00515	PLM-VE	17179	5983	LA_MF	LA		Tr	%		SRC	NR	
P2-00515	PLM-VE	17196	5983	LA_Bin	LA		B1			SRC	NR	
P2-00515	PLM-VE	17213	5983	CH_AF	CH		ND	%		SRC	NR	
P2-00515	PLM-VE	17230	5983	OA_AF	OA		ND	%		SRC	NR	
P2-00515	PLM-VE	17247	5983	OA_type	OA					SRC	NR	
P2-00522	PLM-VE	17180	5984	LA_MF	LA		Tr	%		SRC	NR	
P2-00522	PLM-VE	17197	5984	LA_Bin	LA		B1			SRC	NR	
P2-00522	PLM-VE	17214	5984	CH_AF	CH		ND	%		SRC	NR	
P2-00522	PLM-VE	17231	5984	OA_AF	OA		ND	%		SRC	NR	
P2-00522	PLM-VE	17248	5984	OA_type	OA					SRC	NR	
P2-00523	PLM-VE	17181	5985	LA_MF	LA	1	<	%		SRC	NR	
P2-00523	PLM-VE	17198	5985	LA_Bin	LA		B2			SRC	NR	
P2-00523	PLM-VE	17215	5985	CH_AF	CH		ND	%		SRC	NR	
P2-00523	PLM-VE	17232	5985	OA_AF	OA		ND	%		SRC	NR	
P2-00523	PLM-VE	17249	5985	OA_type	OA					SRC	NR	
P2-00524	PLM-VE	17182	5986	LA_MF	LA		Tr	%		SRC	NR	
P2-00524	PLM-VE	17199	5986	LA_Bin	LA		B1			SRC	NR	
P2-00524	PLM-VE	17216	5986	CH_AF	CH		ND	%		SRC	NR	
P2-00524	PLM-VE	17233	5986	OA_AF	OA		ND	%		SRC	NR	
P2-00524	PLM-VE	17250	5986	OA_type	OA					SRC	NR	
P2-00516	PLM-VE	17183	5987	LA_MF	LA		Tr	%		SRC	NR	
P2-00516	PLM-VE	17200	5987	LA_Bin	LA		B1			SRC	NR	
P2-00516	PLM-VE	17217	5987	CH_AF	CH		ND	%		SRC	NR	

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IndexID	Analysis Type	Result ASB ID	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P2-00516	PLM-VE	17234	5987	OA_AF	OA		ND	%		SRC	NR	
P2-00516	PLM-VE	17251	5987	OA_type	OA					SRC	NR	
P2-00510	PLM-VE	17184	5988	LA_MF	LA		Tr	%		SRC	NR	
P2-00510	PLM-VE	17201	5988	LA_Bin	LA		B1			SRC	NR	
P2-00510	PLM-VE	17218	5988	CH_AF	CH		ND	%		SRC	NR	
P2-00510	PLM-VE	17235	5988	OA_AF	OA		ND	%		SRC	NR	
P2-00510	PLM-VE	17252	5988	OA_type	OA					SRC	NR	
P2-00597	PLM-VE	17185	5989	LA_MF	LA		ND	%		SRC	NR	
P2-00597	PLM-VE	17202	5989	LA_Bin	LA		A			SRC	NR	
P2-00597	PLM-VE	17219	5989	CH_AF	CH		ND	%		SRC	NR	
P2-00597	PLM-VE	17236	5989	OA_AF	OA		ND	%		SRC	NR	
P2-00597	PLM-VE	17253	5989	OA_type	OA					SRC	NR	
P2-00598	PLM-VE	17186	5990	LA_MF	LA		ND	%		SRC	NR	
P2-00598	PLM-VE	17203	5990	LA_Bin	LA		A			SRC	NR	
P2-00598	PLM-VE	17220	5990	CH_AF	CH		ND	%		SRC	NR	
P2-00598	PLM-VE	17237	5990	OA_AF	OA		ND	%		SRC	NR	
P2-00598	PLM-VE	17254	5990	OA_type	OA					SRC	NR	
P2-00599	PLM-VE	17187	5991	LA_MF	LA	1	<	%		SRC	NR	
P2-00599	PLM-VE	17204	5991	LA_Bin	LA		B2			SRC	NR	
P2-00599	PLM-VE	17221	5991	CH_AF	CH		ND	%		SRC	NR	
P2-00599	PLM-VE	17238	5991	OA_AF	OA		ND	%		SRC	NR	
P2-00599	PLM-VE	17255	5991	OA_type	OA					SRC	NR	
P2-00517	PLM-VE	17588	6061	LA_MF	LA		Tr	%		SRC	NR	
P2-00517	PLM-VE	17607	6061	LA_Bin	LA		B1			SRC	NR	
P2-00517	PLM-VE	17626	6061	CH_AF	CH		ND	%		SRC	NR	
P2-00517	PLM-VE	17645	6061	OA_AF	OA		ND	%		SRC	NR	
P2-00517	PLM-VE	17664	6061	OA_type	OA					SRC	NR	
P2-00526	PLM-VE	17589	6062	LA_MF	LA		Tr	%		SRC	NR	
P2-00526	PLM-VE	17608	6062	LA_Bin	LA		B1			SRC	NR	
P2-00526	PLM-VE	17627	6062	CH_AF	CH		ND	%		SRC	NR	
P2-00526	PLM-VE	17646	6062	OA_AF	OA		ND	%		SRC	NR	
P2-00526	PLM-VE	17665	6062	OA_type	OA					SRC	NR	
P2-00507	PLM-VE	17590	6063	LA_MF	LA		Tr	%		SRC	NR	
P2-00507	PLM-VE	17609	6063	LA_Bin	LA		B1			SRC	NR	
P2-00507	PLM-VE	17628	6063	CH_AF	CH		ND	%		SRC	NR	
P2-00507	PLM-VE	17647	6063	OA_AF	OA		ND	%		SRC	NR	
P2-00507	PLM-VE	17666	6063	OA_type	OA					SRC	NR	
P2-00508	PLM-VE	17591	6064	LA_MF	LA		Tr	%		SRC	NR	
P2-00508	PLM-VE	17610	6064	LA_Bin	LA		B1			SRC	NR	
P2-00508	PLM-VE	17629	6064	CH_AF	CH		ND	%		SRC	NR	
P2-00508	PLM-VE	17648	6064	OA_AF	OA		ND	%		SRC	NR	
P2-00508	PLM-VE	17667	6064	OA_type	OA					SRC	NR	
P2-00941	PLM-VE	24716	8588	LA_MF	LA	1	<	%		SRC	NR	
P2-00941	PLM-VE	24735	8588	LA_Bin	LA		B2			SRC	NR	
P2-00941	PLM-VE	25435	8588	LA_MF	LA		Tr	%		SRC	NR	
P2-00941	PLM-VE	25453	8588	LA_Bin	LA		B1			SRC	NR	
P2-00943	PLM-VE	24717	8589	LA_MF	LA	1	<	%		SRC	NR	
P2-00943	PLM-VE	24736	8589	LA_Bin	LA		B2			SRC	NR	
P2-00944	PLM-VE	24718	8590	LA_MF	LA	1	<	%		SRC	NR	
P2-00944	PLM-VE	24737	8590	LA_Bin	LA		B2			SRC	NR	
P2-00946	PLM-VE	24720	8591	LA_MF	LA	1	<	%		SRC	NR	
P2-00946	PLM-VE	24739	8591	LA_Bin	LA		B2			SRC	NR	
P2-00942	PLM-VE	24722	8592	LA_MF	LA	1	<	%		SRC	NR	
P2-00942	PLM-VE	24741	8592	LA_Bin	LA		B2			SRC	NR	
P2-00945	PLM-VE	24724	8593	LA_MF	LA	1	<	%		SRC	NR	
P2-00945	PLM-VE	24743	8593	LA_Bin	LA		B2			SRC	NR	
P2-00951	PLM-VE	24725	8594	LA_MF	LA	1	<	%		SRC	NR	
P2-00951	PLM-VE	24744	8594	LA_Bin	LA		B2			SRC	NR	
P2-00954	PLM-VE	24727	8595	LA_MF	LA	1	<	%		SRC	NR	
P2-00954	PLM-VE	24746	8595	LA_Bin	LA		B2			SRC	NR	
P2-00767	PLM-VE	24728	8596	LA_MF	LA		ND	%		SRC	NR	
P2-00767	PLM-VE	24747	8596	LA_Bin	LA		A			SRC	NR	
P2-00768	PLM-VE	24729	8597	LA_MF	LA	1	<	%		SRC	NR	
P2-00768	PLM-VE	24748	8597	LA_Bin	LA		B2			SRC	NR	
P2-00769	PLM-VE	24730	8598	LA_MF	LA		ND	%		SRC	NR	
P2-00769	PLM-VE	24749	8598	LA_Bin	LA		A			SRC	NR	
P2-00770	PLM-VE	24732	8599	LA_MF	LA	1	<	%		SRC	NR	
P2-00770	PLM-VE	24751	8599	LA_Bin	LA		B2			SRC	NR	
P2-00950	PLM-VE	24811	8601	LA_MF	LA	2		%		SRC	NR	
P2-00950	PLM-VE	24826	8601	LA_Bin	LA		C			SRC	NR	
P2-01010	PLM-VE	24812	8602	LA_MF	LA	2		%		SRC	NR	
P2-01010	PLM-VE	24827	8602	LA_Bin	LA		C			SRC	NR	
P2-00952	PLM-VE	24813	8603	LA_MF	LA	2		%		SRC	NR	
P2-00952	PLM-VE	24828	8603	LA_Bin	LA		C			SRC	NR	
P2-00964	PLM-VE	24814	8604	LA_MF	LA	1		%		SRC	NR	
P2-00964	PLM-VE	24829	8604	LA_Bin	LA		C			SRC	NR	
P2-00948	PLM-VE	24815	8605	LA_MF	LA	1	<	%		SRC	NR	
P2-00948	PLM-VE	24830	8605	LA_Bin	LA		B2			SRC	NR	
P2-00953	PLM-VE	24817	8606	LA_MF	LA	1	<	%		SRC	NR	

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P2-00953	PLM-VE	24832	8606	LA_Bin	LA		B2			SRC	NR	
P2-00965	PLM-VE	24818	8607	LA_MF	LA	2		%		SRC	NR	
P2-00965	PLM-VE	24833	8607	LA_Bin	LA		C			SRC	NR	
P2-00949	PLM-VE	24819	8608	LA_MF	LA	1	<	%		SRC	NR	
P2-00949	PLM-VE	24834	8608	LA_Bin	LA		B2			SRC	NR	
P2-00949	PLM-VE	24849	8608	CH_AF	CH		ND	%		SRC	NR	
P2-00949	PLM-VE	24864	8608	OA_AF	OA		ND	%		SRC	NR	
P2-00949	PLM-VE	24879	8608	OA_type	OA					SRC	NR	
P2-00771	PLM-VE	24820	8609	LA_MF	LA		ND	%		SRC	NR	
P2-00771	PLM-VE	24835	8609	LA_Bin	LA		A			SRC	NR	
P2-00772	PLM-VE	24821	8610	LA_MF	LA	2		%		SRC	NR	
P2-00772	PLM-VE	24836	8610	LA_Bin	LA		C			SRC	NR	
P2-00773	PLM-VE	24822	8611	LA_MF	LA		ND	%		SRC	NR	
P2-00773	PLM-VE	24837	8611	LA_Bin	LA		A			SRC	NR	
P2-00774	PLM-VE	24823	8612	LA_MF	LA	1	<	%		SRC	NR	
P2-00774	PLM-VE	24838	8612	LA_Bin	LA		B2			SRC	NR	
P2-00776	PLM-VE	25000	8645	LA_MF	LA		ND	%		SRC	NR	
P2-00776	PLM-VE	25020	8645	LA_Bin	LA		A			SRC	NR	
P2-00776	PLM-VE	25040	8645	CH_AF	CH		ND	%		SRC	NR	
P2-00776	PLM-VE	25060	8645	OA_AF	OA		ND	%		SRC	NR	
P2-00776	PLM-VE	25080	8645	OA_type	OA					SRC	NR	
P2-00981	PLM-VE	19916	6212	LA_MF	LA	2		%		SRC	NR	
P2-00981	PLM-VE	19931	6212	LA_Bin	LA		C			SRC	NR	
P2-00983	PLM-VE	19917	6213	LA_MF	LA	1	Tr	%		SRC	NR	
P2-00983	PLM-VE	19932	6213	LA_Bin	LA		B1			SRC	NR	
P2-00987	PLM-VE	19918	6214	LA_MF	LA	1	<	%		SRC	NR	
P2-00987	PLM-VE	19933	6214	LA_Bin	LA		B2			SRC	NR	
P2-00979	PLM-VE	19919	6215	LA_MF	LA	1	<	%		SRC	NR	
P2-00979	PLM-VE	19934	6215	LA_Bin	LA		B2			SRC	NR	
P2-00982	PLM-VE	19920	6216	LA_MF	LA	1	<	%		SRC	NR	
P2-00982	PLM-VE	19935	6216	LA_Bin	LA		B2			SRC	NR	
P2-00978	PLM-VE	19921	6217	LA_MF	LA	1	Tr	%		SRC	NR	
P2-00978	PLM-VE	19936	6217	LA_Bin	LA		B1			SRC	NR	
P2-00980	PLM-VE	19922	6218	LA_MF	LA	1	<	%		SRC	NR	
P2-00980	PLM-VE	19937	6218	LA_Bin	LA		B2			SRC	NR	
P2-00988	PLM-VE	19923	6219	LA_MF	LA	1	<	%		SRC	NR	
P2-00988	PLM-VE	19938	6219	LA_Bin	LA		B2			SRC	NR	
P2-00992	PLM-VE	19924	6220	LA_MF	LA	1		%		SRC	NR	
P2-00992	PLM-VE	19939	6220	LA_Bin	LA		C			SRC	NR	
P2-00992	PLM-VE	19954	6220	CH_AF	CH		ND	%		SRC	NR	
P2-00992	PLM-VE	19969	6220	OA_AF	OA		ND	%		SRC	NR	
P2-00992	PLM-VE	19984	6220	OA_type	OA					SRC	NR	
P2-00991	PLM-VE	19925	6221	LA_MF	LA	1		%		SRC	NR	
P2-00991	PLM-VE	19940	6221	LA_Bin	LA		C			SRC	NR	
P2-00989	PLM-VE	19926	6222	LA_MF	LA	2		%		SRC	NR	
P2-00989	PLM-VE	19941	6222	LA_Bin	LA		C			SRC	NR	
P2-00778	PLM-VE	19987	6223	OA_type	OA					SRC	NR	
P2-00778	PLM-VE	19927	6223	LA_MF	LA		ND	%		SRC	NR	
P2-00778	PLM-VE	19942	6223	LA_Bin	LA		A			SRC	NR	
P2-00778	PLM-VE	19957	6223	CH_AF	CH		ND	%		SRC	NR	
P2-00778	PLM-VE	19972	6223	OA_AF	OA		ND	%		SRC	NR	
P2-01021	PLM-VE	19928	6224	LA_MF	LA		ND	%		SRC	NR	
P2-01021	PLM-VE	19943	6224	LA_Bin	LA		A			SRC	NR	
P2-01022	PLM-VE	19929	6225	LA_MF	LA	2		%		SRC	NR	
P2-01022	PLM-VE	19944	6225	LA_Bin	LA		C			SRC	NR	
P2-00986	PLM-VE	25425	8650	LA_MF	LA		ND	%		SRC	NR	
P2-00986	PLM-VE	25086	8650	LA_MF	LA		ND	%		SRC	NR	
P2-00986	PLM-VE	25108	8650	LA_Bin	LA		A			SRC	NR	
P2-00986	PLM-VE	25443	8650	LA_Bin	LA		A			SRC	NR	
P2-00990	PLM-VE	25088	8651	LA_MF	LA	2		%		SRC	NR	
P2-00990	PLM-VE	25110	8651	LA_Bin	LA		C			SRC	NR	
P2-00995	PLM-VE	25089	8652	LA_MF	LA	1	Tr	%		SRC	NR	
P2-00995	PLM-VE	25111	8652	LA_Bin	LA		B1			SRC	NR	
P2-01009	PLM-VE	25091	8653	LA_MF	LA	2		%		SRC	NR	
P2-01009	PLM-VE	25113	8653	LA_Bin	LA		C			SRC	NR	
P2-01008	PLM-VE	25092	8654	LA_MF	LA	1	<	%		SRC	NR	
P2-01008	PLM-VE	25114	8654	LA_Bin	LA		B2			SRC	NR	
P2-00999	PLM-VE	25093	8655	LA_MF	LA	1	<	%		SRC	NR	
P2-00999	PLM-VE	25115	8655	LA_Bin	LA		B2			SRC	NR	
P2-00996	PLM-VE	25094	8656	LA_MF	LA	1	Tr	%		SRC	NR	
P2-00996	PLM-VE	25116	8656	LA_Bin	LA		B1			SRC	NR	
P2-00998	PLM-VE	25096	8657	LA_MF	LA	1	<	%		SRC	NR	
P2-00998	PLM-VE	25118	8657	LA_Bin	LA		B2			SRC	NR	
P2-00994	PLM-VE	25097	8658	LA_MF	LA		ND	%		SRC	NR	
P2-00994	PLM-VE	25119	8658	LA_Bin	LA		A			SRC	NR	
P2-01007	PLM-VE	25098	8659	LA_MF	LA	1	<	%		SRC	NR	
P2-01007	PLM-VE	25120	8659	LA_Bin	LA		B2			SRC	NR	
P2-01011	PLM-VE	25099	8660	LA_MF	LA	1	<	%		SRC	NR	
P2-01011	PLM-VE	25121	8660	LA_Bin	LA		B2			SRC	NR	

ATTACHMENT 4. DATA SUMMARY OF RESULT INFORMATION - PHASE II SEDIMENT

IndexID	Analysis Type	Result ASB ID	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P2-01020	PLM-VE	25100	8661	LA_MF	LA		ND	%		SRC	NR	
P2-01020	PLM-VE	25122	8661	LA_Bin	LA		A			SRC	NR	
P2-01023	PLM-VE	25101	8662	LA_MF	LA		ND	%		SRC	NR	
P2-01023	PLM-VE	25123	8662	LA_Bin	LA		A			SRC	NR	
P2-01024	PLM-VE	25102	8663	LA_MF	LA	1	Tr	%		SRC	NR	
P2-01024	PLM-VE	25124	8663	LA_Bin	LA		B1			SRC	NR	
P2-00977	PLM-VE	25103	8664	LA_MF	LA	1	Tr	%		SRC	NR	
P2-00977	PLM-VE	25125	8664	LA_Bin	LA		B1			SRC	NR	
P2-00997	PLM-VE	25431	8665	LA_MF	LA		Tr	%		SRC	NR	
P2-00997	PLM-VE	25105	8665	LA_MF	LA	1	Tr	%		SRC	NR	
P2-00997	PLM-VE	25127	8665	LA_Bin	LA		B1			SRC	NR	
P2-00997	PLM-VE	25449	8665	LA_Bin	LA		B1			SRC	NR	
P2-01001	PLM-VE	25195	8667	LA_MF	LA	5		%		SRC	NR	
P2-01001	PLM-VE	25212	8667	LA_Bin	LA		C			SRC	NR	
P2-01002	PLM-VE	25197	8668	LA_MF	LA	1	<	%		SRC	NR	
P2-01002	PLM-VE	25214	8668	LA_Bin	LA		B2			SRC	NR	
P2-01003	PLM-VE	25199	8669	LA_MF	LA	1	<	%		SRC	NR	
P2-01003	PLM-VE	25216	8669	LA_Bin	LA		B2			SRC	NR	
P2-01013	PLM-VE	25201	8670	LA_MF	LA	2		%		SRC	NR	
P2-01013	PLM-VE	25218	8670	LA_Bin	LA		C			SRC	NR	
P2-01014	PLM-VE	25202	8671	LA_MF	LA	1	<	%		SRC	NR	
P2-01014	PLM-VE	25219	8671	LA_Bin	LA		B2			SRC	NR	
P2-01015	PLM-VE	25204	8672	LA_MF	LA	1	<	%		SRC	NR	
P2-01015	PLM-VE	25221	8672	LA_Bin	LA		B2			SRC	NR	
P2-01016	PLM-VE	25433	8673	LA_MF	LA		Tr	%		SRC	NR	
P2-01016	PLM-VE	25206	8673	LA_MF	LA	1	Tr	%		SRC	NR	
P2-01016	PLM-VE	25223	8673	LA_Bin	LA		B1			SRC	NR	
P2-01016	PLM-VE	25451	8673	LA_Bin	LA		B1			SRC	NR	
P2-01017	PLM-VE	25207	8674	LA_MF	LA	1	Tr	%		SRC	NR	
P2-01017	PLM-VE	25224	8674	LA_Bin	LA		B1			SRC	NR	
P2-01017	PLM-VE	25241	8674	CH_AF	CH		ND	%		SRC	NR	
P2-01017	PLM-VE	25258	8674	OA_AF	OA		ND	%		SRC	NR	
P2-01017	PLM-VE	25275	8674	OA_type	OA					SRC	NR	
P2-01025	PLM-VE	25208	8675	LA_MF	LA		ND	%		SRC	NR	
P2-01025	PLM-VE	25225	8675	LA_Bin	LA		A			SRC	NR	
P2-01026	PLM-VE	25209	8676	LA_MF	LA		ND	%		SRC	NR	
P2-01026	PLM-VE	25226	8676	LA_Bin	LA		A			SRC	NR	
P2-01026	PLM-VE	25243	8676	CH_AF	CH		ND	%		SRC	NR	
P2-01026	PLM-VE	25260	8676	OA_AF	OA		ND	%		SRC	NR	
P2-01026	PLM-VE	25277	8676	OA_type	OA					SRC	NR	
P2-01027	PLM-VE	25210	8677	LA_MF	LA	1	<	%		SRC	NR	
P2-01027	PLM-VE	25227	8677	LA_Bin	LA		B2			SRC	NR	
P2-01070	PLM-VE	25281	8679	LA_MF	LA	2		%		SRC	NR	
P2-01070	PLM-VE	25310	8679	LA_Bin	LA		C			SRC	NR	
P2-01070	PLM-VE	25339	8679	CH_AF	CH		ND	%		SRC	NR	
P2-01070	PLM-VE	25368	8679	OA_AF	OA		ND	%		SRC	NR	
P2-01070	PLM-VE	25397	8679	OA_type	OA					SRC	NR	
P2-01071	PLM-VE	25283	8680	LA_MF	LA	2		%		SRC	NR	
P2-01071	PLM-VE	25312	8680	LA_Bin	LA		C			SRC	NR	
P2-01072	PLM-VE	25284	8681	LA_MF	LA	2		%		SRC	NR	
P2-01072	PLM-VE	25313	8681	LA_Bin	LA		C			SRC	NR	
P2-01073	PLM-VE	25286	8682	LA_MF	LA	5		%		SRC	NR	
P2-01073	PLM-VE	25315	8682	LA_Bin	LA		C			SRC	NR	
P2-01074	PLM-VE	25287	8683	LA_MF	LA	2		%		SRC	NR	
P2-01074	PLM-VE	25316	8683	LA_Bin	LA		C			SRC	NR	
P2-01075	PLM-VE	25288	8684	LA_MF	LA		Tr	%		SRC	NR	
P2-01075	PLM-VE	25317	8684	LA_Bin	LA		B1			SRC	NR	
P2-01076	PLM-VE	25290	8685	LA_MF	LA		ND	%		SRC	NR	
P2-01076	PLM-VE	25319	8685	LA_Bin	LA		A			SRC	NR	
P2-01077	PLM-VE	25292	8686	LA_MF	LA		Tr	%		SRC	NR	
P2-01077	PLM-VE	25321	8686	LA_Bin	LA		B1			SRC	NR	
P2-01078	PLM-VE	25294	8687	LA_MF	LA		ND	%		SRC	NR	
P2-01078	PLM-VE	25323	8687	LA_Bin	LA		A			SRC	NR	
P2-01079	PLM-VE	25296	8688	LA_MF	LA	5		%		SRC	NR	
P2-01079	PLM-VE	25325	8688	LA_Bin	LA		C			SRC	NR	
P2-01080	PLM-VE	25298	8689	LA_MF	LA	3		%		SRC	NR	
P2-01080	PLM-VE	25327	8689	LA_Bin	LA		C			SRC	NR	
P2-01081	PLM-VE	25299	8690	LA_MF	LA	3		%		SRC	NR	
P2-01081	PLM-VE	25328	8690	LA_Bin	LA		C			SRC	NR	
P2-01082	PLM-VE	25302	8691	LA_MF	LA		ND	%		SRC	NR	
P2-01082	PLM-VE	25429	8691	LA_MF	LA		ND	%		SRC	NR	
P2-01082	PLM-VE	25331	8691	LA_Bin	LA		A			SRC	NR	
P2-01082	PLM-VE	25447	8691	LA_Bin	LA		A			SRC	NR	
P2-01028	PLM-VE	25303	8692	LA_MF	LA		ND	%		SRC	NR	
P2-01028	PLM-VE	25332	8692	LA_Bin	LA		A			SRC	NR	
P2-01029	PLM-VE	25304	8693	LA_MF	LA		ND	%		SRC	NR	
P2-01029	PLM-VE	25333	8693	LA_Bin	LA		A			SRC	NR	
P2-01029	PLM-VE	25362	8693	CH_AF	CH		ND	%		SRC	NR	
P2-01029	PLM-VE	25391	8693	OA_AF	OA		ND	%		SRC	NR	

ATTACHMENT 4. DATA SUMMARY OF RESULT INFORMATION - PHASE II SEDIMENT

IndexID	Analysis Type	Result ASB ID	FK Analysis	Result Char	Mineral Class	Result	Result Txt	Result Units	Result Comments	Verifier's Company	Verifier	Comments
P2-01029	PLM-VE	25420	8693	OA_type	OA					SRC	NR	
P2-01030	PLM-VE	25306	8694	LA_MF	LA	3		%		SRC	NR	
P2-01030	PLM-VE	25335	8694	LA_Bin	LA		C			SRC	NR	
P2-01030	PLM-VE	25364	8694	CH_AF	CH		ND	%		SRC	NR	
P2-01030	PLM-VE	25393	8694	OA_AF	OA		ND	%		SRC	NR	
P2-01030	PLM-VE	25422	8694	OA_type	OA					SRC	NR	

ATTACHMENT 5. DATA SUMMARY OF OPTICAL INFORMATION - PHASE I SEDIMENT, FOREST SOIL & MINE WASTE

Index ID	Analysis Type	Lab QC Type	Optical ID	FK Analysis	Fiber Morph	Fiber Color	Sign Elong	Pleoch	Extinct Ang	RI alpha	RI gamma	Biref	Optical Comments	Verifier's Company	Verifier	Comments
P1-00371	PLM-VE	Not QA	216	1692	ST	C	+	N	O	1.626	1.633	L		SRC	AB	
P1-00421	PLM-VE	Not QA	225	1701	ST	C	+	N	O	1.623	1.634	L		SRC	AB	
P1-00062	PLM-VE	Not QA	235	1711										SRC	AB	
P1-00036	PLM-VE	Not QA	236	1712										SRC	AB	
P1-00178	PLM-VE	Not QA	248	1724										SRC	AB	
P1-00224	PLM-VE	Not QA	250	1726	ST	C	+	N	O	1.624	1.63	L		SRC	AB	
P1-00034	PLM-VE	LD	256	1732										SRC	AB	
P1-00040	PLM-VE	LD	265	1741										SRC	AB	
P1-00395	PLM-VE	Not QA	277	1753	ST	C	+	N	O	1.625	1.629	L		SRC	AB	
P1-00403	PLM-VE	Not QA	284	1760	ST	O	+	N	O	1.625	1.629	L	Beige	SRC	AB	Optical comment not written in hard copy
P1-00404	PLM-VE	Not QA	285	1761										SRC	AB	
P1-00235	PLM-VE	Not QA	304	1780	ST	C	+	N	O	1.624	1.634	L		SRC	AB	
P1-00379	PLM-VE	Not QA	321	1797	ST	C	+	N	O	1.624	1.636	L		SRC	AB	
P1-00340	PLM-VE	Not QA	324	1800										SRC	AB	
P1-00342	PLM-VE	Not QA	325	1801	ST	C	+	N	O	1.624	1.6334	L		SRC	AB	RIgamma should be 1.634, not 1.6334
P1-00214	PLM-VE	Not QA	345	1821										SRC	AB	
P1-00202	PLM-VE	Not QA	348	1824	ST	C	+	N	O	1.624	1.634	L		SRC	AB	
P1-00431	PLM-VE	Not QA	364	1840	ST	C	+	N	O	1.625	1.632	L		SRC	AB	
P1-00428	PLM-VE	Not QA	377	1853										SRC	AB	
P1-00366	PLM-VE	NOT QA	394	2039	ST	W	+	N	O	1623	1635	M		SRC	AB	
GB-120307	PLM-VE	NOT QA	395	2040										SRC	AB	

ATTACHMENT 5. DATA SUMMARY OF OPTICAL INFORMATION - PHASE II SEDIMENT

Index ID	Analysis Type	Lab QC Type	Optical ID	FK Analysis	Fiber Morph	Fiber Color	Sign Elong	Pleoch	Extinct Ang	RI alpha	RI gamma	Biref	Optical Comments	Verifier's Company	Verifier	Comments
P2-00461	PLM-VE	NOT QA	447	5994	ST	C	+	N	O	1.626	1.635	L		SRC	NR	
P2-00464	PLM-VE	NOT QA	448	5995	ST	C	+	N	O	1.623	1.631	L		SRC	NR	
P2-00465	PLM-VE	NOT QA	449	5996	ST	C	+	N	O	1.627	1.631	L		SRC	NR	
P2-00466	PLM-VE	NOT QA	450	5997	ST	C	+	N	O	1.623	1.631	L		SRC	NR	
P2-00469	PLM-VE	NOT QA	408	5921	B, ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00470	PLM-VE	NOT QA	407	5920	B, ST	C	+	N	O	1.623	1.628	L		SRC	NR	
P2-00472	PLM-VE	NOT QA	421	5945	ST	C	+	N	O	1.623	1.631	L		SRC	NR	Biref changed from M to L on hard copy. Data Manager (SRC) manually changed the data in this field in the project database.
P2-00473	PLM-VE	NOT QA	419	5944	ST	C	+	N	O	1.624	1.633	L		SRC	NR	Biref changed from M to L on hard copy. Data Manager (SRC) manually changed the data in this field in the project database.
P2-00474	PLM-VE	NOT QA	424	5948										SRC	NR	
P2-00475	PLM-VE	NOT QA	422	5946	ST	C	+	N	O	1.626	1.635	L		SRC	NR	Biref changed from M to L on hard copy. Data Manager (SRC) manually changed the data in this field in the project database.
P2-00476	PLM-VE	NOT QA	425	5949	ST	C	+	N	O	1.631	1.635	L		SRC	NR	Biref changed from M to L on hard copy. Data Manager (SRC) manually changed the data in this field in the project database.
P2-00477	PLM-VE	NOT QA	423	5947	ST	C	+	N	O	1.627	1.631	L		SRC	NR	Biref changed from M to L on hard copy. Data Manager (SRC) manually changed the data in this field in the project database.
P2-00478	PLM-VE	NOT QA	406	5919	B, ST	C	+	N	O	1.623	1.631	L		SRC	NR	
P2-00481	PLM-VE	NOT QA	463	6010	ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00482	PLM-VE	NOT QA	464	6011	ST	C	+	N	O	1.623	1.633	L		SRC	NR	
P2-00483	PLM-VE	NOT QA	418	5943	F	C	+	N	O	1.625	1.635	L		SRC	NR	Biref changed from M to L on hard copy. Data Manager (SRC) manually changed the data in this field in the project database.
P2-00485	PLM-VE	NOT QA	461	6008	ST	C	+	N	O	1.626	1.635	L		SRC	NR	
P2-00486	PLM-VE	NOT QA	462	6009	ST	C	+	N	O	1.623	1.631	L		SRC	NR	
P2-00487	PLM-VE	NOT QA	417	5942	B	C	+	N	O	1.623	1.631	L		SRC	NR	Biref changed from M to L on hard copy. Data Manager (SRC) manually changed the data in this field in the project database.
P2-00489	PLM-VE	NOT QA	459	6006	ST	C	+	N	O	1.62	1.638	M		SRC	NR	
P2-00490	PLM-VE	NOT QA	410	5923	B, ST	C	+	N	O	1.622	1.631	L		SRC	NR	
P2-00491	PLM-VE	NOT QA	411	5924	B, ST	C, Gr	+	N	O	1.623	1.635	M		SRC	NR	
P2-00492	PLM-VE	NOT QA	413	5926	B, ST	C	+	N	O	1.623	1.631	L		SRC	NR	
P2-00493	PLM-VE	NOT QA	412	5925	B, ST	C	+	N	O	1.623	1.631	L		SRC	NR	
P2-00494	PLM-VE	NOT QA	409	5922	B, ST	C	+	N	O	1.626	1.635	L		SRC	NR	
P2-00496	PLM-VE	NOT QA	518	6072	B,ST	C	+	N	O	1.622	1.631	L		SRC	NR	
P2-00497	PLM-VE	NOT QA	517	6071	B,ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00498	PLM-VE	NOT QA	433	5980	F	C	+	N	O	1.623	1.628	L		SRC	NR	
P2-00499	PLM-VE	NOT QA	460	6007	ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00501	PLM-VE	NOT QA	516	6070	F,ST	C	+	N	O	1.623	1.633	L		SRC	NR	
P2-00502	PLM-VE	NOT QA	432	5979	F,B	C	+	N	O	1.625	1.631	L		SRC	NR	
P2-00503	PLM-VE	NOT QA	514	6068	F,ST	C	+	N	O	1.623	1.635	M		SRC	NR	

ATTACHMENT 5. DATA SUMMARY OF OPTICAL INFORMATION - PHASE II SEDIMENT

Index ID	Analysis Type	Lab QC Type	Optical ID	FK Analysis	Fiber Morph	Fiber Color	Sign Elong	Pleoch	Extinct Ang	RI alpha	RI gamma	Biref	Optical Comments	Verifier's Company	Verifier	Comments
P2-00504	PLM-VE	NOT QA	513	6067	F,ST	C	+	N	O	1.622	1.631	L		SRC	NR	
P2-00505	PLM-VE	NOT QA	512	6066	F,ST	C	+	N	O	1.625	1.635	L		SRC	NR	
P2-00506	PLM-VE	NOT QA	511	6065	F,ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00507	PLM-VE	NOT QA	509	6063	F,ST	C	+	N	O	1.623	1.633	L		SRC	NR	
P2-00508	PLM-VE	NOT QA	510	6064	F,ST	C	+	N	O	1.625	1.631	L		SRC	NR	
P2-00509	PLM-VE	NOT QA	468	6015	ST	C	+	N	O	1.626	1.635	L		SRC	NR	
P2-00510	PLM-VE	NOT QA	441	5988	F	C	+	N	O	1.625	1.635	L		SRC	NR	
P2-00511	PLM-VE	NOT QA	471	6018	ST	C	+	N	O	1.625	1.635	L		SRC	NR	
P2-00512	PLM-VE	NOT QA	474	6021	F,B	C	+	N	O	1.626	1.638	M		SRC	NR	
P2-00513	PLM-VE	NOT QA	470	6017	ST	C	+	N	O	1.623	1.631	L		SRC	NR	
P2-00514	PLM-VE	NOT QA	430	5977	F,B	C	+	N	O	1.623	1.633	L	Cellulose found	SRC	NR	
P2-00515	PLM-VE	NOT QA	436	5983	F	C	+	N	O	1.622	1.631	L		SRC	NR	
P2-00516	PLM-VE	NOT QA	440	5987	F	C	+	N	O	1.623	1.635	M		SRC	NR	Biref changed from L to M on hard copy. Data Manager (SRC) manually changed the data in this field in the project database.
P2-00517	PLM-VE	NOT QA	507	6061	F,ST	C	+	N	O	1.625	1.633	L		SRC	NR	
P2-00518	PLM-VE	NOT QA	431	5978	F,B	C	+	N	O	1.623	1.633	L		SRC	NR	
P2-00519	PLM-VE	NOT QA	515	6069	F,ST	C	+	N	O	1.623	1.631	L		SRC	NR	
P2-00520	PLM-VE	NOT QA	435	5982	F	C	+	N	O	1.623	1.633	L		SRC	NR	
P2-00522	PLM-VE	NOT QA	437	5984	F	C	+	N	O	1.623	1.628	L	Cellulose found	SRC	NR	
P2-00523	PLM-VE	NOT QA	438	5985	F	C	+	N	O	1.625	1.635	M		SRC	NR	Biref changed from L to M on hard copy. Data Manager (SRC) manually changed the data in this field in the project database.
P2-00524	PLM-VE	NOT QA	439	5986	F	C	+	N	O	1.623	1.628	L		SRC	NR	
P2-00525	PLM-VE	NOT QA	434	5981	F	C	+	N	O	1.622	1.628	L		SRC	NR	
P2-00526	PLM-VE	NOT QA	508	6062	F,ST	C	+	N	O	1.623	1.628	L		SRC	NR	
P2-00531	PLM-VE	NOT QA	452	5999	ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00532	PLM-VE	NOT QA	453	6000	ST	C	+	N	O	1.623	1.631	L		SRC	NR	
P2-00533	PLM-VE	NOT QA	451	5998	ST	C	+	N	O	1.623	1.633	L		SRC	NR	
P2-00534	PLM-VE	NOT QA	454	6001	ST	C	+	N	O	1.625	1.631	L		SRC	NR	
P2-00536	PLM-VE	NOT QA	469	6016	ST	C	+	N	O	1.625	1.635	L		SRC	NR	
P2-00537	PLM-VE	NOT QA	472	6019	ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00538	PLM-VE	NOT QA	473	6020	ST	C	+	N	O	1.625	1.633	L		SRC	NR	
P2-00580	PLM-VE	NOT QA	426	5950										SRC	NR	
P2-00581	PLM-VE	NOT QA	427	5951										SRC	NR	
P2-00582	PLM-VE	NOT QA	428	5952	ST	C	+	N	O	1.626	1.633	L		SRC	NR	Biref changed from M to L on hard copy. Data Manager (SRC) manually changed the data in this field in the project database.
P2-00583	PLM-VE	NOT QA	414	5927										SRC	NR	
P2-00584	PLM-VE	NOT QA	429	5953										SRC	NR	
P2-00585	PLM-VE	NOT QA	415	5928										SRC	NR	
P2-00586	PLM-VE	NOT QA	416	5929	B,ST	C	+	N	O	1.623	1.628	L		SRC	NR	
P2-00587	PLM-VE	NOT QA	455	6002										SRC	NR	
P2-00588	PLM-VE	NOT QA	456	6003	ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00589	PLM-VE	NOT QA	457	6004										SRC	NR	
P2-00590	PLM-VE	NOT QA	458	6005	ST	C	+	N	O	1.623	1.638	M		SRC	NR	
P2-00591	PLM-VE	NOT QA	465	6012										SRC	NR	
P2-00592	PLM-VE	NOT QA	466	6013										SRC	NR	

ATTACHMENT 5. DATA SUMMARY OF OPTICAL INFORMATION - PHASE II SEDIMENT

Index ID	Analysis Type	Lab QC Type	Optical ID	FK Analysis	Fiber Morph	Fiber Color	Sign Elong	Pleoch	Extinct Ang	RI alpha	RI gamma	Biref	Optical Comments	Verifier's Company	Verifier	Comments
P2-00593	PLM-VE	NOT QA	467	6014	ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00594	PLM-VE	NOT QA	475	6022										SRC	NR	
P2-00595	PLM-VE	NOT QA	476	6023										SRC	NR	
P2-00596	PLM-VE	NOT QA	477	6024	F,B	C	+	N	O	1.626	1.638	M		SRC	NR	
P2-00597	PLM-VE	NOT QA	442	5989										SRC	NR	
P2-00598	PLM-VE	NOT QA	443	5990										SRC	NR	
P2-00599	PLM-VE	NOT QA	444	5991	F	C	+	N	O	1.625	1.635	L		SRC	NR	
P2-00760	PLM-VE	NOT QA	522	6076										SRC	NR	
P2-00761	PLM-VE	NOT QA	519	6073	F,ST	C	+	N	O	1.623	1.631	L		SRC	NR	
P2-00762	PLM-VE	NOT QA	520	6074										SRC	NR	
P2-00763	PLM-VE	NOT QA	521	6075	B,ST	C	+	N	O	1.625	1.633	L		SRC	NR	
P2-00764	PLM-VE	NOT QA	533	6087										SRC	NR	
P2-00765	PLM-VE	NOT QA	534	6088										SRC	NR	
P2-00766	PLM-VE	NOT QA	535	6089										SRC	NR	
P2-00771	PLM-VE	Not QA	689	8609										SRC	NR	
P2-00772	PLM-VE	Not QA	690	8610	ST	C	+	N	O	1.62	1.632	M		SRC	NR	
P2-00773	PLM-VE	Not QA	691	8611										SRC	NR	
P2-00774	PLM-VE	Not QA	692	8612	ST	C	+	N	O	1.626	1.637	M		SRC	NR	
P2-00775	PLM-VE	NOT QA	728	8644										SRC	NR	
P2-00776	PLM-VE	NOT QA	729	8645										SRC	NR	
P2-00777	PLM-VE	NOT QA	730	8646	ST	C	+	N	O	1.621	1.632	M		SRC	NR	
P2-00778	PLM-VE	NOT QA	567	6223										SRC	NR	
P2-00779	PLM-VE	NOT QA	731	8647										SRC	NR	
P2-00860	PLM-VE	NOT QA	526	6080	ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00861	PLM-VE	NOT QA	527	6081	ST	C	+	N	O	1.631	1.642	M		SRC	NR	
P2-00862	PLM-VE	NOT QA	528	6082	ST	C	+	N	O	1.623	1.633	L		SRC	NR	
P2-00863	PLM-VE	NOT QA	529	6083										SRC	NR	
P2-00864	PLM-VE	NOT QA	530	6084	ST	C	+	N	O	1.627	1.635	L		SRC	NR	
P2-00865	PLM-VE	NOT QA	531	6085	ST	C	+	N	O	1.627	1.635	L		SRC	NR	
P2-00866	PLM-VE	NOT QA	532	6086										SRC	NR	
P2-00948	PLM-VE	Not QA	684	8605	ST	C	+	N	O	1.622	1.634	M		SRC	NR	
P2-00949	PLM-VE	Not QA	688	8608	ST	C	+	N	O	1.619	1.633	M		SRC	NR	
P2-00950	PLM-VE	Not QA	680	8601	ST	C	+	N	O	1.622	1.635	M		SRC	NR	
P2-00952	PLM-VE	Not QA	682	8603	ST	C	+	N	O	1.622	1.634	M		SRC	NR	
P2-00953	PLM-VE	Not QA	686	8606	ST	C	+	N	O	1.621	1.633	M		SRC	NR	
P2-00961	PLM-VE	NOT QA	727	8643	ST	C	+	N	O	1.622	1.634	M		SRC	NR	
P2-00962	PLM-VE	NOT QA	719	8636	ST	C	+	N	O	1.619	1.632	M		SRC	NR	
P2-00963	PLM-VE	NOT QA	726	8642	ST	C	+	N	O	1.62	1.632	M		SRC	NR	
P2-00964	PLM-VE	Not QA	683	8604	ST	C	+	N	O	1.62	1.634	M		SRC	NR	
P2-00965	PLM-VE	Not QA	687	8607	ST	C	+	N	O	1.619	1.632	M		SRC	NR	
P2-00966	PLM-VE	NOT QA	714	8632	ST	C	+	N	O	1.621	1.631	M		SRC	NR	
P2-00968	PLM-VE	NOT QA	816	8635	ST	C	+	N	O	1.623	1.635	M		SRC	NR	
P2-00968	PLM-VE	NOT QA	718	8635	ST	C	+	N	O	1.62	1.631	M		SRC	NR	
P2-00969	PLM-VE	NOT QA	723	8639	ST	C	+	N	O	1.622	1.633	M		SRC	NR	
P2-00970	PLM-VE	NOT QA	721	8638	ST	C	+	N	O	1.62	1.631	M		SRC	NR	
P2-00971	PLM-VE	NOT QA	720	8637	ST	C	+	N	O	1.62	1.631	M		SRC	NR	
P2-00972	PLM-VE	NOT QA	715	8633	ST	C	+	N	O	1.621	1.631	M		SRC	NR	
P2-00973	PLM-VE	NOT QA	725	8641	ST	C	+	N	O	1.62	1.634	M		SRC	NR	
P2-00974	PLM-VE	NOT QA	724	8640	ST	C	+	N	O	1.62	1.634	M		SRC	NR	
P2-00975	PLM-VE	NOT QA	716	8634	ST	C	+	N	O	1.62	1.634	M		SRC	NR	
P2-00978	PLM-VE	NOT QA	561	6217	ST	C	+	N	O	1.62	1.632	M		SRC	NR	
P2-00979	PLM-VE	NOT QA	559	6215	ST	C	+	N	O	1.621	1.633	M		SRC	NR	
P2-00980	PLM-VE	NOT QA	562	6218	ST	C	+	N	O	1.621	1.633	M		SRC	NR	

ATTACHMENT 5. DATA SUMMARY OF OPTICAL INFORMATION - PHASE II SEDIMENT

Index ID	Analysis Type	Lab QC Type	Optical ID	FK Analysis	Fiber Morph	Fiber Color	Sign Elong	Pleoch	Extinct Ang	RI alpha	RI gamma	Biref	Optical Comments	Verifier's Company	Verifier	Comments
P2-00981	PLM-VE	NOT QA	556	6212	ST	C	+	N	O	1.618	1.629	M		SRC	NR	
P2-00982	PLM-VE	NOT QA	560	6216	ST	C	+	N	O	1.618	1.632	M		SRC	NR	
P2-00983	PLM-VE	NOT QA	557	6213	ST	C	+	N	O	1.618	1.632	M		SRC	NR	
P2-00987	PLM-VE	NOT QA	558	6214	ST	C	+	N	O	1.618	1.633	M		SRC	NR	
P2-00988	PLM-VE	NOT QA	563	6219	ST	C	+	N	O	1.619	1.631	M		SRC	NR	
P2-00989	PLM-VE	NOT QA	566	6222	ST	C	+	N	O	1.621	1.632	M		SRC	NR	
P2-00991	PLM-VE	NOT QA	565	6221	ST	C	+	N	O	1.619	1.634	M		SRC	NR	
P2-00992	PLM-VE	NOT QA	564	6220	ST	C	+	N	O	1.62	1.632	M		SRC	NR	
P2-01010	PLM-VE	Not QA	681	8602	ST	C	+	N	O	1.623	1.634	M		SRC	NR	
P2-01017	PLM-VE	NOT QA	768	8674	ST	C	+	N	O	1.619	1.632	M		SRC	NR	
P2-01021	PLM-VE	NOT QA	568	6224										SRC	NR	
P2-01022	PLM-VE	NOT QA	569	6225	ST	C	+	N	O	1.619	1.634	M		SRC	NR	
P2-01026	PLM-VE	NOT QA	770	8676										SRC	NR	
P2-01029	PLM-VE	NOT QA	797	8693										SRC	NR	
P2-01030	PLM-VE	NOT QA	799	8694	SC	C	+	N	O	1.62	1.632	M		SRC	NR	
P2-01070	PLM-VE	NOT QA	774	8679	SC	C	+	N	O	1.62	1.632	M		SRC	NR	



Appendix H

Statistics

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H.1 Summary of Statistical Analyses Performed to Support Non-Asbestos Nature and Extent Evaluations

This appendix summarizes the basic statistical analyses performed to support the evaluations of the nature and extent of non-asbestos constituents (e.g., organics, metals, radionuclides) presented in Section 5.0 of this RI document. The main objectives of the statistical analyses were to:

1) Compare on-site inorganic, non-asbestos data with available reference data to identify the inorganic, non-asbestos constituents that are elevated in the various media on-site relative to reference. This comparison was performed for surface water, sediment, and soil/mine waste. This comparison was not performed for groundwater because no reliable groundwater reference data is currently available.
2) Generate box-and-whisker plots by media and location for the constituents that were determined to be elevated on-site relative to reference for surface water, sediment, and soil/mine waste. Box-and-whisker plots also were generated for all inorganic, non-asbestos constituents detected in the on-site groundwater samples.
3) Generate box-and-whisker plots by media and location for all organic constituents detected on site.

Additional details are presented in Section 5.0 regarding how these statistical analyses were used to support the nature and extent evaluations.

H.1.1 On-Site Versus Reference Location Comparisons

Inorganic, non-asbestos results from site surface water, sediment, and soil/mine waste samples were compared statistically with the inorganic, non-asbestos results from the reference locations to identify constituent concentrations that were elevated on site relative to reference. This comparison was limited to inorganic, non-asbestos data because organics are likely to have anthropogenic origin (both on- and off-site), and comparison with reference locations would not help determine if the presence of organic constituents in the on-site samples are mine-related. "Reference data" refers to analytical results from locations that are presumed to not be impacted by previous mining activities or the presence of mine waste. Note that this comparison evaluation did not include groundwater because there currently are no reliable reference groundwater data for the OU3 Study Area.

H.1.1.1 Data Organization

Prior to analysis, data were culled to remove those constituents from each media group where both on-site and reference samples contained no detections of that constituent. If one detection of a constituent existed on-site or at a reference location, the entire dataset for that constituent was retained for analysis. A summary of the data quantities before and after culling for 100 percent non-detections is shown in **Table H-1**.

H.1.1.2 Mann-Whitney Testing

The resulting culled data were subjected to Mann-Whitney testing to identify constituents that are elevated in the on-site samples relative to the reference locations. The Mann-Whitney test, also known as Wilcoxon Rank Sum, is a nonparametric test that may be used to evaluate

whether the median measurement from one population is significantly higher or lower than the median measurement from another population. This test was performed using the statistical software Sanitas™, version 9.3.25 (Sanitas, 2015). The test was selected because it is a non-parametric statistical test of medians from two groups, and therefore, does not rely on the assumption of a normal distribution in the dataset, which is required for parametric testing methods such as Student's t test. The distribution of the non-asbestos-constituent data was tested using the Sanitas™ software and the Shapiro-Wilk test (utilizing the ladder of powers), and was found to be primarily non-normal, which supports the use of the Mann-Whitney test. Non-detect results were replaced with values equal to one-half of the practical quantification limit (PQL) for this test.

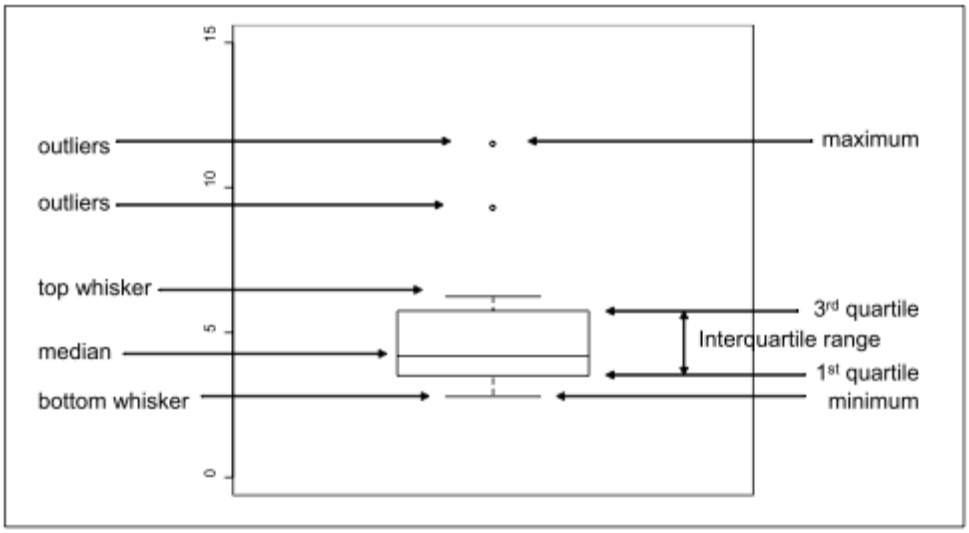
Tables H-2, H-3, and H-4 summarize the results of the Mann-Whitney testing for surface water, sediment, and soil/mine waste, respectively. As summarized on the tables, the results of Mann-Whitney testing identified 21 constituents in surface water, 14 constituents in sediment, and 8 constituents in soil/mine waste that were elevated on site compared to reference data. The determination of on-site constituent concentrations being elevated compared to reference concentrations was made for those cases where the Mann-Whitney significance level was 95 percent or greater (i.e., alpha $\leq$0.05). In two cases, antimony and beryllium in sediment, the positive result of the Mann-Whitney test (i.e., on-site concentrations found to be higher than reference concentrations) was rejected because the datasets contained nearly all (>80 percent) non-detect data and the medians of each group were calculated to be equivalent. The Mann-Whitney result was therefore determined to be a result of differing laboratory PQL values between the on-site and reference sample populations, and that likely no difference in the concentrations of these constituents exists between on-site and reference conditions.

H.1.1.3 Box-and-Whisker Plots

For each inorganic, non-asbestos constituent that was determined to be elevated relative to reference, box-and-whisker plots were generated to depict all results for that constituent for all on-site sample locations. The box-and-whisker plots are useful for visualizing the locations (or groups of locations) where the inorganic, non-asbestos constituents are elevated relative to other site locations. The box-and whisker plots also are useful for visualizing the range of detected concentrations at each location.

The plots were prepared using the open-source programming language and environment for statistical computing R, version 3.2.2 (R Core Team, 2015). Box-and-whisker plots depict five data metrics: the minimum value, maximum value, median (geometric mean), lower quartile, and upper quartile. Outlier values are also depicted singularly. R calculates outliers as observations that are numerically distant from the rest of the data. Specifically, an outlier is defined as a data point that is located outside the "whiskers" of the boxplot (e.g., outside 1.5 times the interquartile range above the upper quartile and below the lower quartile). Note that non-detects are shown as zeros on the plots (as opposed to plotting the PQL or one-half of the PQL for non-detects) so that there is a clear visual distinction between detected and non-detected constituents. A typical box-and-whisker plot is depicted in **Figure H-1**.

Figure H-1. Box-and-whisker plot data metrics produced in R.



The location-specific box-and-whisker plots for the inorganic, non-asbestos constituents that were determined to have concentrations that were elevated relative to reference are presented separately by media in **Attachments H-1 through H-3**.

As discussed above, there are no reliable groundwater reference data to compare with the on-site data. Therefore, all inorganic, non-asbestos constituents detected in the on-site groundwater samples are plotted by well location in **Attachment H-4**. Likewise, box-and-whisker plots for all detected organic, non-asbestos constituents are included for all media in **Attachments H-5**.

H.2 References

R Core Team, 2015. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL https://www.R-project.org/.

Sanitas, 2015. Sanitas Technologies, www.sanitastech.com.

H.3 Attachments

H-1 Inorganic, Non-Asbestos Box-and-Whisker Plots for Surface Water
H-2 Inorganic, Non-Asbestos Box-and-Whisker Plots for Sediment
H-3 Inorganic, Non-Asbestos Box-and-Whisker Plots for Soil/Mine Waste
H-4 Inorganic, Non-Asbestos Box-and-Whisker Plots for Groundwater
H-5 Organic, Non-Asbestos Box-and-Whisker Plots for All Media



Appendix H Tables

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TABLE H-1
SUMMARY OF INORGANIC DATA RECEIVED
AND DATA RETAINED FOR STATISTICAL ANAYLISIS
(Page 1 of 1)

Data Source	Media	Sediment		Soil		Surface Water	
	Site Status	Locations	Constituents	Locations	Constituents	Locations	Constituents
Initial Data	On-Site	58	243	38	218	26	265
	Reference	9	174	12	20	5	174
	Total	**67**	**417**	**50**	**238**	**31**	**439**
Culled Data	On-Site	55	53	38	40	25	49
	Reference	11	52	12	17	5	45
	Total	**66**	**105**	**50**	**57**	**30**	**94**

TABLE H-2
SUMMARY OF MANN-WHITNEY TEST RESULTS
FOR ON-SITE AND REFERENCE SURFACE WATER LOCATIONS - INORGANIC DATA

Constituent Name	Media	Calculated U Statistic	Alpha	Statistically Elevated From Reference	Method
Alkalinity, Total as CaCO3 (ug/l)	Surface Water	3.982	0.01	Yes	Mann-Whitney
Aluminum, Dissolved (ug/l)	Surface Water	0.3402	--	No	Mann-Whitney
Aluminum, Total (ug/l)	Surface Water	1.052	--	No	Mann-Whitney
Barium, Dissolved (ug/l)	Surface Water	4.9	0.01	Yes	Mann-Whitney
Barium, Total (ug/l)	Surface Water	4.692	0.01	Yes	Mann-Whitney
Bicarbonate as HCO3 (ug/l)	Surface Water	3.975	0.01	Yes	Mann-Whitney
Cadmium, Dissolved (ug/l)	Surface Water	-2.684	--	No	Mann-Whitney
Calcium, Dissolved (ug/l)	Surface Water	3.735	0.01	Yes	Mann-Whitney
Calcium, Total (ug/l)	Surface Water	3.678	0.01	Yes	Mann-Whitney
Carbonate as CO3 (ug/l)	Surface Water	1.104	--	No	Mann-Whitney
Chloride (ug/l)	Surface Water	2.145	0.025	Yes	Mann-Whitney
Chromium, Total (ug/l)	Surface Water	0.7406	--	No	Mann-Whitney
Copper, Dissolved (ug/l)	Surface Water	0.3402	--	No	Mann-Whitney
Copper, Total (ug/l)	Surface Water	-0.4268	--	No	Mann-Whitney
Fluoride (ug/l)	Surface Water	4.032	0.01	Yes	Mann-Whitney
Hardness as CaCO3 (ug/l)	Surface Water	3.764	0.01	Yes	Mann-Whitney
Iron, Dissolved (ug/l)	Surface Water	0.9397	--	No	Mann-Whitney
Iron, Total (ug/l)	Surface Water	2.193	0.025	Yes	Mann-Whitney
Lead, Dissolved (ug/l)	Surface Water	0.3402	--	No	Mann-Whitney
Lead, Total (ug/l)	Surface Water	0.41	--	No	Mann-Whitney
Magnesium, Dissolved (ug/l)	Surface Water	4.56	0.01	Yes	Mann-Whitney
Magnesium, Total (ug/l)	Surface Water	4.435	0.01	Yes	Mann-Whitney
Manganese, Dissolved (ug/l)	Surface Water	1.656	0.05	Yes	Mann-Whitney
Manganese, Total (ug/l)	Surface Water	2.232	0.025	Yes	Mann-Whitney
Nickel, Total (ug/l)	Surface Water	0.511	--	No	Mann-Whitney
Nitrogen, Kjeldahl, Total as N (ug/l)	Surface Water	0.9751	--	No	Mann-Whitney
Nitrogen, Nitrate as N (ug/l)	Surface Water	1.066	--	No	Mann-Whitney
Nitrogen, Nitrate+Nitrite as N (ug/l)	Surface Water	1.275	--	No	Mann-Whitney
Nitrogen, Nitrite as N (ug/l)	Surface Water	0.4568	--	No	Mann-Whitney
Phosphorus, Orthophosphate as P (ug/l)	Surface Water	4.066	0.01	Yes	Mann-Whitney
Potassium, Dissolved (ug/l)	Surface Water	4.952	0.01	Yes	Mann-Whitney
Potassium, Total (ug/l)	Surface Water	5.018	0.01	Yes	Mann-Whitney
Sodium, Dissolved (ug/l)	Surface Water	4.983	0.01	Yes	Mann-Whitney
Sodium, Total (ug/l)	Surface Water	4.028	0.01	Yes	Mann-Whitney
Solids, Total Dissolved TDS @ 180 C (ug/l)	Surface Water	4.287	0.01	Yes	Mann-Whitney
Solids, Total Suspended TSS @ 105 C (ug/l)	Surface Water	1.18	--	No	Mann-Whitney
Sulfate (ug/l)	Surface Water	3.875	0.01	Yes	Mann-Whitney
Vanadium, Dissolved (ug/l)	Surface Water	0.7514	--	No	Mann-Whitney
Vanadium, Total (ug/l)	Surface Water	0.9267	--	No	Mann-Whitney
Zinc, Total (ug/l)	Surface Water	0.5038	--	No	Mann-Whitney

-- Mann-Whitney test alpha greater than 0.1 (less than 90 percent). Statistical software does not report actual result.

TABLE H-3
SUMMARY OF MANN-WHITNEY TEST RESULTS
FOR ON-SITE AND REFERENCE SEDIMENT LOCATIONS - INORGANIC DATA

Constituent Name	Media	Calculated U Statistic	Alpha	Statistically Elevated From Reference	Method
Acid Volatile Sulfide (mg/kg-dry)	Sediment	-0.7692	--	No	Mann-Whitney
Aluminum (mg/kg-dry)	Sediment	2.322	0.025	Yes	Mann-Whitney
Ammonia as N, KCL Extract (mg/kg-dry)	Sediment	-1.212	--	No	Mann-Whitney
Antimony (mg/kg-dry)	Sediment	2.228	0.025	Yes*	Mann-Whitney
Arsenic (mg/kg-dry)	Sediment	-5.435	--	No	Mann-Whitney
Barium (mg/kg-dry)	Sediment	5.184	0.01	Yes	Mann-Whitney
Beryllium (mg/kg-dry)	Sediment	4.321	0.01	Yes*	Mann-Whitney
Boron (mg/kg-dry)	Sediment	0.8298	--	No	Mann-Whitney
Cadmium (mg/kg-dry)	Sediment	-0.2373	--	No	Mann-Whitney
Chromium (mg/kg-dry)	Sediment	5.556	0.01	Yes	Mann-Whitney
Cobalt (mg/kg-dry)	Sediment	5.478	0.01	Yes	Mann-Whitney
Copper (mg/kg-dry)	Sediment	4.075	0.01	Yes	Mann-Whitney
Fluoride (mg/kg-dry)	Sediment	2.528	0.01	Yes	Mann-Whitney
Iron (mg/kg-dry)	Sediment	4.729	0.01	Yes	Mann-Whitney
Lead (mg/kg-dry)	Sediment	3.774	0.01	Yes	Mann-Whitney
Magnesium (mg/kg-dry)	Sediment	1.361	--	No	Mann-Whitney
Manganese (mg/kg-dry)	Sediment	3.425	0.01	Yes	Mann-Whitney
Mercury (mg/kg-dry)	Sediment	-2.813	--	No	Mann-Whitney
Moisture (wt%)	Sediment	-0.7466	--	No	Mann-Whitney
Nickel (mg/kg-dry)	Sediment	5.548	0.01	Yes	Mann-Whitney
pH (s.u.)	Sediment	2.347	0.025	Yes	Mann-Whitney
pH, sat. paste (s.u.)	Sediment	-1.501	--	No	Mann-Whitney
Phosphorus, Total (mg/kg-dry)	Sediment	4.316	0.01	Yes	Mann-Whitney
Selenium (mg/kg-dry)	Sediment	1.616	--	No	Mann-Whitney
Solids, Total (wt%)	Sediment	-1.225	--	No	Mann-Whitney
Strontium (mg/kg-dry)	Sediment	1.201	--	No	Mann-Whitney
Thallium (mg/kg-dry)	Sediment	2.408	0.01	Yes	Mann-Whitney
Tin (mg/kg-dry)	Sediment	-1.6	--	No	Mann-Whitney
Vanadium (mg/kg-dry)	Sediment	5.046	0.01	Yes	Mann-Whitney
Zinc (mg/kg-dry)	Sediment	0.6048	--	No	Mann-Whitney

* Mann-Whitney results of elevated on-site concentrations rejected based on non-detect data >80 percent and equivalent median values
-- Mann-Whitney test alpha greater than 0.1 (less than 90 percent). Statistical software does not report actual result.

TABLE H-4
SUMMARY OF MANN-WHITNEY TEST RESULTS
FOR ON-SITE AND REFERENCE SOIL LOCATIONS - INORGANIC DATA

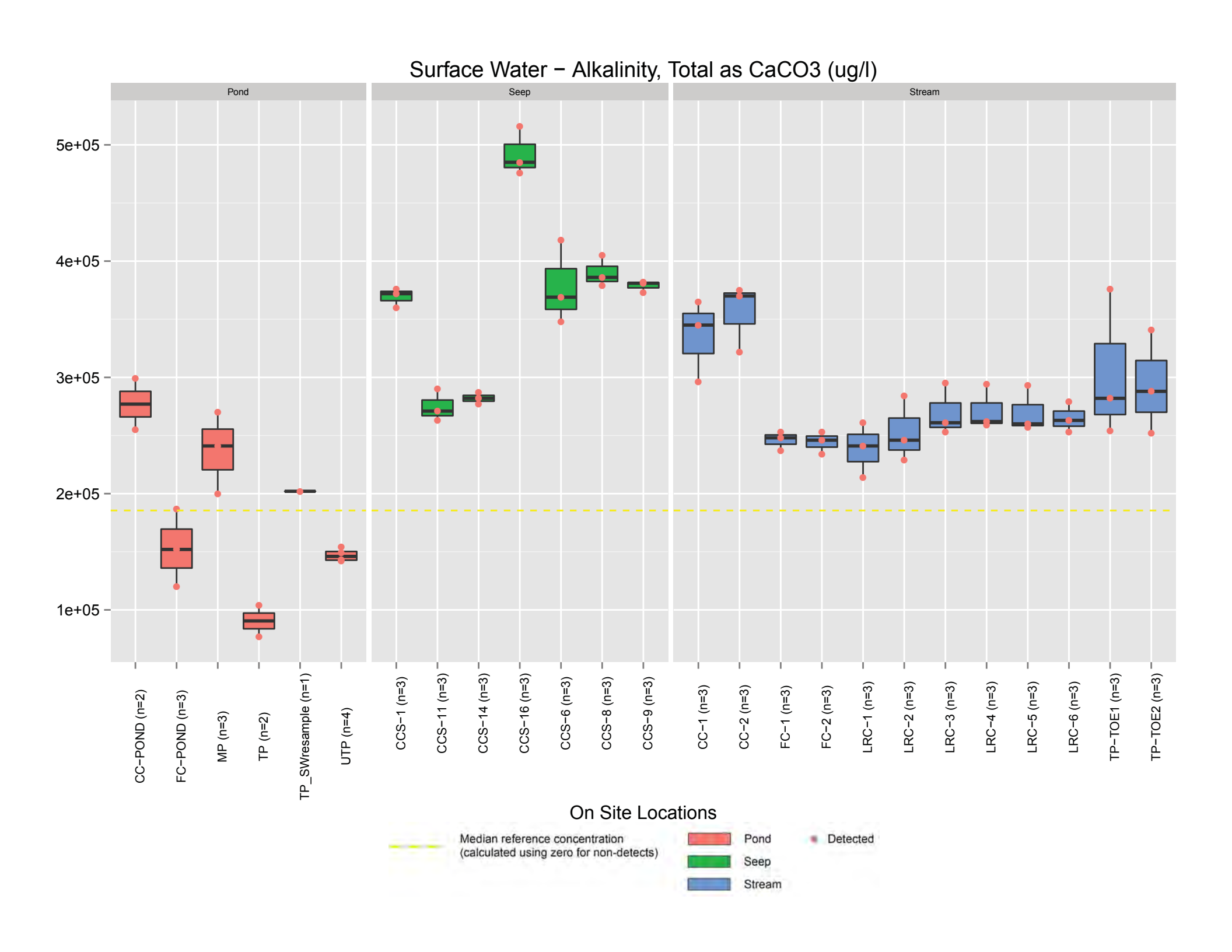
Constituent Name	Media	Calculated U Statistic	Alpha	Statistically Elevated From Reference	Method
Aluminum (mg/kg-dry)	Soil	3.691	0.01	Yes	Mann-Whitney
Antimony (mg/kg-dry)	Soil	-6.809	--	No	Mann-Whitney
Arsenic (mg/kg-dry)	Soil	-5.951	--	No	Mann-Whitney
Barium (mg/kg-dry)	Soil	5.054	0.01	Yes	Mann-Whitney
Boron (mg/kg-dry)	Soil	-2.576	--	No	Mann-Whitney
Cadmium (mg/kg-dry)	Soil	-6.995	--	No	Mann-Whitney
Chromium (mg/kg-dry)	Soil	4.804	0.01	Yes	Mann-Whitney
Cobalt (mg/kg-dry)	Soil	4.518	0.01	Yes	Mann-Whitney
Copper (mg/kg-dry)	Soil	1.649	0.05	Yes	Mann-Whitney
Iron (mg/kg-dry)	Soil	3.249	0.01	Yes	Mann-Whitney
Lead (mg/kg-dry)	Soil	0.06828	--	No	Mann-Whitney
Manganese (mg/kg-dry)	Soil	0.4203	--	No	Mann-Whitney
Mercury (mg/kg-dry)	Soil	-6.809	--	No	Mann-Whitney
Nickel (mg/kg-dry)	Soil	4.477	0.01	Yes	Mann-Whitney
Thallium (mg/kg-dry)	Soil	-6.471	--	No	Mann-Whitney
Vanadium (mg/kg-dry)	Soil	3.352	0.01	Yes	Mann-Whitney
Zinc (mg/kg-dry)	Soil	-4.515	--	No	Mann-Whitney

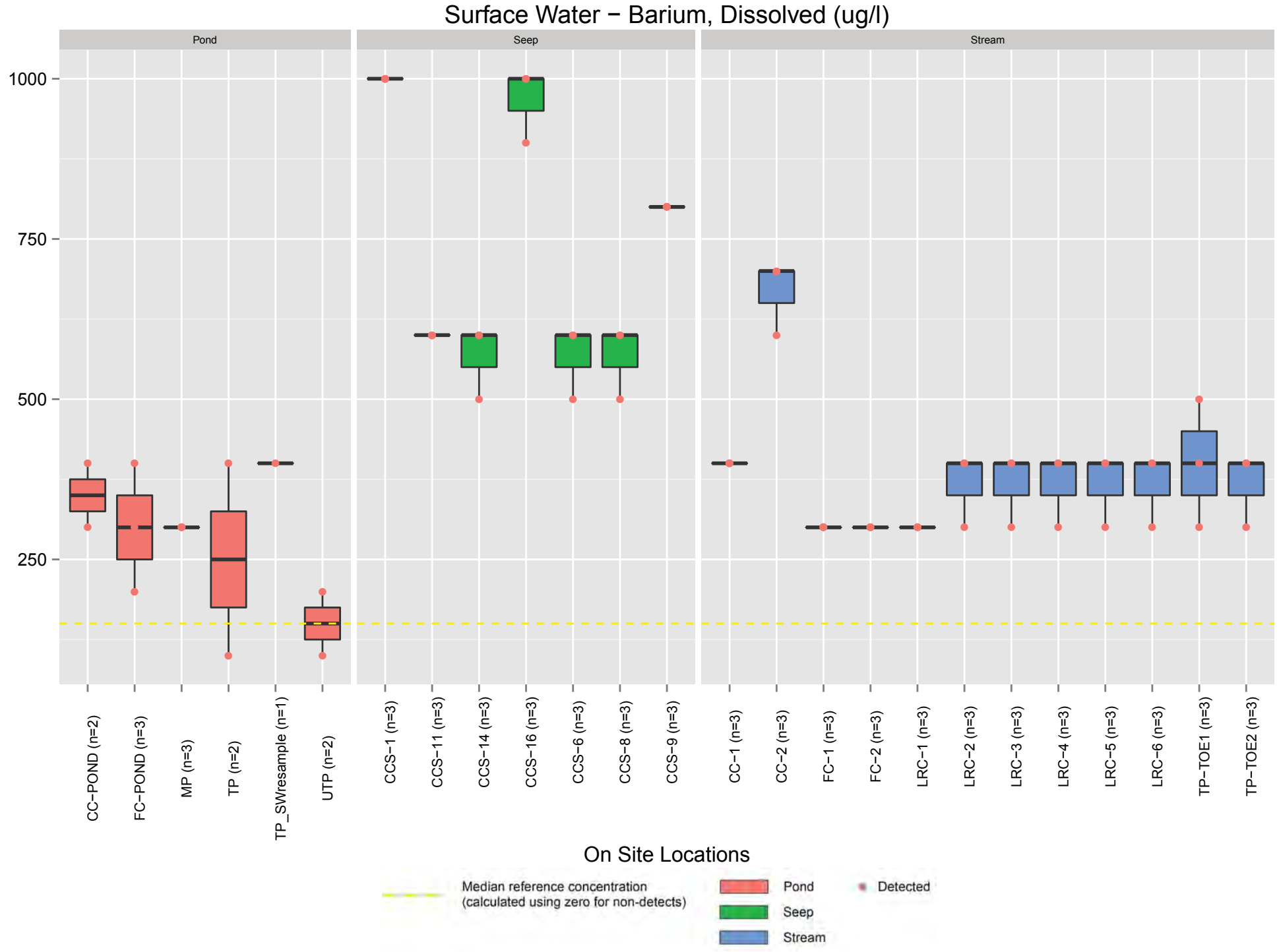
-- Mann-Whitney test alpha greater than 0.1 (less than 90 percent). Statistical software does not report actual result.

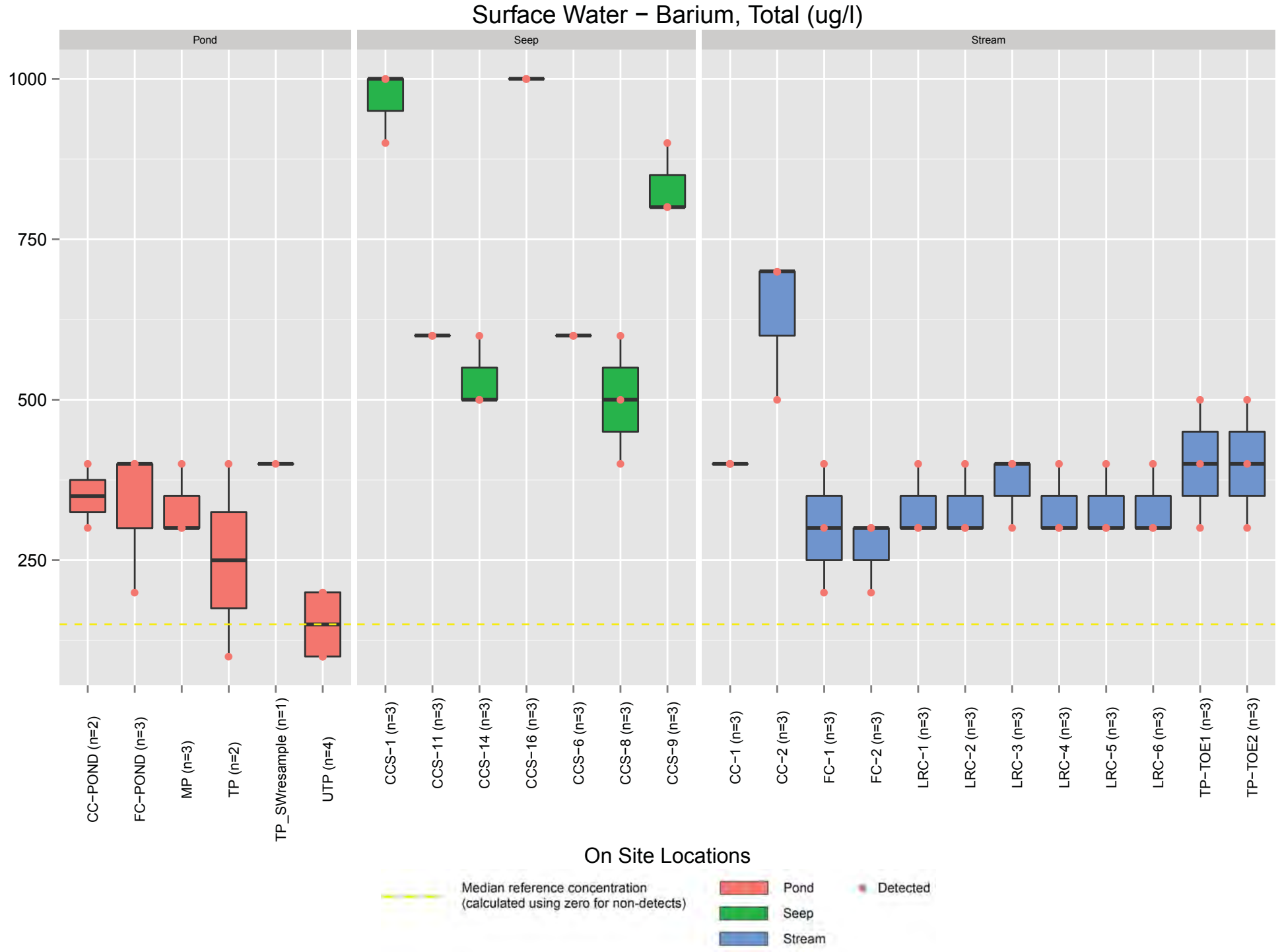


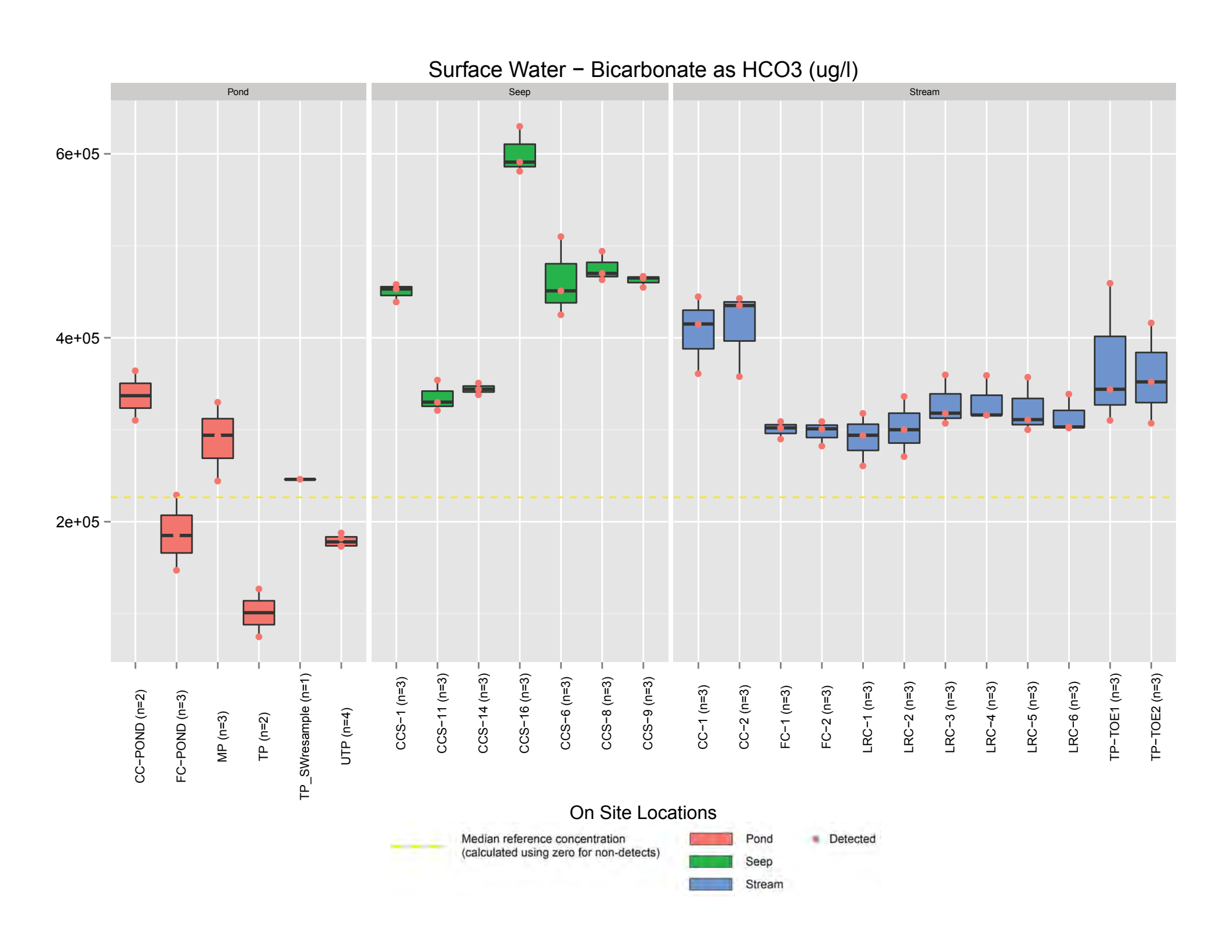
Attachment H-1
Inorganic, Non-Asbestos Box-and-Whisker Plots for Surface Water

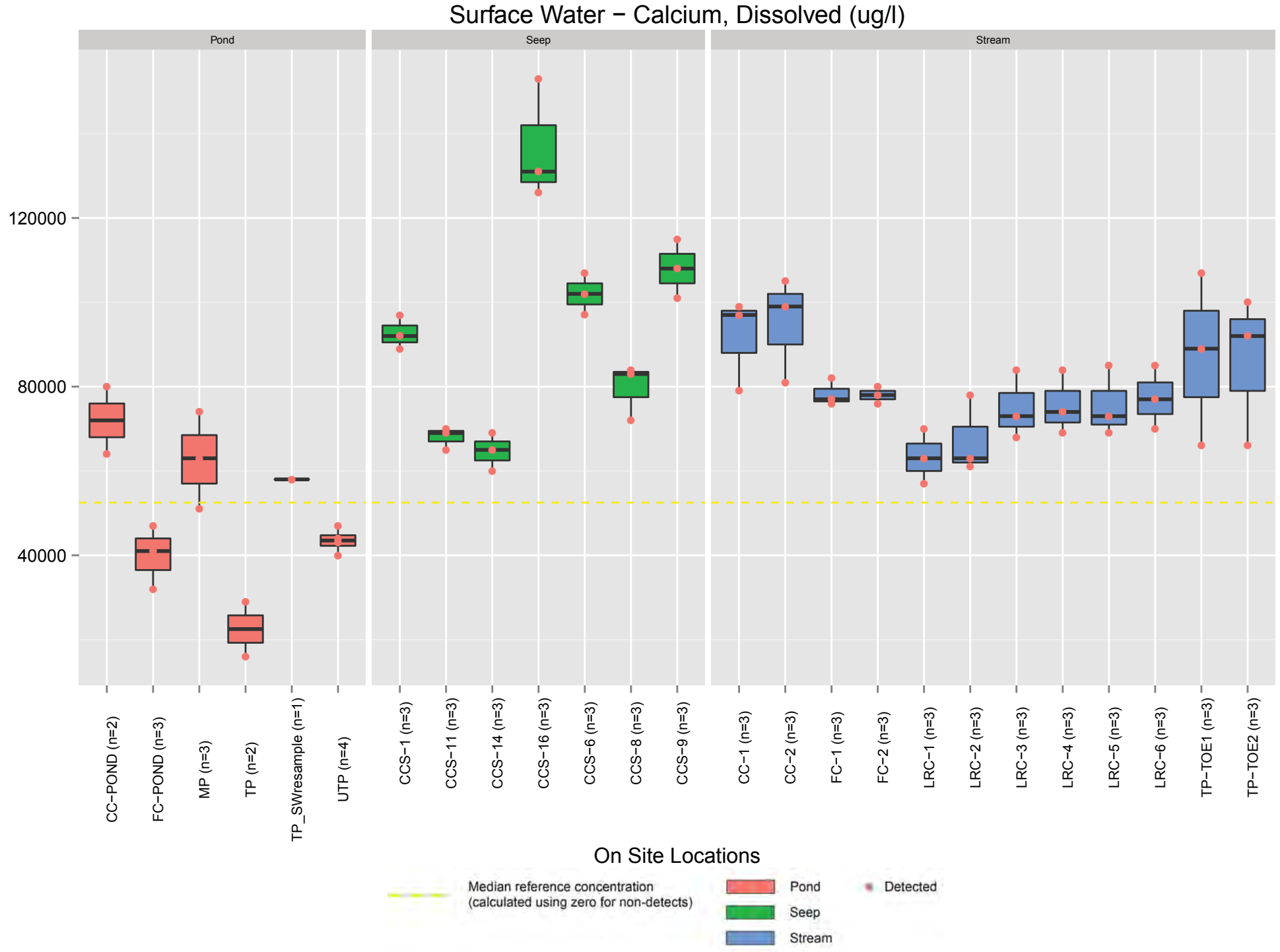
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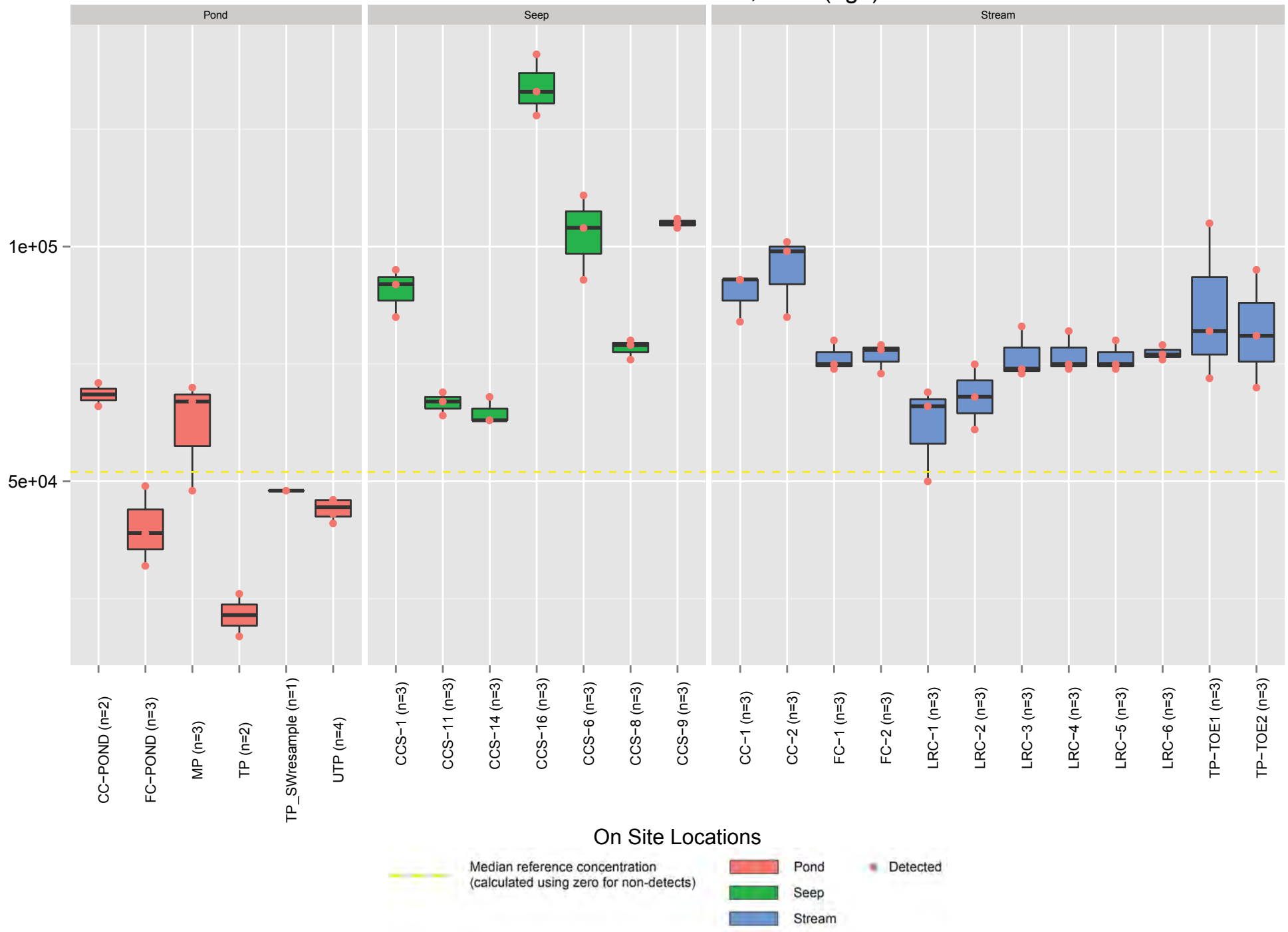

Surface Water − Alkalinity, Total as CaCO3 (ug/l)
Pond
Seep
Stream
5e+05
4e+05
3e+05
2e+05
1e+05
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

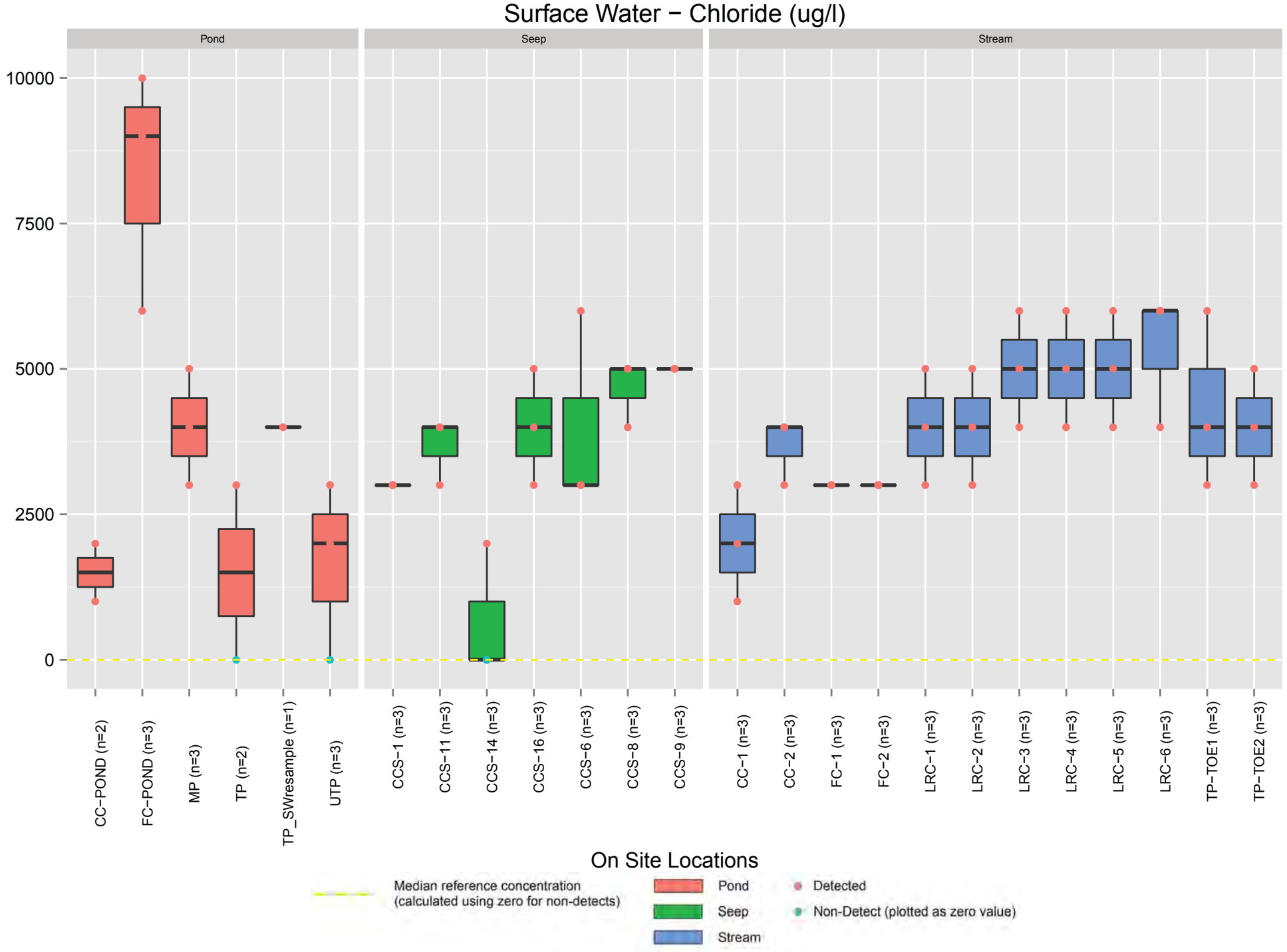

Surface Water − Barium, Dissolved (ug/l)
Pond
Seep
Stream
1000
750
500
250
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

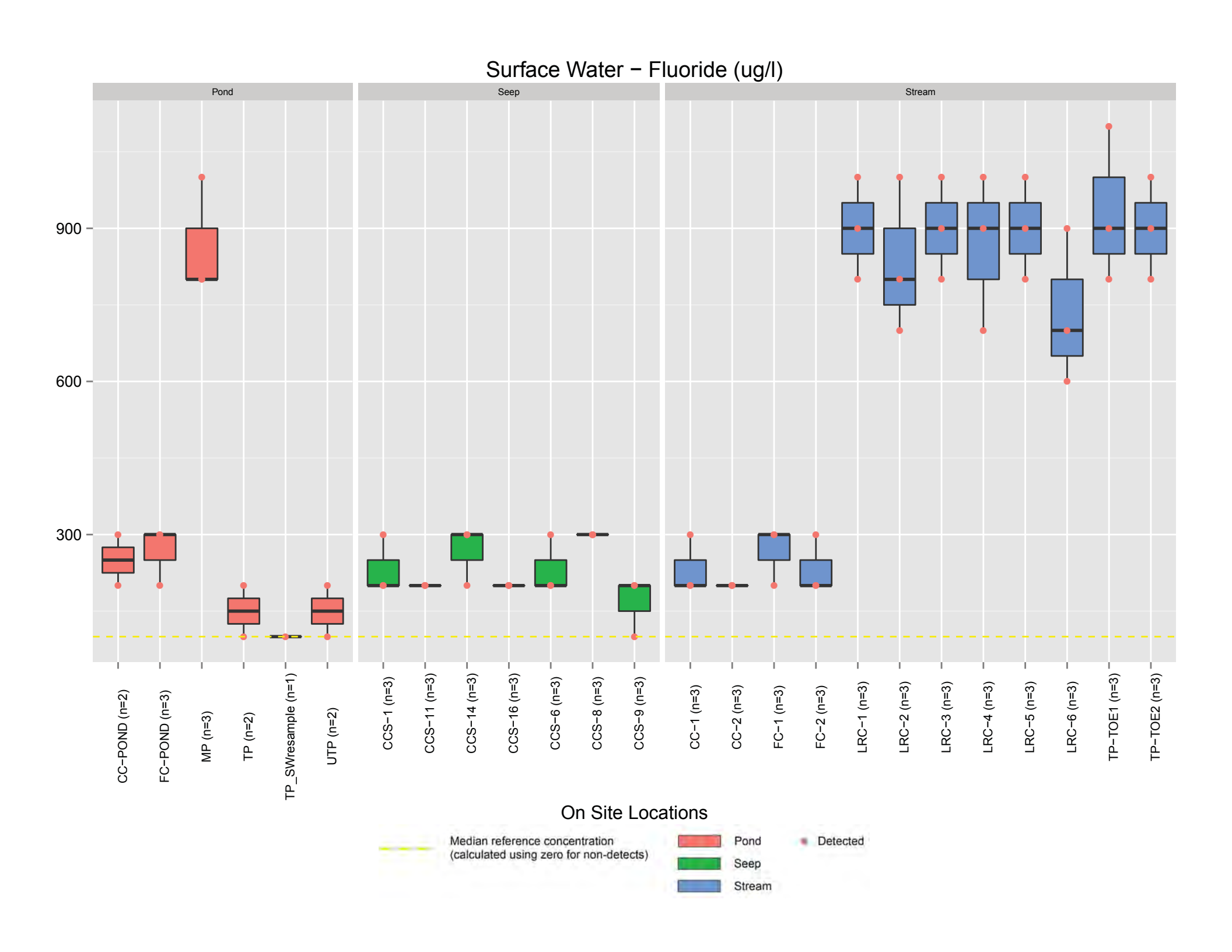

Surface Water − Barium, Total (ug/l)
Pond
Seep
Stream
1000
750
500
250
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

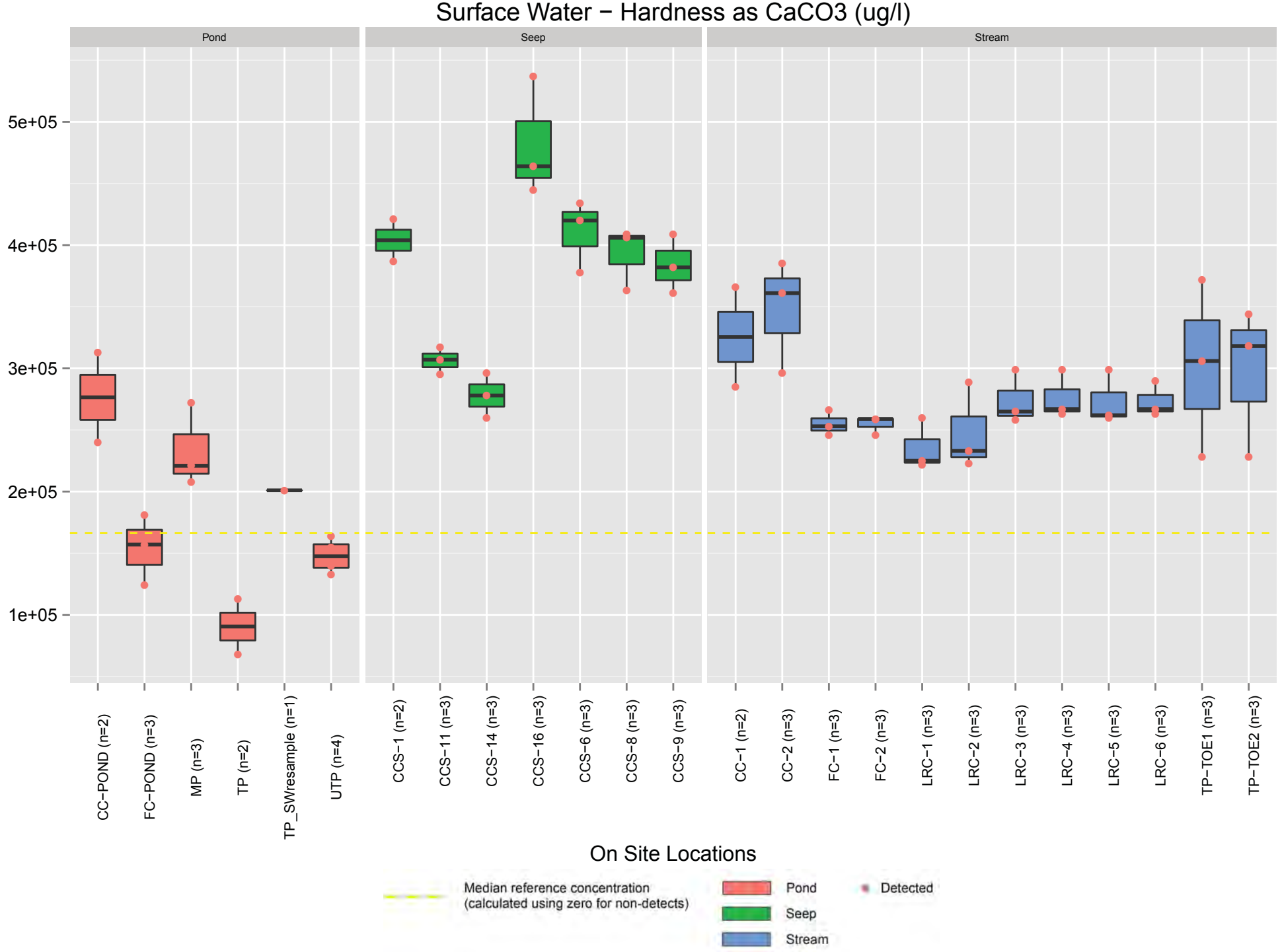

Surface Water − Bicarbonate as HCO3 (ug/l)
Pond
Seep
Stream
6e+05
4e+05
2e+05
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

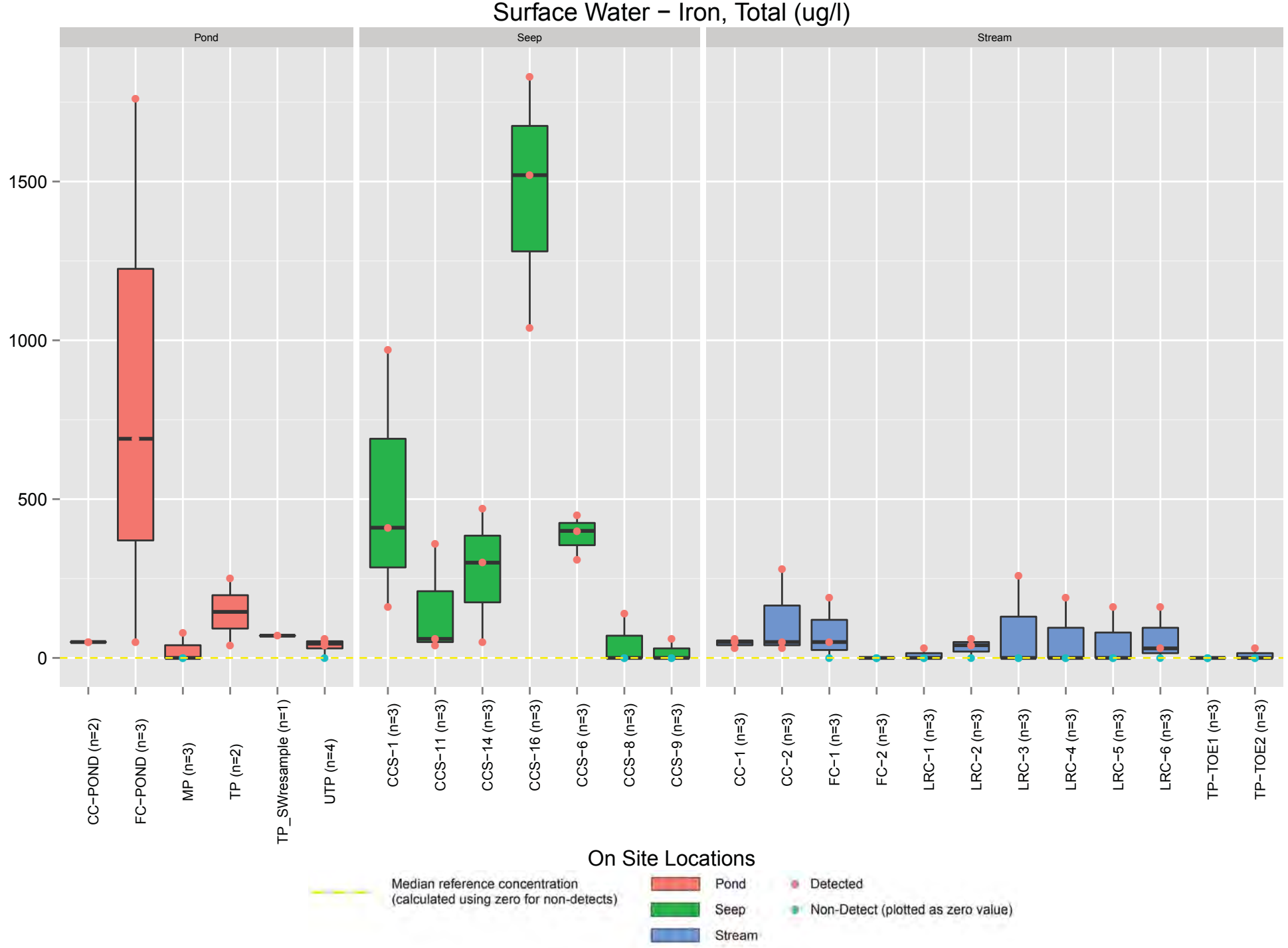

Surface Water − Calcium, Dissolved (ug/l)
Pond
Seep
Stream
120000
80000
40000
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

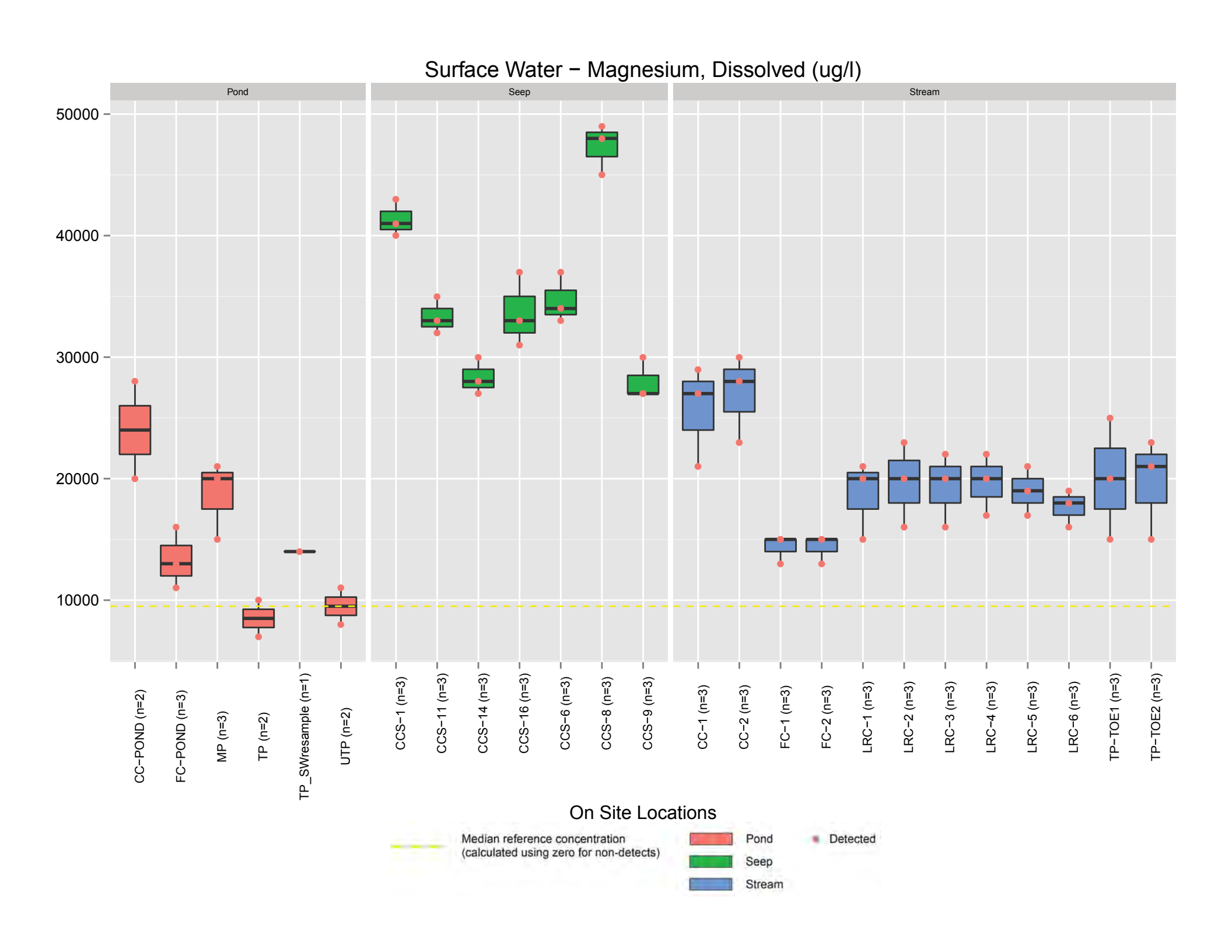

Surface Water − Calcium, Total (ug/l)
Pond
Seep
Stream
1e+05
5e+04
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

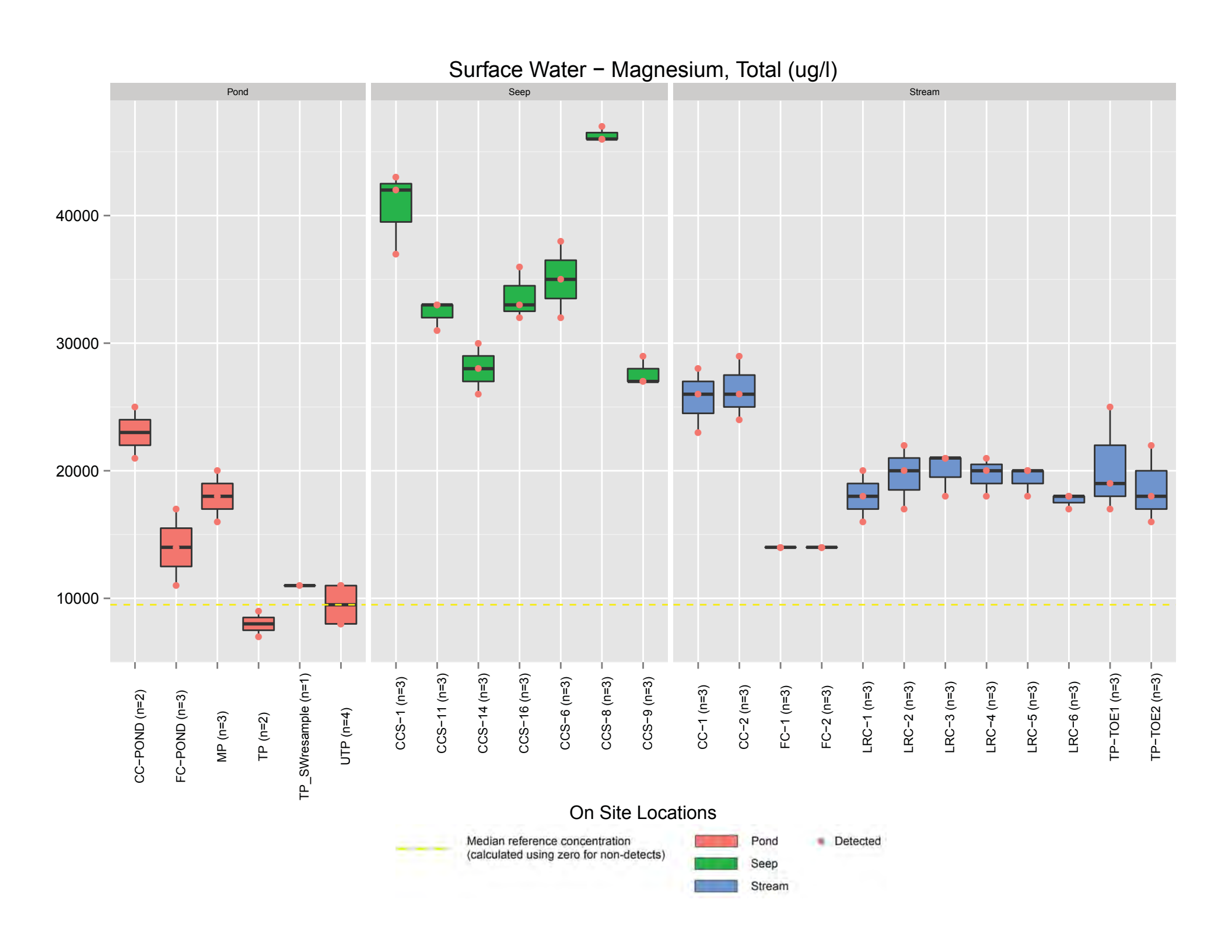

Surface Water − Chloride (ug/l)
Pond
Seep
Stream
10000
7500
5000
2500
0
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=3)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

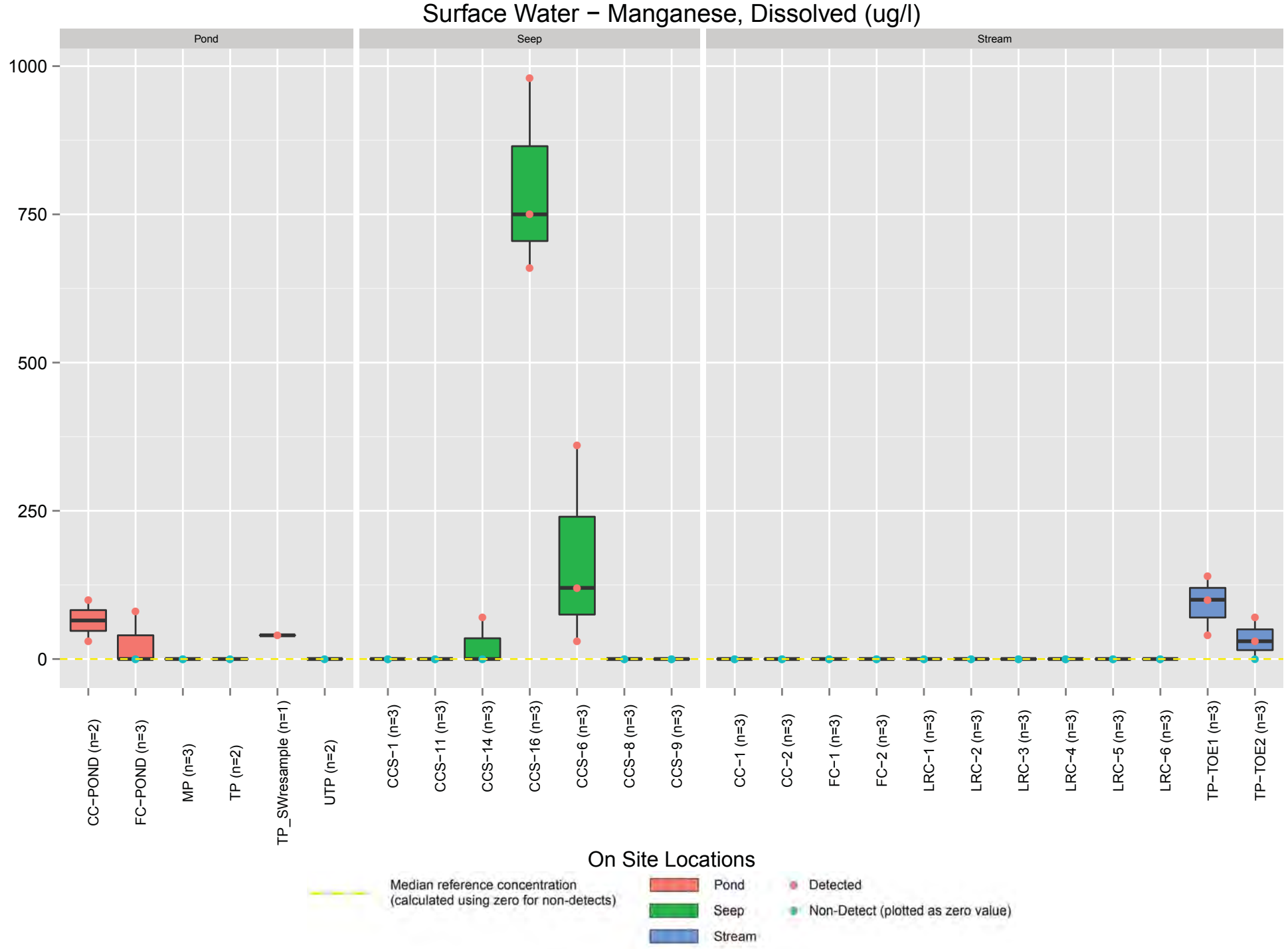

Surface Water − Fluoride (ug/l)
Pond
Seep
Stream
900
600
300
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

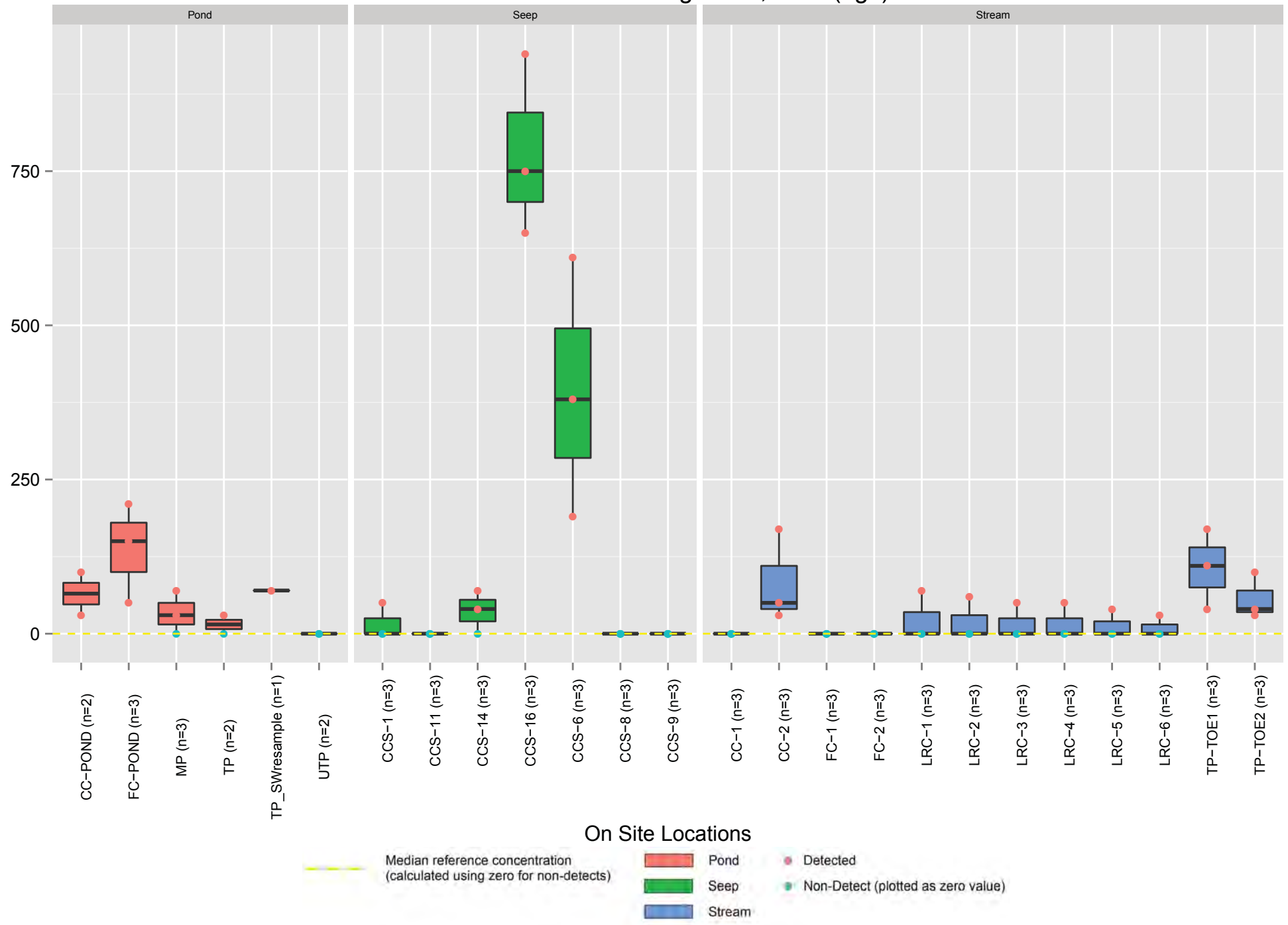

Surface Water − Hardness as CaCO3 (ug/l)
Pond
Seep
Stream
5e+05
4e+05
3e+05
2e+05
1e+05
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=2)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=2)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

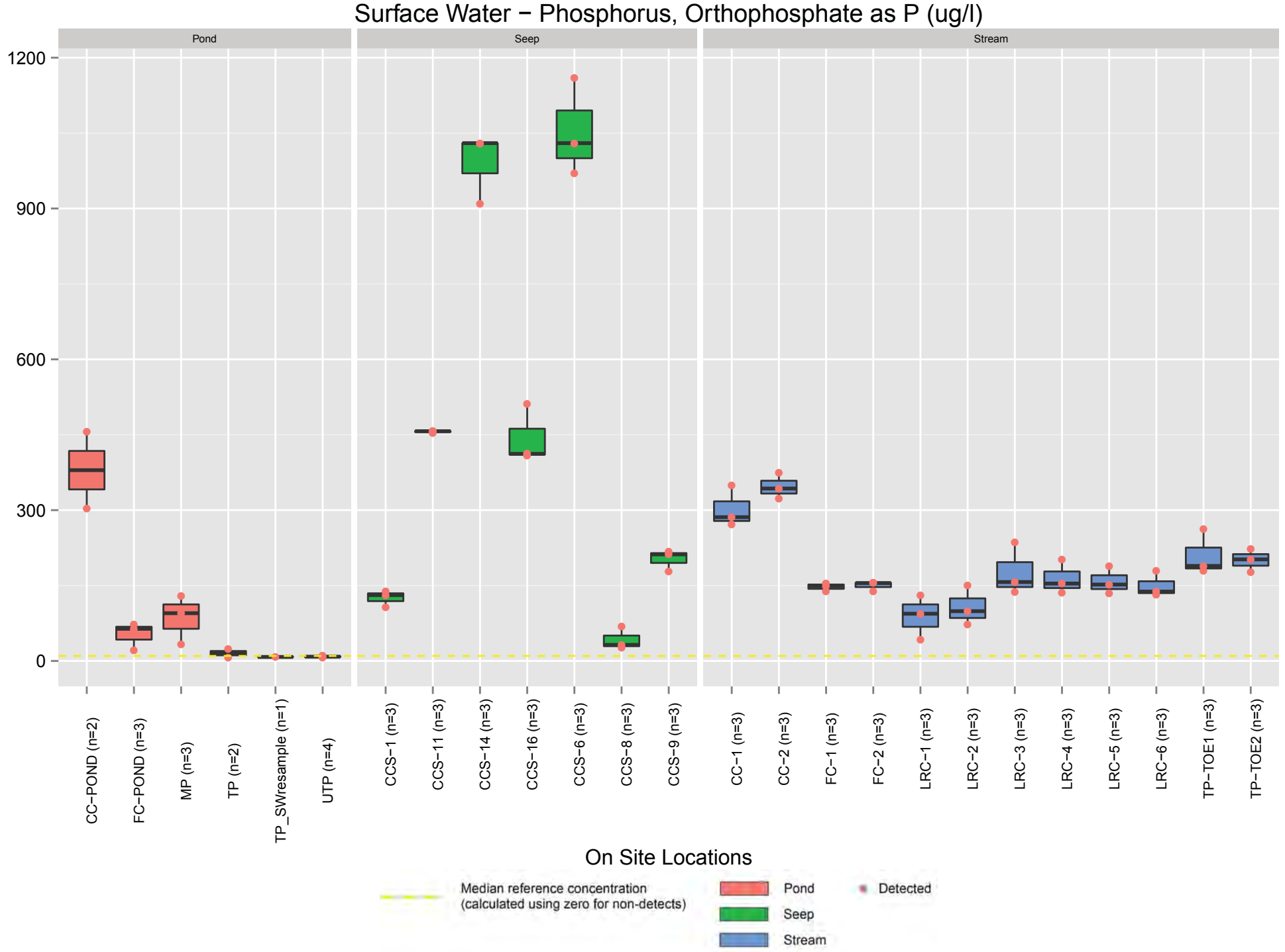

Surface Water − Iron, Total (ug/l)
Pond
Seep
Stream
1500
1000
500
0
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

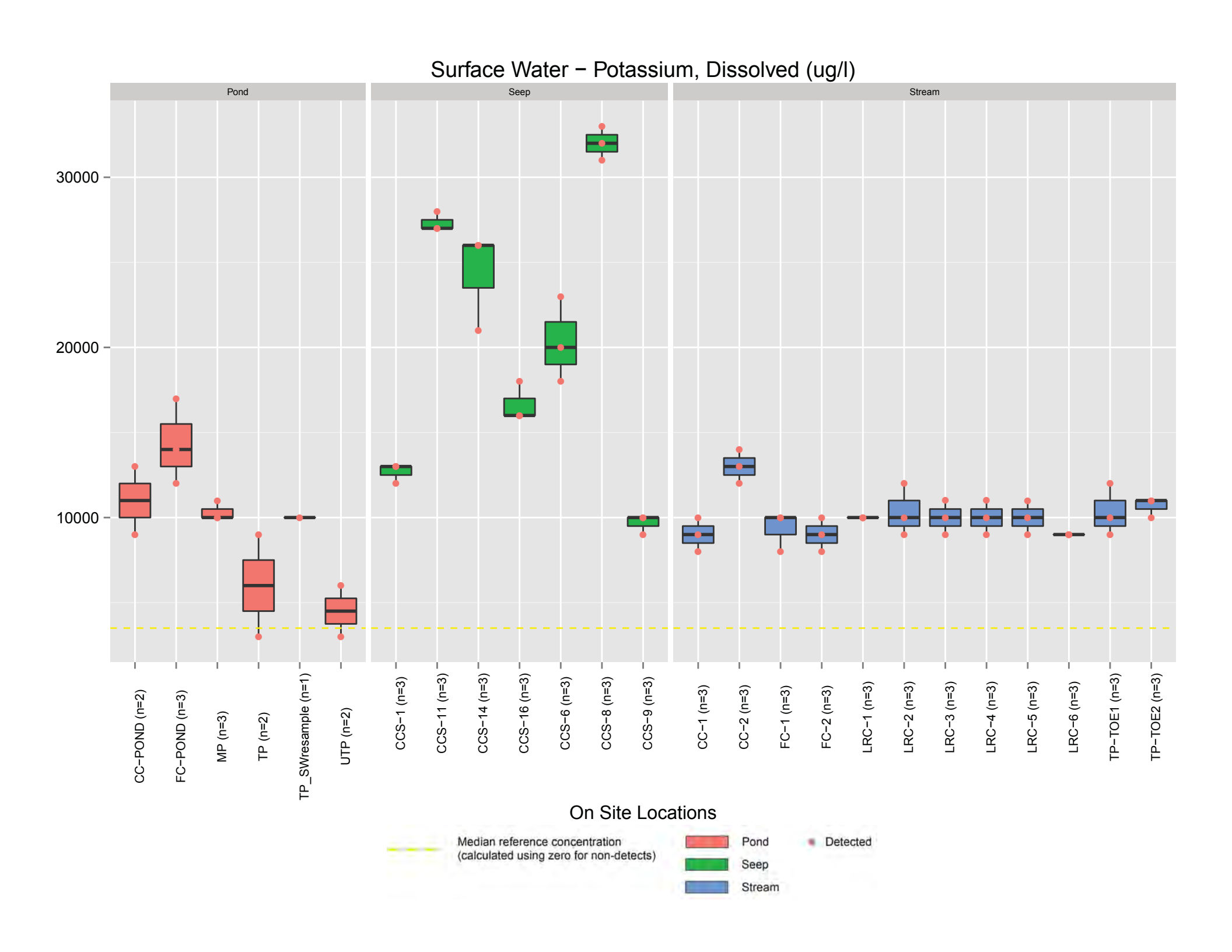

Surface Water − Magnesium, Dissolved (ug/l)
Pond
Seep
Stream
50000
40000
30000
20000
10000
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

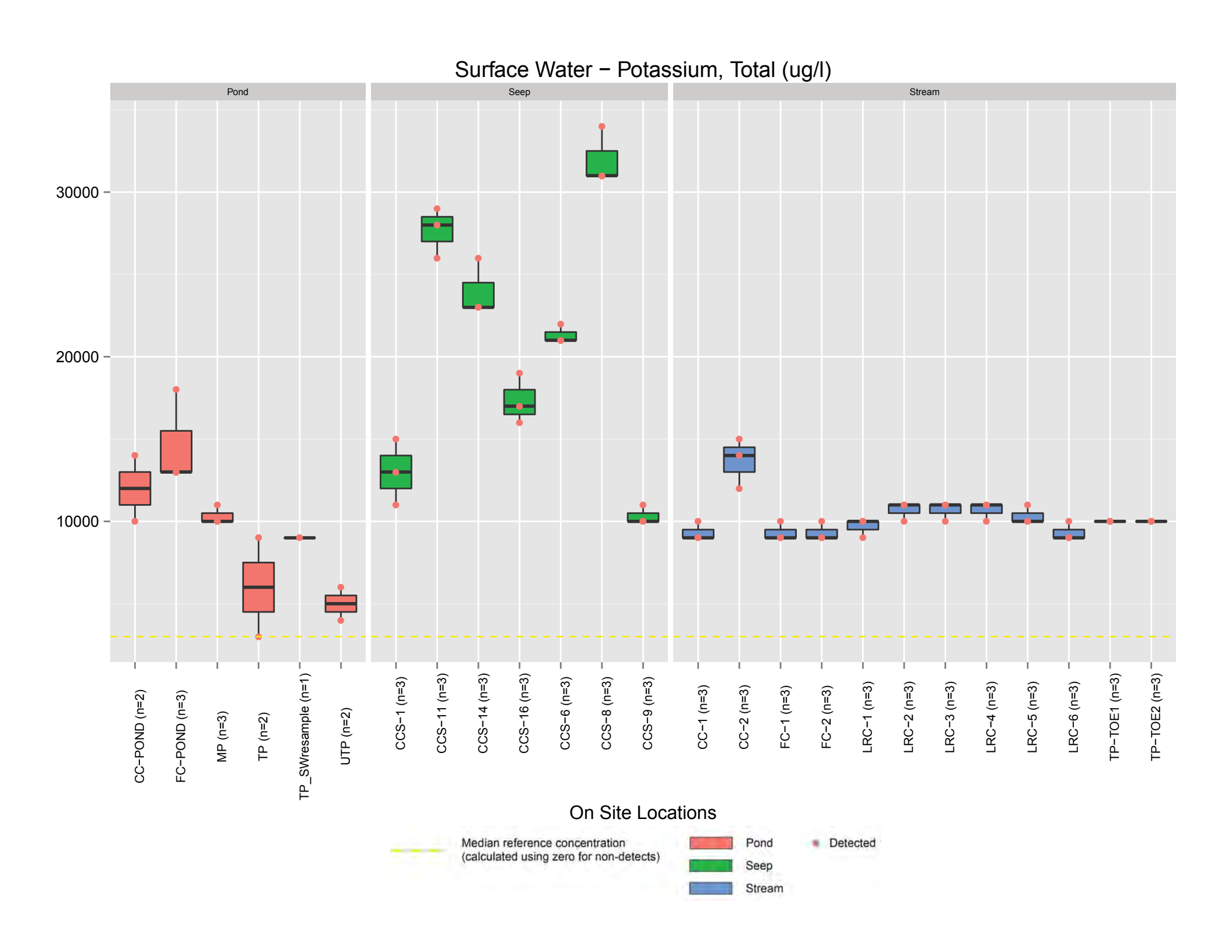

Surface Water − Magnesium, Total (ug/l)
Pond
Seep
Stream
40000
30000
20000
10000
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

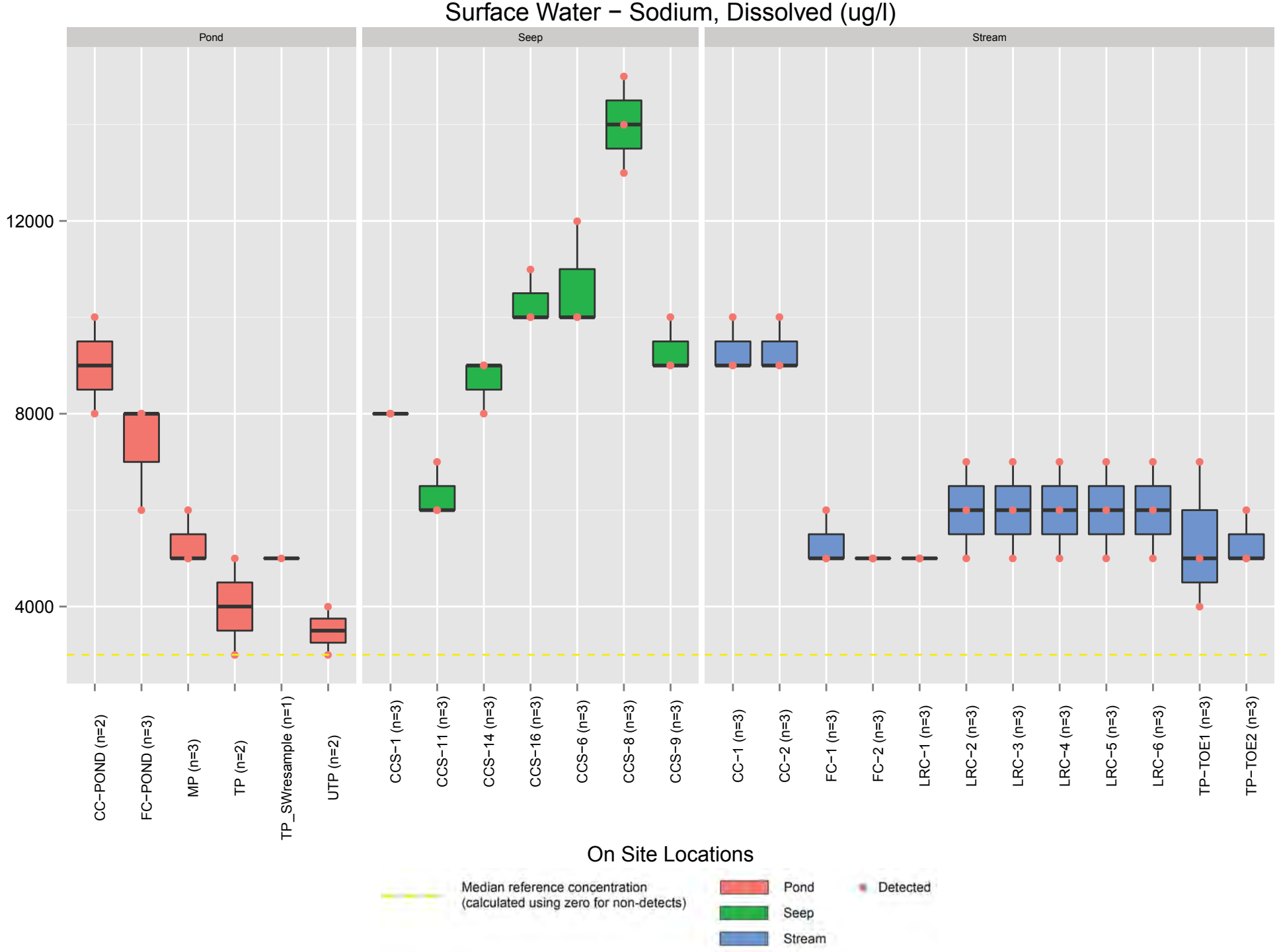

Surface Water − Manganese, Dissolved (ug/l)
Pond
Seep
Stream
1000
750
500
250
0
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

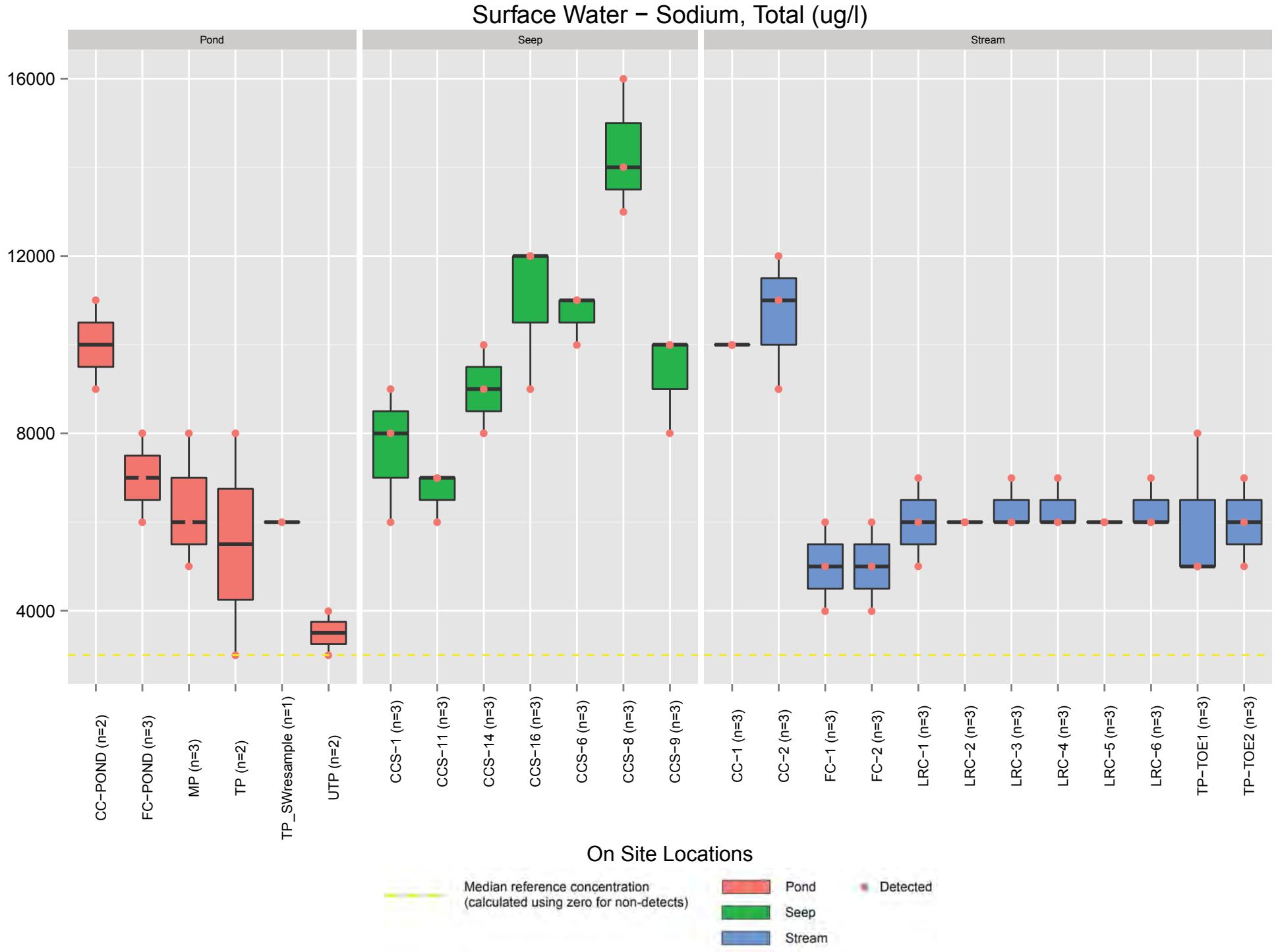

Surface Water − Manganese, Total (ug/l)
Pond
Seep
Stream
750
500
250
0
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

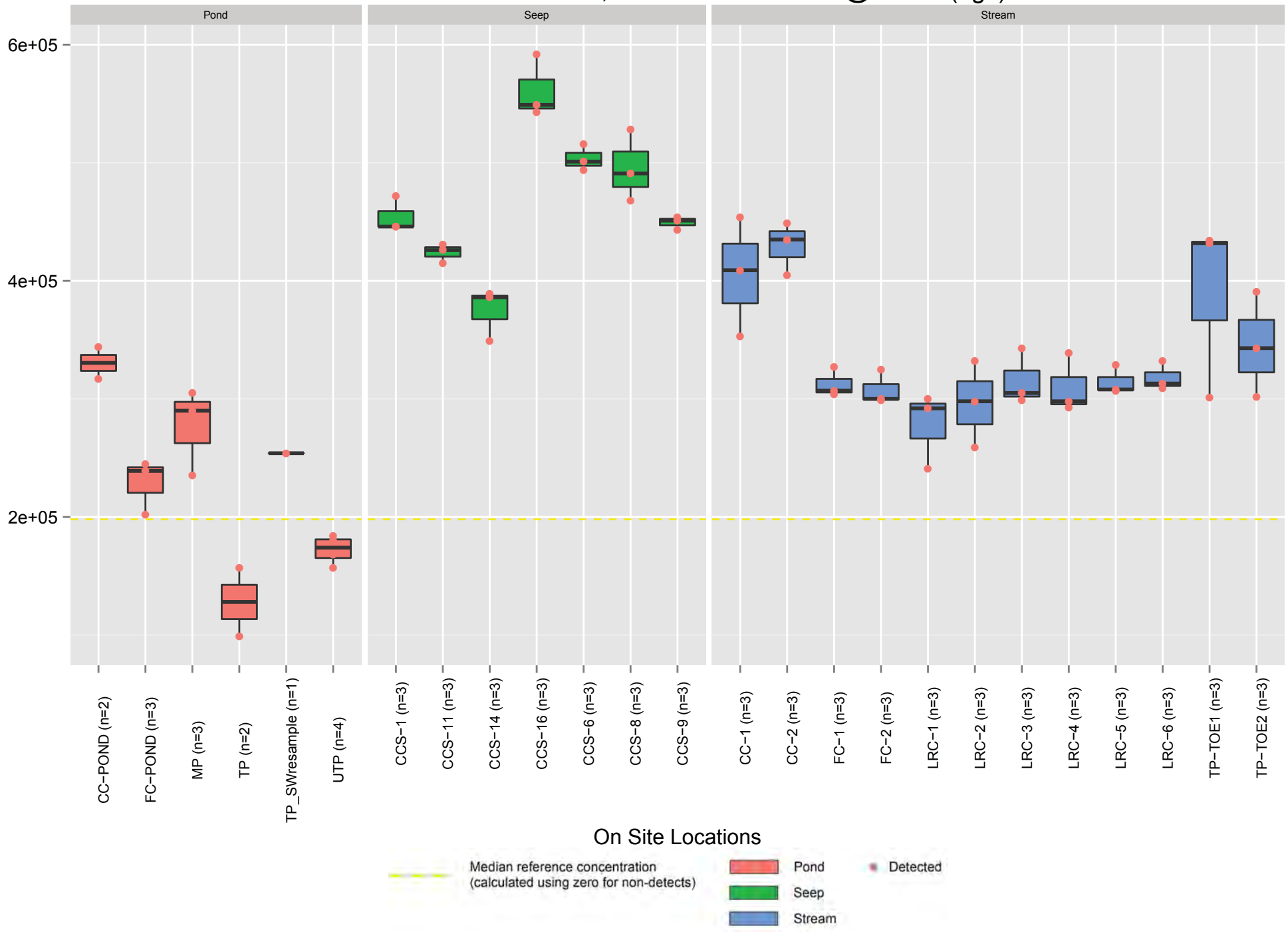

Surface Water − Phosphorus, Orthophosphate as P (ug/l)
Pond
Seep
Stream
1200
900
600
300
0
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

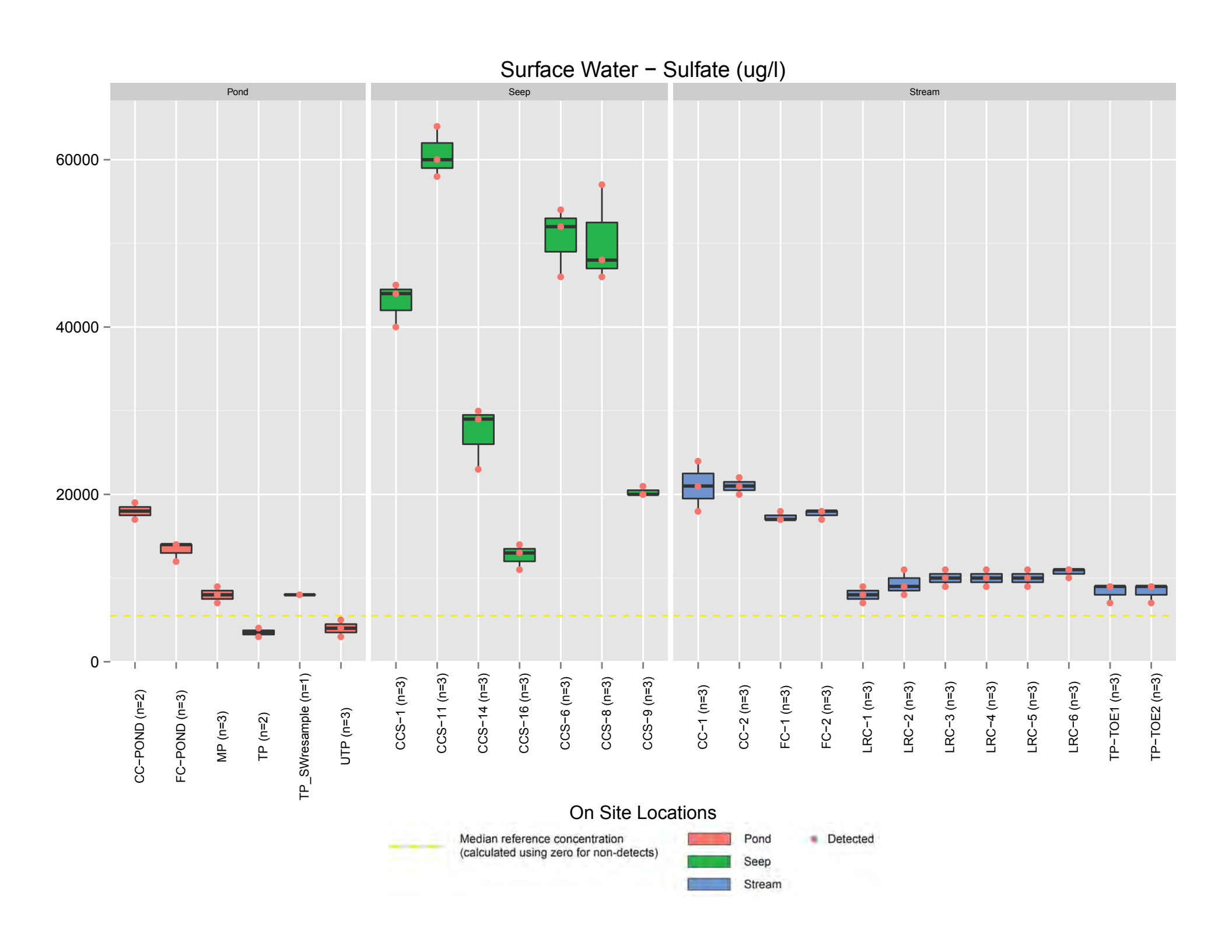

Surface Water − Potassium, Dissolved (ug/l)
Pond
Seep
Stream
30000
20000
10000
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected


Surface Water − Potassium, Total (ug/l)
Pond
Seep
Stream
30000
20000
10000
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected


Surface Water − Sodium, Dissolved (ug/l)
Pond
Seep
Stream
12000
8000
4000
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected


Surface Water − Sodium, Total (ug/l)
Pond
Seep
Stream
16000
12000
8000
4000
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

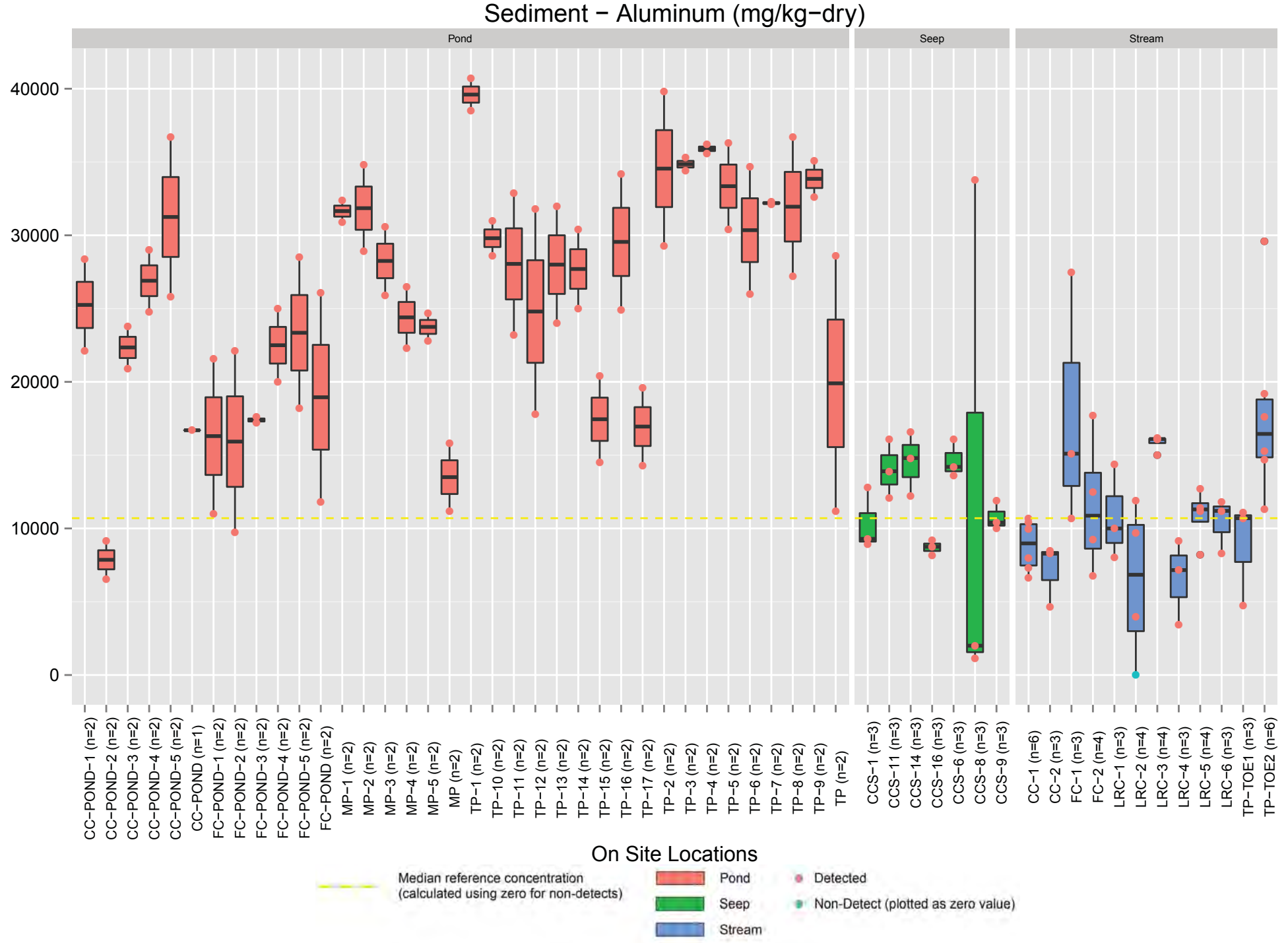

Surface Water − Solids, Total Dissolved TDS @ 180 C (ug/l)
Pond
Seep
Stream
6e+05
4e+05
2e+05
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

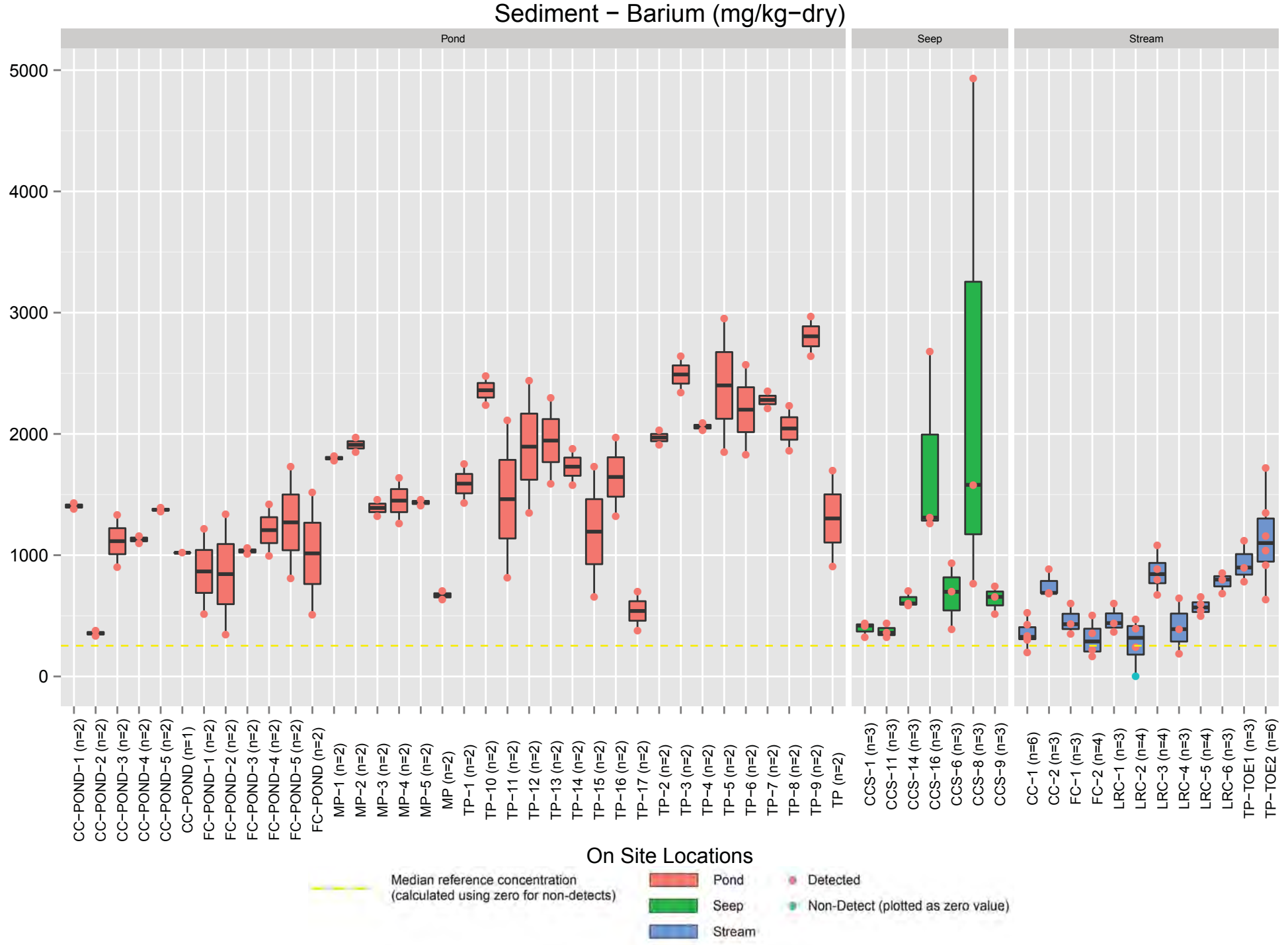

Surface Water − Sulfate (ug/l)
Pond
Seep
Stream
60000
40000
20000
0
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=3)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

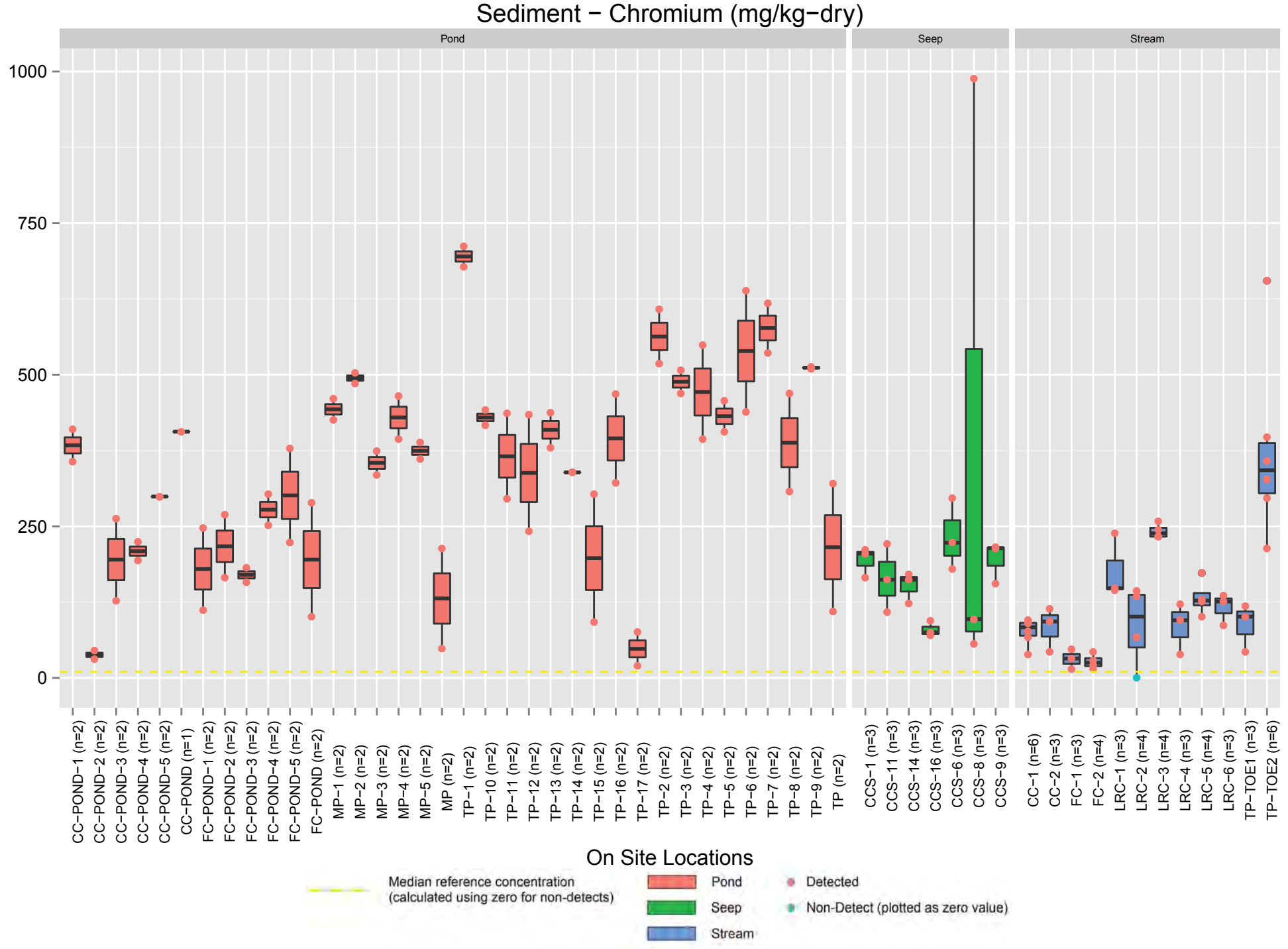


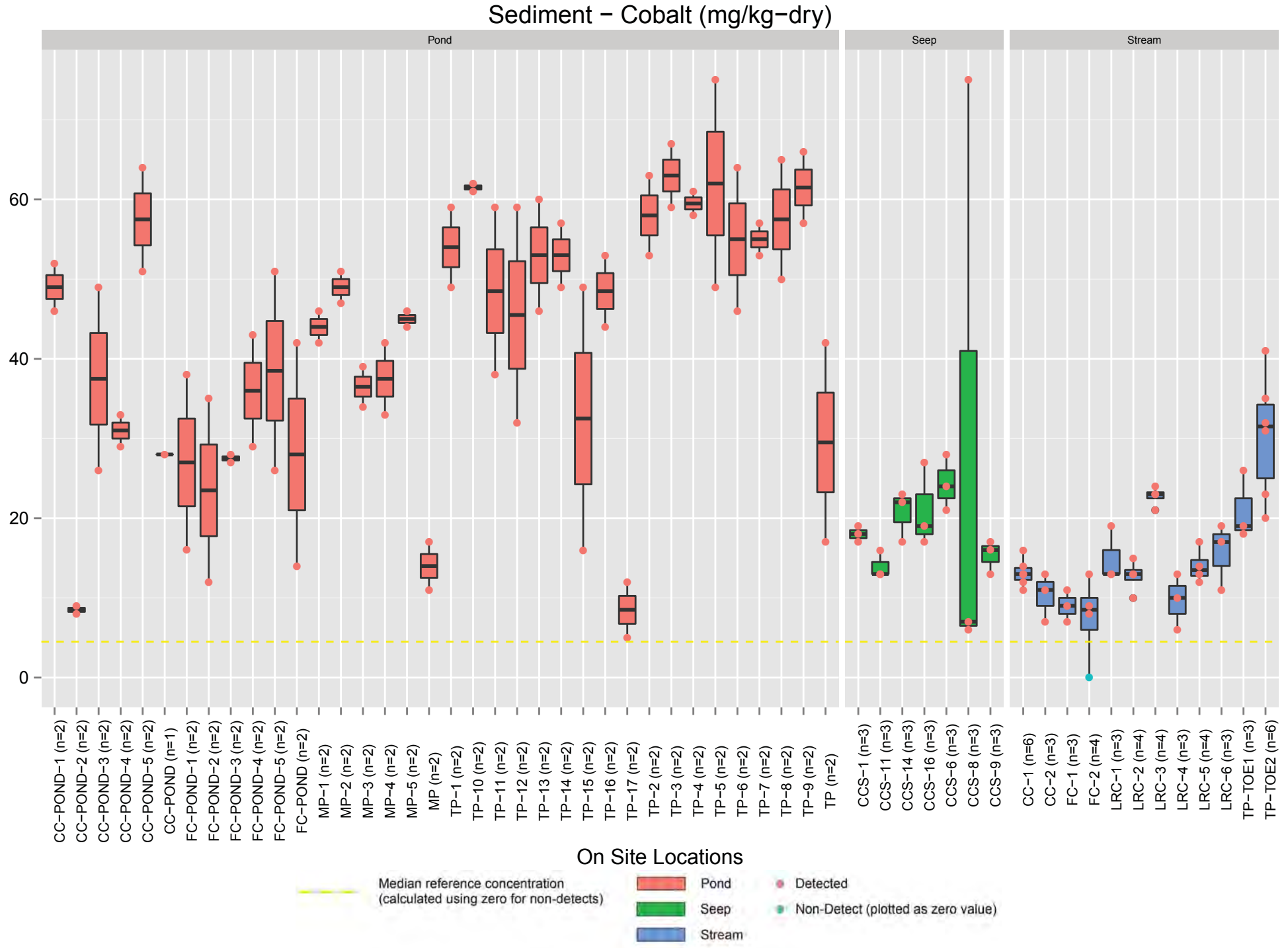
Attachment H-2
Inorganic, Non-Asbestos Box-and-Whisker Plots for Sediment

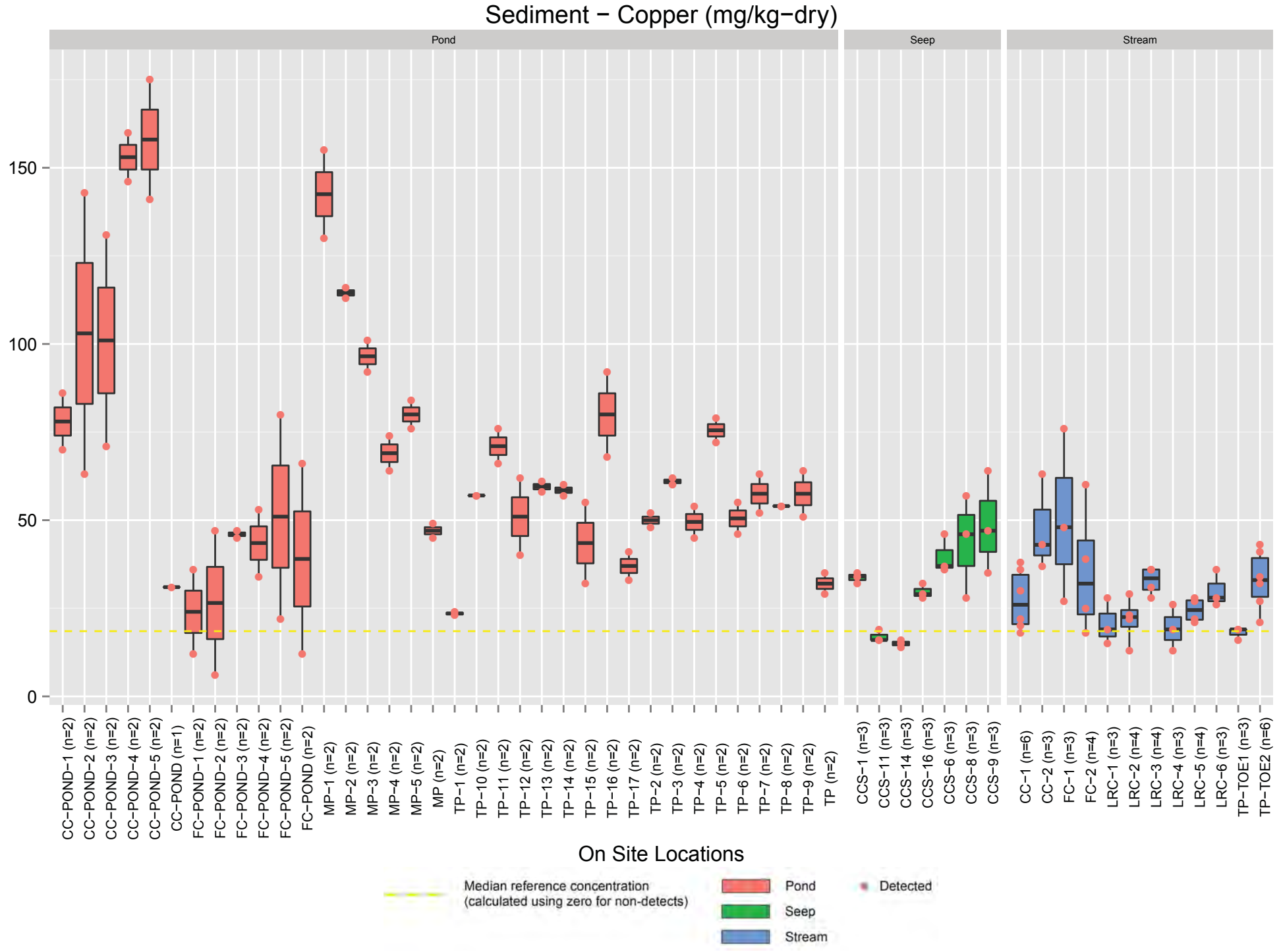
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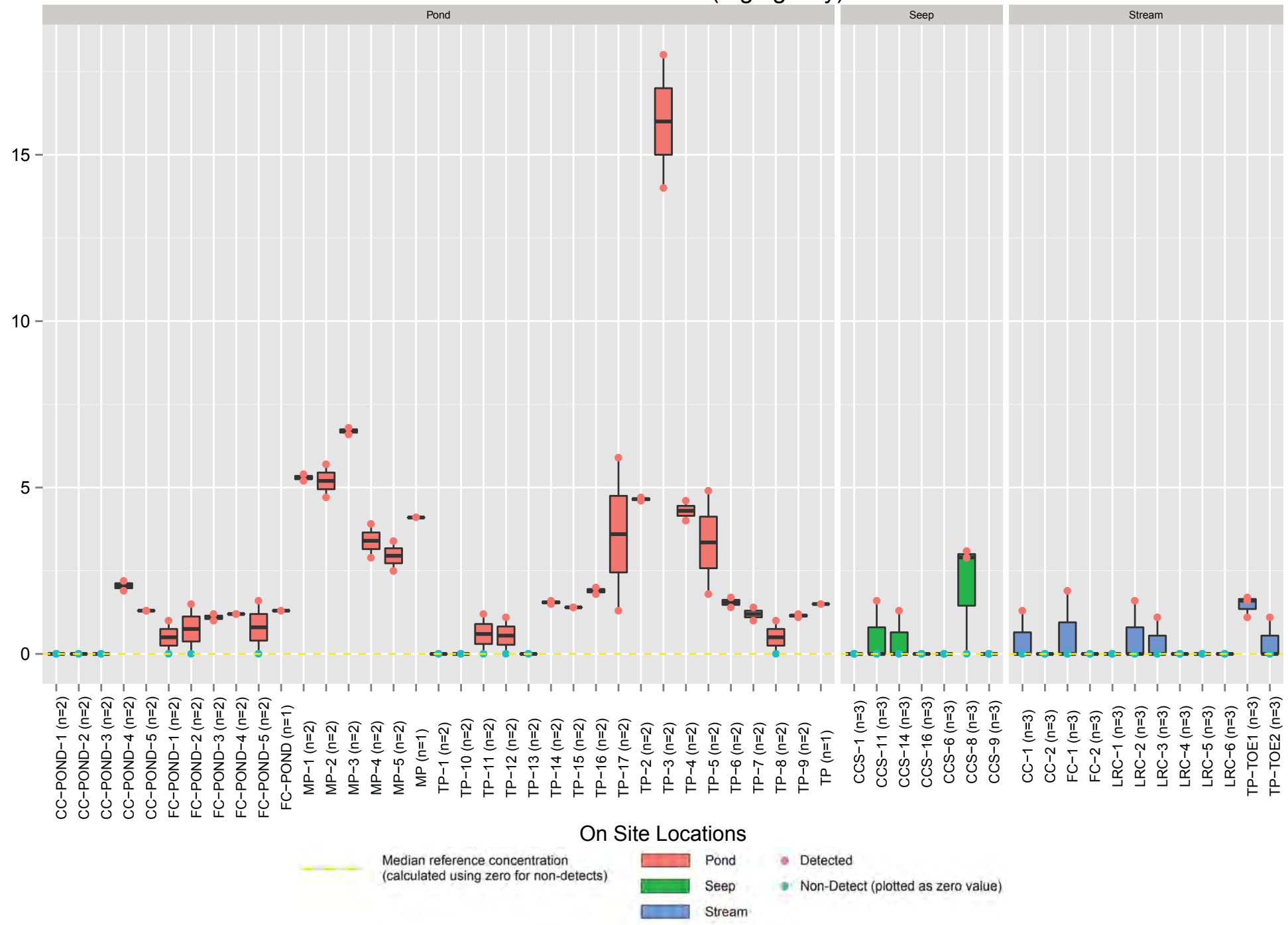

Sediment − Aluminum (mg/kg−dry)
Pond
Seep
Stream
40000
30000
20000
10000
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=6)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

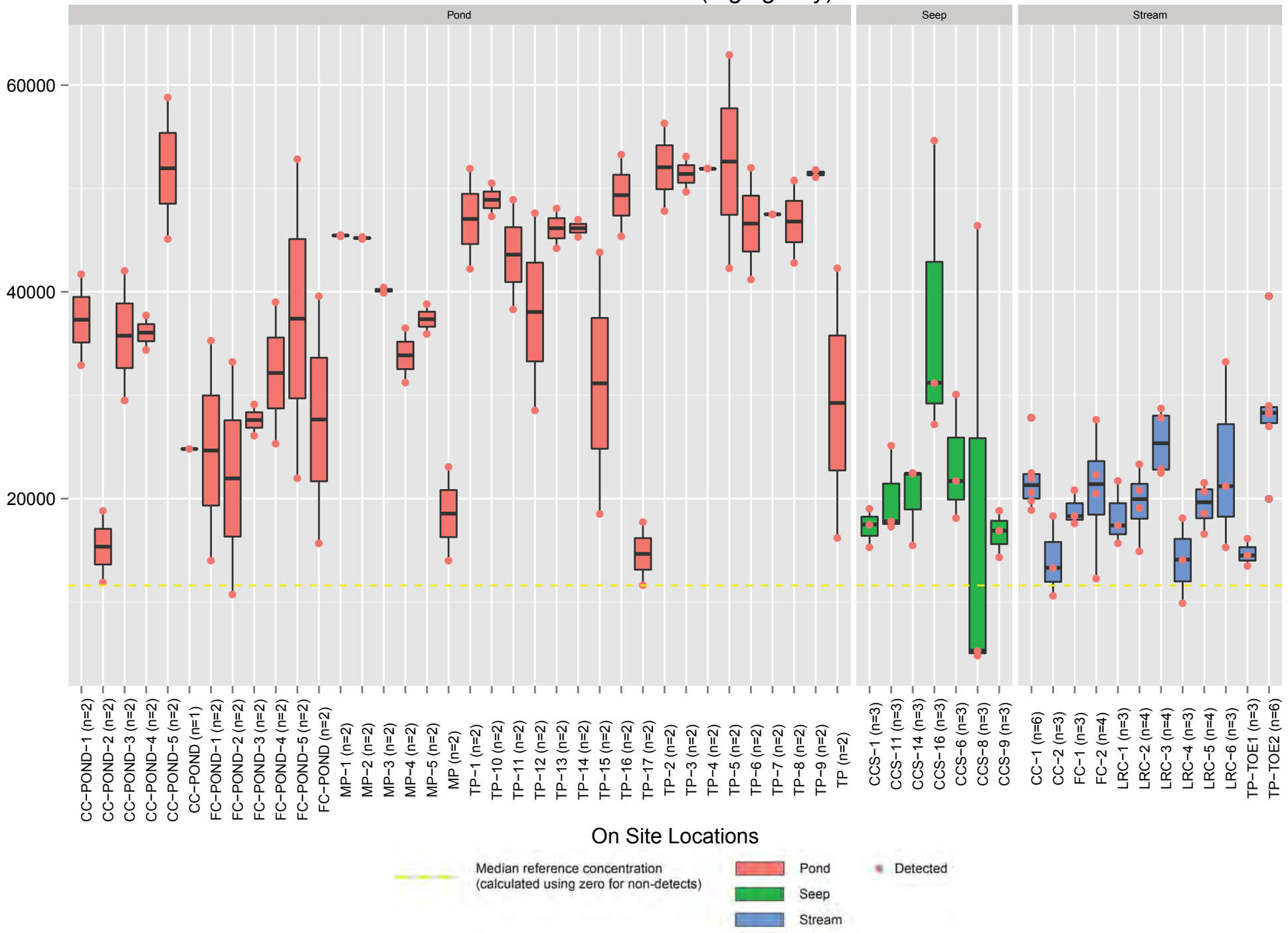

Sediment − Barium (mg/kg−dry)
Pond
Seep
Stream
5000
4000
3000
2000
1000
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=6)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

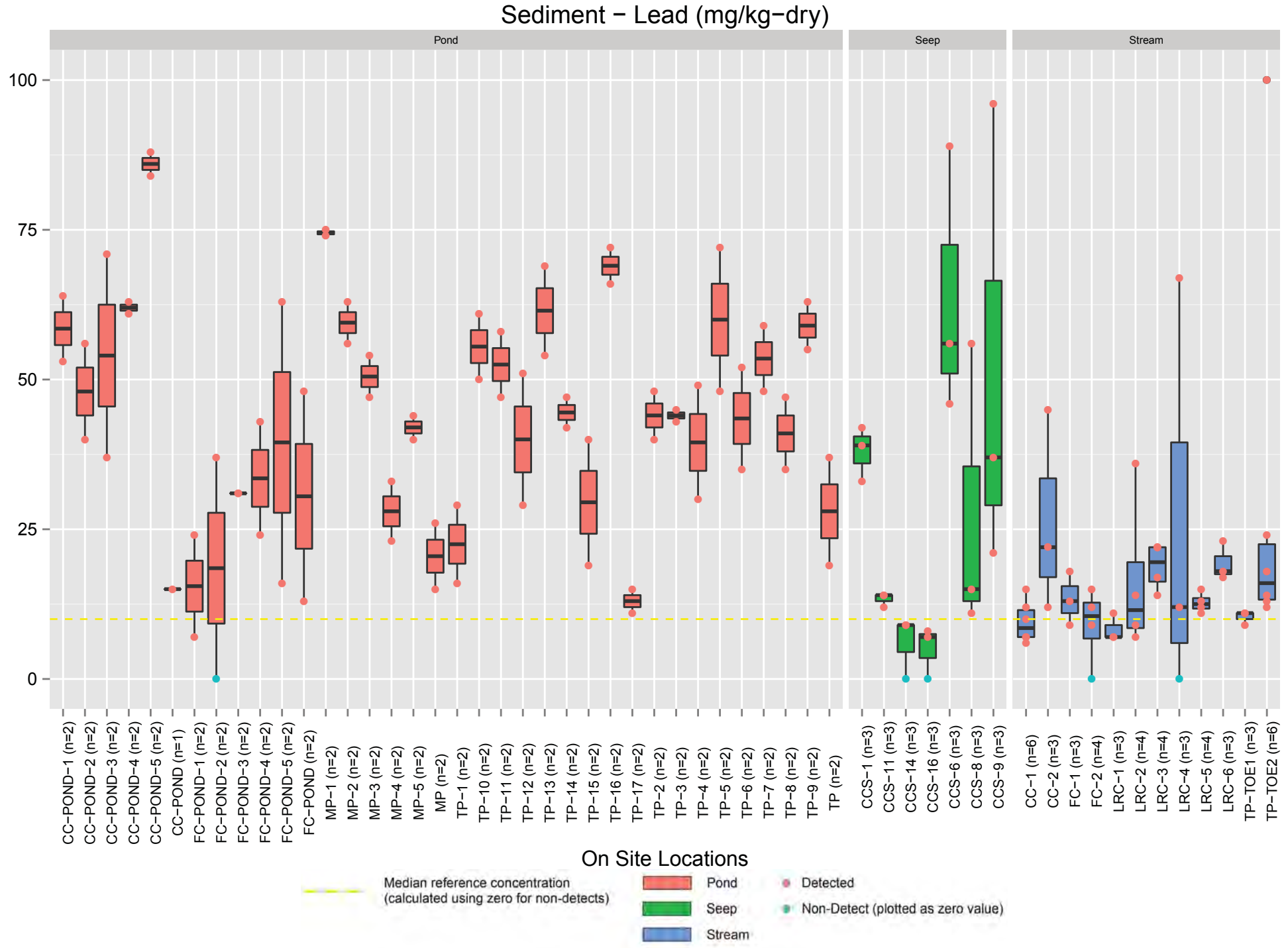

Sediment − Chromium (mg/kg−dry)
Pond
Seep
Stream
1000
750
500
250
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=6)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

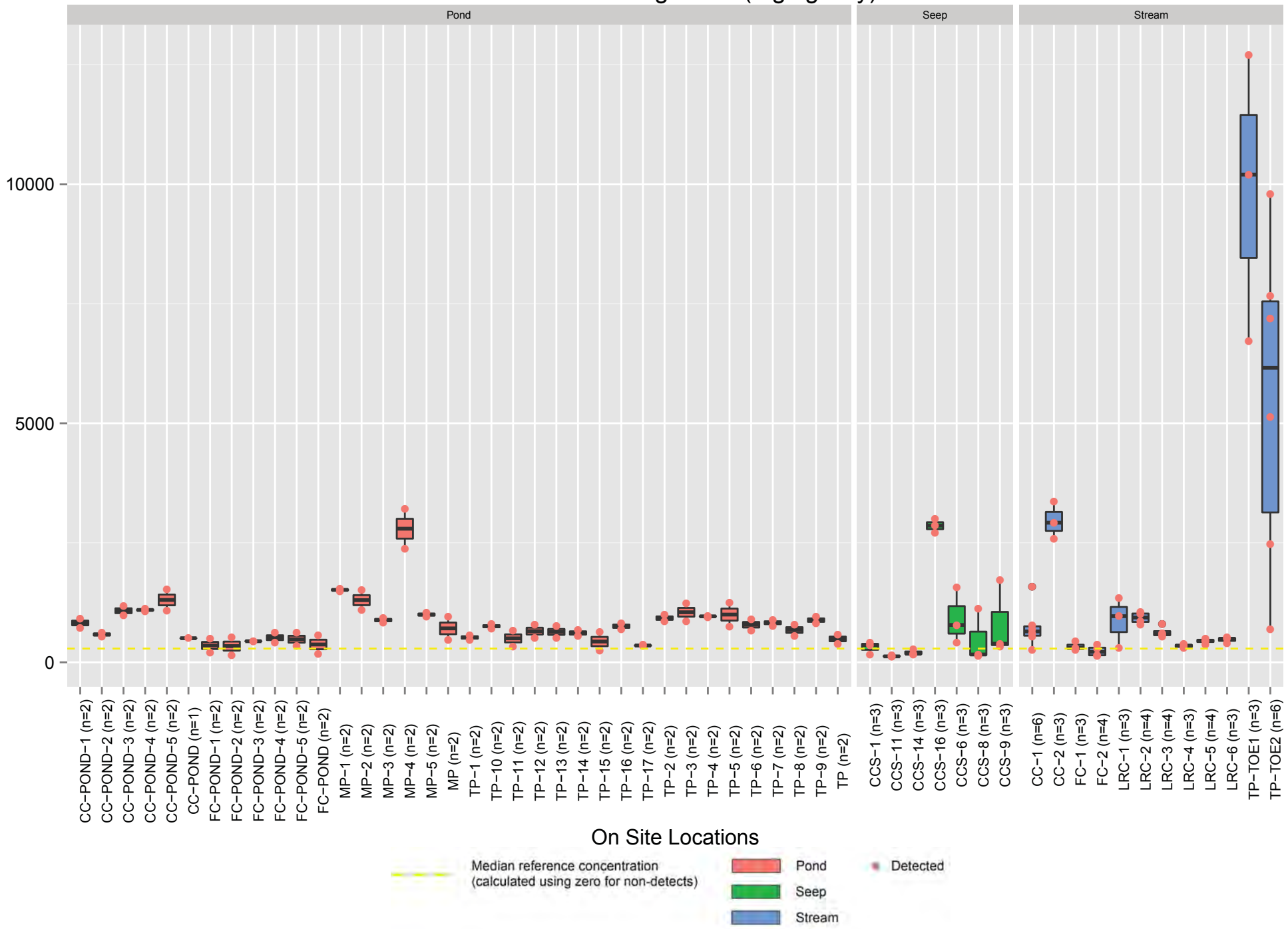

Sediment − Cobalt (mg/kg−dry)
Pond
Seep
Stream
60
40
20
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=6)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

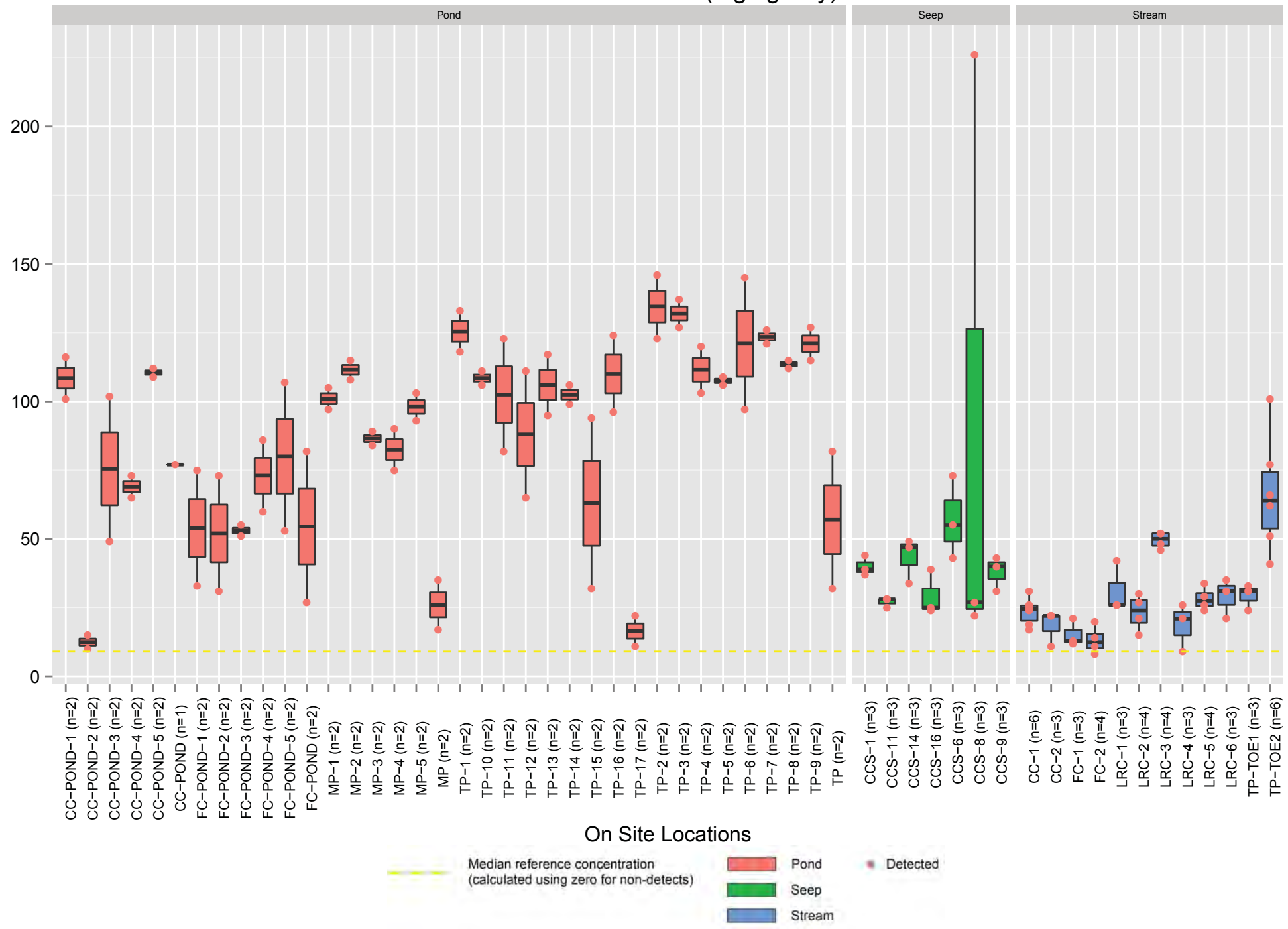

Sediment − Copper (mg/kg−dry)
Pond
Seep
Stream
150
100
50
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=6)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

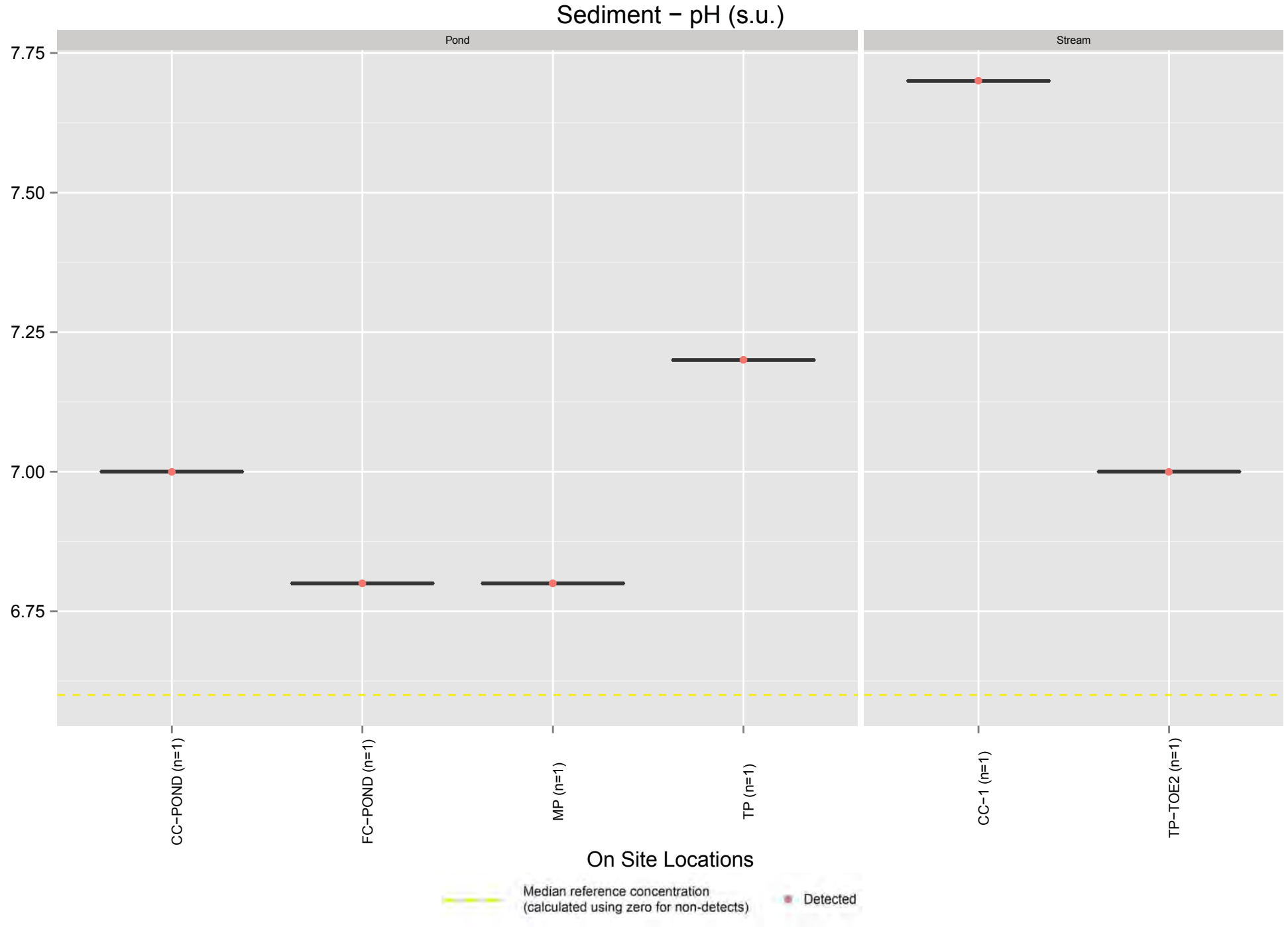

Sediment − Fluoride (mg/kg−dry)
Pond
Seep
Stream
15
10
5
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=1)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=1)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=1)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

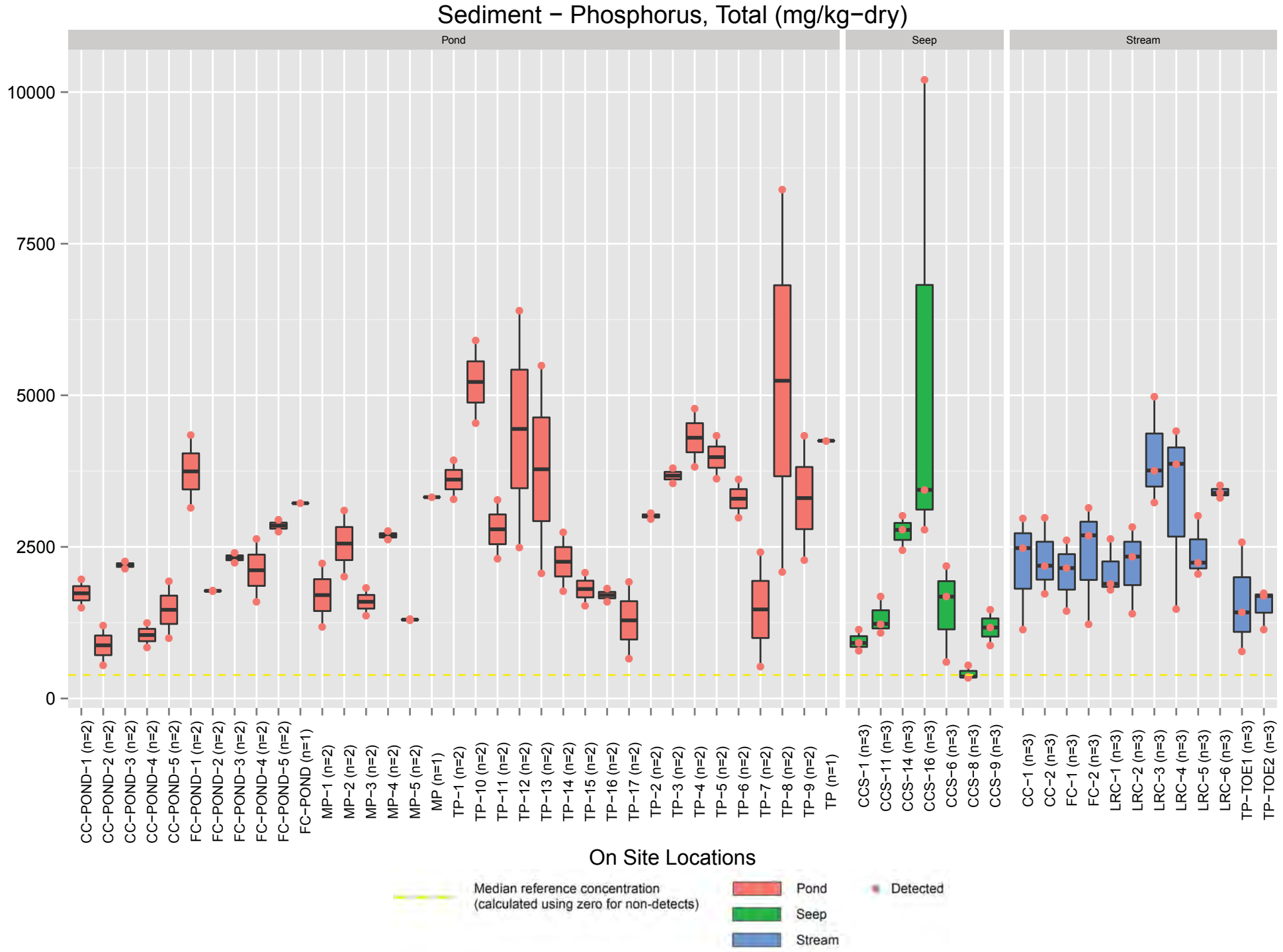

Sediment − Iron (mg/kg−dry)
Pond
Seep
Stream
60000
40000
20000
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=6)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

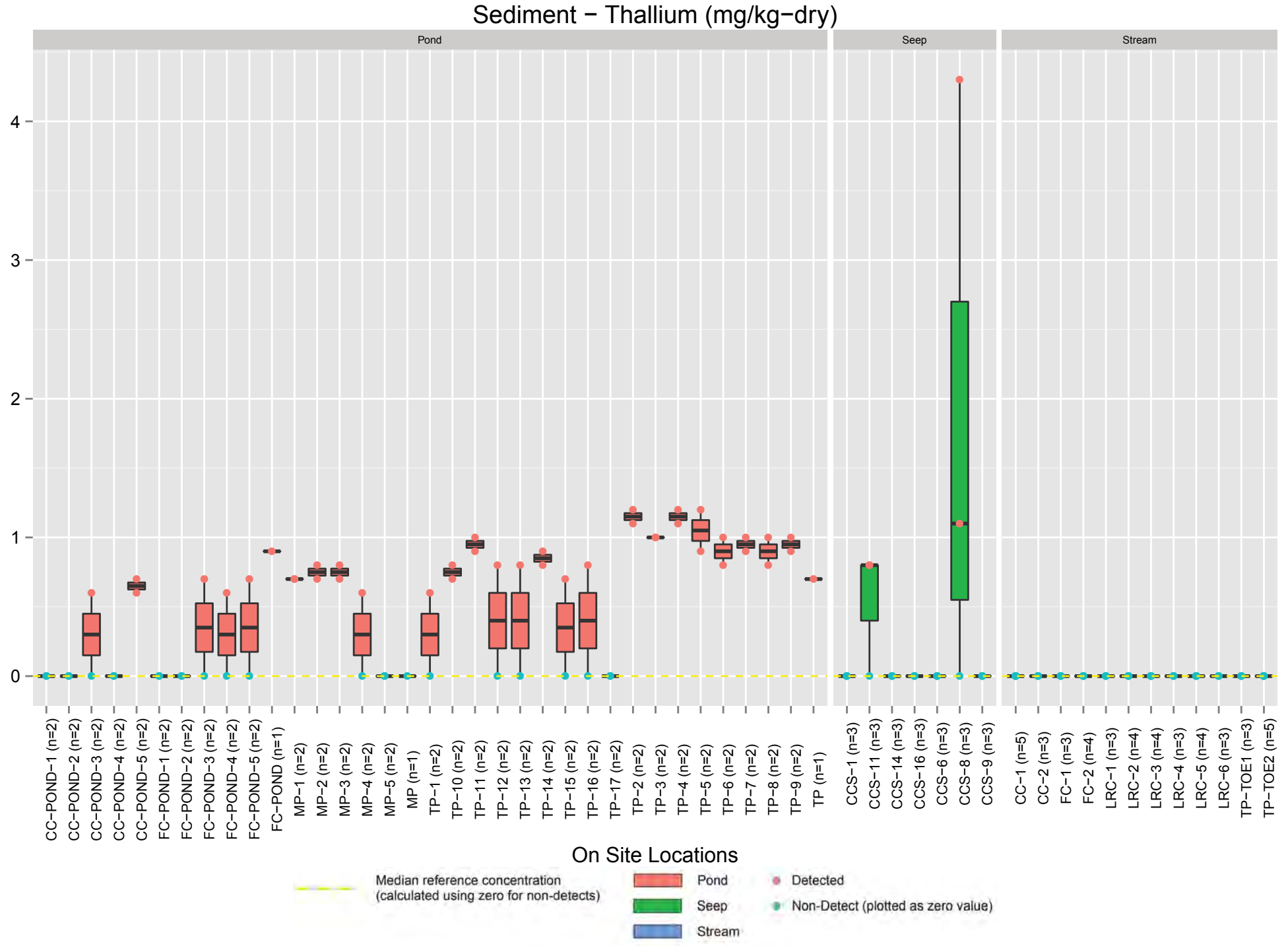

Sediment − Lead (mg/kg−dry)
Pond
Seep
Stream
100
75
50
25
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=6)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

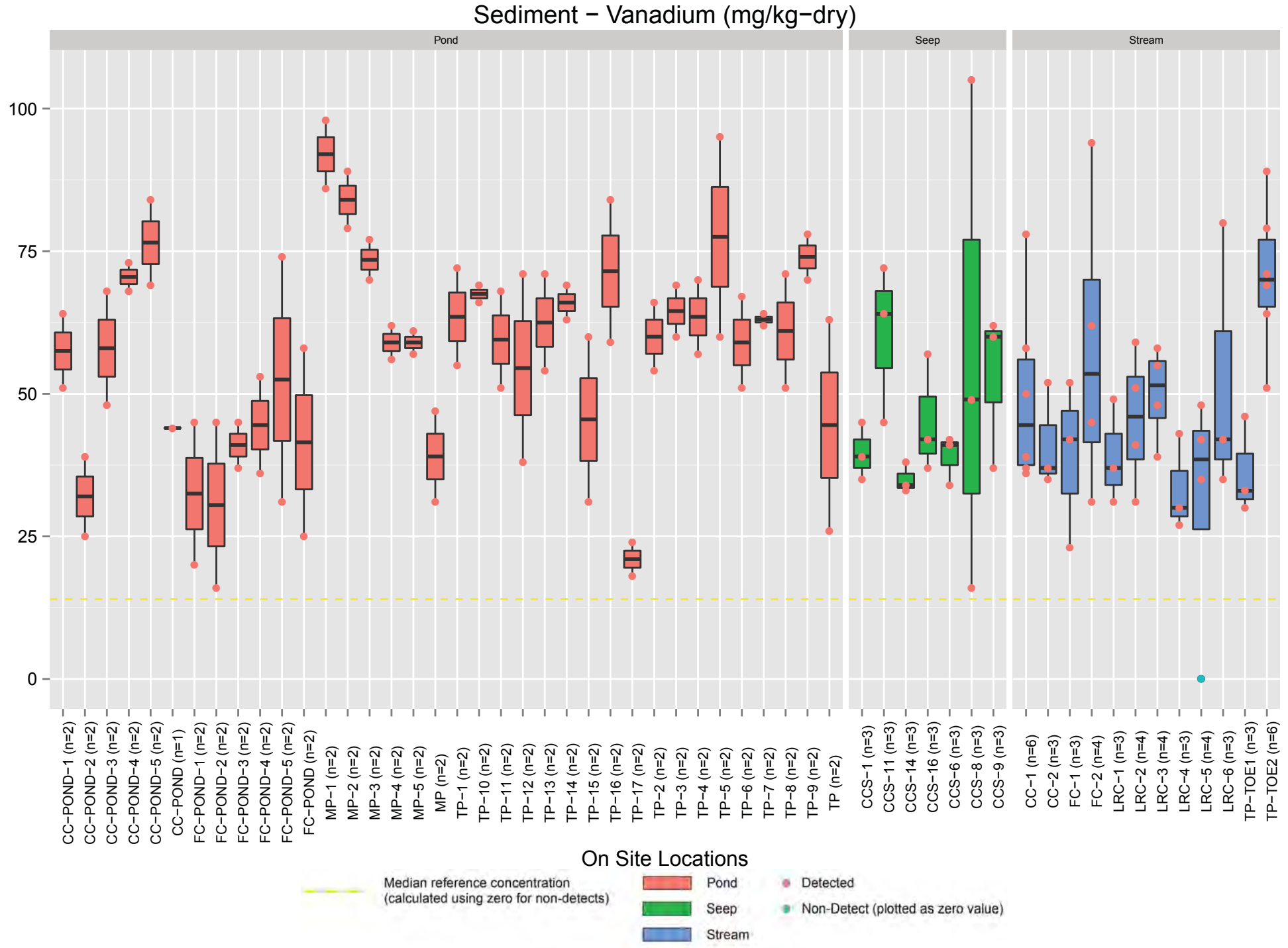

Sediment − Manganese (mg/kg−dry)
Pond
Seep
Stream
10000
5000
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=6)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected


Sediment − Nickel (mg/kg−dry)
Pond
Seep
Stream
200
150
100
50
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=6)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected


Sediment − pH (s.u.)
Pond
Stream
7.75
7.50
7.25
7.00
6.75
CC−POND (n=1)
FC−POND (n=1)
MP (n=1)
TP (n=1)
CC−1 (n=1)
TP−TOE2 (n=1)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Detected


Sediment − Phosphorus, Total (mg/kg−dry)
Pond
Seep
Stream
10000
7500
5000
2500
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=1)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=1)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=1)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected

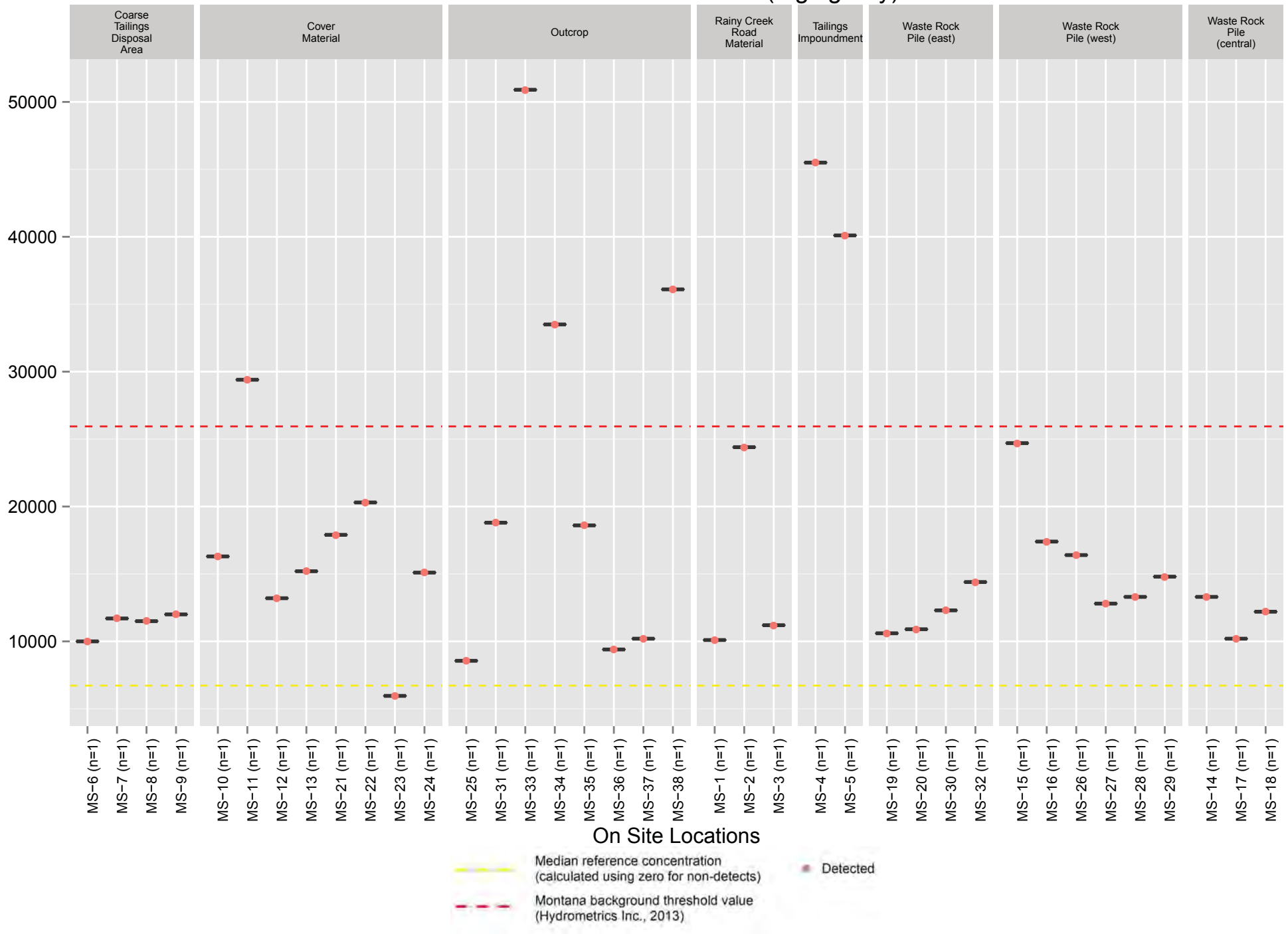

Sediment − Thallium (mg/kg−dry)
Pond
Seep
Stream
4
3
2
1
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=1)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=1)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=1)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=5)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=5)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

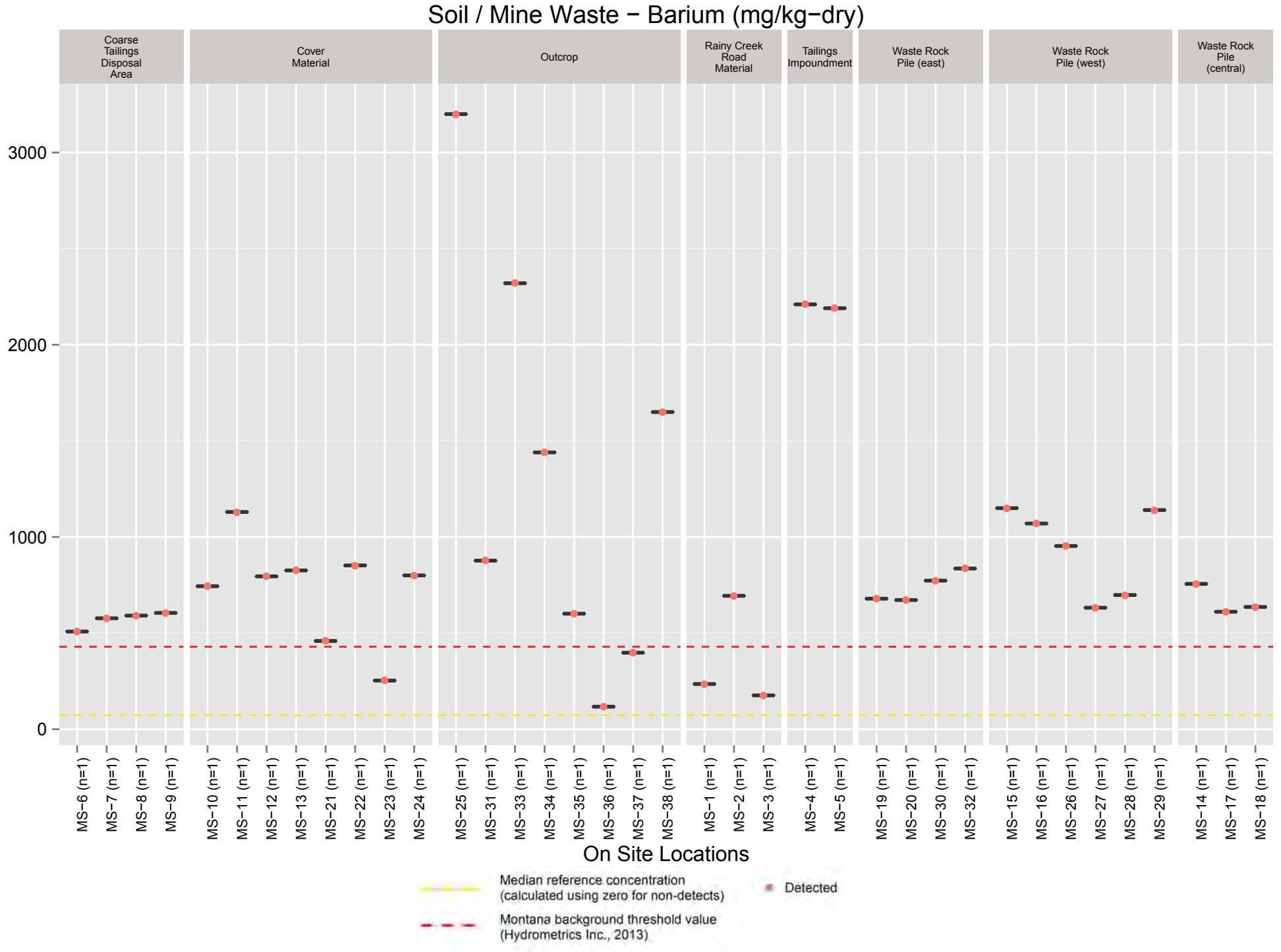

Sediment − Vanadium (mg/kg−dry)
Pond
Seep
Stream
100
75
50
25
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=6)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Median reference concentration
(calculated using zero for non-detects)
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

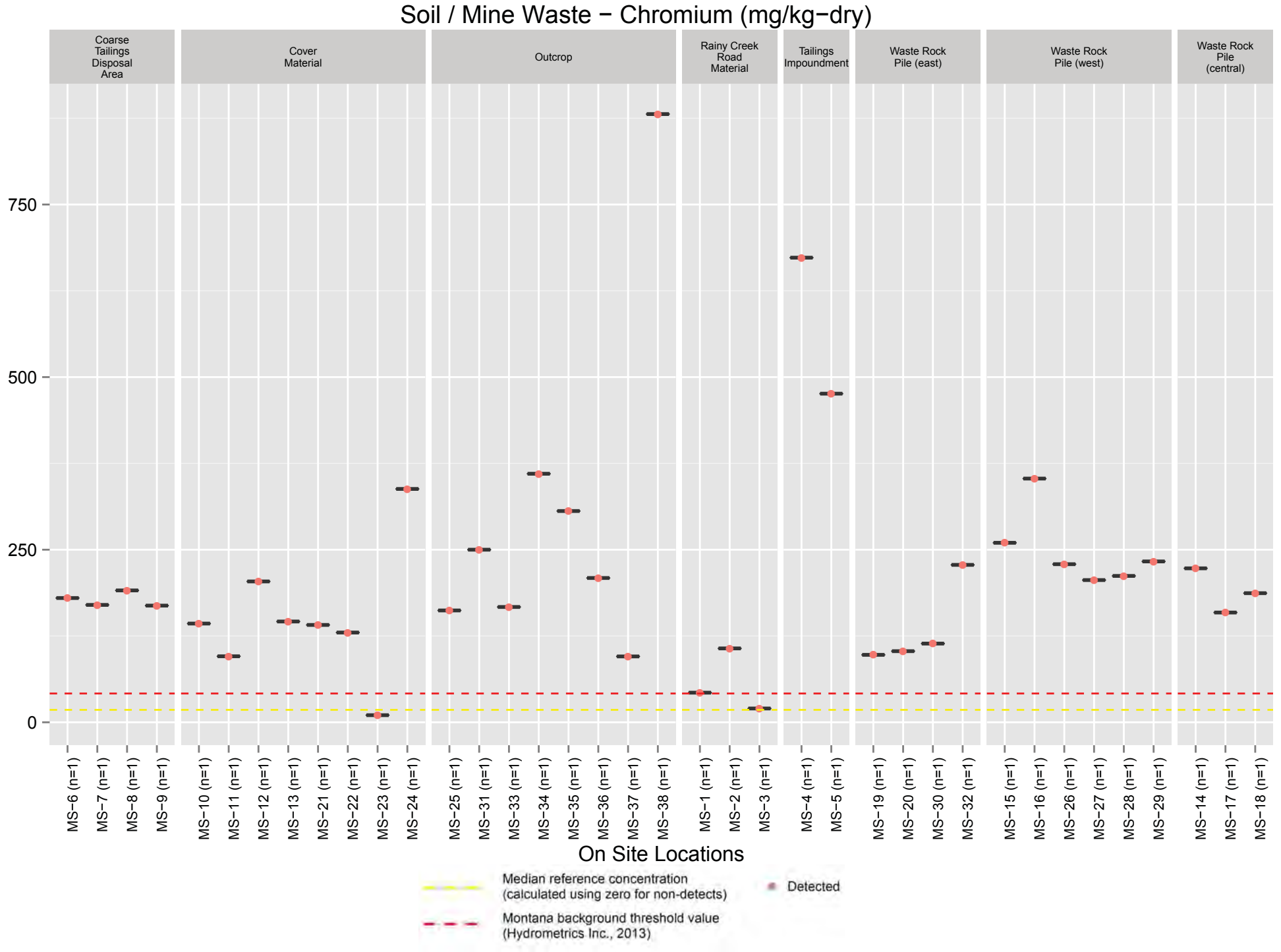


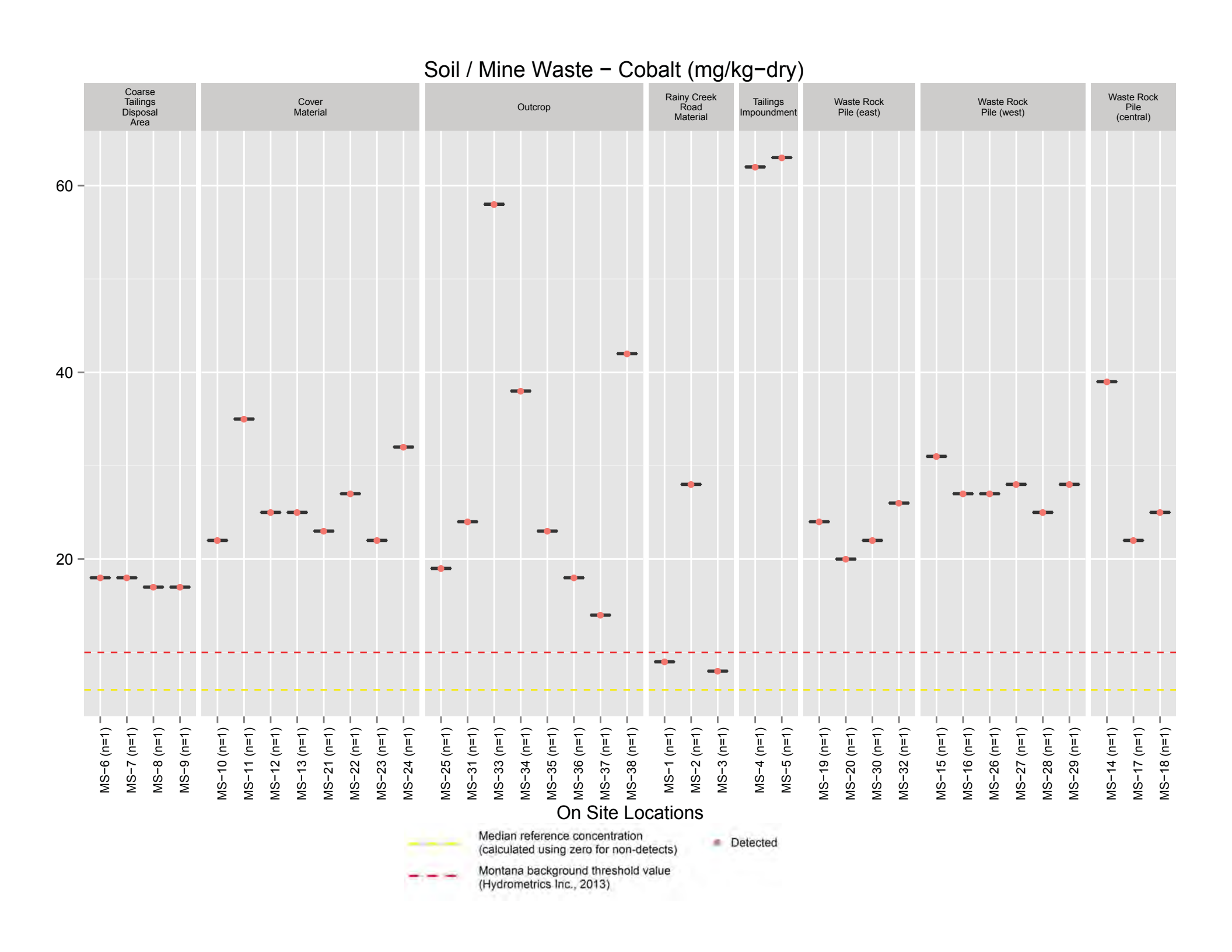
Attachment H-3
Inorganic, Non-Asbestos Box-and-Whisker Plots for Soil/Mine Waste

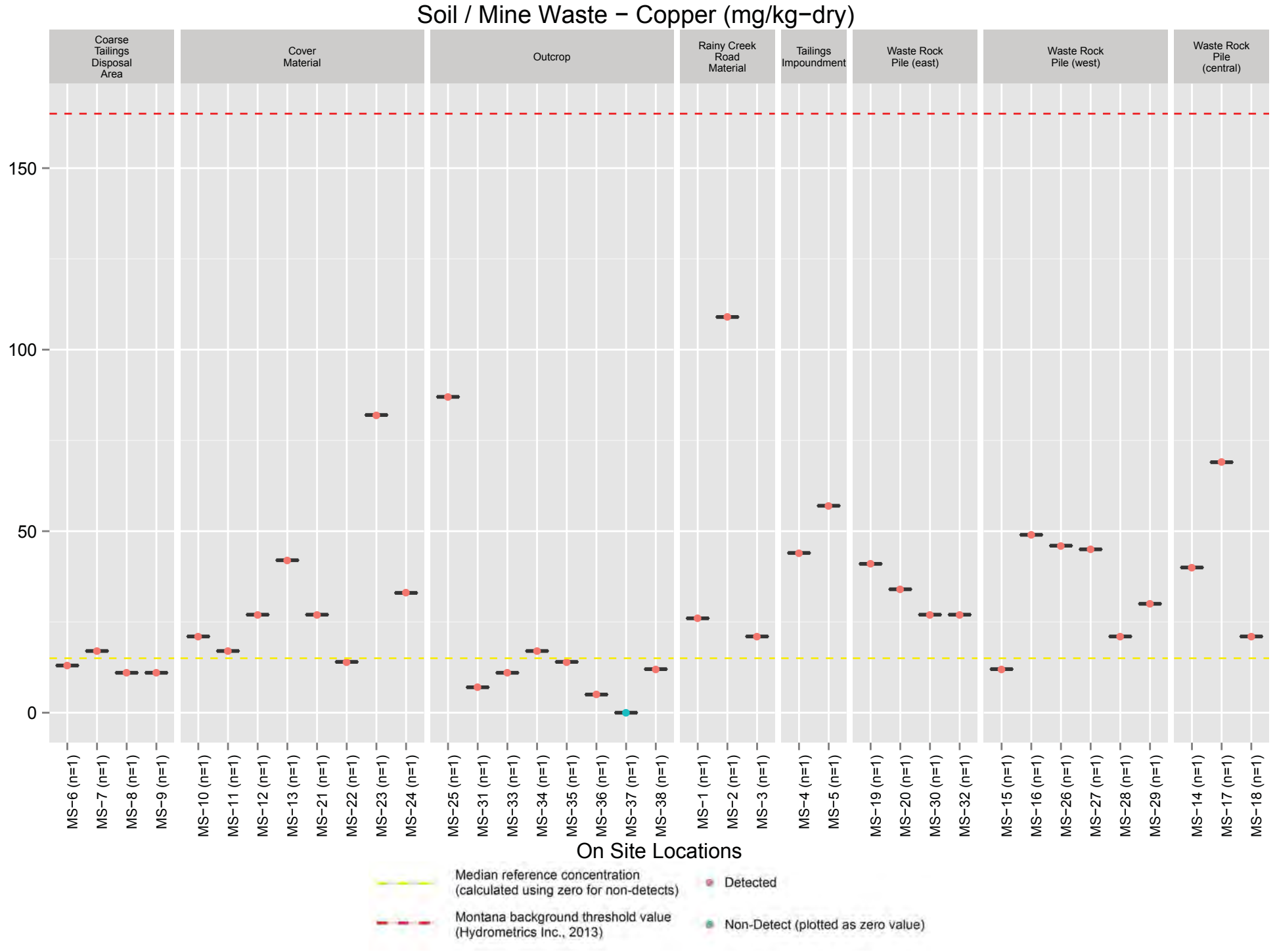
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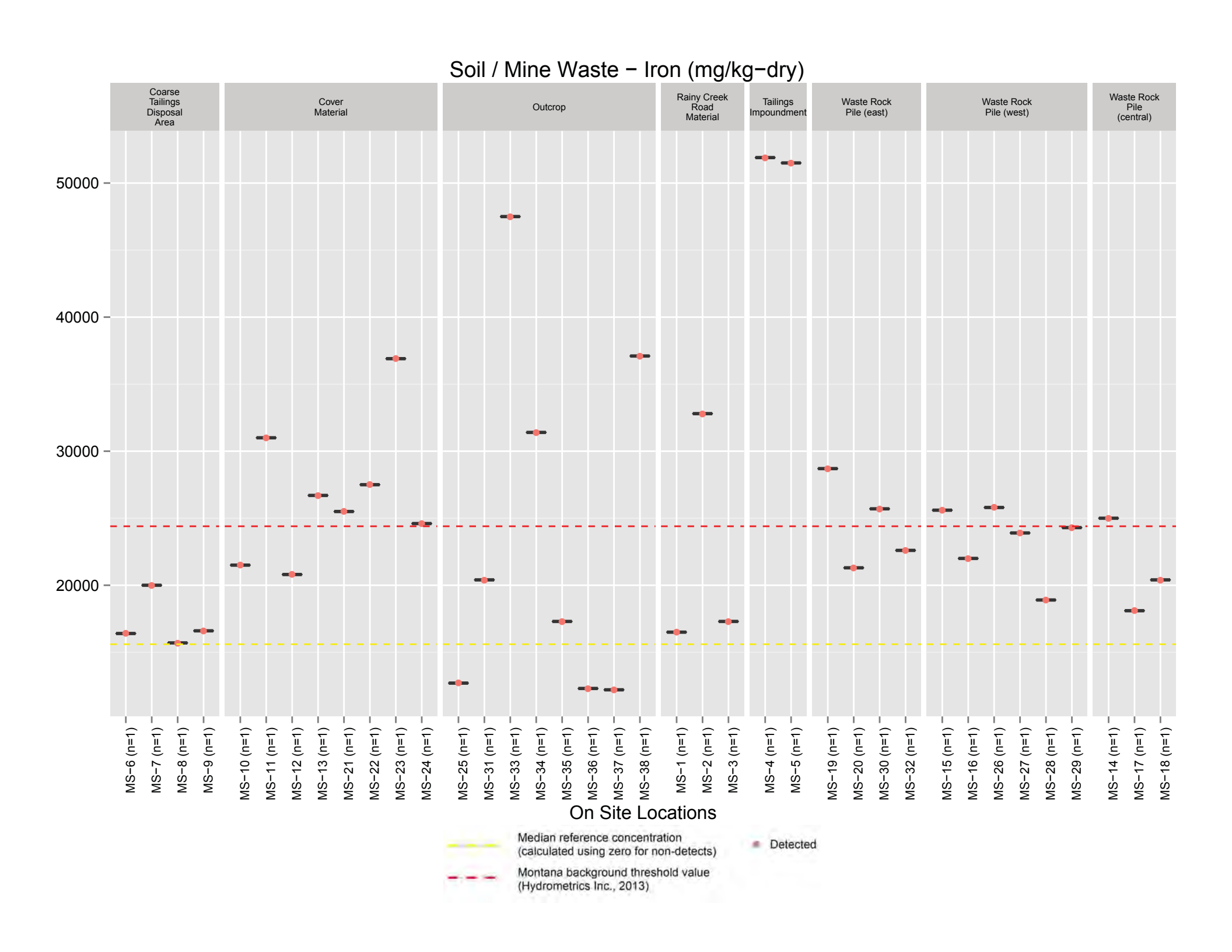

Soil / Mine Waste − Aluminum (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Outcrop
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
50000
40000
30000
20000
10000
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−25 (n=1)
MS−31 (n=1)
MS−33 (n=1)
MS−34 (n=1)
MS−35 (n=1)
MS−36 (n=1)
MS−37 (n=1)
MS−38 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Median reference concentration (calculated using zero for non-detects)
Montana background threshold value (Hydrometrics Inc., 2013)
Detected

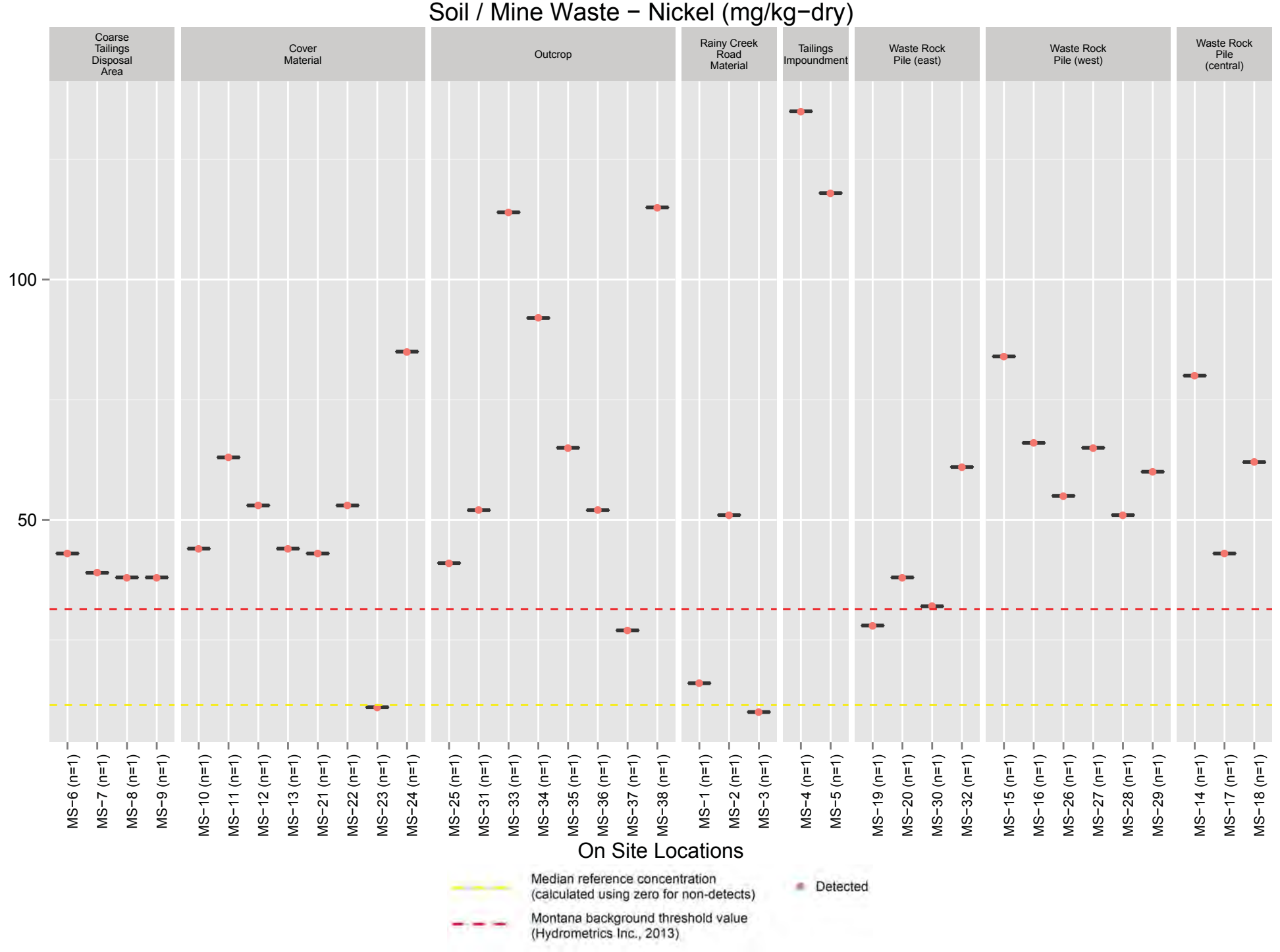

Soil / Mine Waste − Barium (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Outcrop
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
3000
2000
1000
0
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−25 (n=1)
MS−31 (n=1)
MS−33 (n=1)
MS−34 (n=1)
MS−35 (n=1)
MS−36 (n=1)
MS−37 (n=1)
MS−38 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Median reference concentration (calculated using zero for non-detects)
Montana background threshold value (Hydrometrics Inc., 2013)
Detected

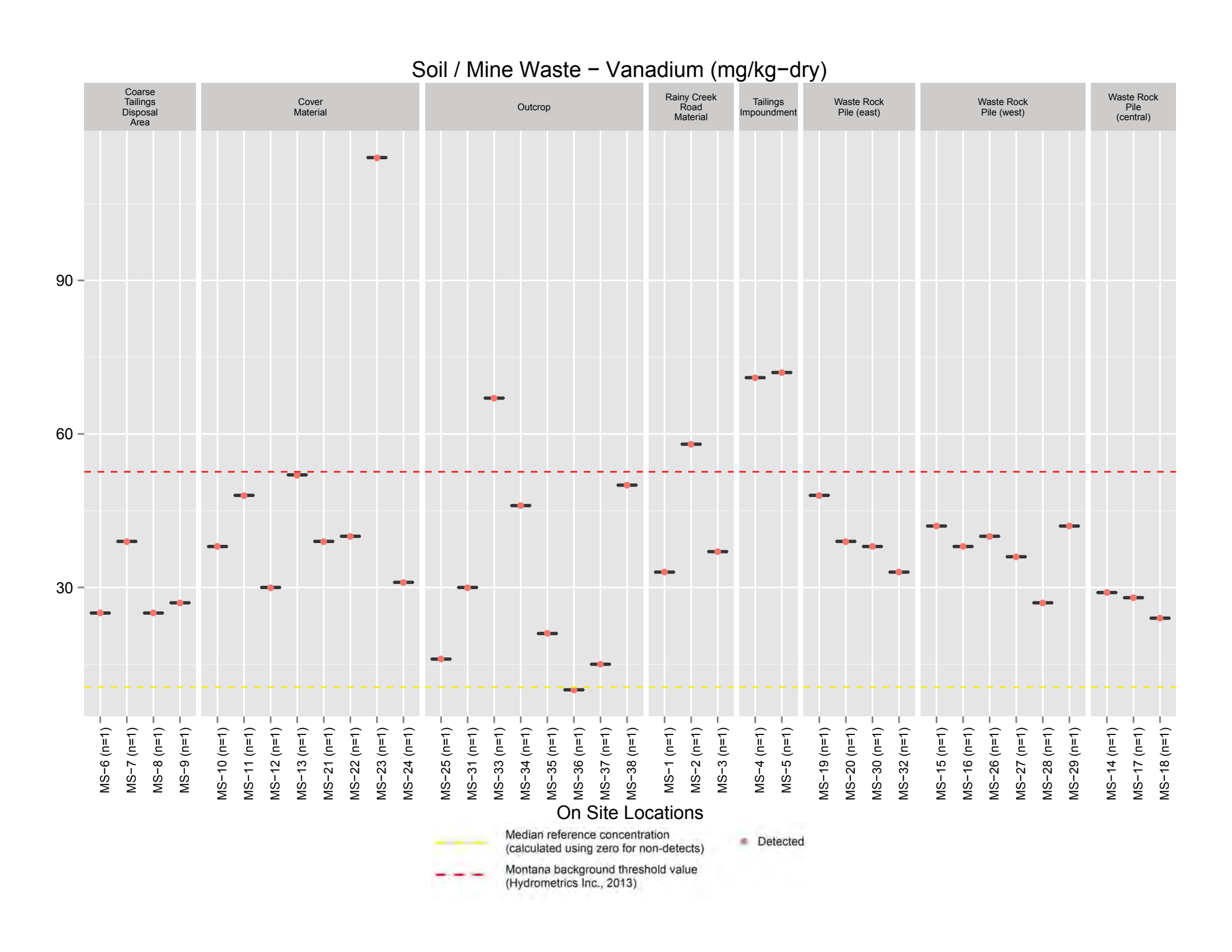

Soil / Mine Waste − Chromium (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Outcrop
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
750
500
250
0
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−25 (n=1)
MS−31 (n=1)
MS−33 (n=1)
MS−34 (n=1)
MS−35 (n=1)
MS−36 (n=1)
MS−37 (n=1)
MS−38 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Median reference concentration (calculated using zero for non-detects)
Montana background threshold value (Hydrometrics Inc., 2013)
Detected


Soil / Mine Waste − Cobalt (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Outcrop
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
60
40
20
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−25 (n=1)
MS−31 (n=1)
MS−33 (n=1)
MS−34 (n=1)
MS−35 (n=1)
MS−36 (n=1)
MS−37 (n=1)
MS−38 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Median reference concentration (calculated using zero for non-detects)
Montana background threshold value (Hydrometrics Inc., 2013)
Detected


Soil / Mine Waste − Copper (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Outcrop
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
150
100
50
0
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−25 (n=1)
MS−31 (n=1)
MS−33 (n=1)
MS−34 (n=1)
MS−35 (n=1)
MS−36 (n=1)
MS−37 (n=1)
MS−38 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Median reference concentration (calculated using zero for non-detects)
Montana background threshold value (Hydrometrics Inc., 2013)
Detected
Non-Detect (plotted as zero value)


Soil / Mine Waste − Iron (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Outcrop
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
50000
40000
30000
20000
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−25 (n=1)
MS−31 (n=1)
MS−33 (n=1)
MS−34 (n=1)
MS−35 (n=1)
MS−36 (n=1)
MS−37 (n=1)
MS−38 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Median reference concentration (calculated using zero for non-detects)
Montana background threshold value (Hydrometrics Inc., 2013)
Detected

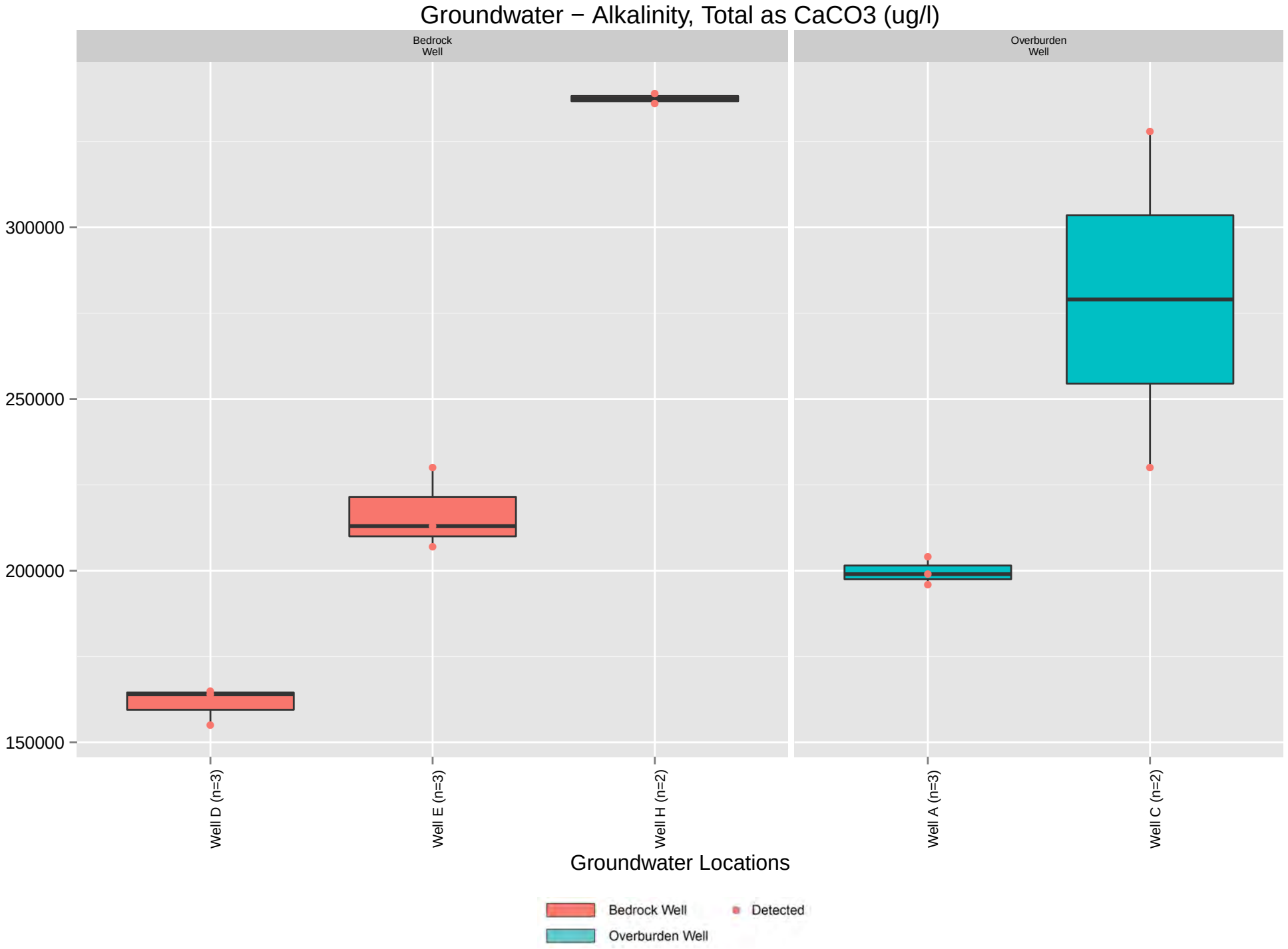

Soil / Mine Waste − Nickel (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Outcrop
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
100
50
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−25 (n=1)
MS−31 (n=1)
MS−33 (n=1)
MS−34 (n=1)
MS−35 (n=1)
MS−36 (n=1)
MS−37 (n=1)
MS−38 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Median reference concentration (calculated using zero for non-detects)
Montana background threshold value (Hydrometrics Inc., 2013)
Detected

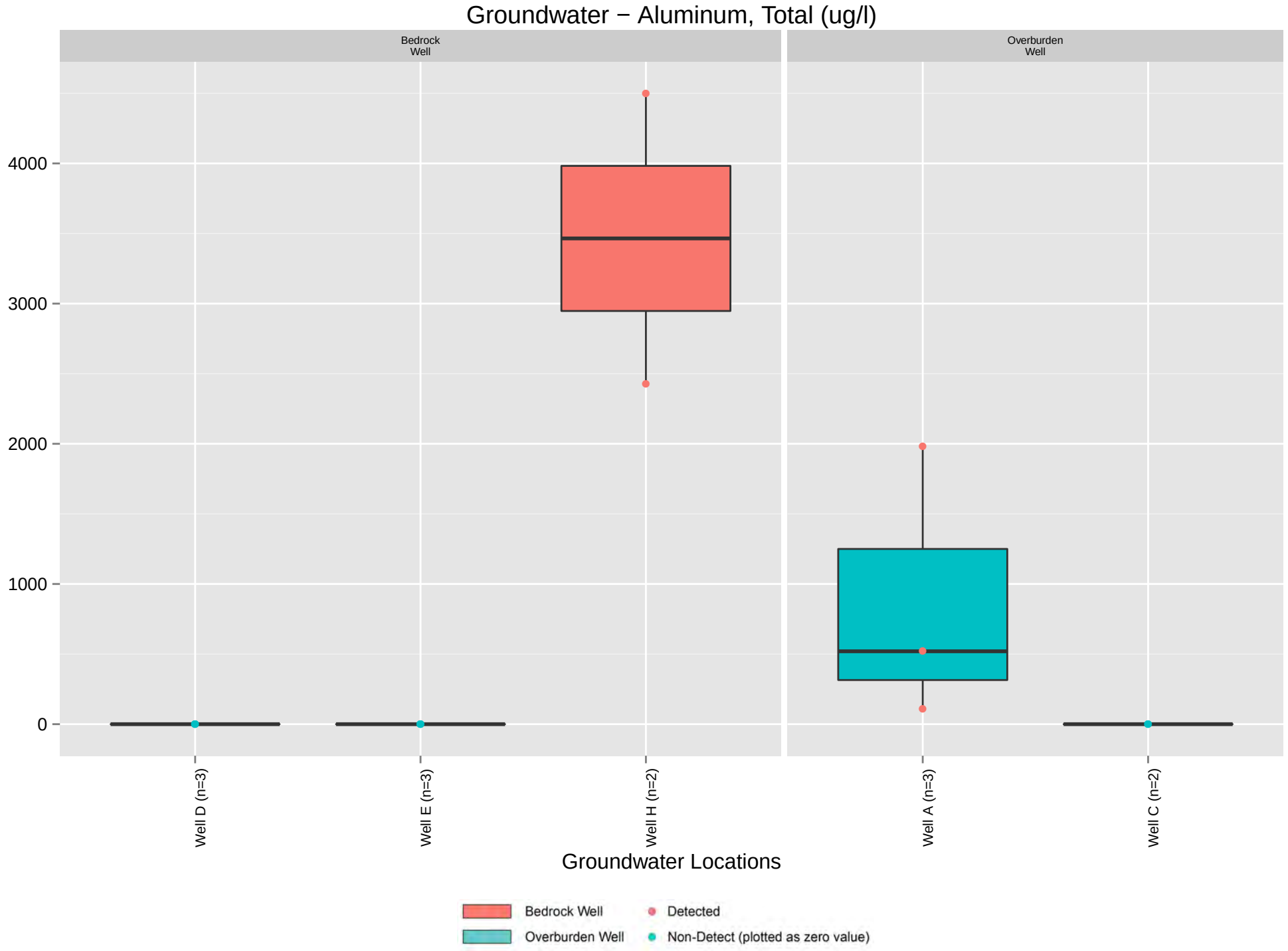

Soil / Mine Waste − Vanadium (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Outcrop
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
90
60
30
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−25 (n=1)
MS−31 (n=1)
MS−33 (n=1)
MS−34 (n=1)
MS−35 (n=1)
MS−36 (n=1)
MS−37 (n=1)
MS−38 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Median reference concentration (calculated using zero for non-detects)
Montana background threshold value (Hydrometrics Inc., 2013)
Detected

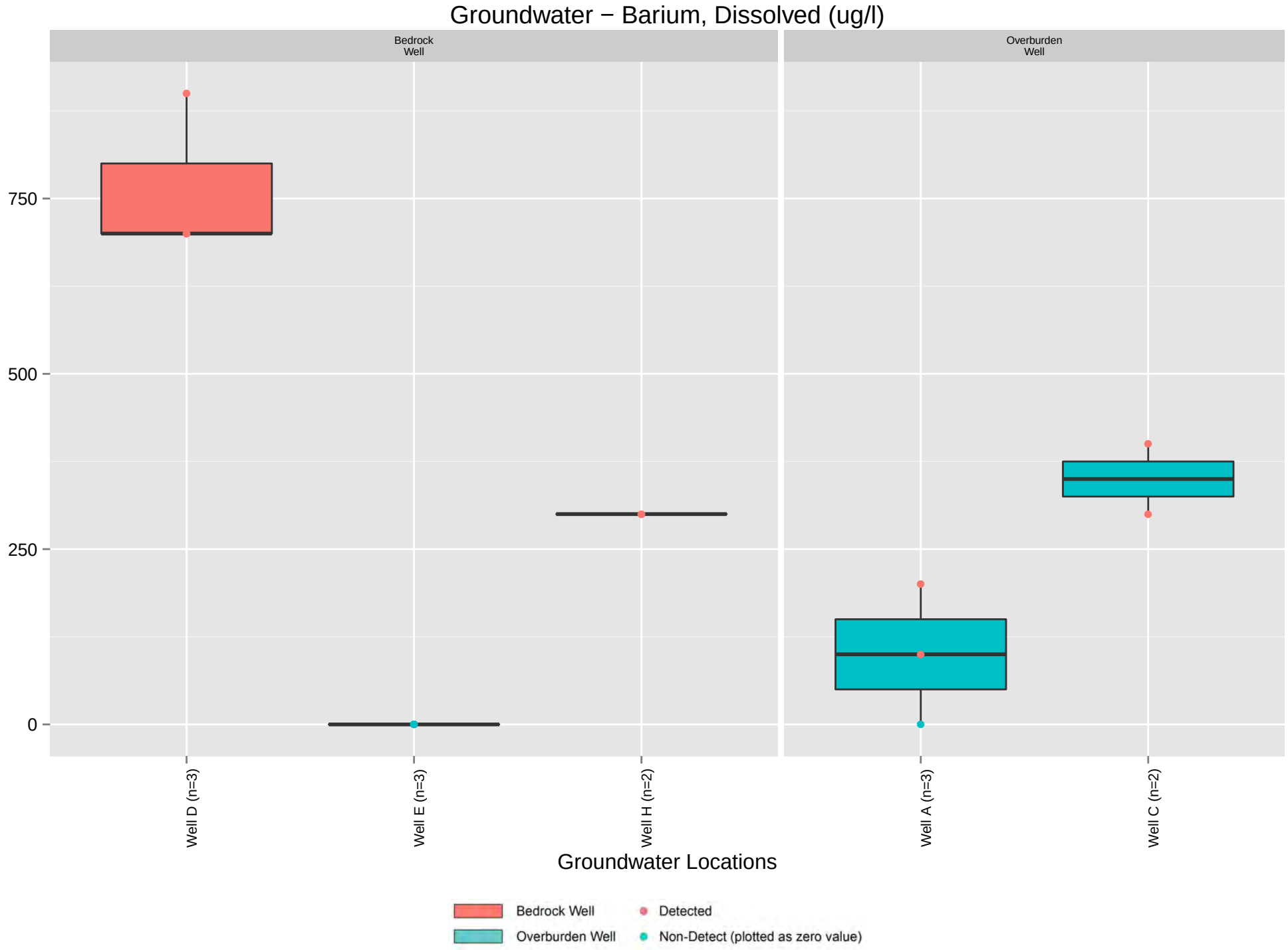


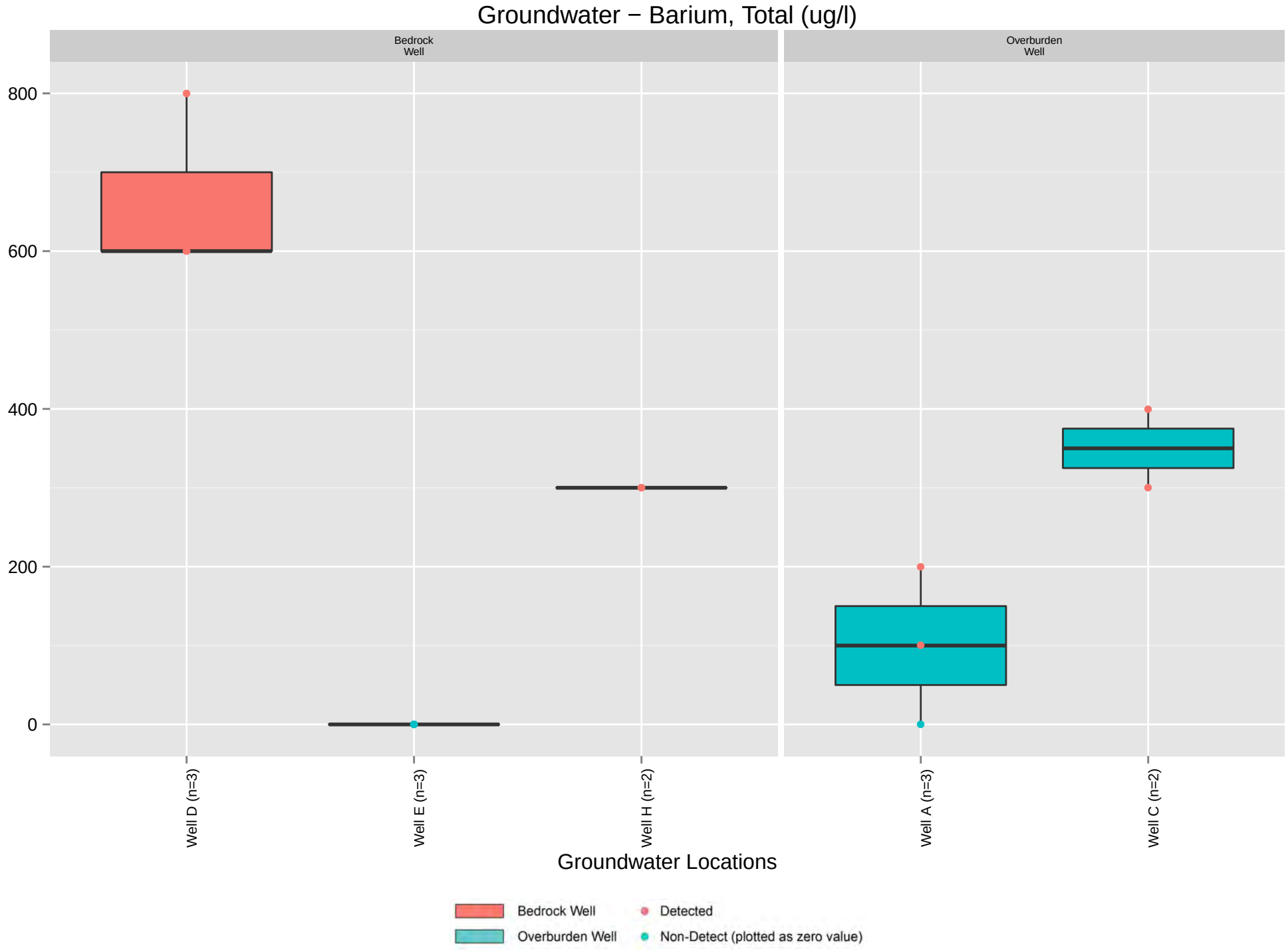
Attachment H-4
Inorganic, Non-Asbestos Box-and-Whisker Plots for Groundwater

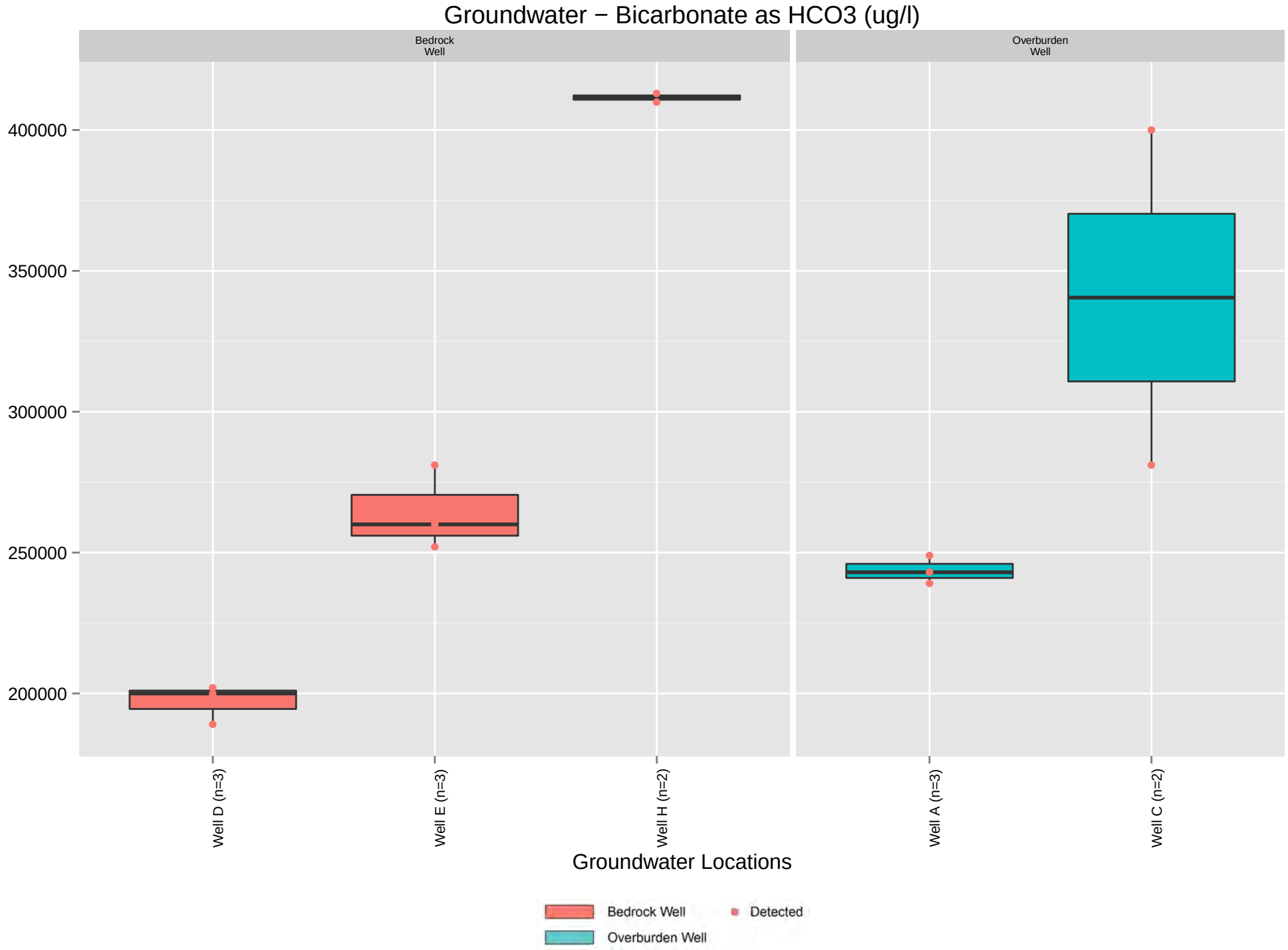
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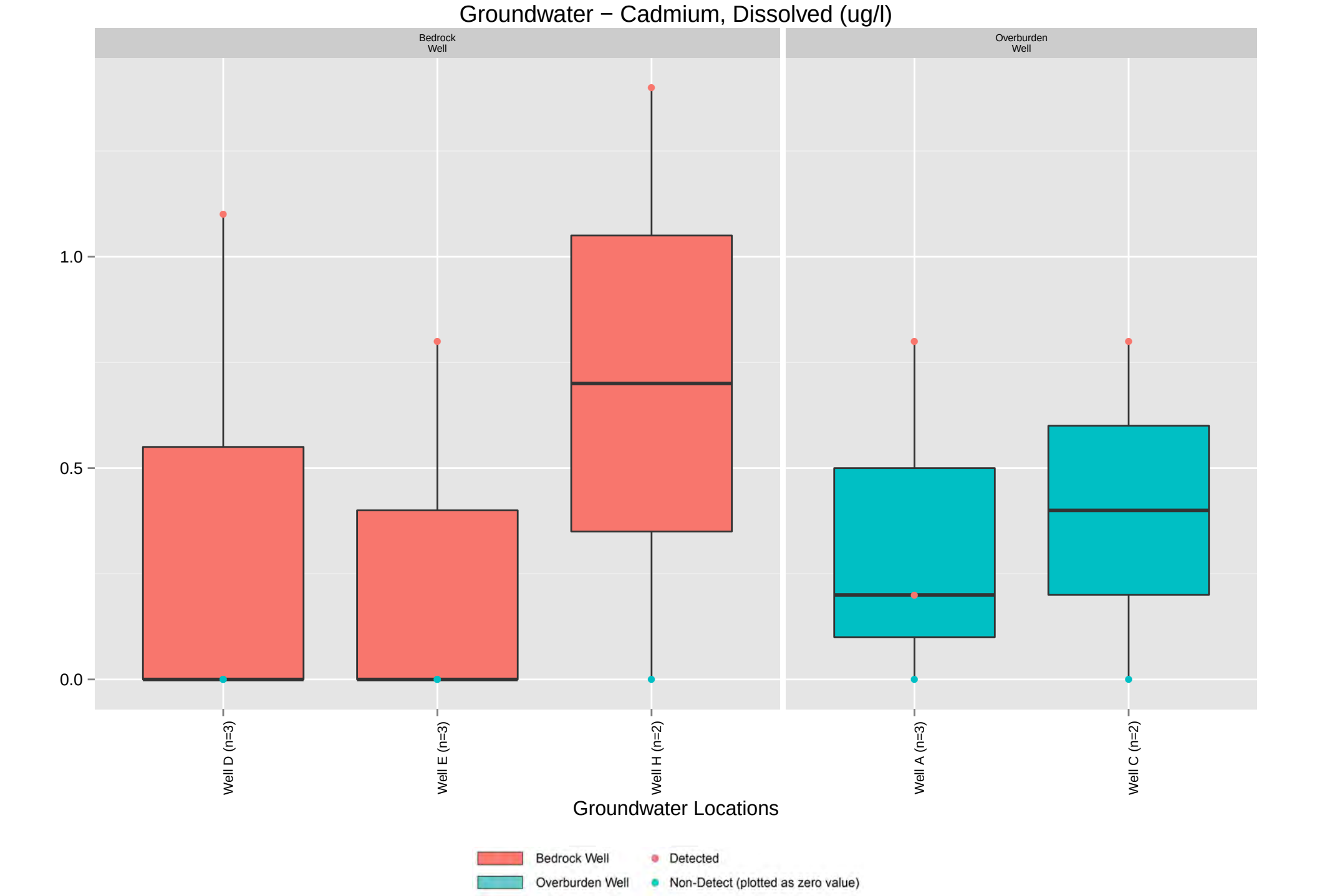

Groundwater − Alkalinity, Total as CaCO3 (ug/l)
Bedrock Well
Overburden Well
300000
250000
200000
150000
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

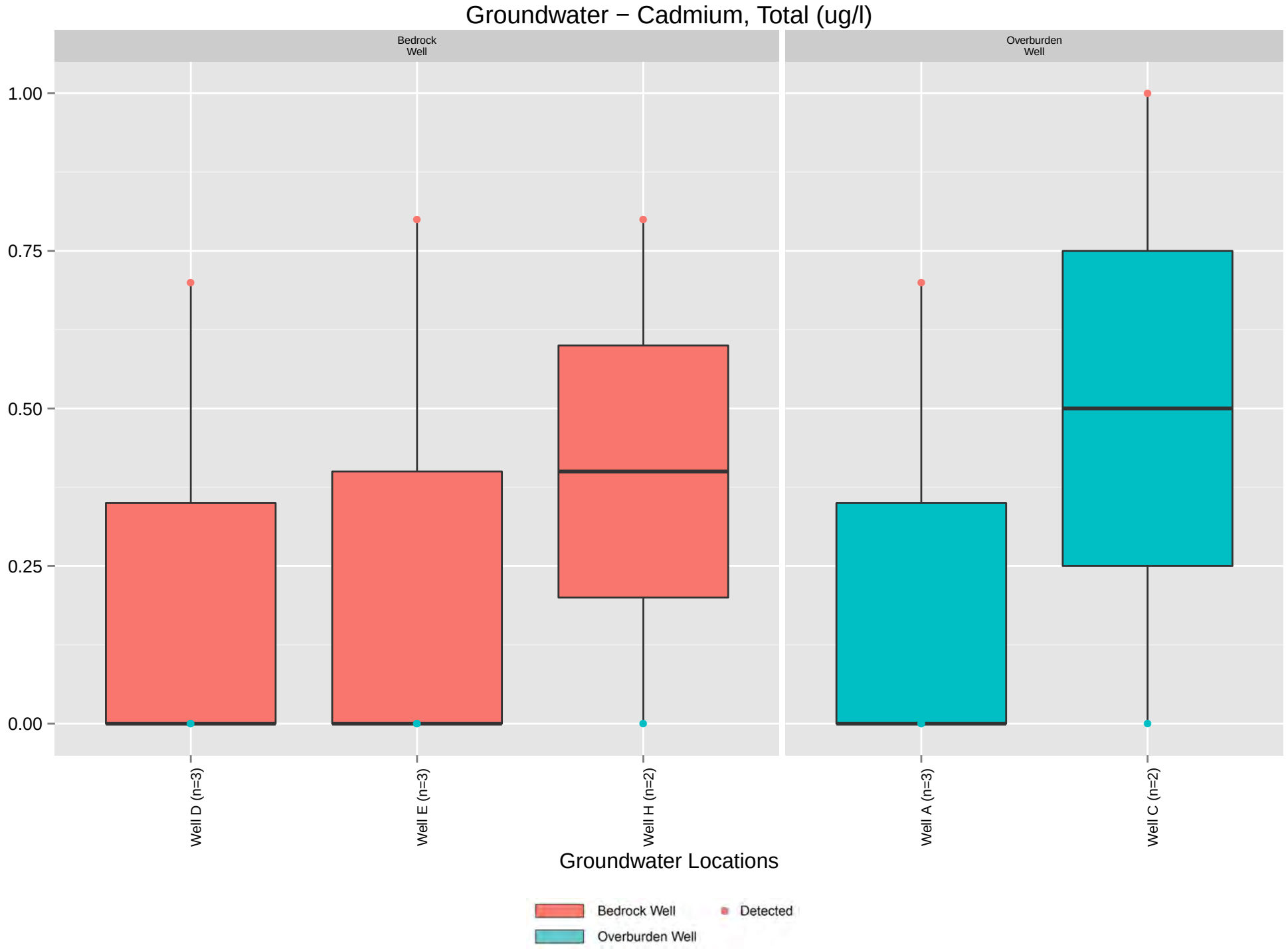

Groundwater − Aluminum, Total (ug/l)
Bedrock Well
Overburden Well
4000
3000
2000
1000
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

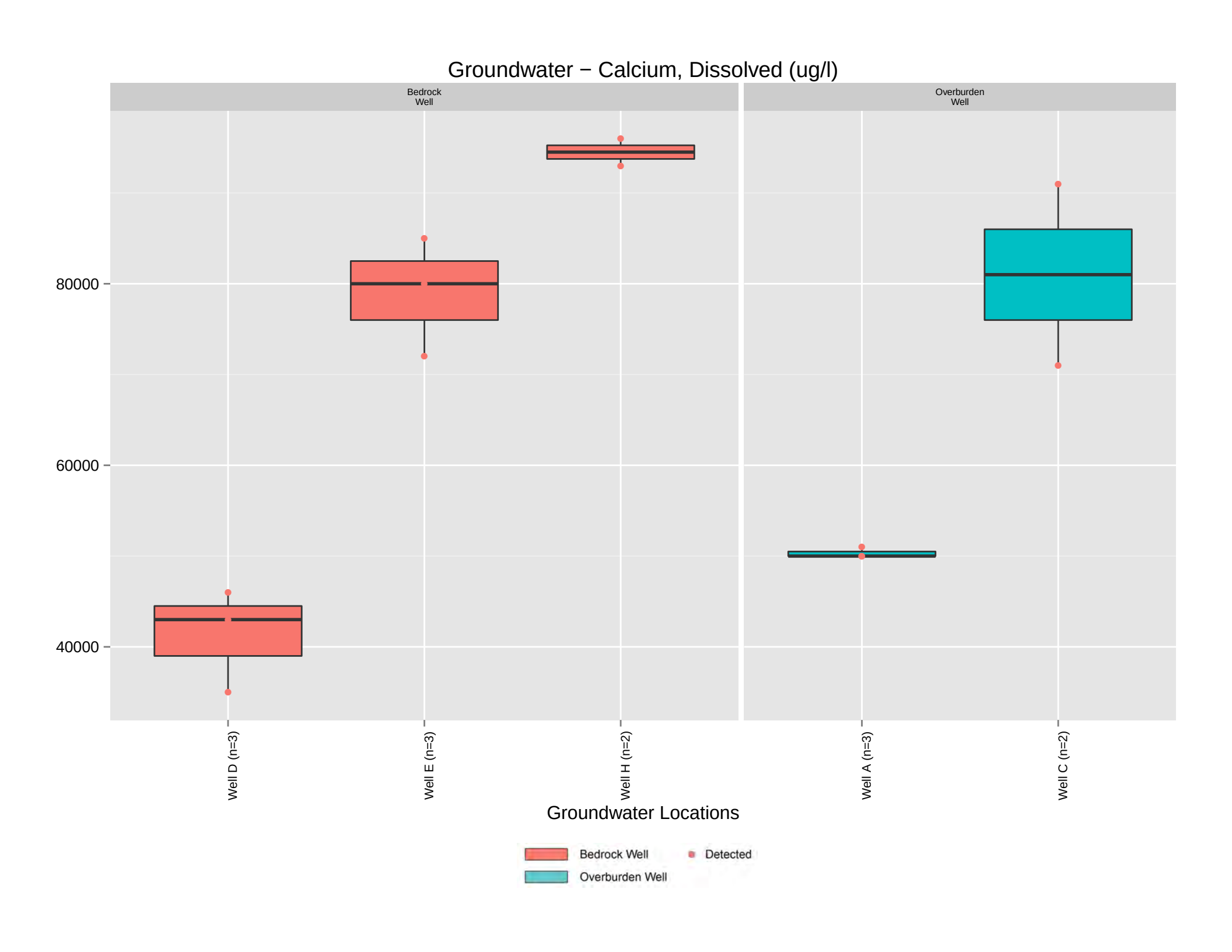

Groundwater − Barium, Dissolved (ug/l)
Bedrock Well
Overburden Well
750
500
250
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

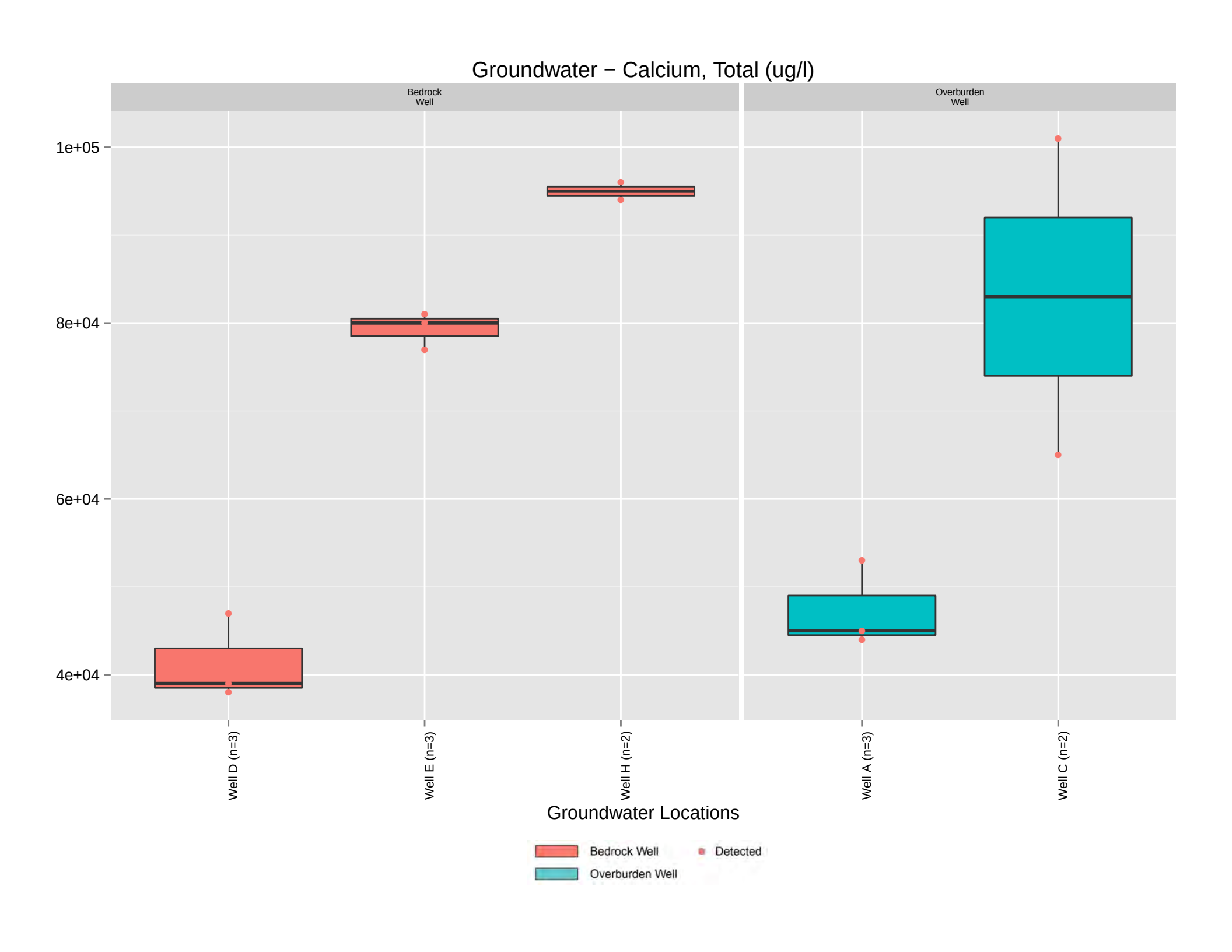

Groundwater − Barium, Total (ug/l)
Bedrock Well
Overburden Well
800
600
400
200
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

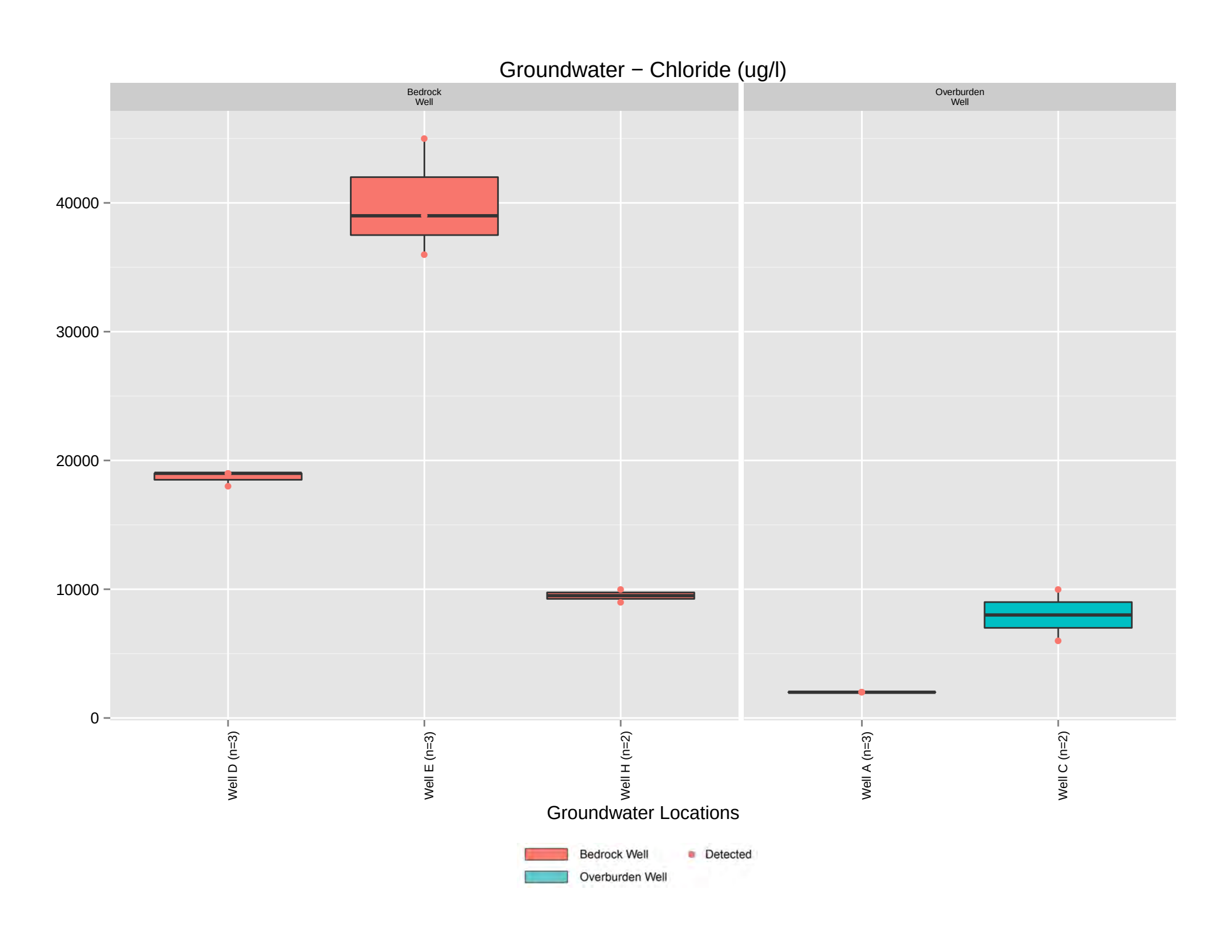

Groundwater − Bicarbonate as HCO3 (ug/l)
Bedrock Well
Overburden Well
400000
350000
300000
250000
200000
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

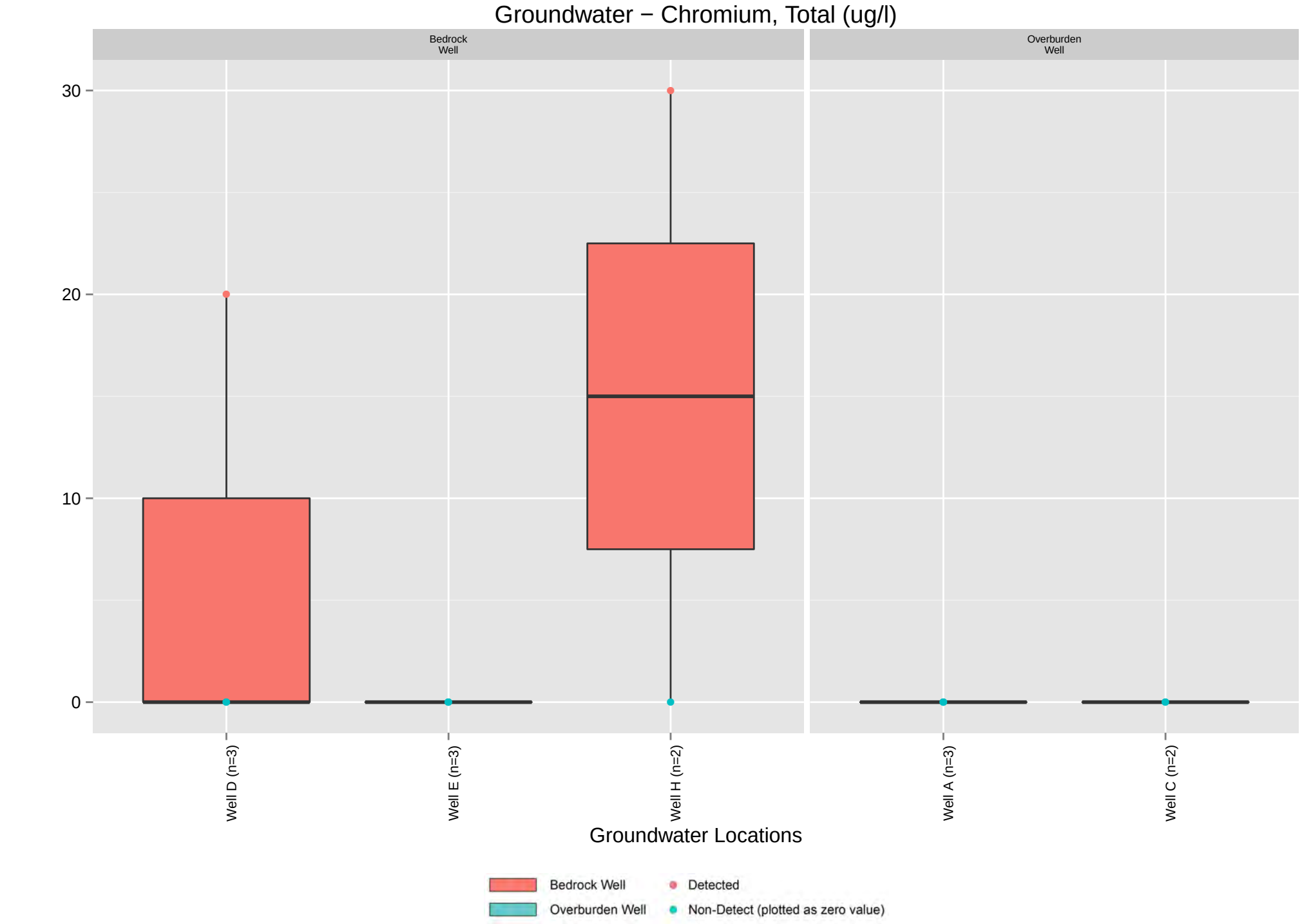

Groundwater − Cadmium, Dissolved (ug/l)
Bedrock Well
Overburden Well
1.0
0.5
0.0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

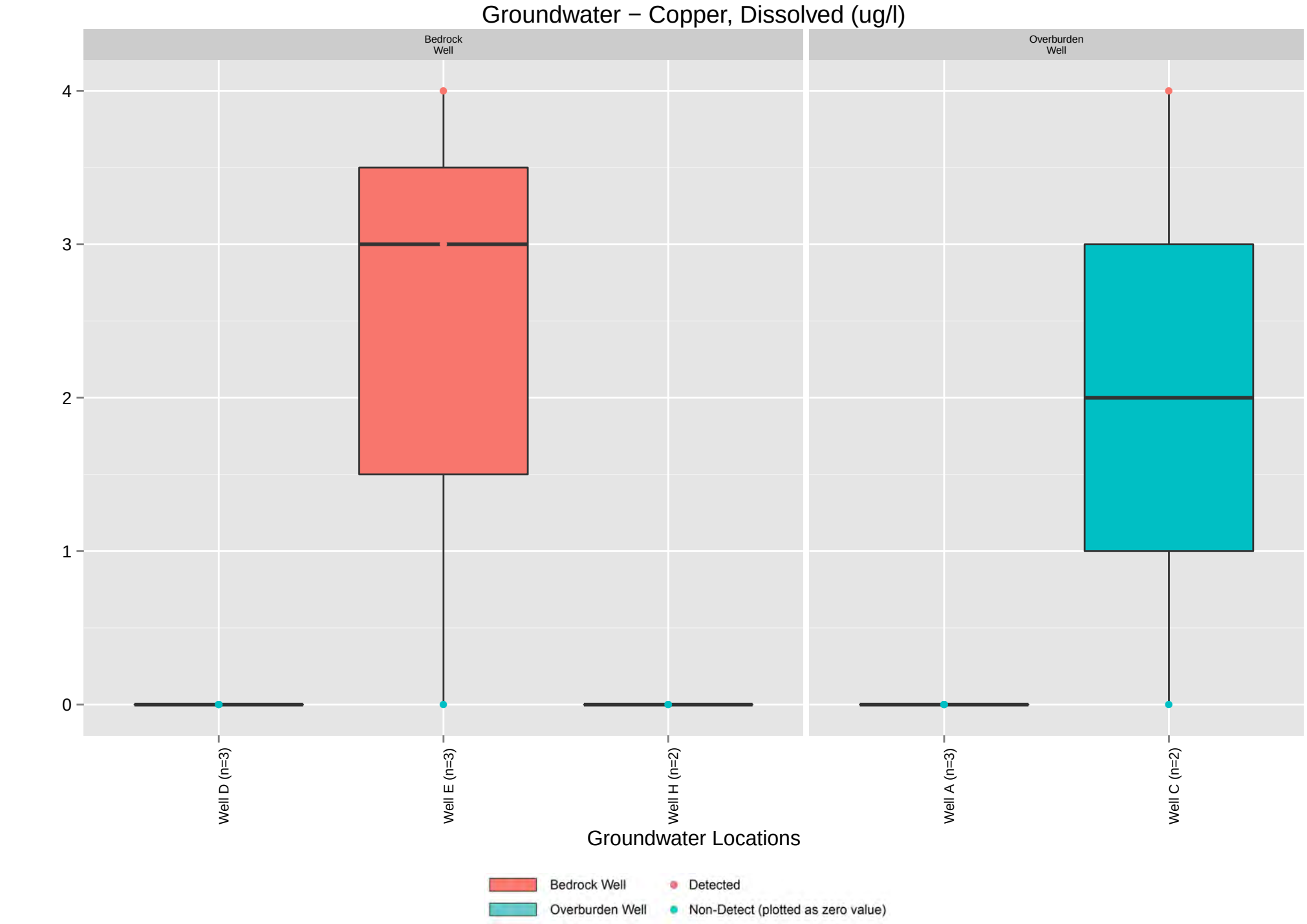

Groundwater − Cadmium, Total (ug/l)
Bedrock Well
Overburden Well
1.00
0.75
0.50
0.25
0.00
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

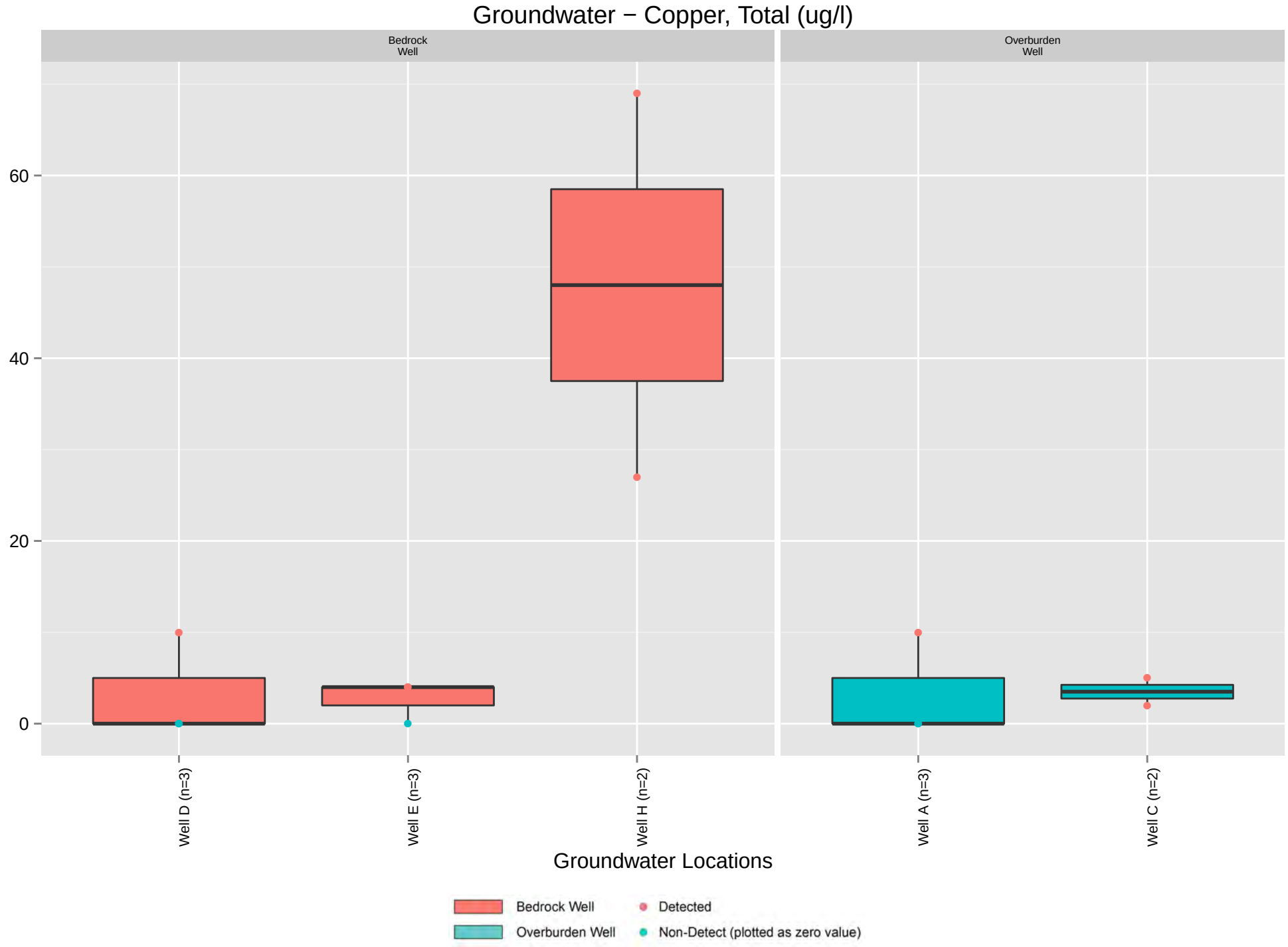

Groundwater − Calcium, Dissolved (ug/l)
Bedrock Well
Overburden Well
80000
60000
40000
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

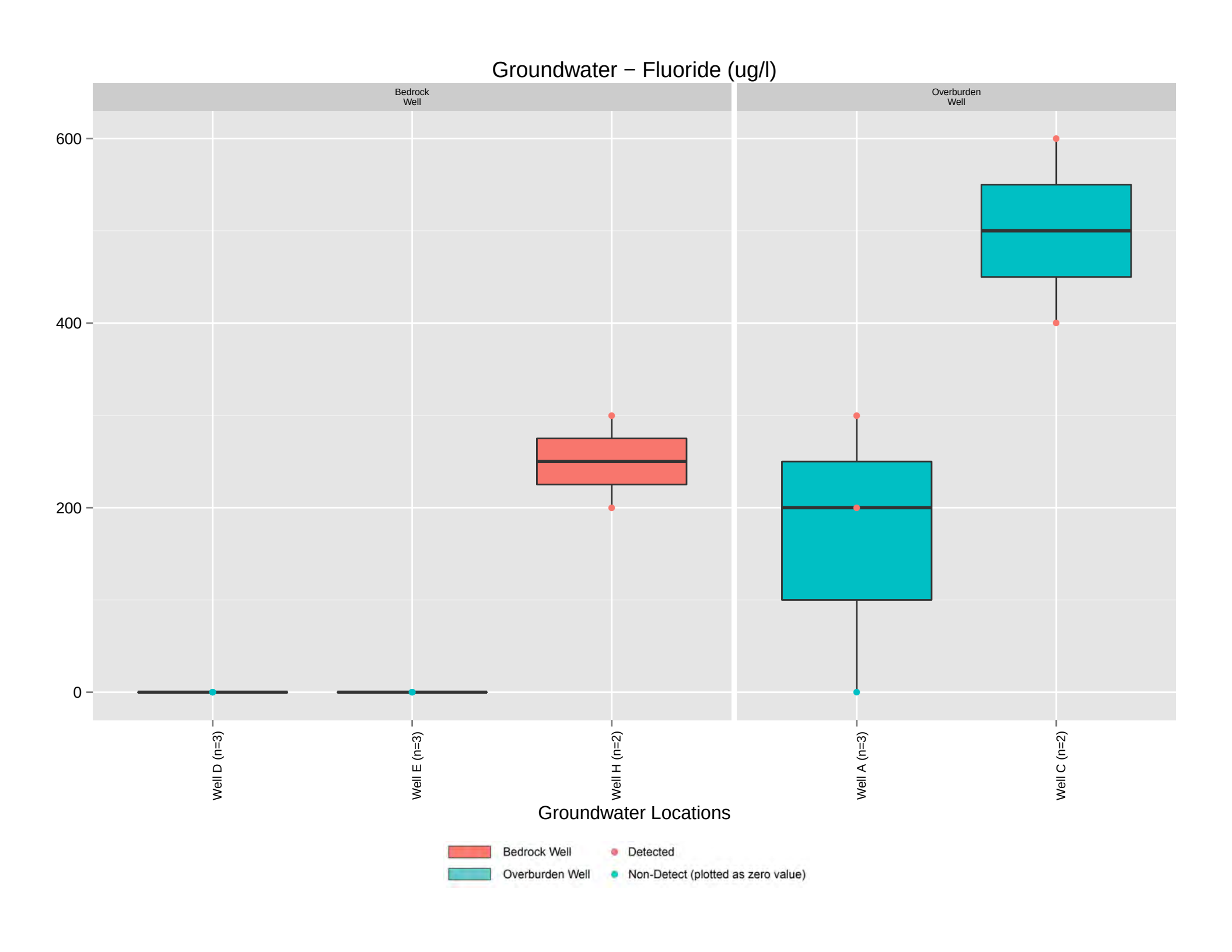

Groundwater − Calcium, Total (ug/l)
Bedrock Well
Overburden Well
1e+05
8e+04
6e+04
4e+04
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

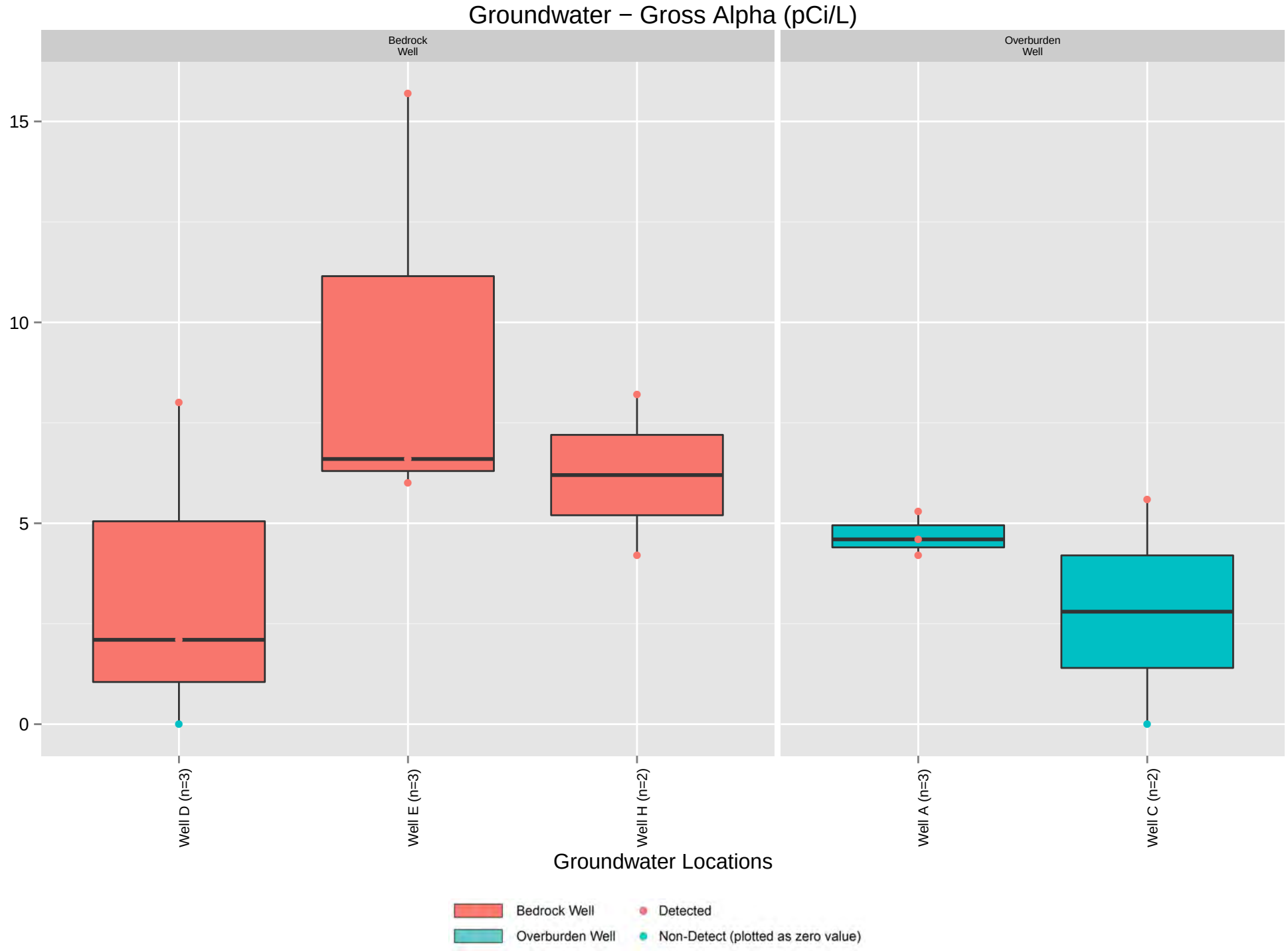

Groundwater − Chloride (ug/l)
Bedrock Well
Overburden Well
40000
30000
20000
10000
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

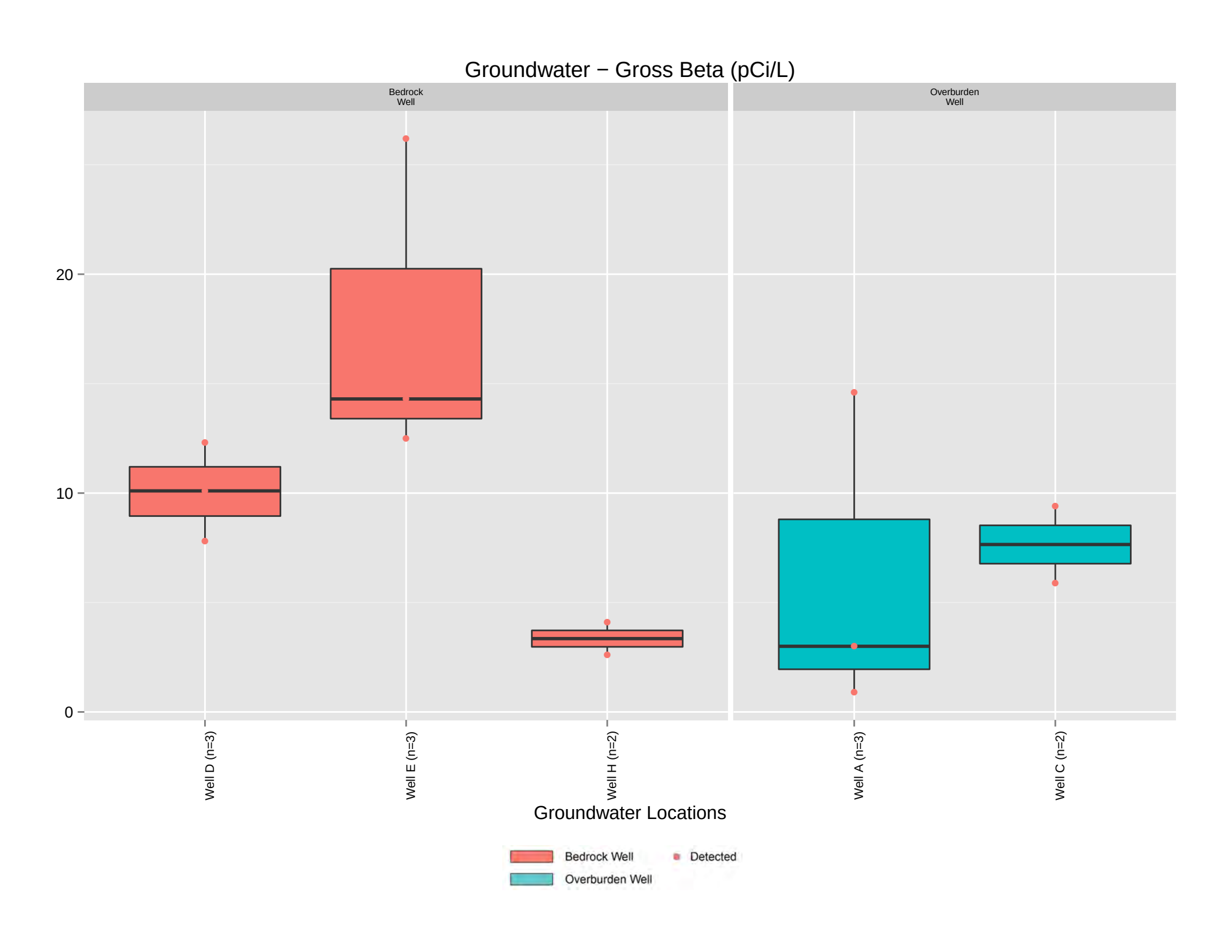

Groundwater − Chromium, Total (ug/l)
Bedrock Well
Overburden Well
30
20
10
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

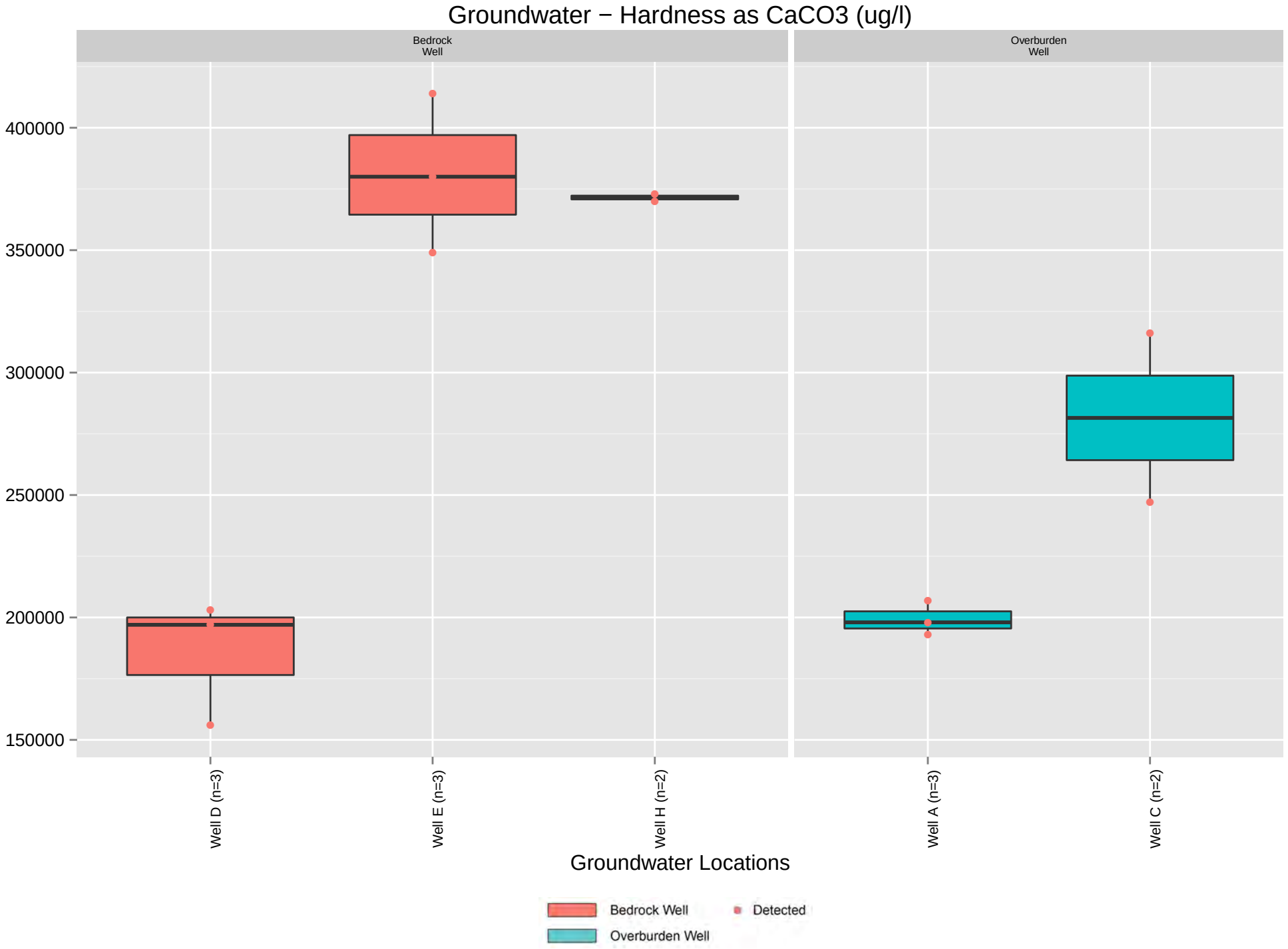

Groundwater − Copper, Dissolved (ug/l)
Bedrock Well
Overburden Well
4
3
2
1
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

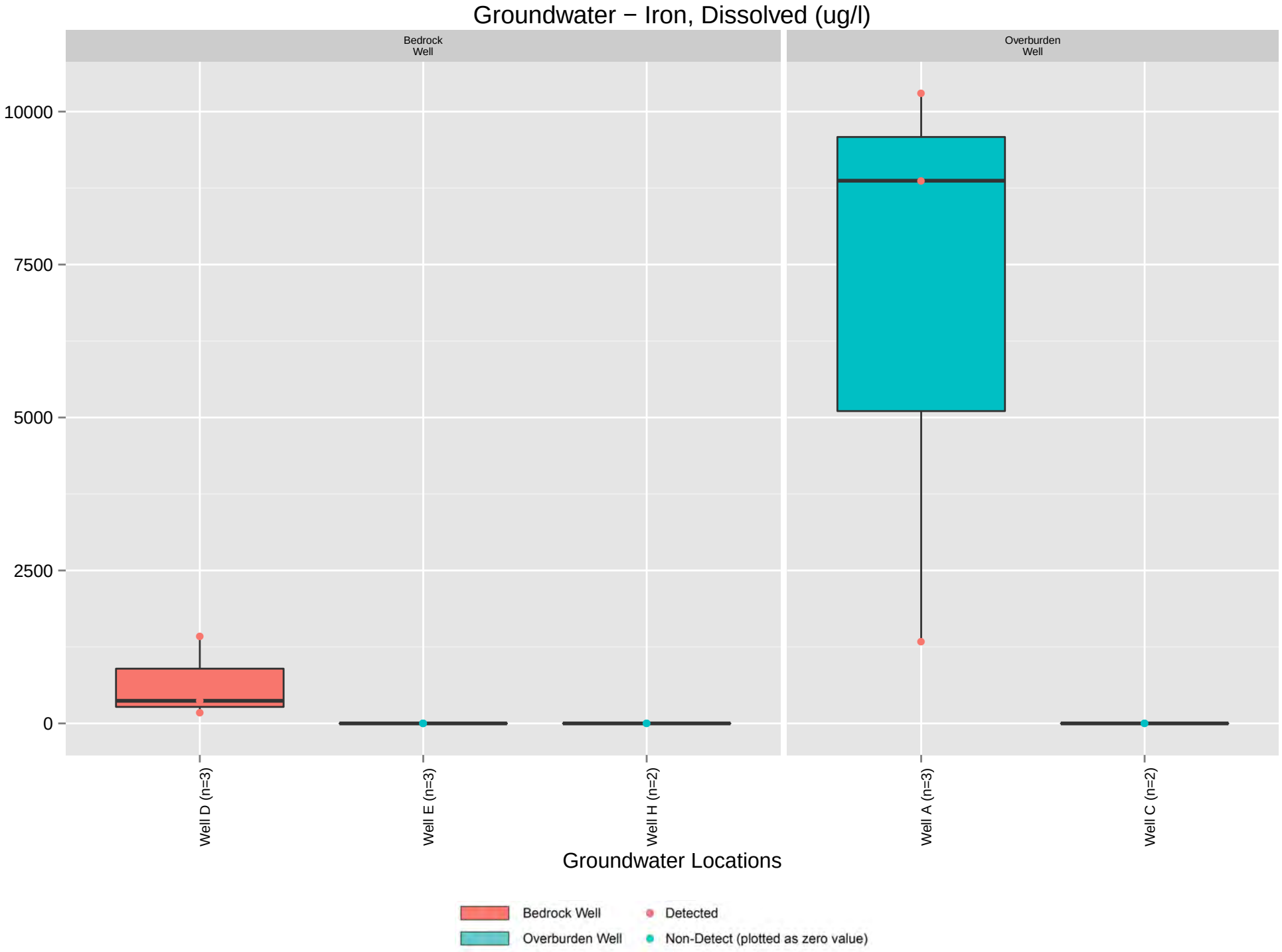

Groundwater − Copper, Total (ug/l)
Bedrock Well
Overburden Well
60
40
20
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

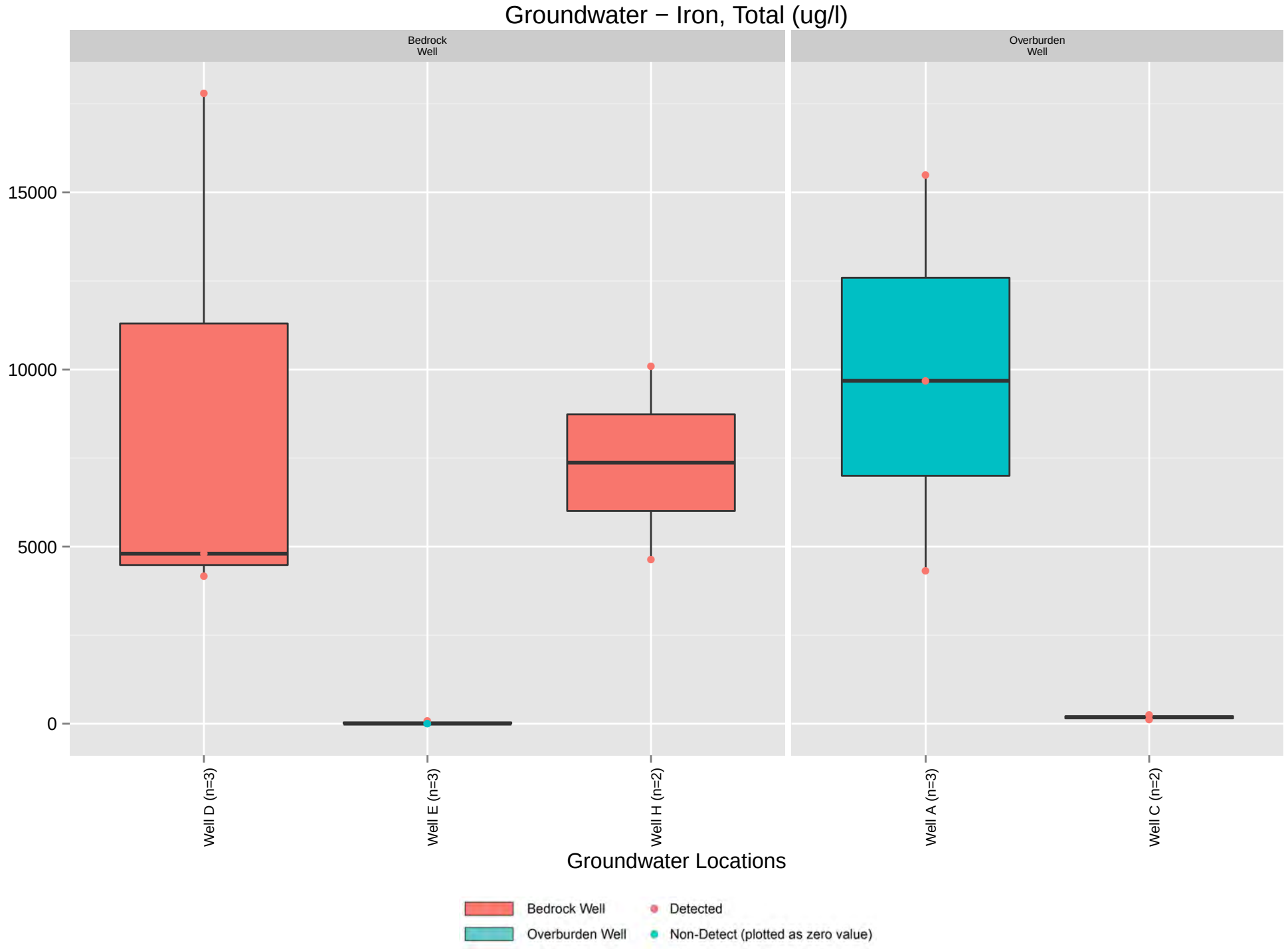

Groundwater − Fluoride (ug/l)
Bedrock Well
Overburden Well
600
400
200
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

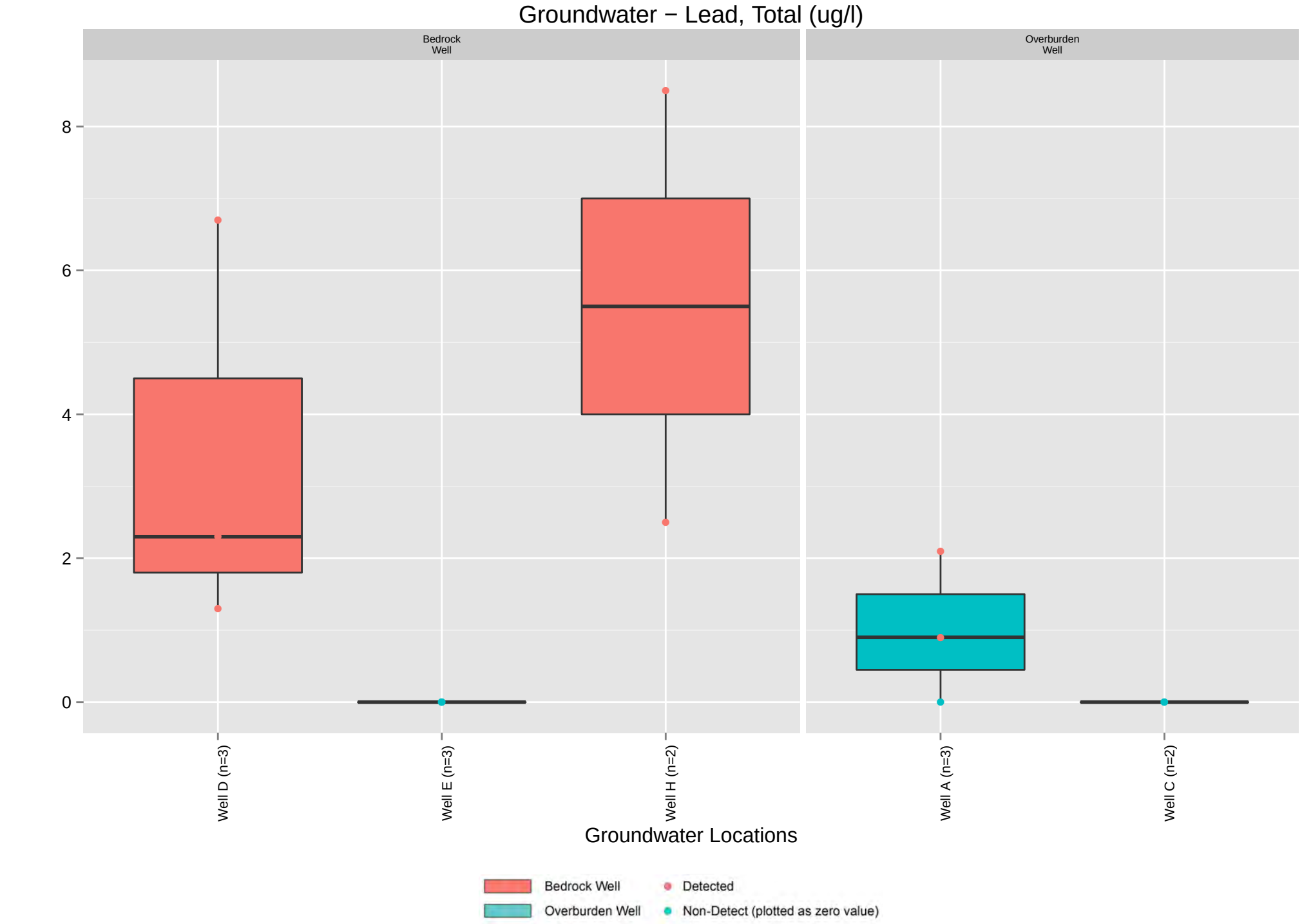

Groundwater − Gross Alpha (pCi/L)
Bedrock Well
Overburden Well
15
10
5
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

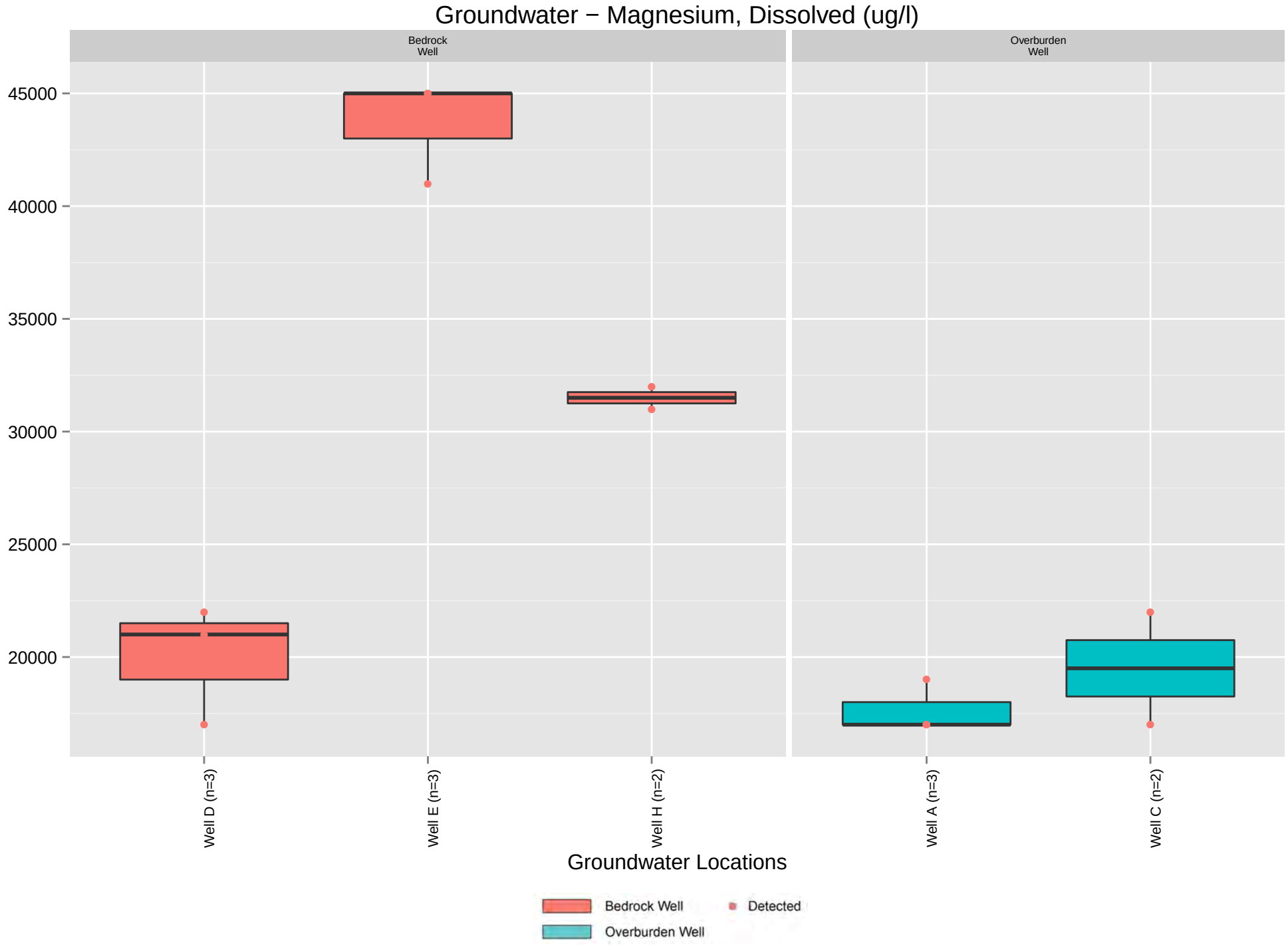

Groundwater − Gross Beta (pCi/L)
Bedrock Well
Overburden Well
20
10
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

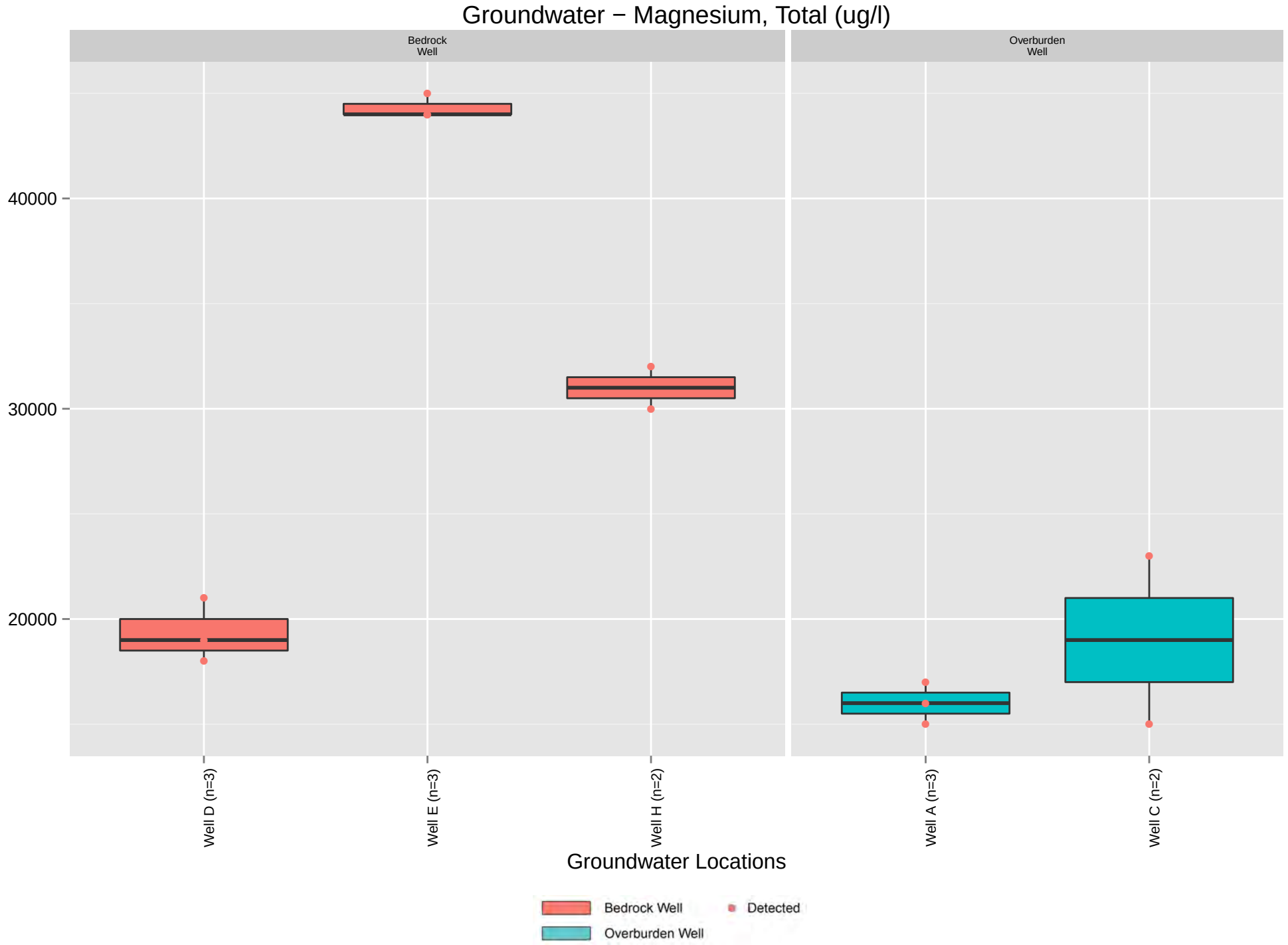

Groundwater − Hardness as CaCO3 (ug/l)
Bedrock Well
Overburden Well
400000
350000
300000
250000
200000
150000
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

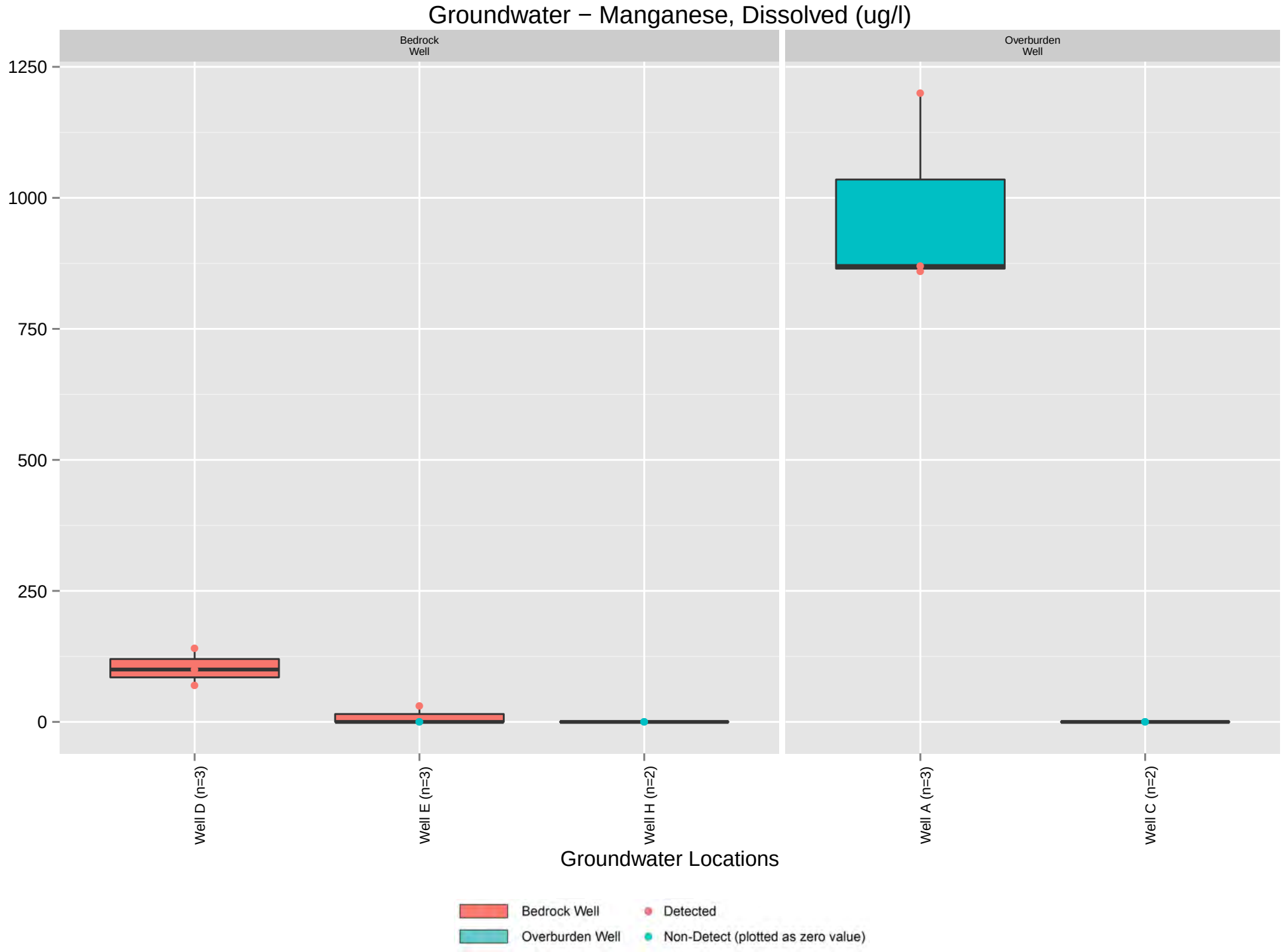

Groundwater − Iron, Dissolved (ug/l)
Bedrock Well
Overburden Well
10000
7500
5000
2500
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

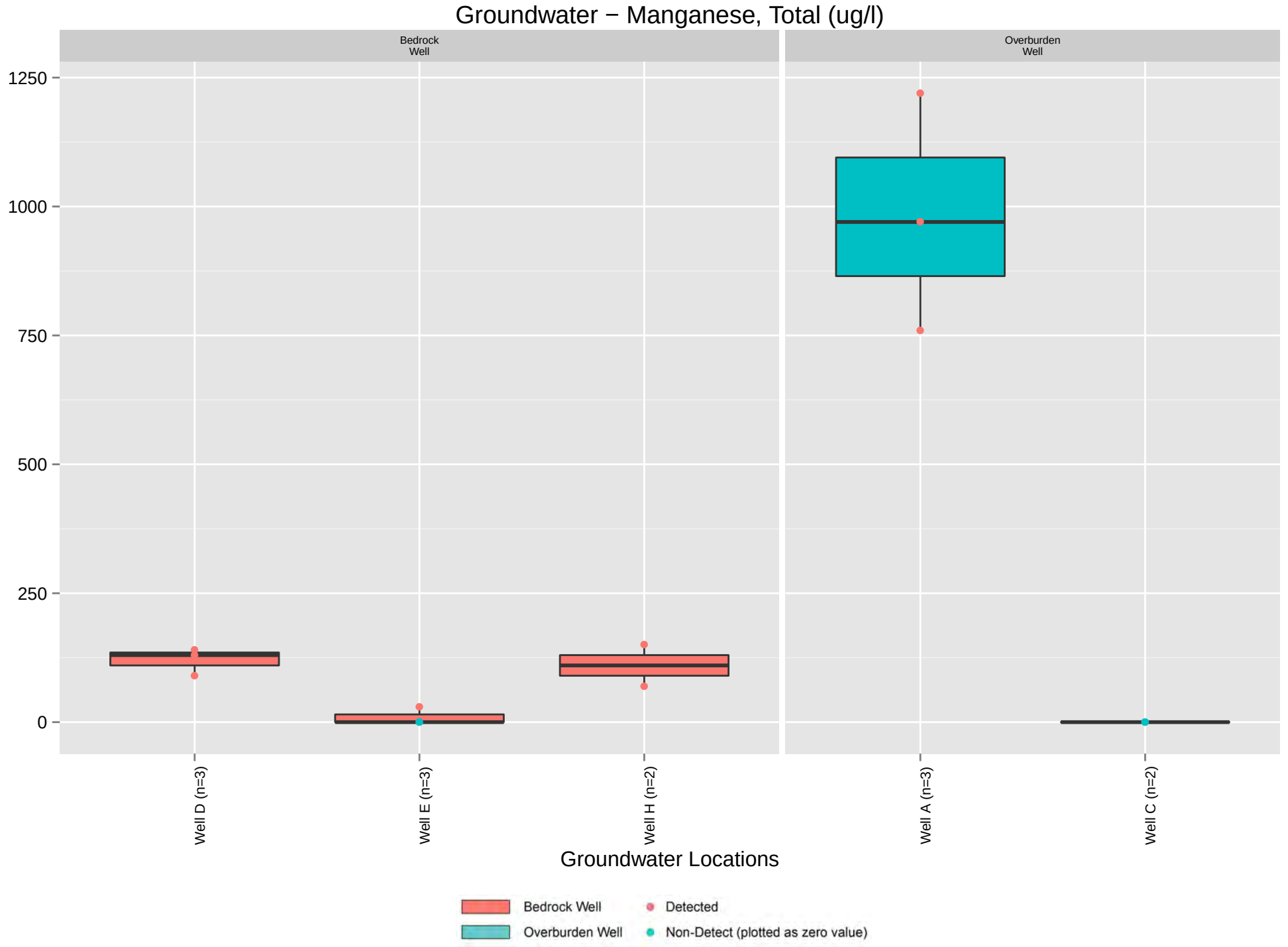

Groundwater − Iron, Total (ug/l)
Bedrock Well
Overburden Well
15000
10000
5000
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

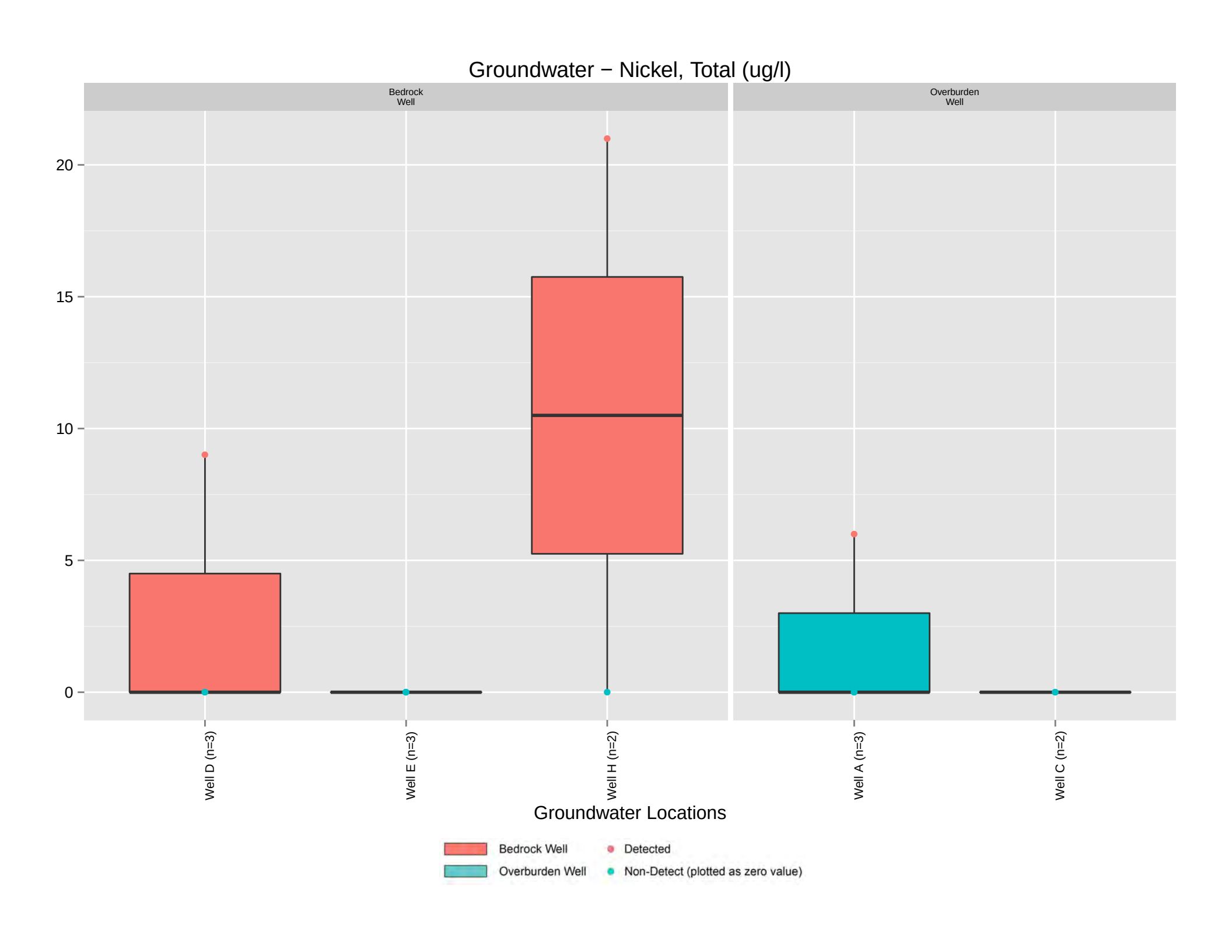

Groundwater − Lead, Total (ug/l)
Bedrock Well
Overburden Well
8
6
4
2
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

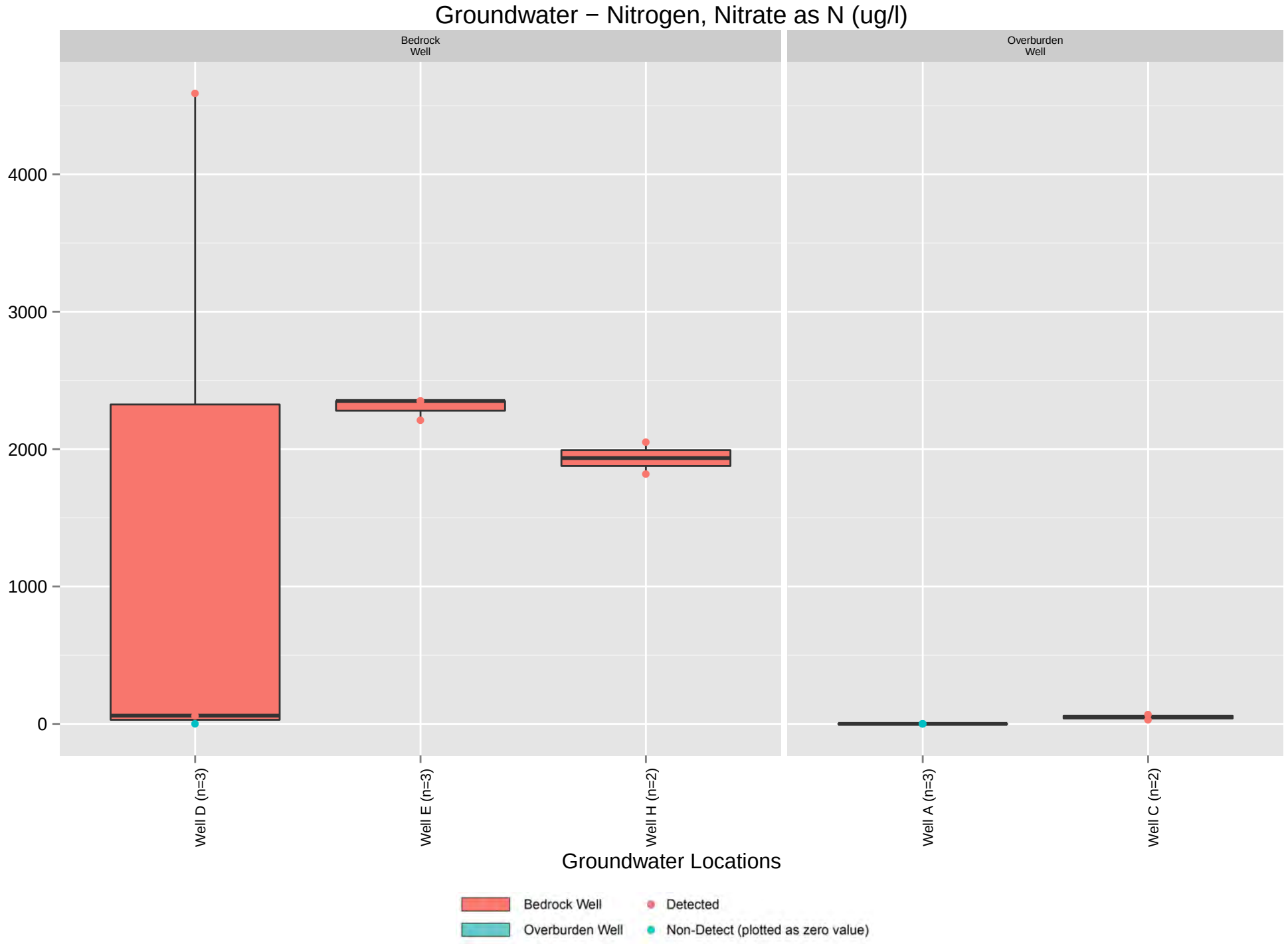

Groundwater − Magnesium, Dissolved (ug/l)
Bedrock Well
Overburden Well
45000
40000
35000
30000
25000
20000
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

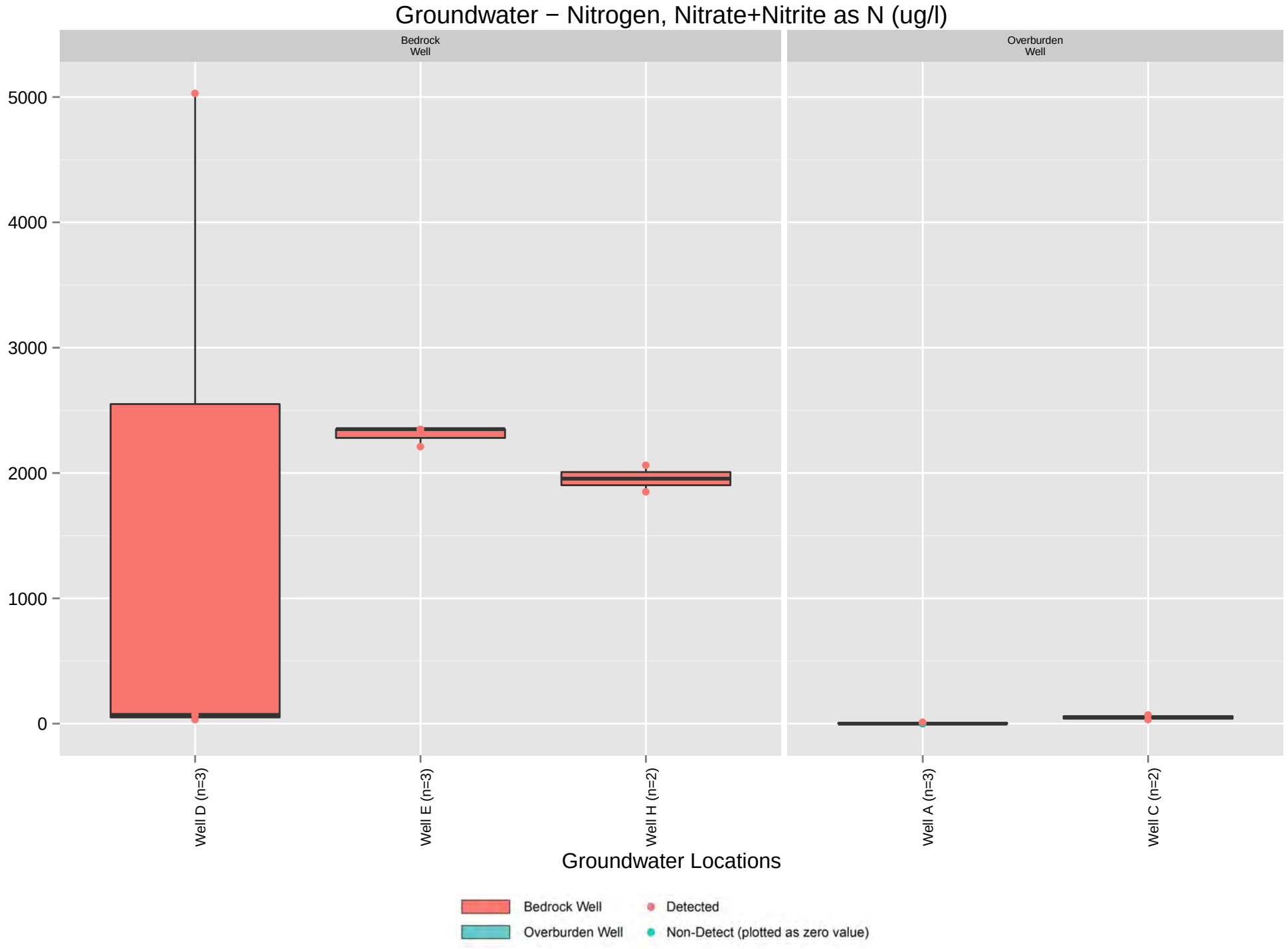

Groundwater − Magnesium, Total (ug/l)
Bedrock Well
Overburden Well
40000
30000
20000
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

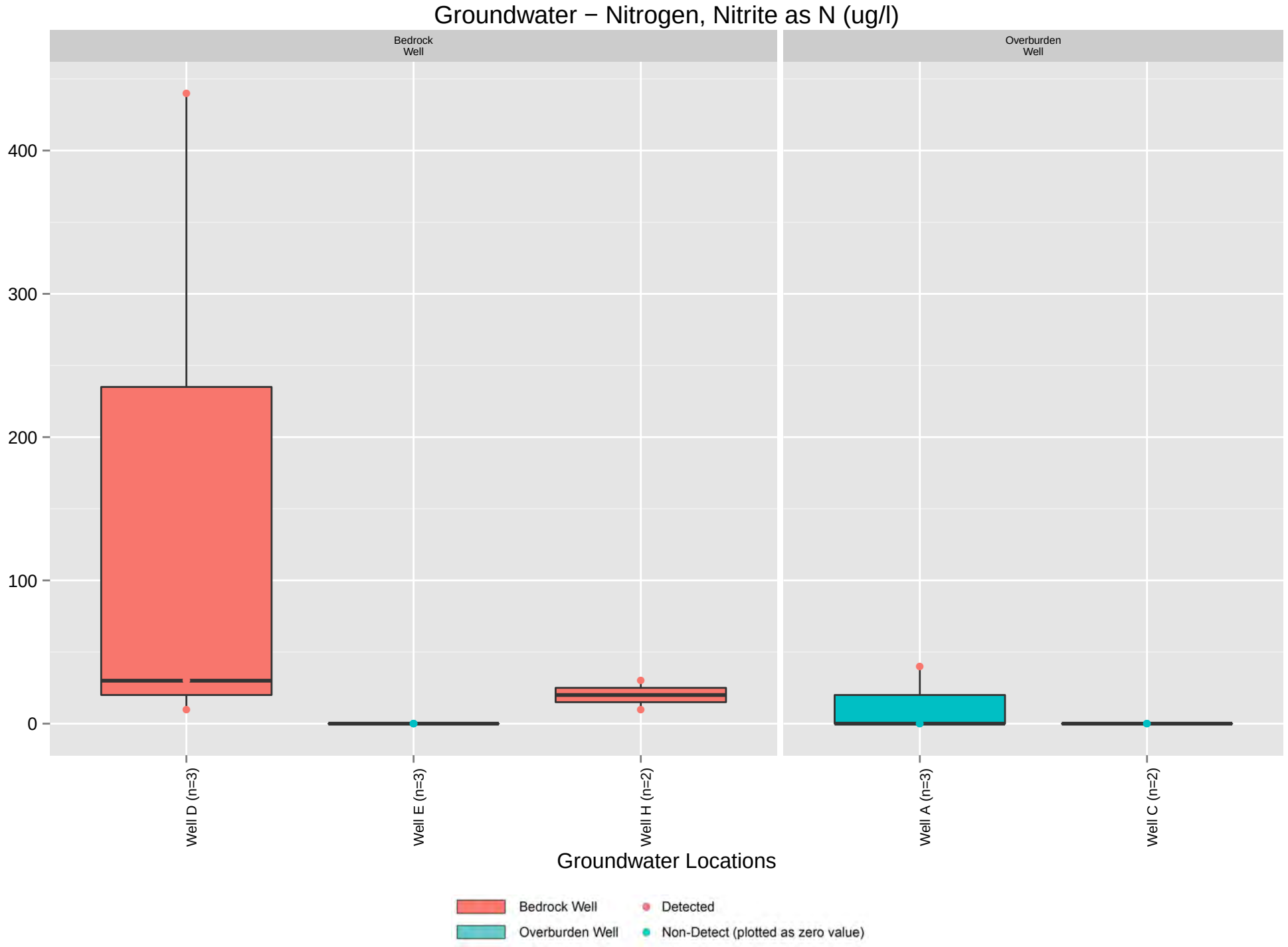

Groundwater − Manganese, Dissolved (ug/l)
Bedrock Well
Overburden Well
1250
1000
750
500
250
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

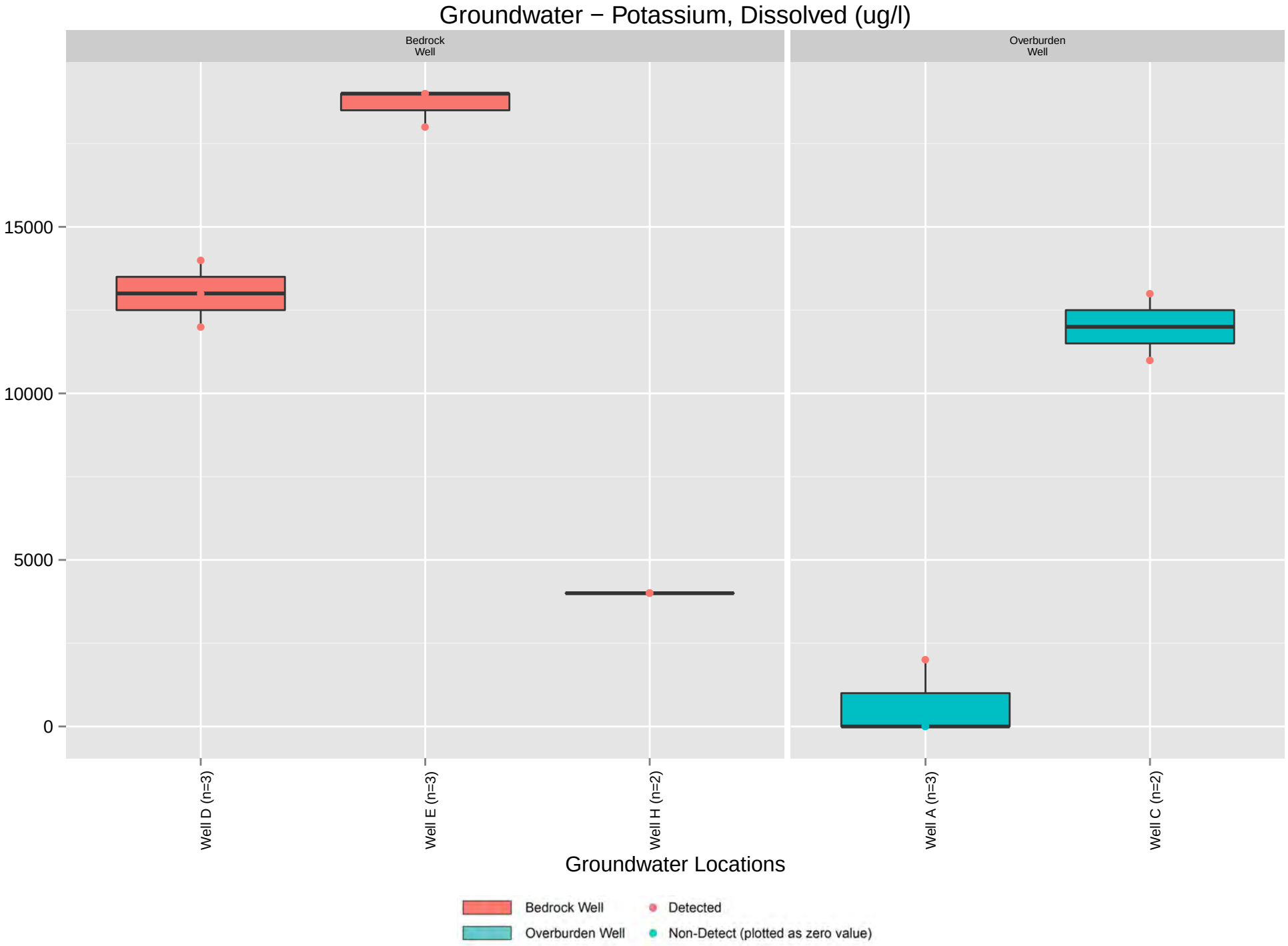

Groundwater − Manganese, Total (ug/l)
Bedrock Well
Overburden Well
1250
1000
750
500
250
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

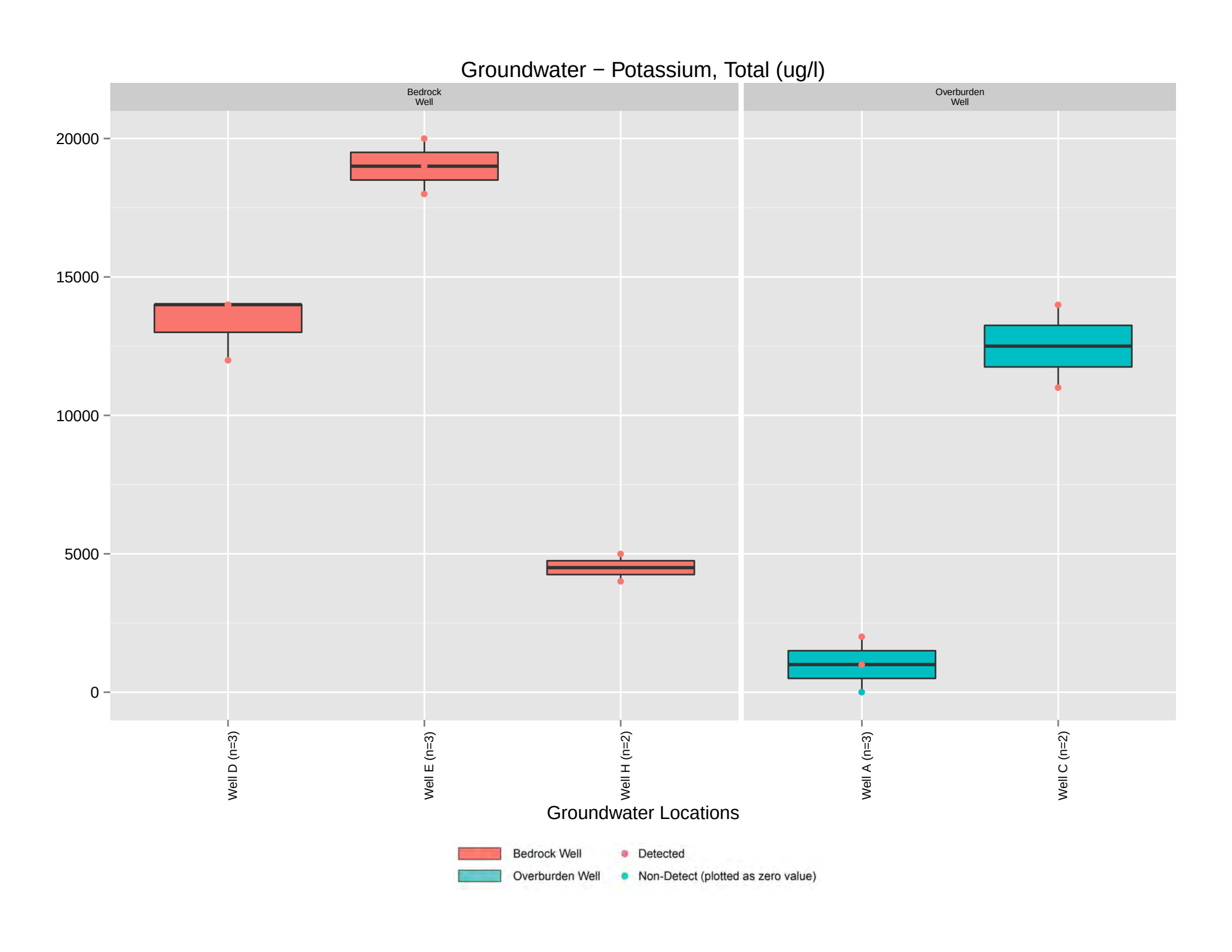

Groundwater − Nickel, Total (ug/l)
Bedrock Well
Overburden Well
20
15
10
5
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

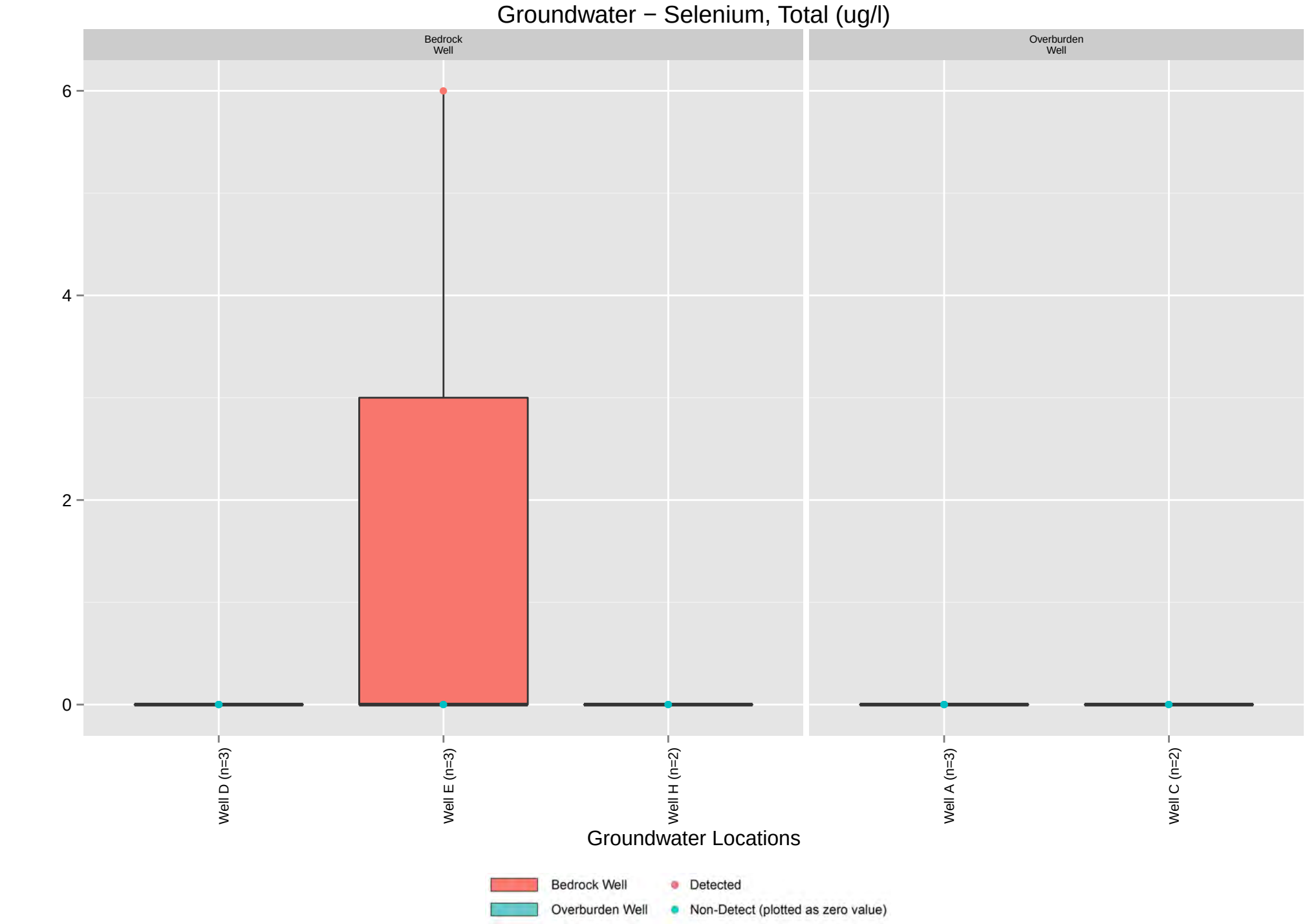

Groundwater − Nitrogen, Nitrate as N (ug/l)
Bedrock Well
Overburden Well
4000
3000
2000
1000
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

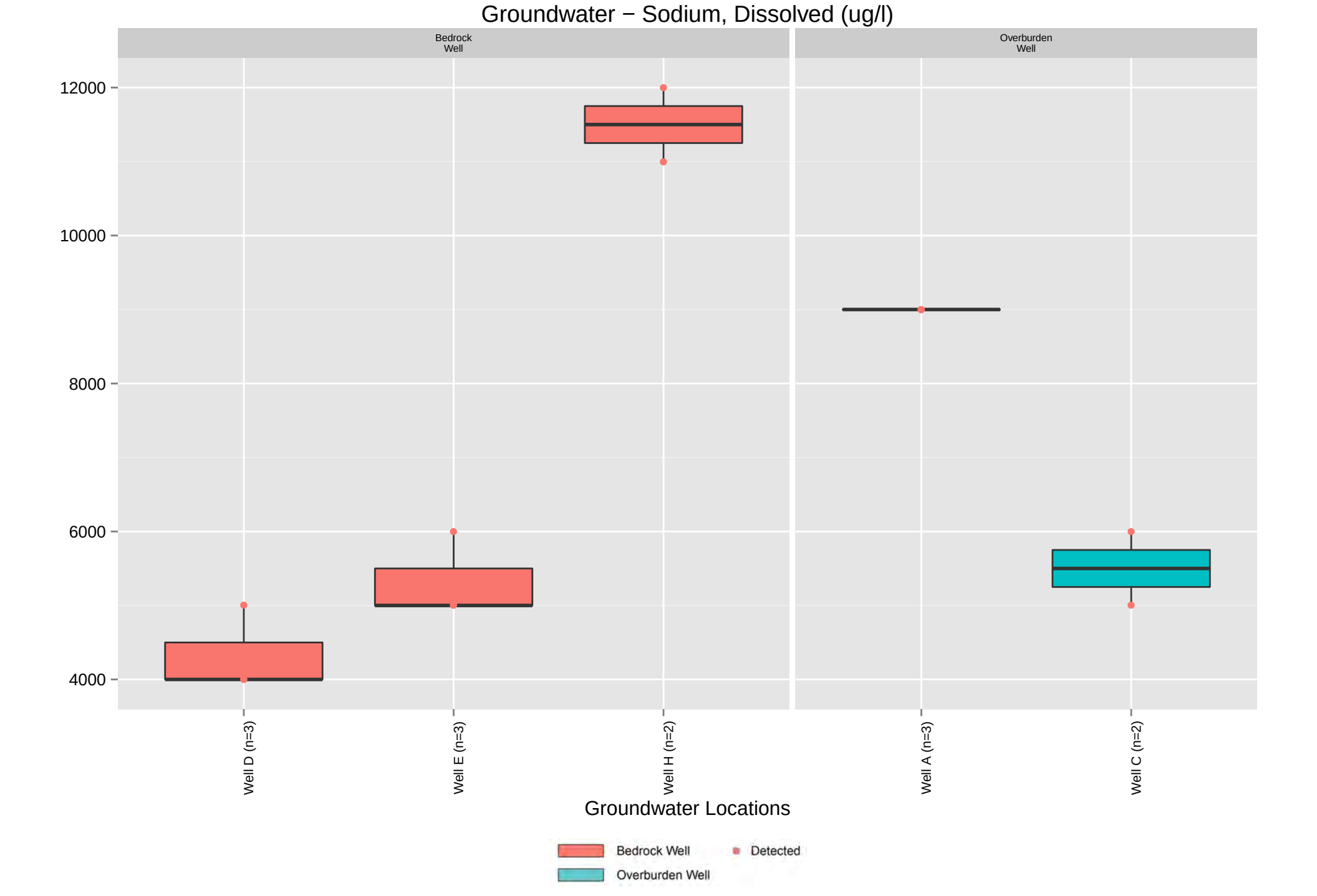

Groundwater − Nitrogen, Nitrate+Nitrite as N (ug/l)
Bedrock Well
Overburden Well
5000
4000
3000
2000
1000
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

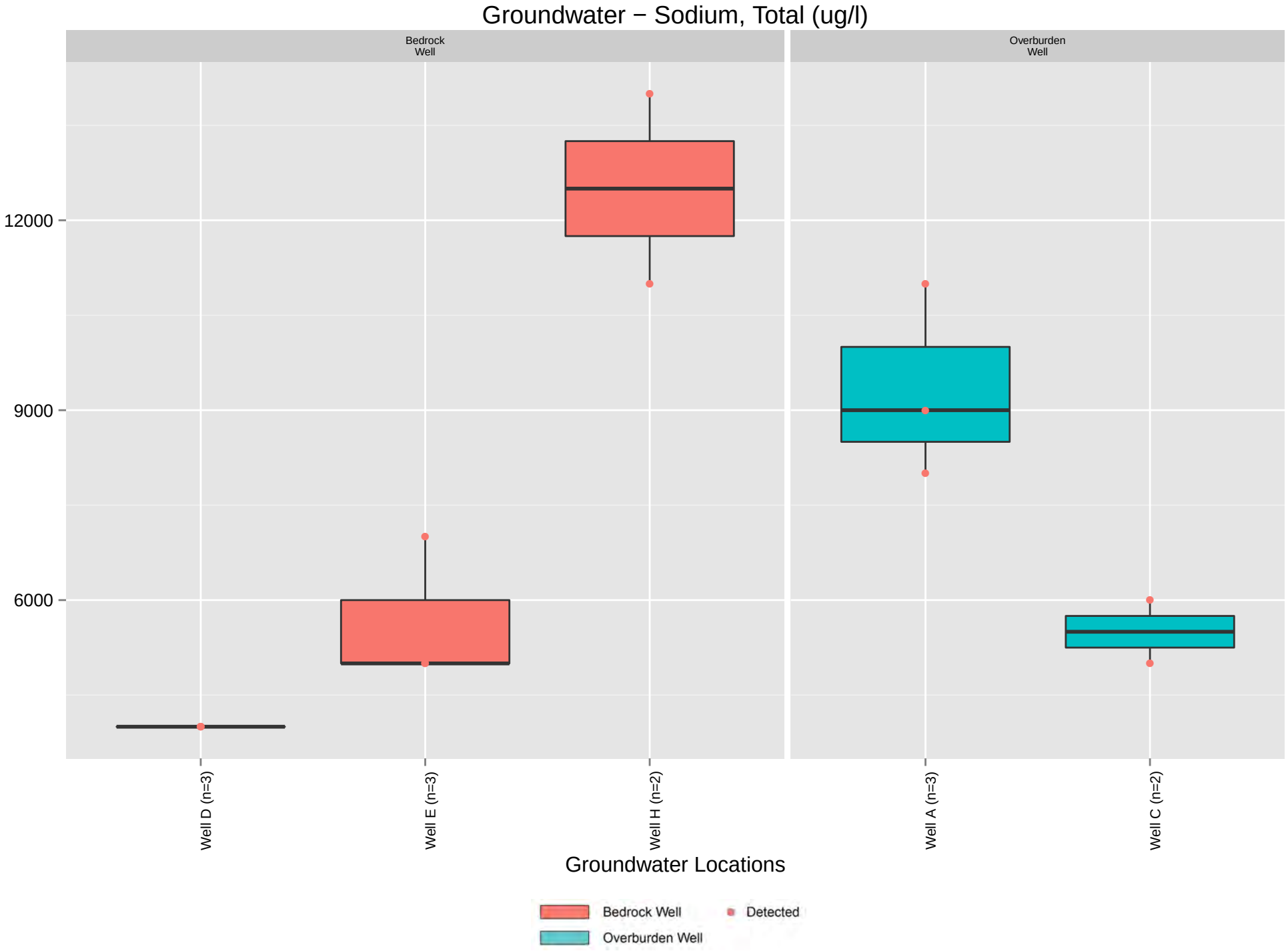

Groundwater − Nitrogen, Nitrite as N (ug/l)
Bedrock Well
Overburden Well
400
300
200
100
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

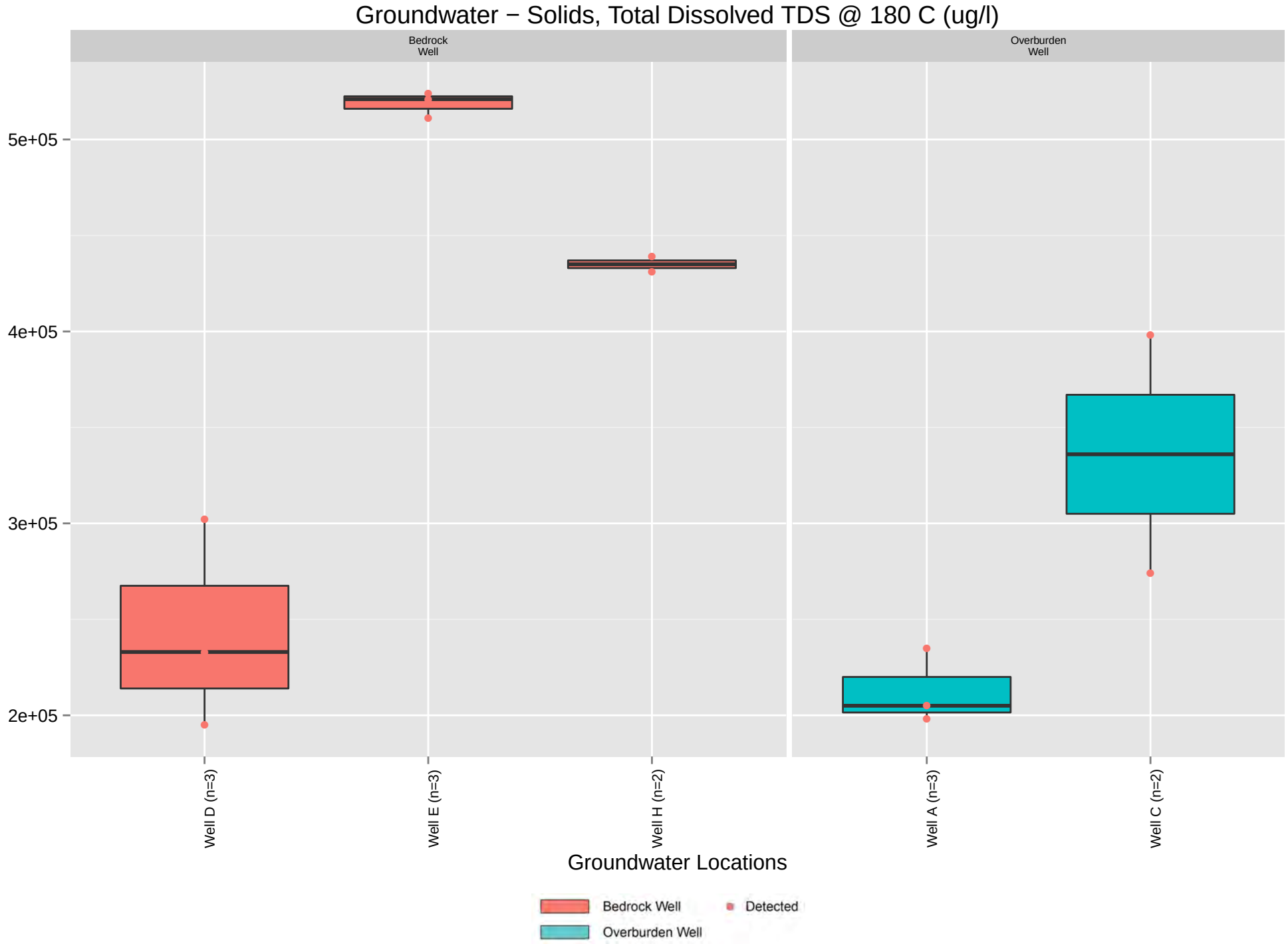

Groundwater − Potassium, Dissolved (ug/l)
Bedrock Well
Overburden Well
15000
10000
5000
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

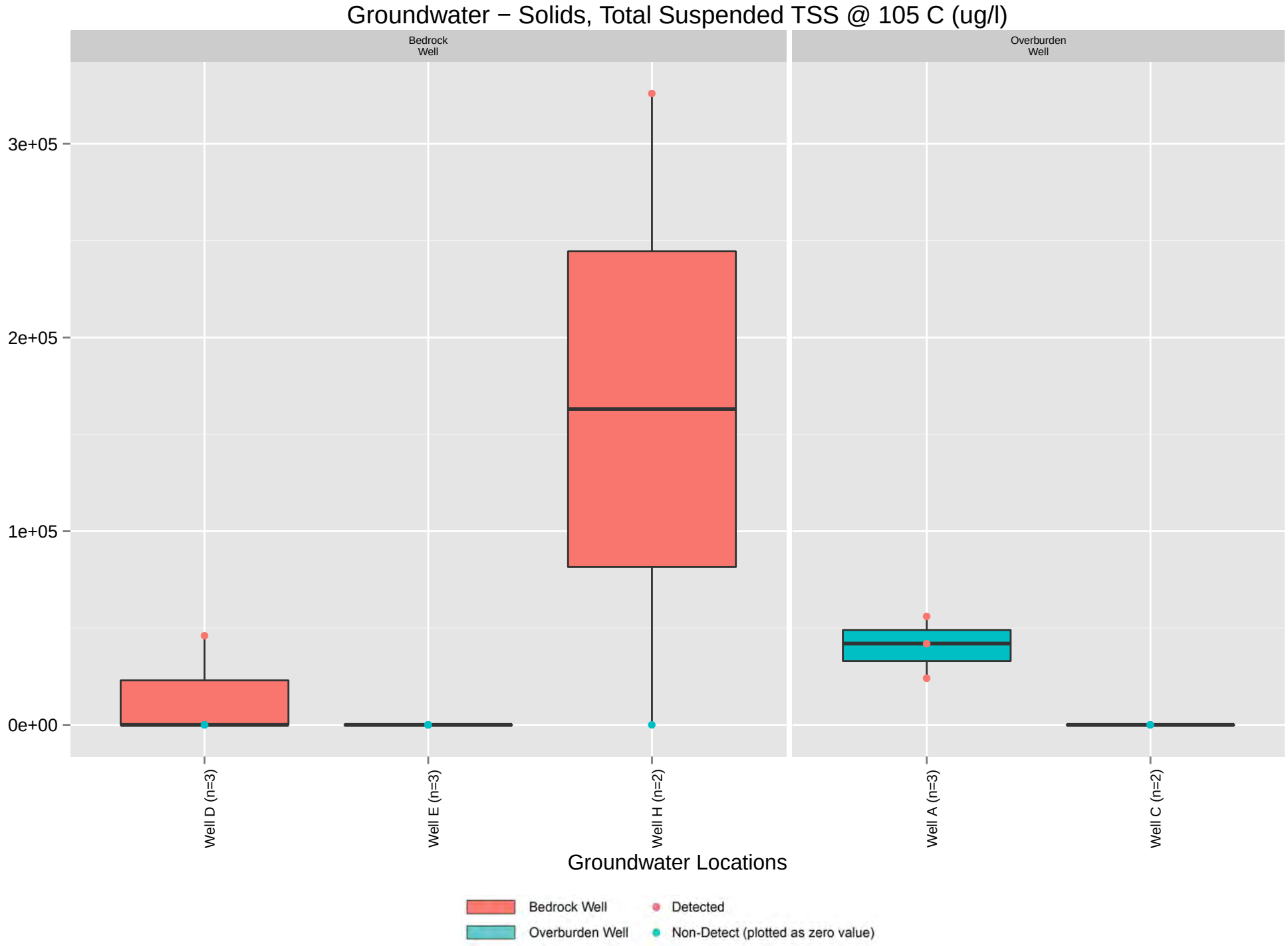

Groundwater − Potassium, Total (ug/l)
Bedrock Well
Overburden Well
20000
15000
10000
5000
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

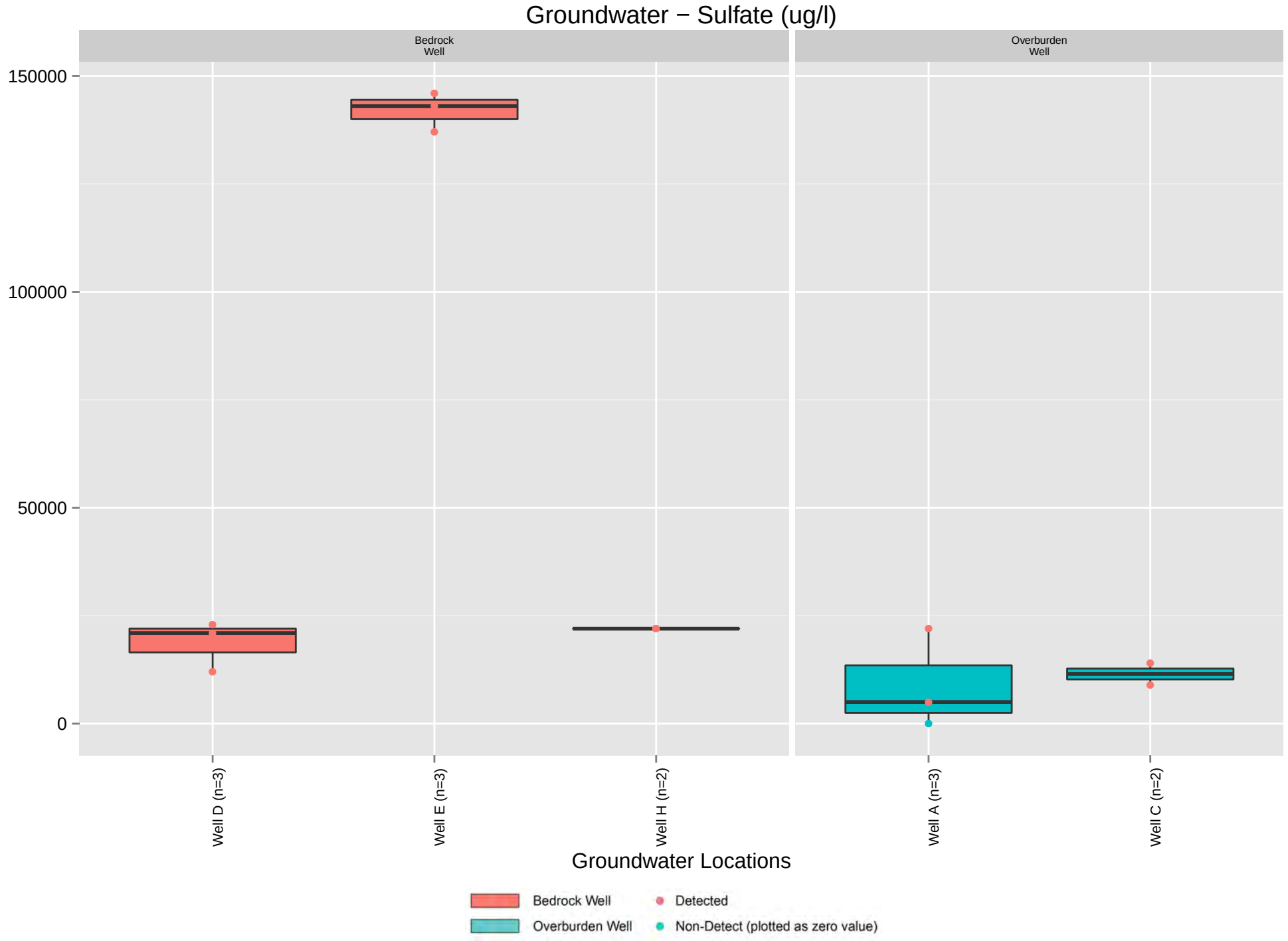

Groundwater − Selenium, Total (ug/l)
Bedrock Well
Overburden Well
6
4
2
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

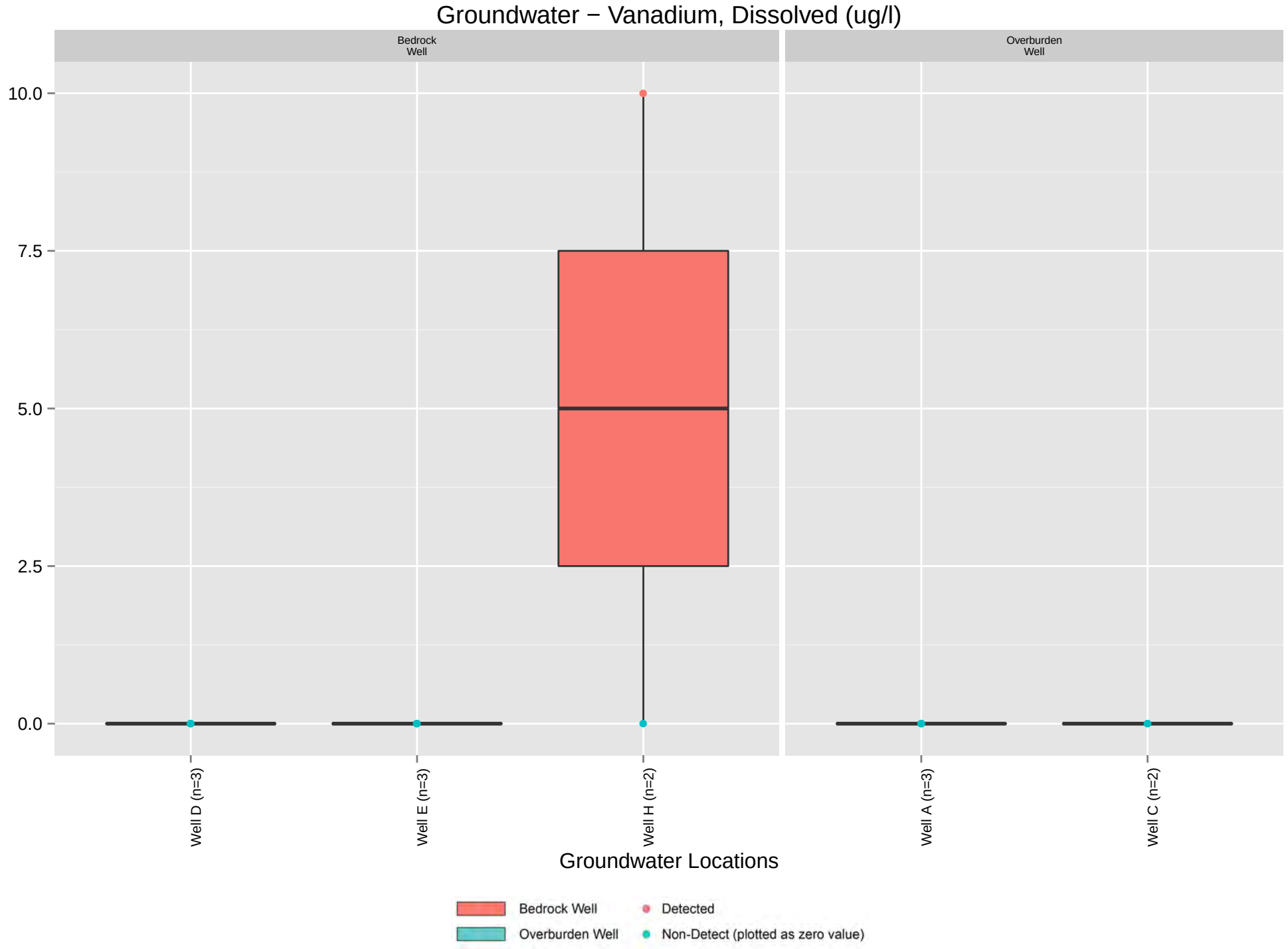

Groundwater − Sodium, Dissolved (ug/l)
Bedrock Well
Overburden Well
12000
10000
8000
6000
4000
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

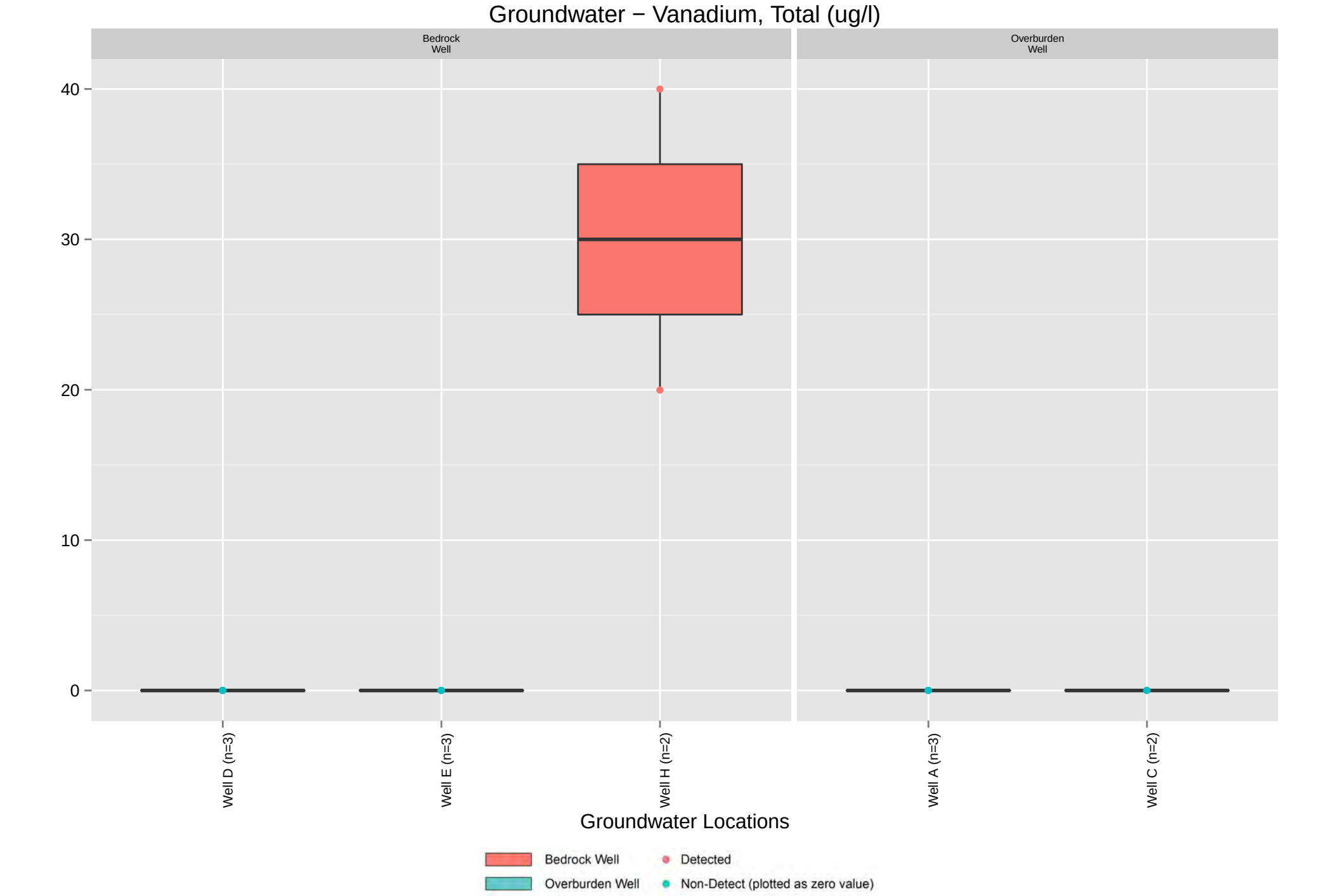

Groundwater − Sodium, Total (ug/l)
Bedrock Well
Overburden Well
12000
9000
6000
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

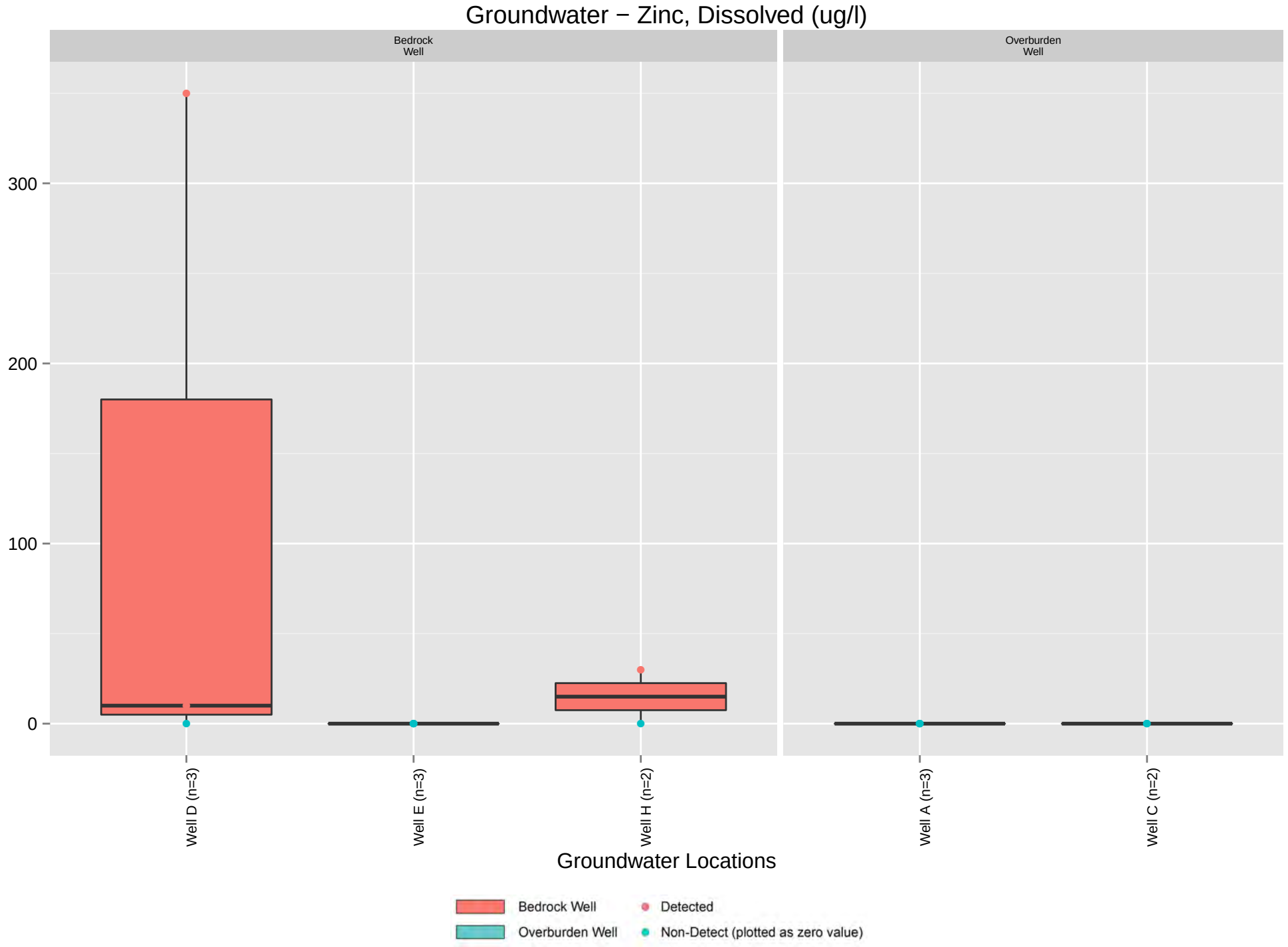

Groundwater − Solids, Total Dissolved TDS @ 180 C (ug/l)
Bedrock Well
Overburden Well
5e+05
4e+05
3e+05
2e+05
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected

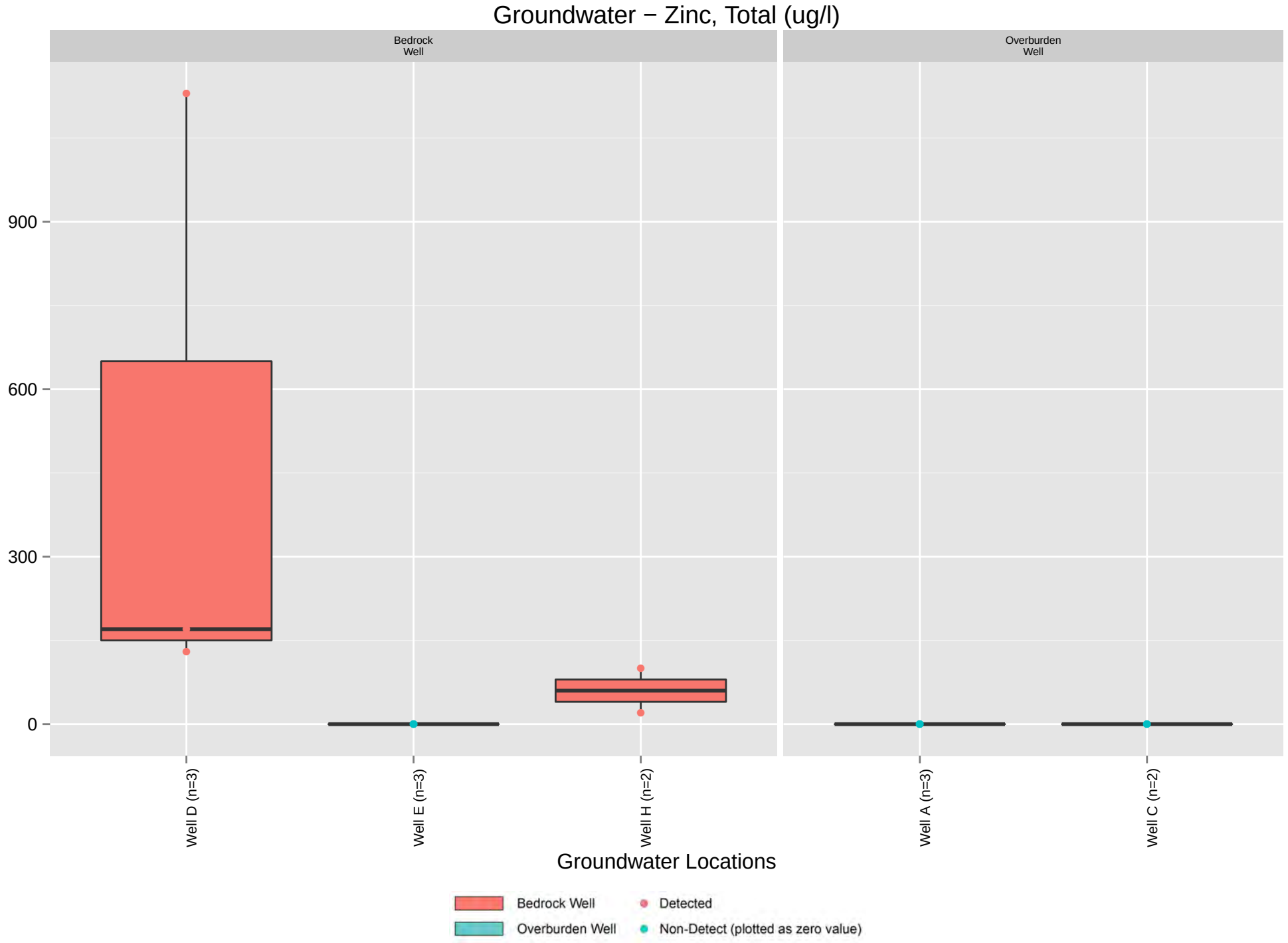

Groundwater − Solids, Total Suspended TSS @ 105 C (ug/l)
Bedrock Well
Overburden Well
3e+05
2e+05
1e+05
0e+00
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)


Groundwater − Sulfate (ug/l)
Bedrock Well
Overburden Well
150000
100000
50000
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)


Groundwater − Vanadium, Dissolved (ug/l)
Bedrock Well
Overburden Well
10.0
7.5
5.0
2.5
0.0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)


Groundwater − Vanadium, Total (ug/l)
Bedrock Well
Overburden Well
40
30
20
10
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

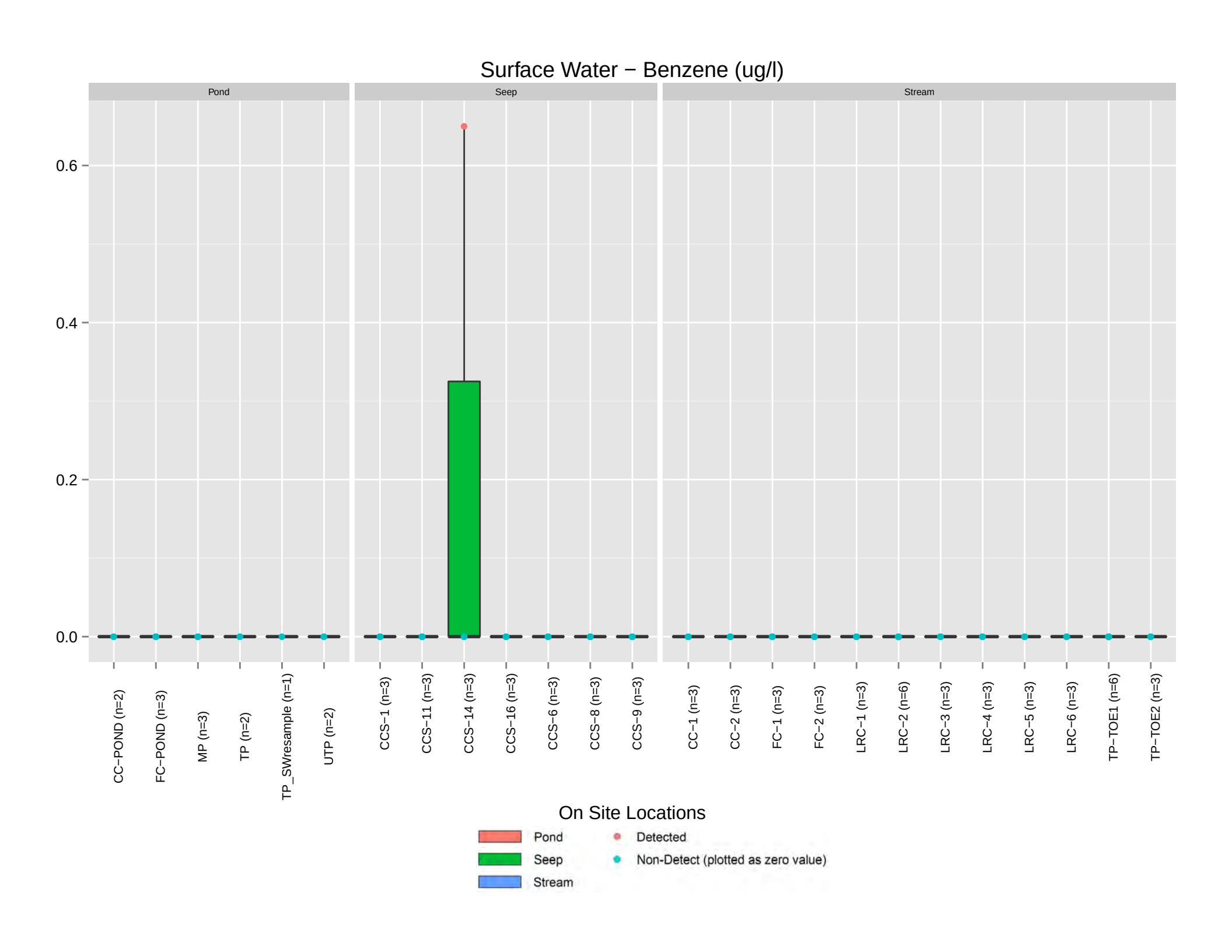

Groundwater − Zinc, Dissolved (ug/l)
Bedrock Well
Overburden Well
300
200
100
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

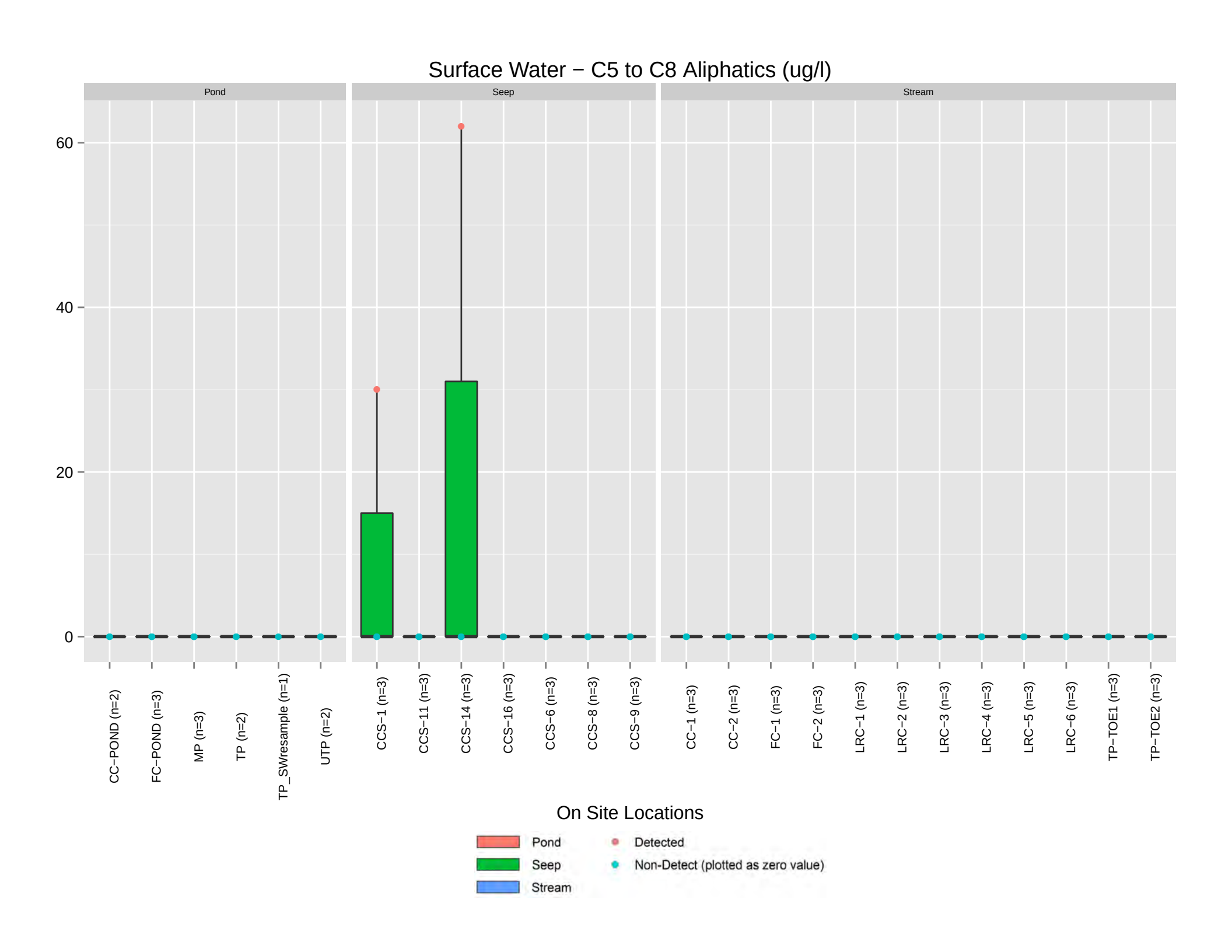

Groundwater − Zinc, Total (ug/l)
Bedrock Well
Overburden Well
900
600
300
0
Well D (n=3)
Well E (n=3)
Well H (n=2)
Well A (n=3)
Well C (n=2)
Groundwater Locations
Bedrock Well
Overburden Well
Detected
Non-Detect (plotted as zero value)

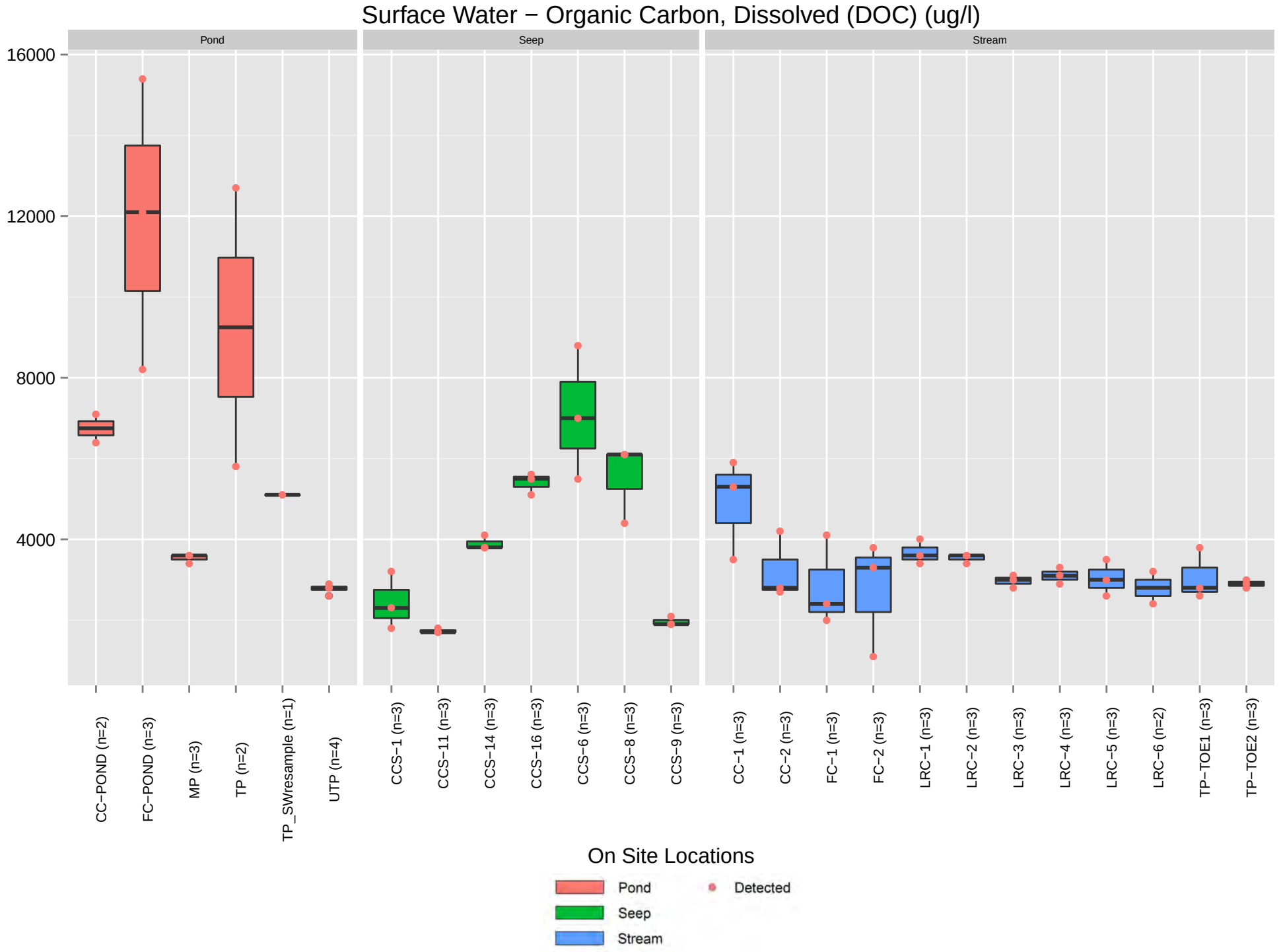


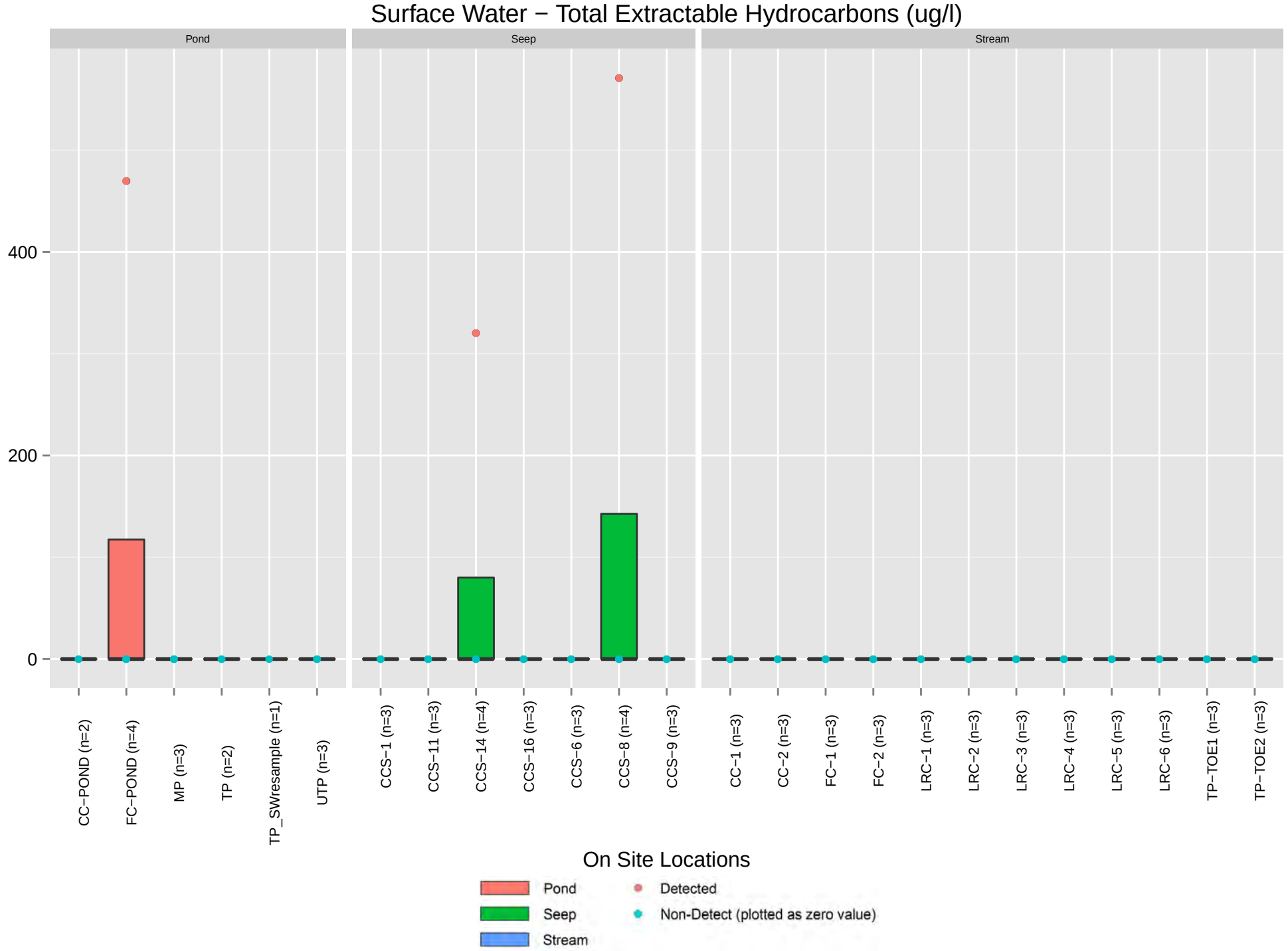
Attachment H-5
Organic, Non-Asbestos Box-and-Whisker Plots for All Media

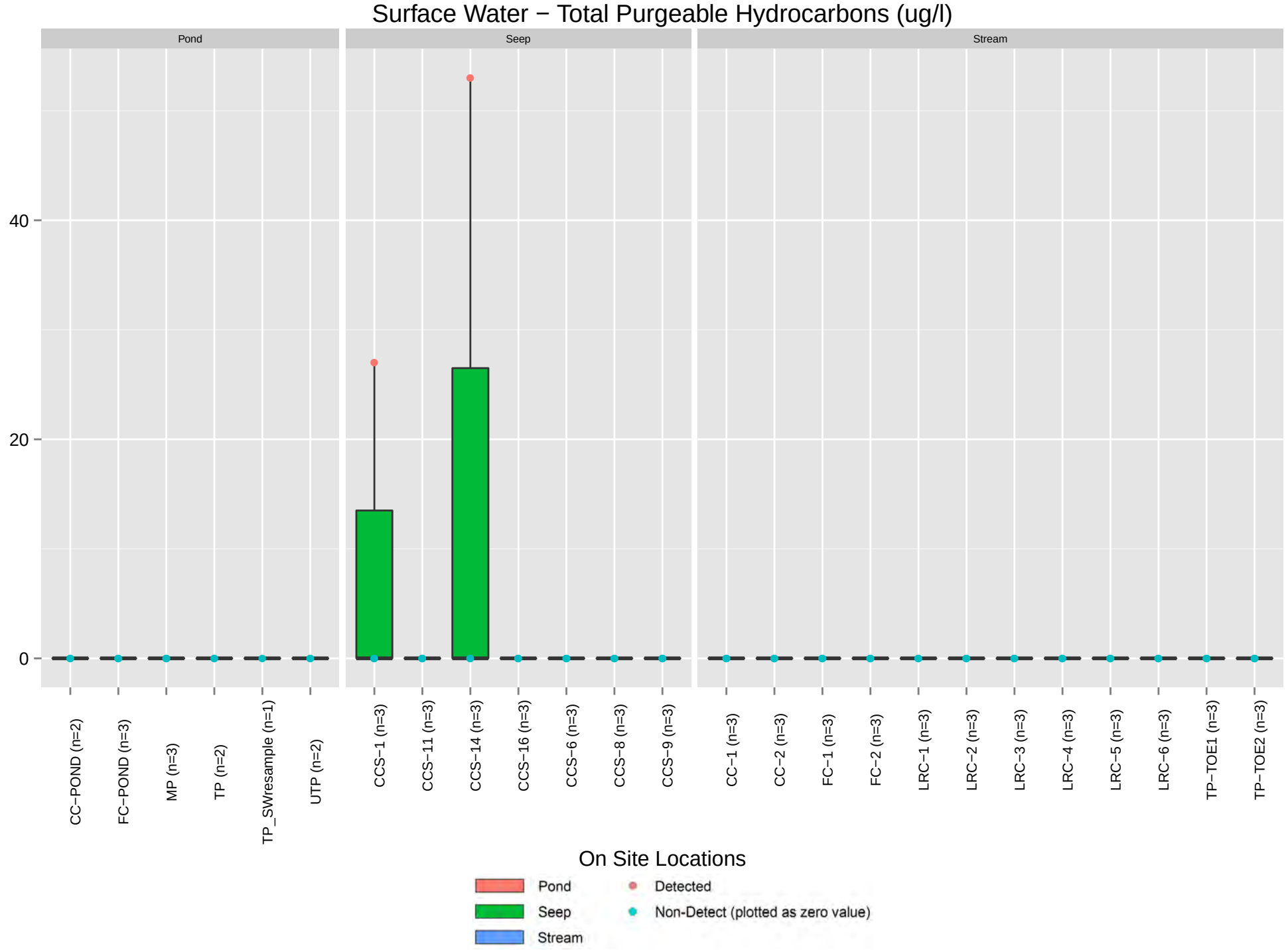
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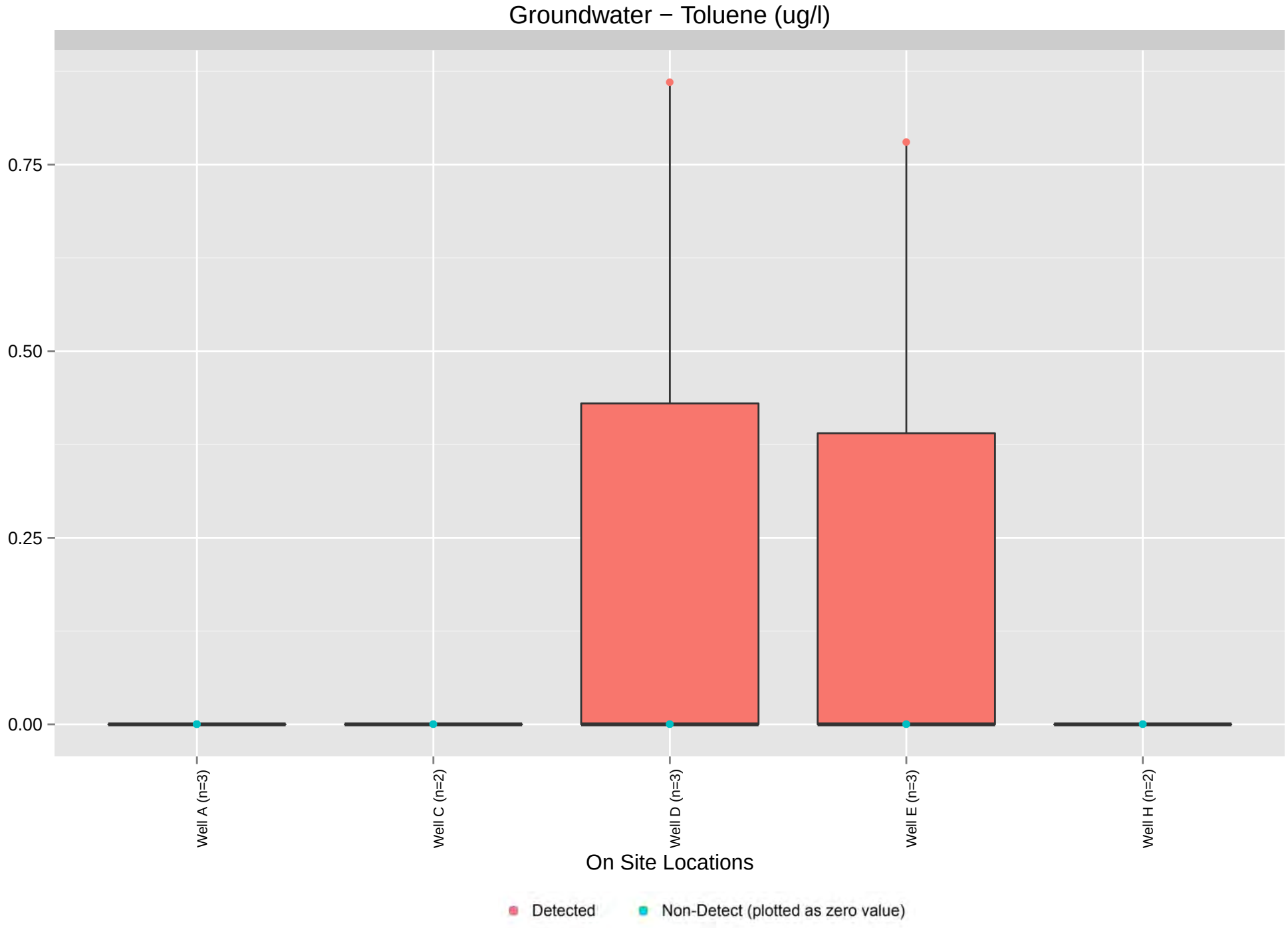

Surface Water − Benzene (ug/l)
Pond
Seep
Stream
0.6
0.4
0.2
0.0
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=6)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=6)
TP−TOE2 (n=3)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

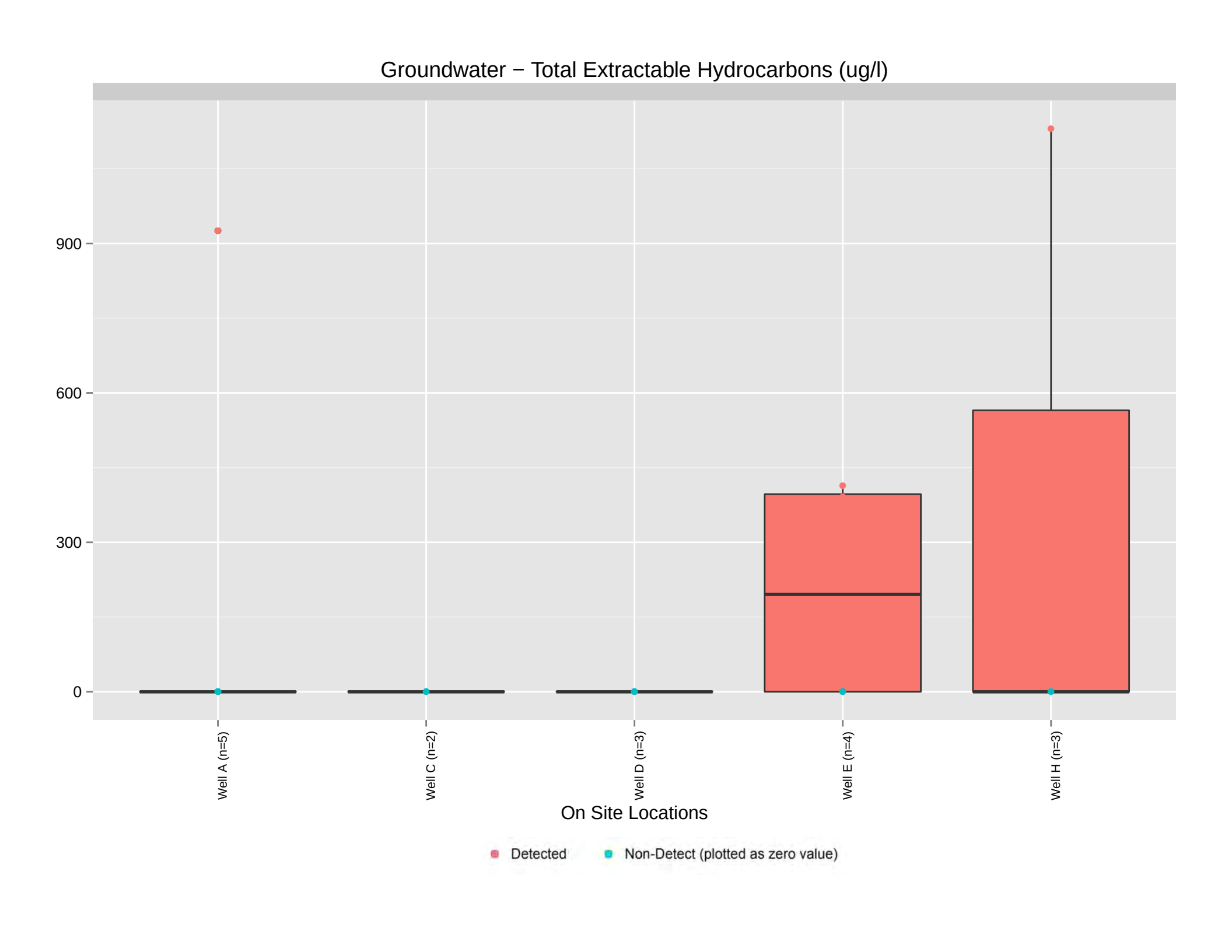

Surface Water − C5 to C8 Aliphatics (ug/l)
Pond
Seep
Stream
60
40
20
0
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

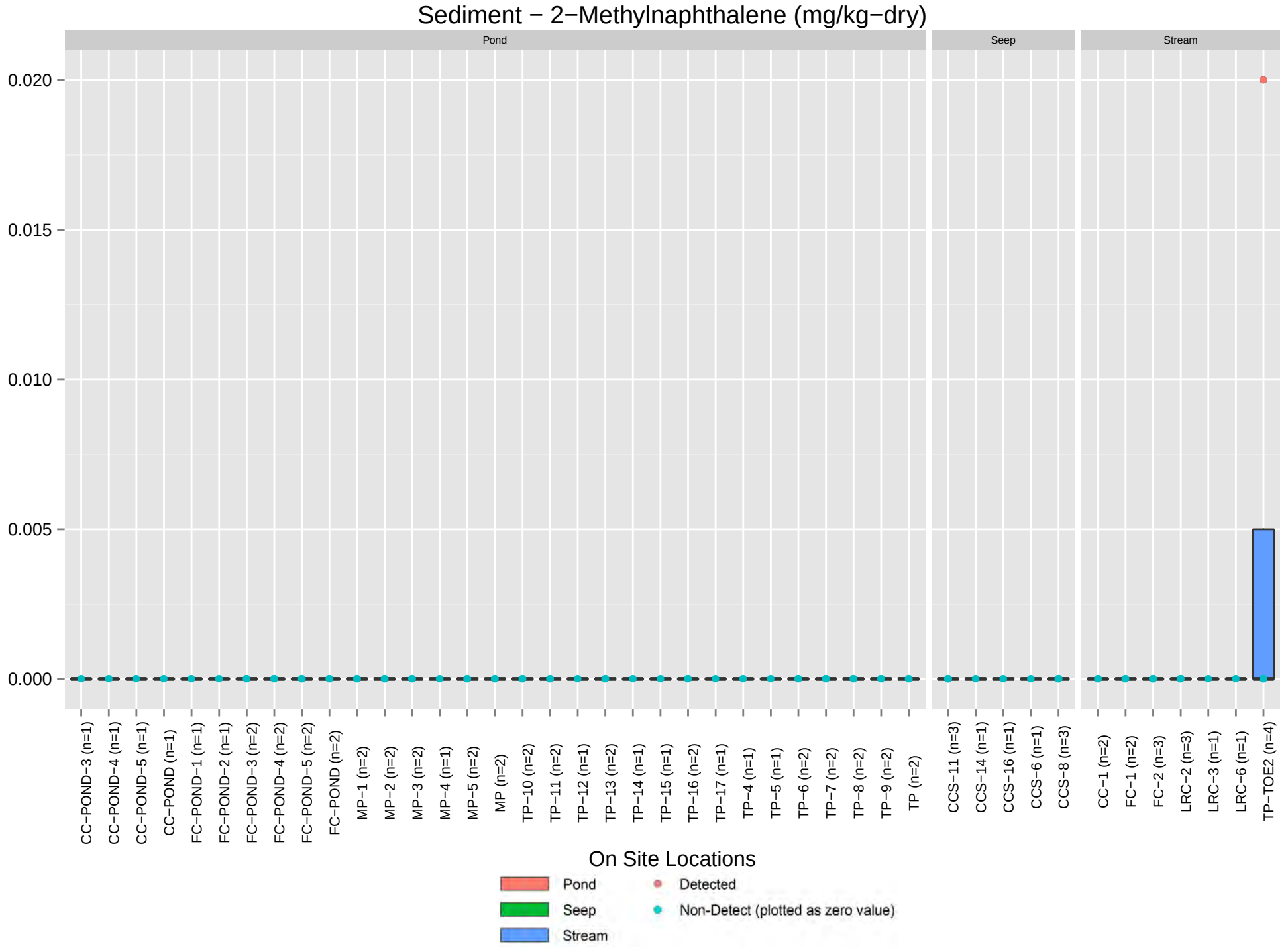

Surface Water − Organic Carbon, Dissolved (DOC) (ug/l)
Pond
Seep
Stream
16000
12000
8000
4000
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=4)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=2)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Pond
Seep
Stream
Detected

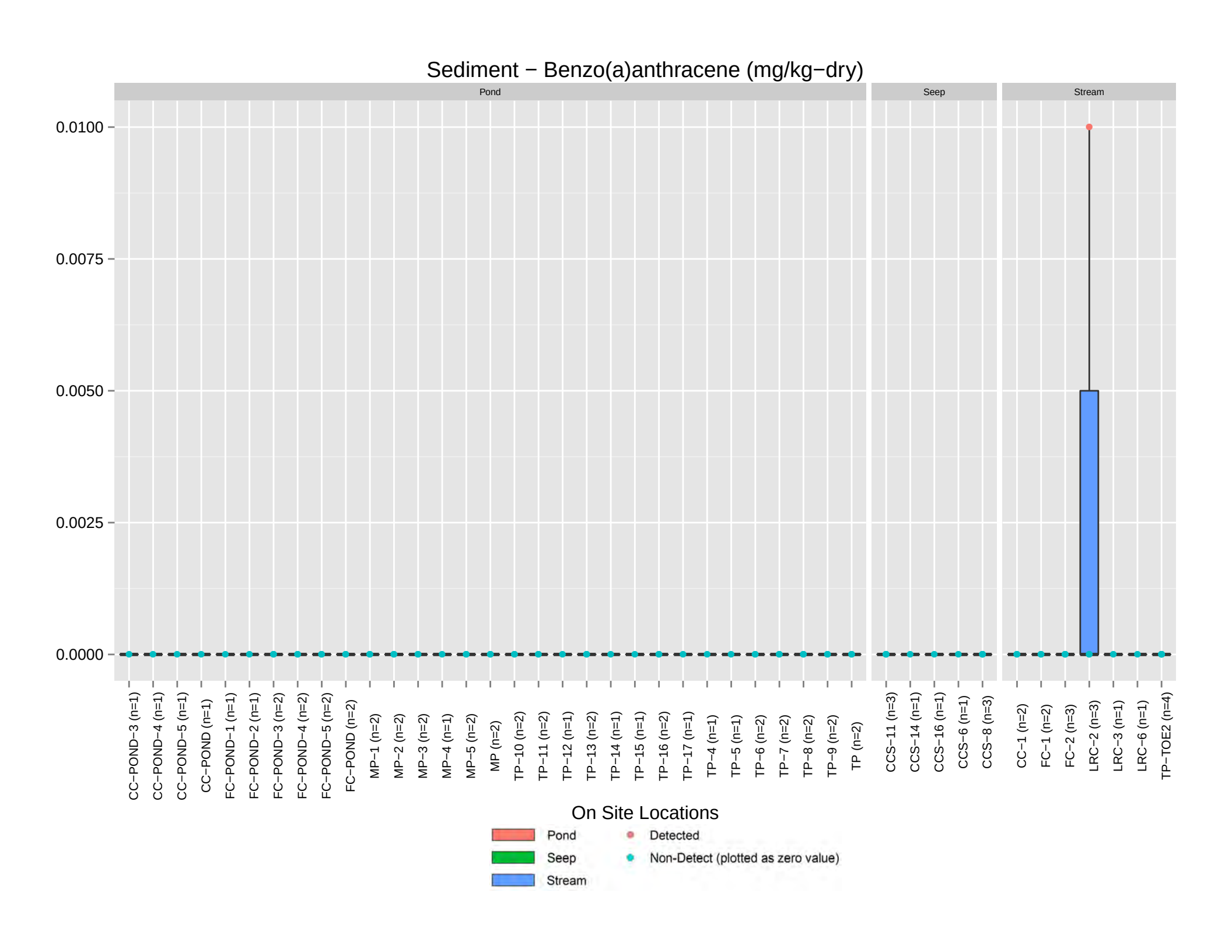

Surface Water − Total Extractable Hydrocarbons (ug/l)
Pond
Seep
Stream
400
200
0
CC−POND (n=2)
FC−POND (n=4)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=3)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=4)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=4)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

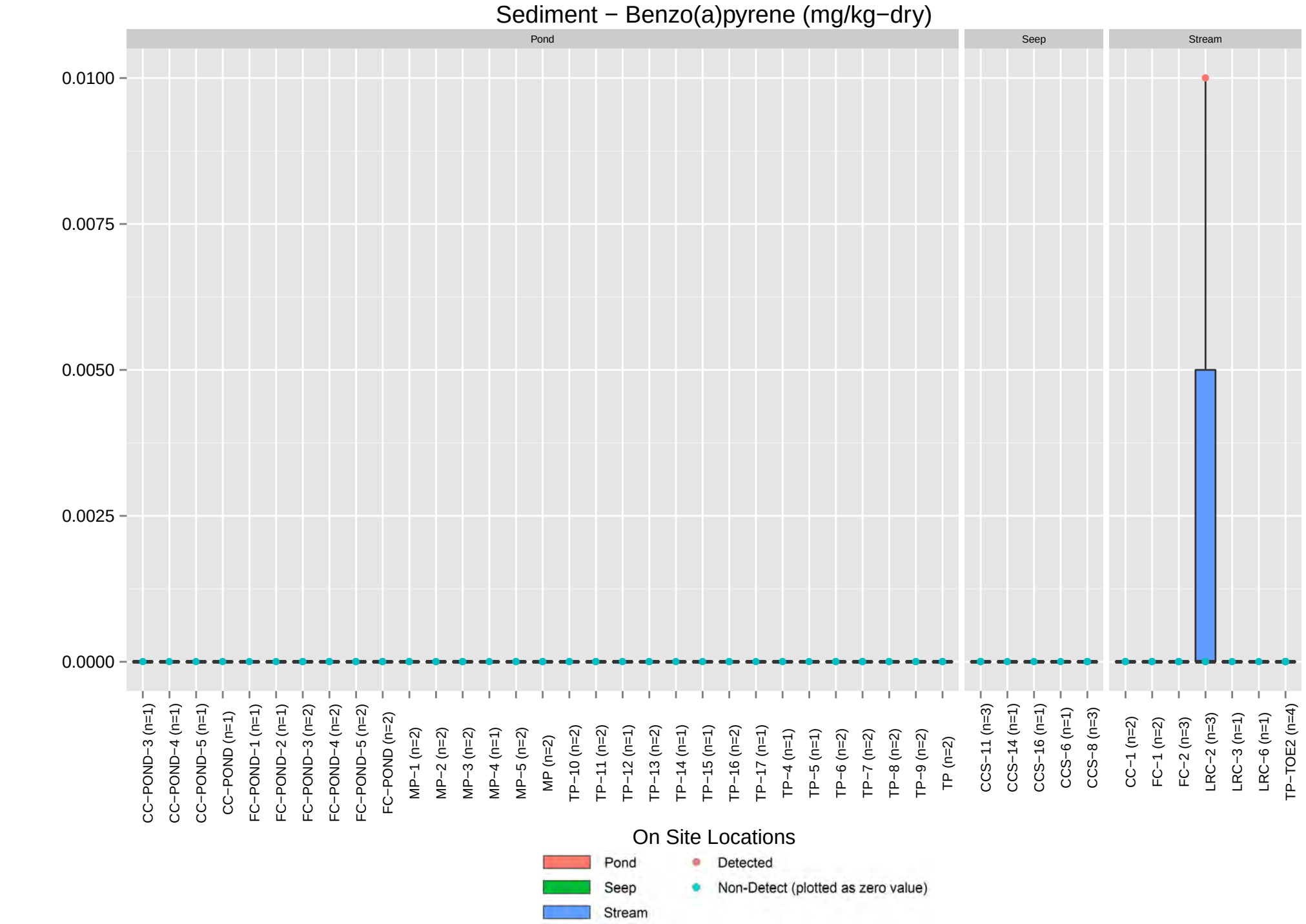

Surface Water − Total Purgeable Hydrocarbons (ug/l)
Pond
Seep
Stream
40
20
0
CC−POND (n=2)
FC−POND (n=3)
MP (n=3)
TP (n=2)
TP_SWresample (n=1)
UTP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

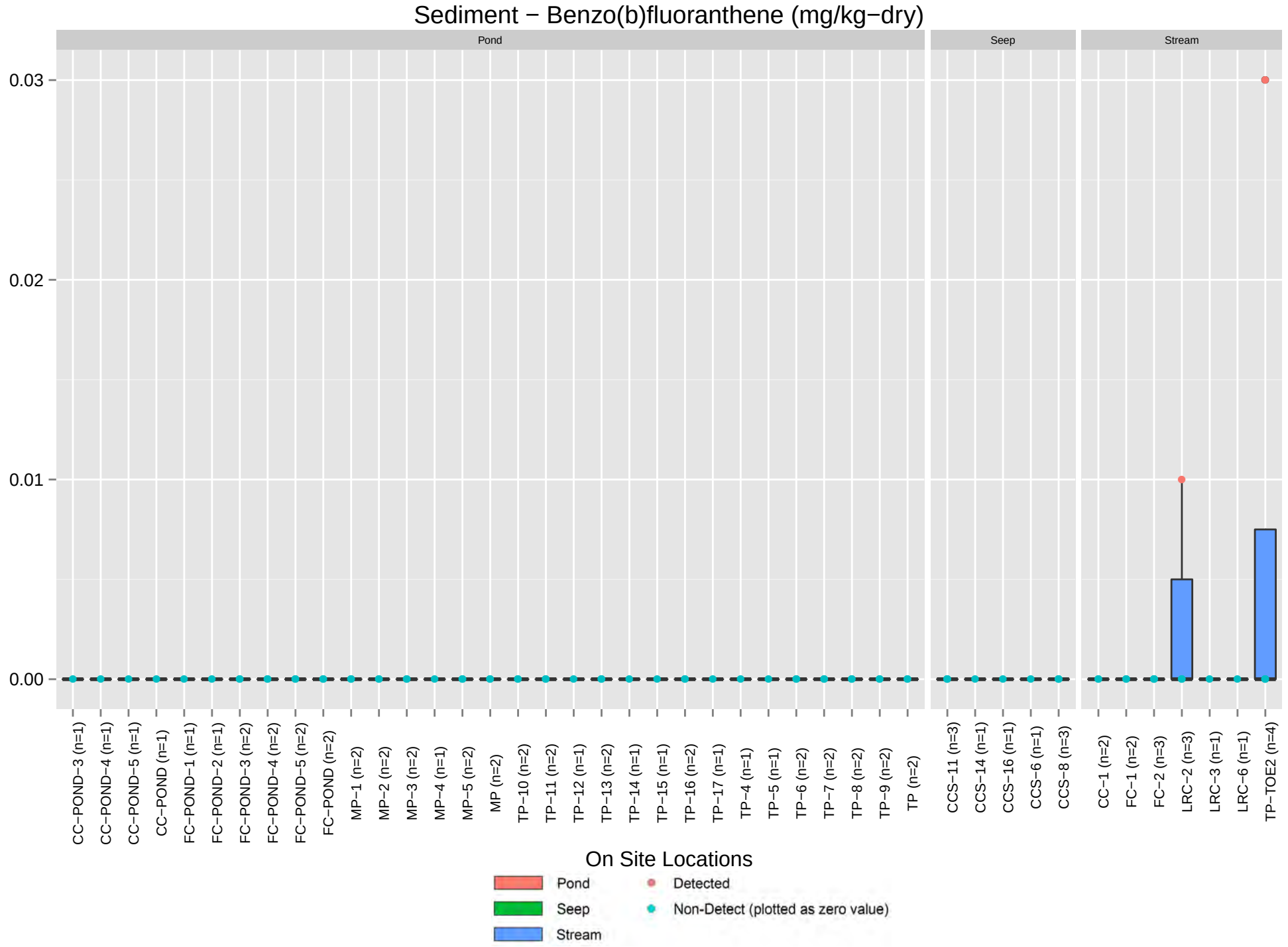

Groundwater − Toluene (ug/l)
0.75
0.50
0.25
0.00
Well A (n=3)
Well C (n=2)
Well D (n=3)
Well E (n=3)
Well H (n=2)
On Site Locations
Detected
Non-Detect (plotted as zero value)

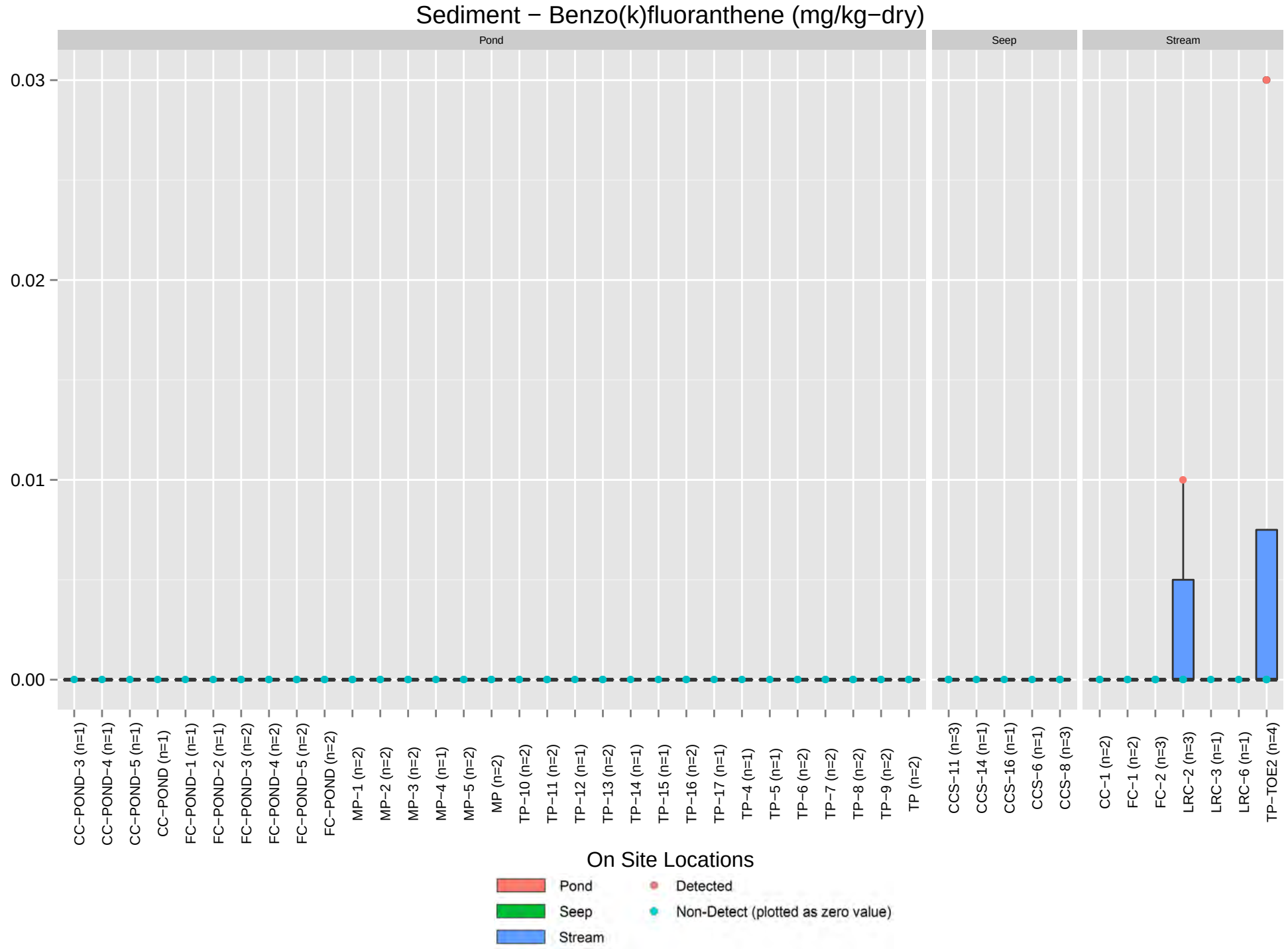

Groundwater − Total Extractable Hydrocarbons (ug/l)
900
600
300
0
Well A (n=5)
Well C (n=2)
Well D (n=3)
Well E (n=4)
Well H (n=3)
On Site Locations
Detected
Non-Detect (plotted as zero value)

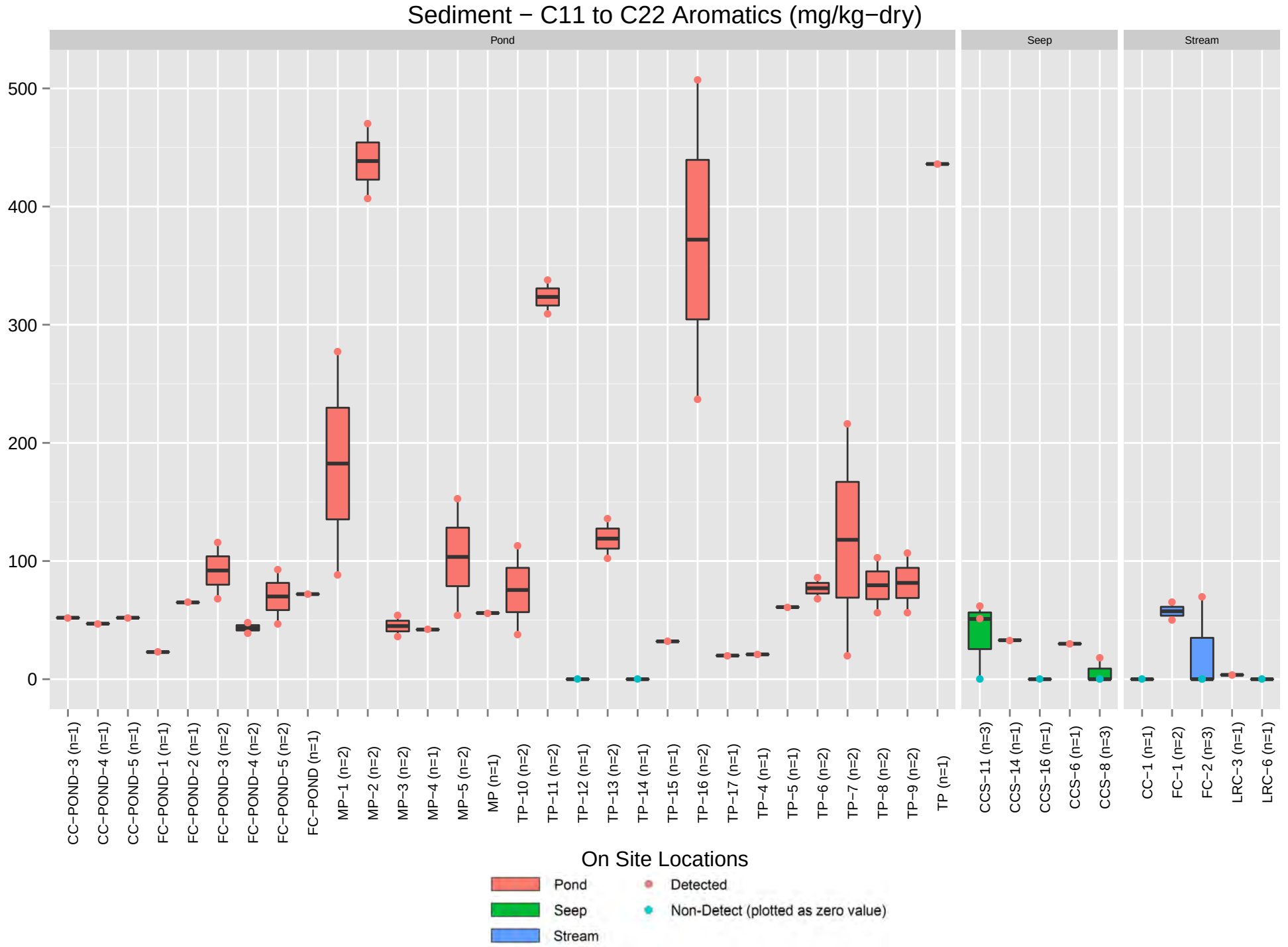

Sediment − 2−Methylnaphthalene (mg/kg−dry)
Pond
Seep
Stream
0.020
0.015
0.010
0.005
0.000
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
CC−POND (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=2)
FC−1 (n=2)
FC−2 (n=3)
LRC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

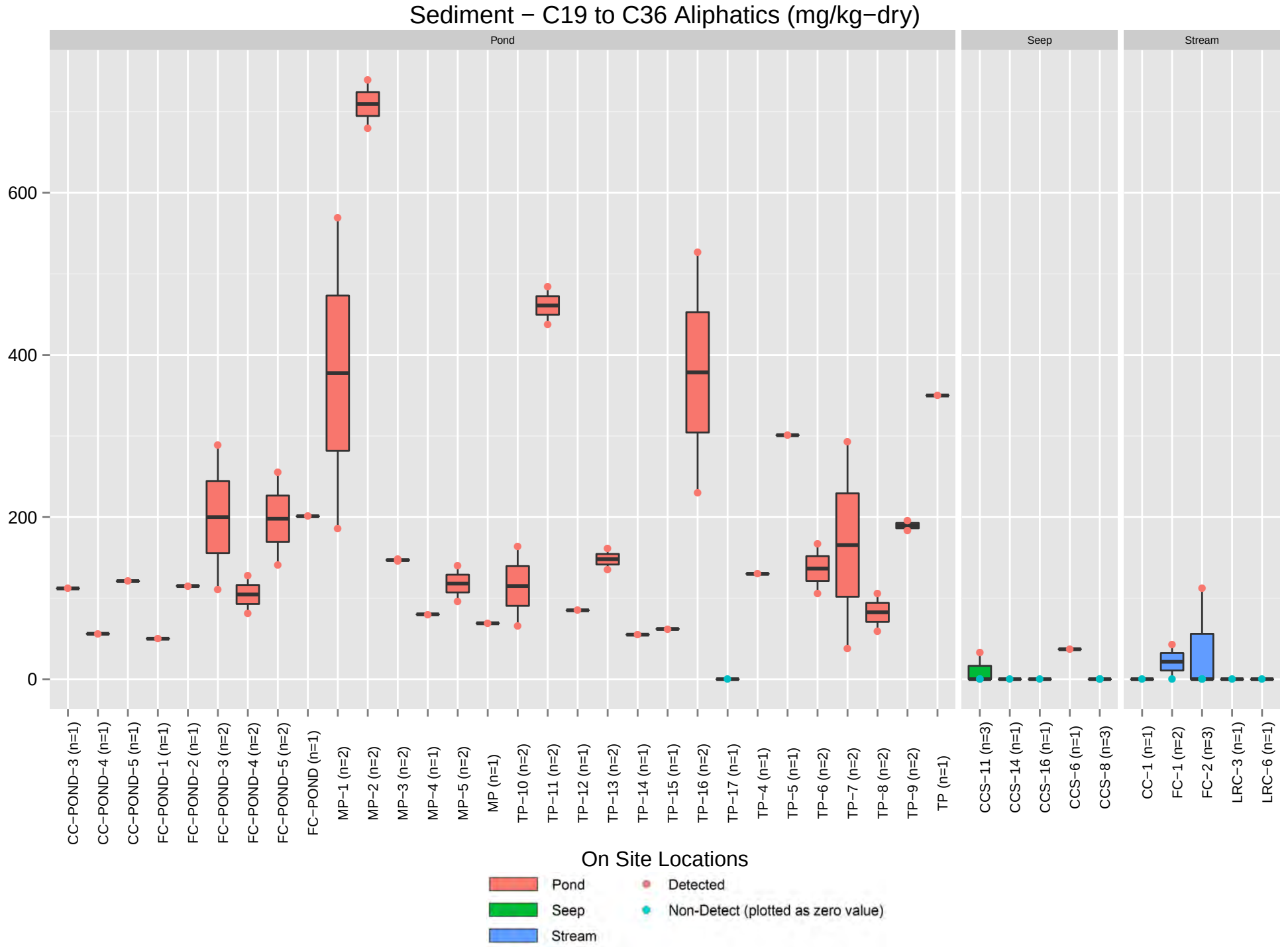

Sediment − Benzo(a)anthracene (mg/kg−dry)
Pond
Seep
Stream
0.0100
0.0075
0.0050
0.0025
0.0000
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
CC−POND (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=2)
FC−1 (n=2)
FC−2 (n=3)
LRC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

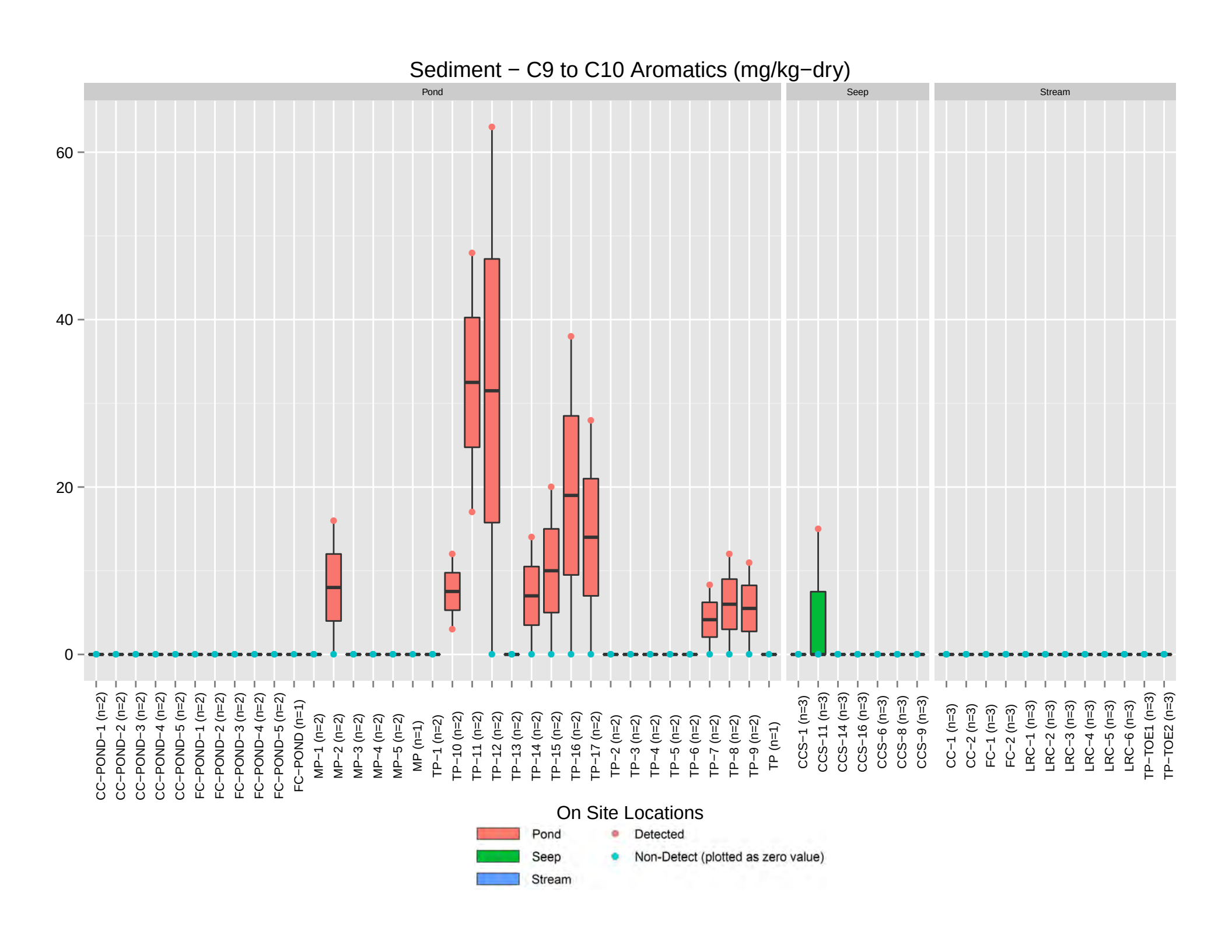

Sediment − Benzo(a)pyrene (mg/kg−dry)
Pond
Seep
Stream
0.0100
0.0075
0.0050
0.0025
0.0000
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
CC−POND (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=2)
FC−1 (n=2)
FC−2 (n=3)
LRC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

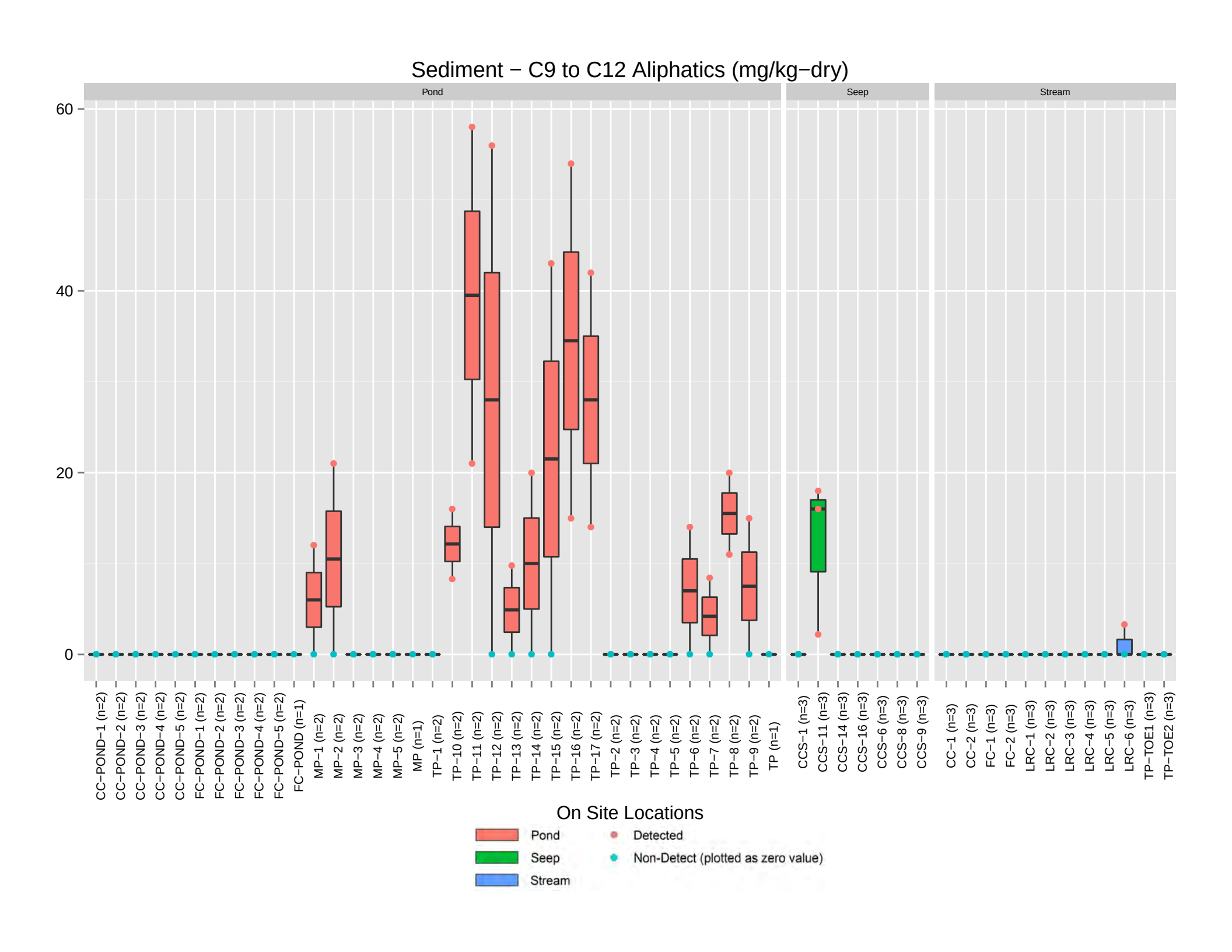

Sediment − Benzo(b)fluoranthene (mg/kg−dry)
Pond
Seep
Stream
0.03
0.02
0.01
0.00
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
CC−POND (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=2)
FC−1 (n=2)
FC−2 (n=3)
LRC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

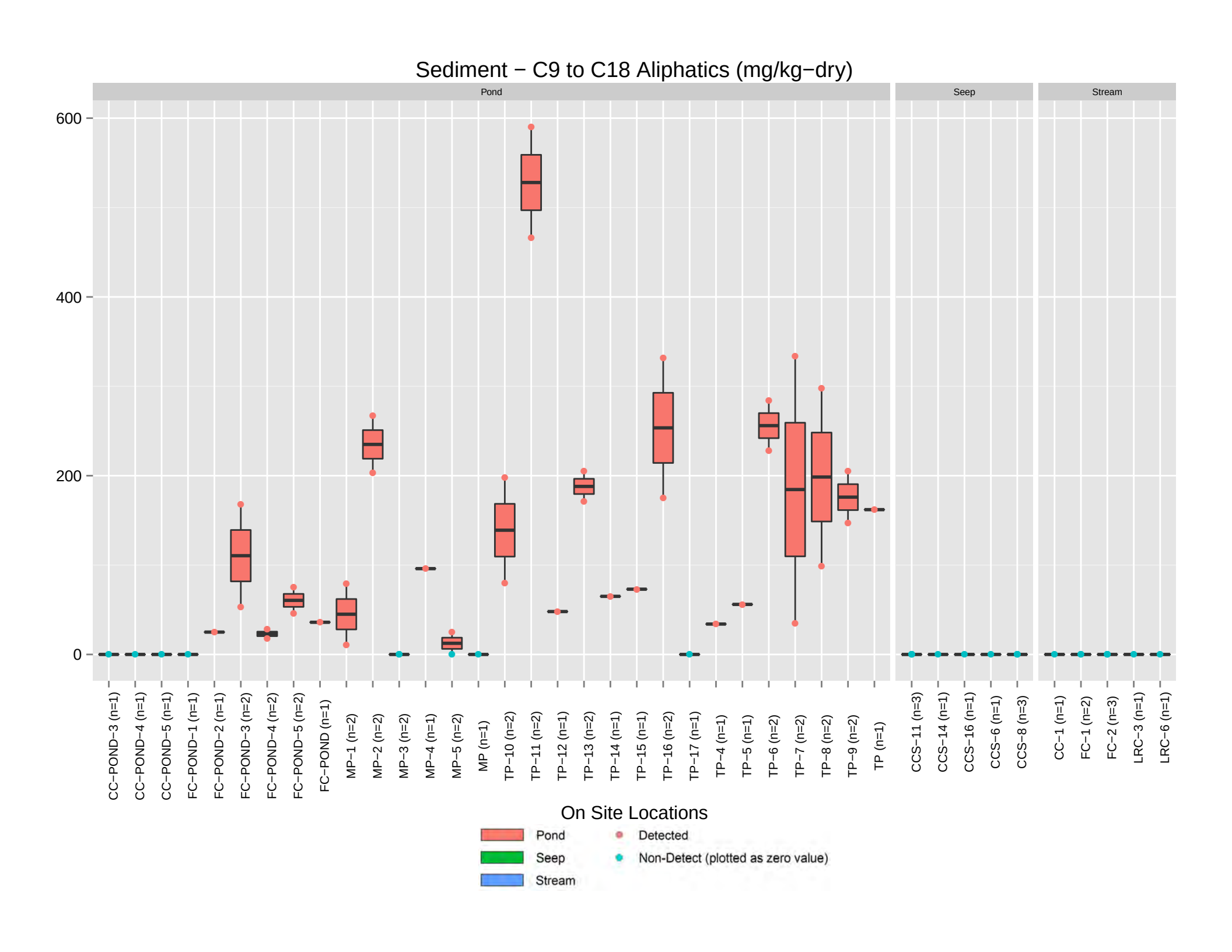

Sediment − Benzo(k)fluoranthene (mg/kg−dry)
Pond
Seep
Stream
0.03
0.02
0.01
0.00
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
CC−POND (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=2)
FC−1 (n=2)
FC−2 (n=3)
LRC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

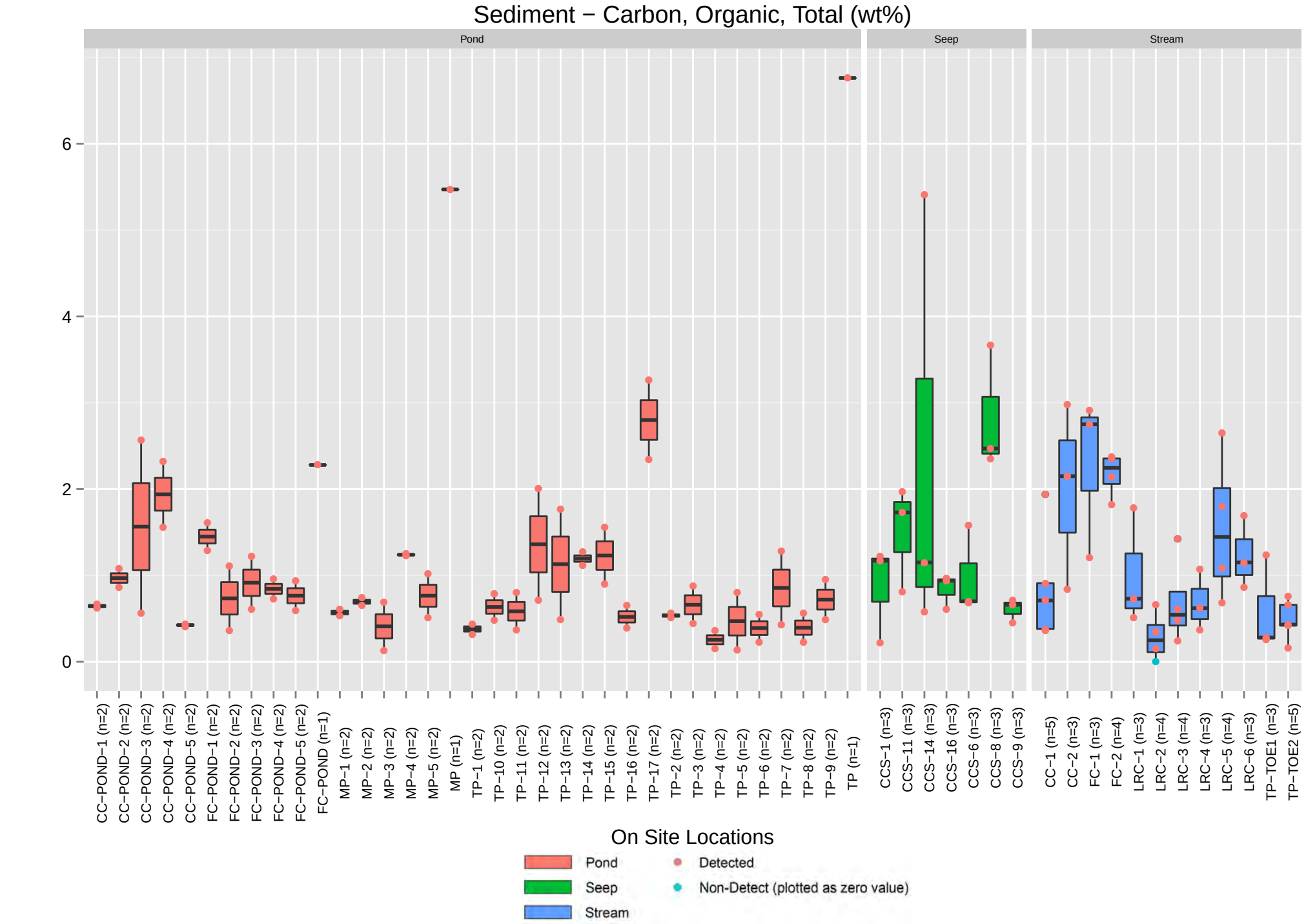

Sediment − C11 to C22 Aromatics (mg/kg−dry)
Pond
Seep
Stream
500
400
300
200
100
0
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=1)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=1)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=1)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=1)
FC−1 (n=2)
FC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

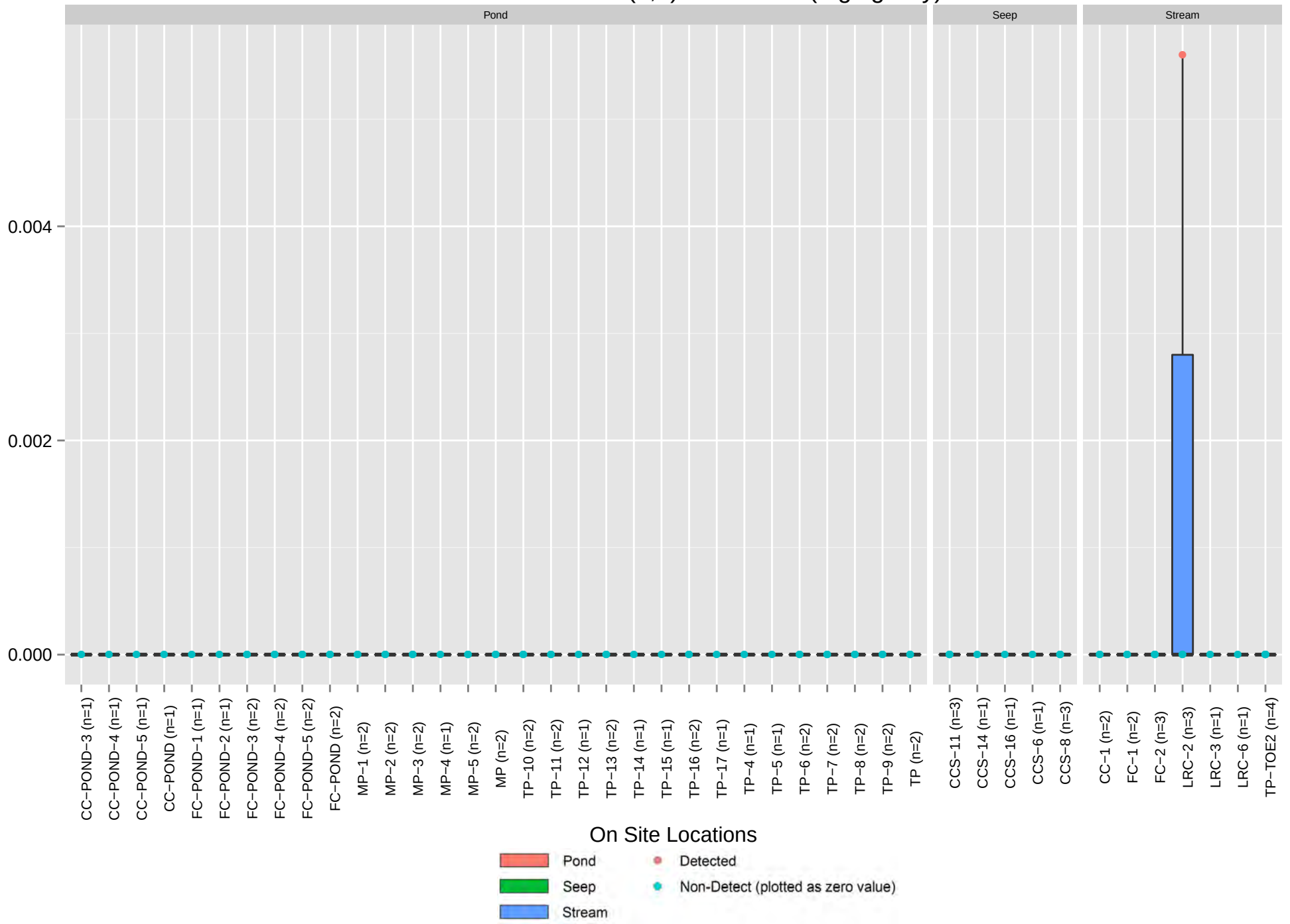

Sediment − C19 to C36 Aliphatics (mg/kg−dry)
Pond
Seep
Stream
600
400
200
0
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=1)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=1)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=1)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=1)
FC−1 (n=2)
FC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

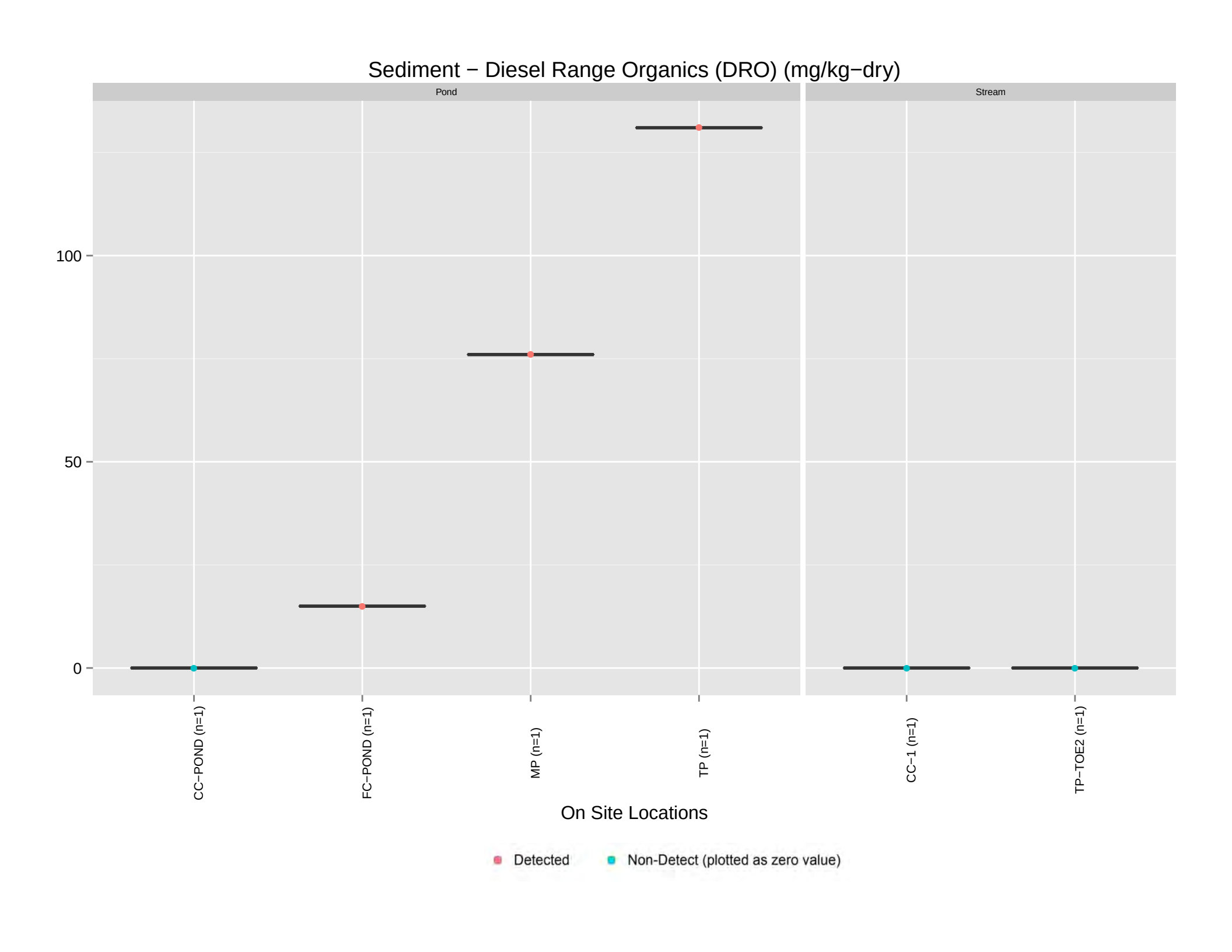

Sediment − C9 to C10 Aromatics (mg/kg−dry)
Pond
Seep
Stream
60
40
20
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=1)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=1)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=1)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

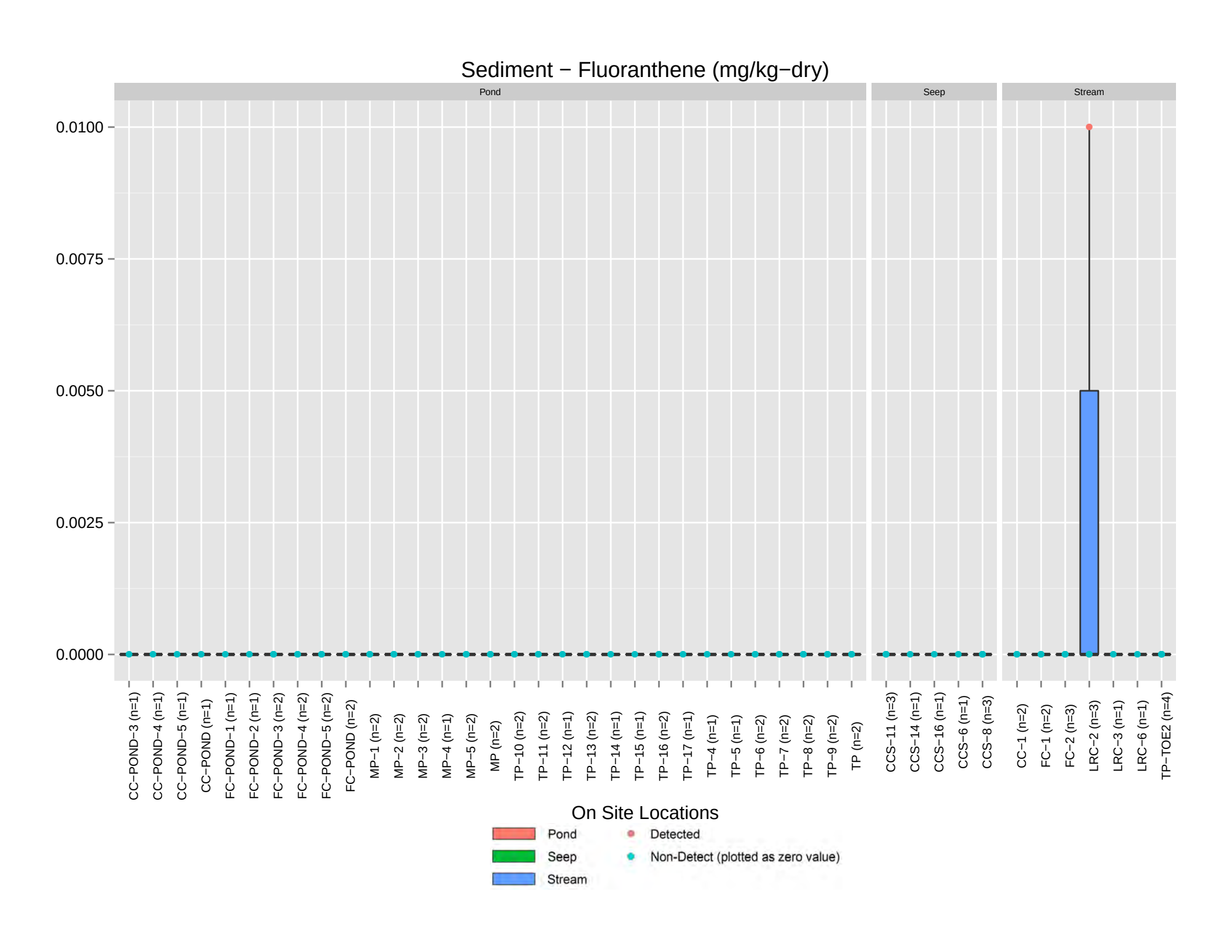

Sediment − C9 to C12 Aliphatics (mg/kg−dry)
Pond
Seep
Stream
60
40
20
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=1)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=1)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=1)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=3)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

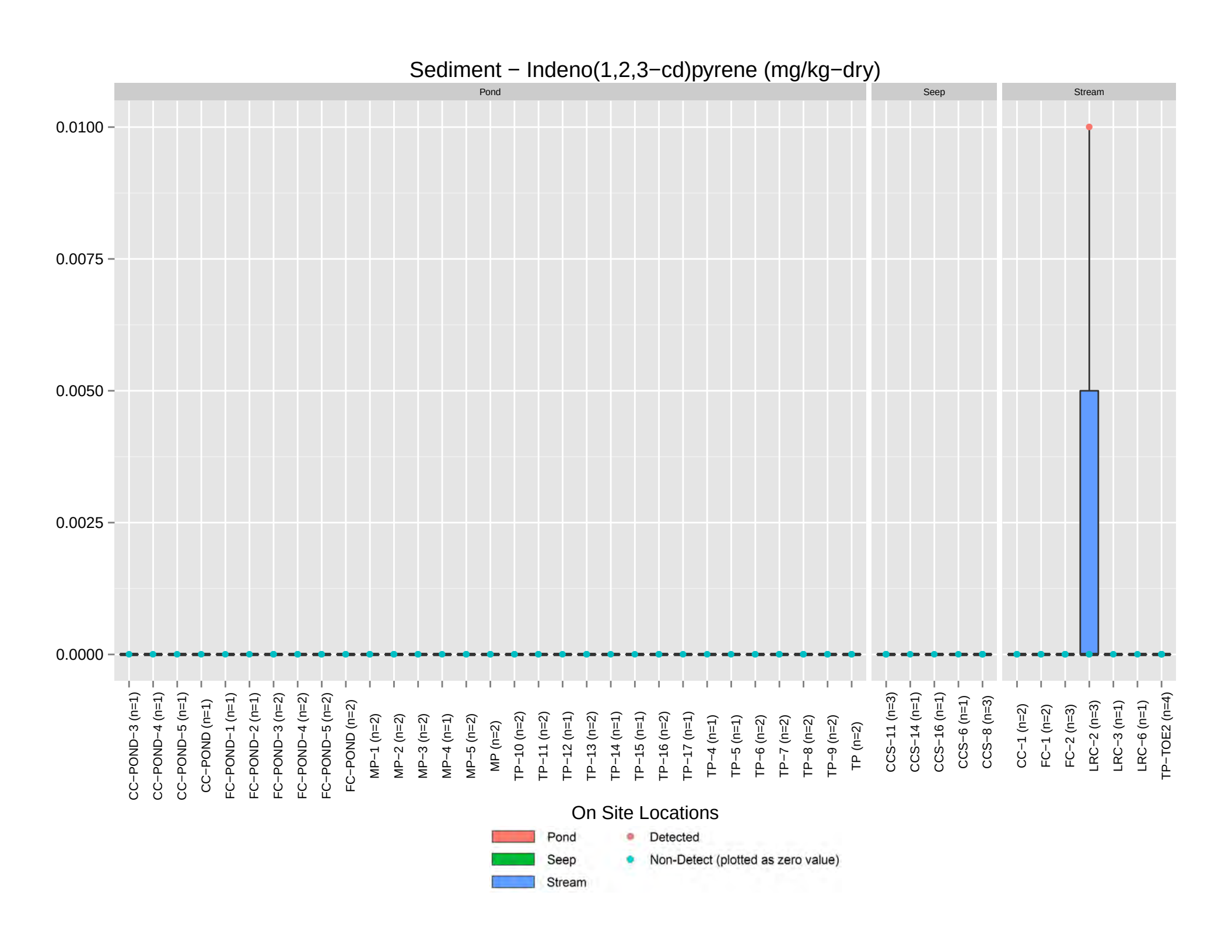

Sediment − C9 to C18 Aliphatics (mg/kg−dry)
Pond
Seep
Stream
600
400
200
0
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=1)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=1)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=1)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=1)
FC−1 (n=2)
FC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

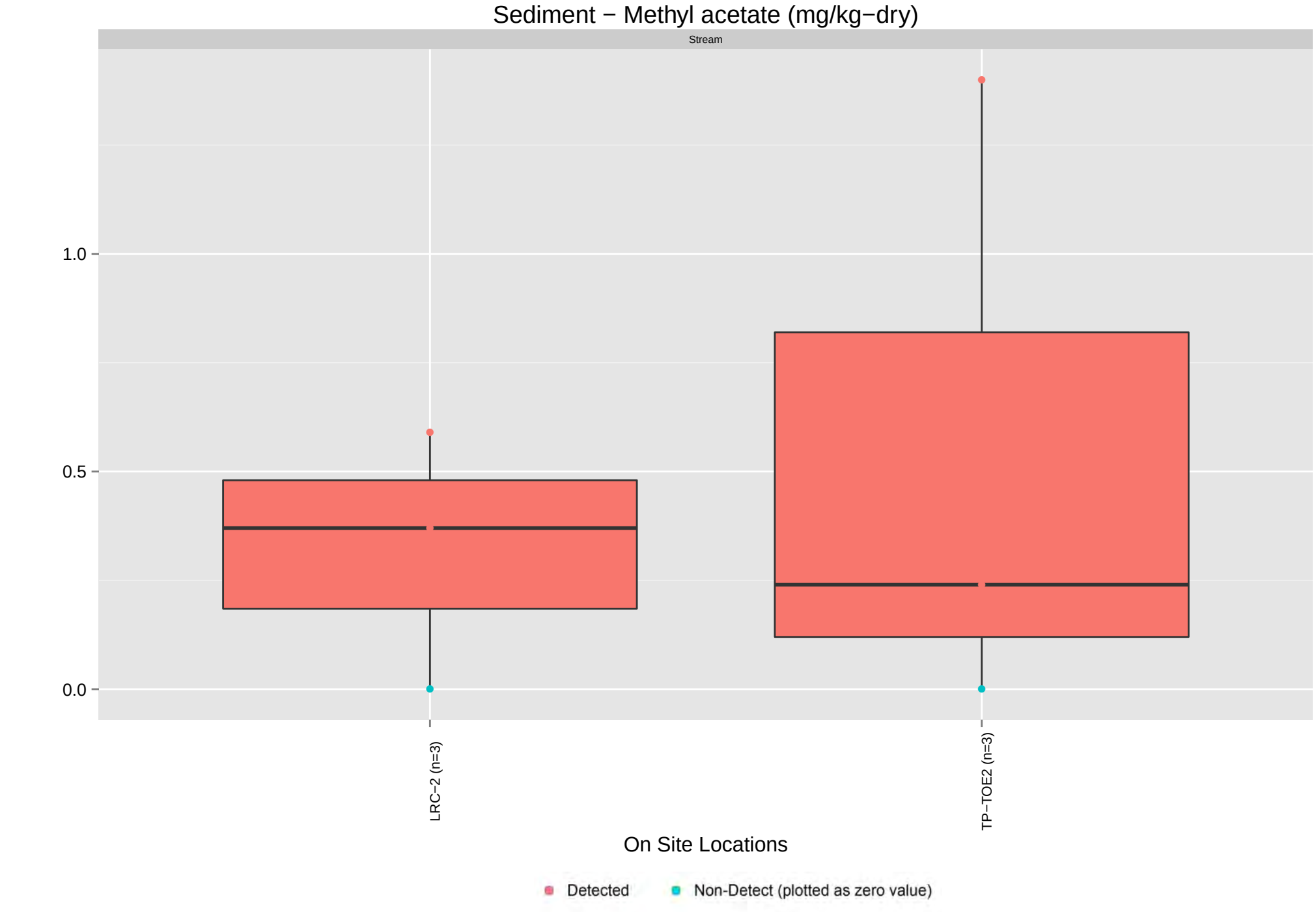

Sediment − Carbon, Organic, Total (wt%)
Pond
Seep
Stream
6
4
2
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=1)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=1)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=1)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=5)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=4)
LRC−1 (n=3)
LRC−2 (n=4)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=4)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=5)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

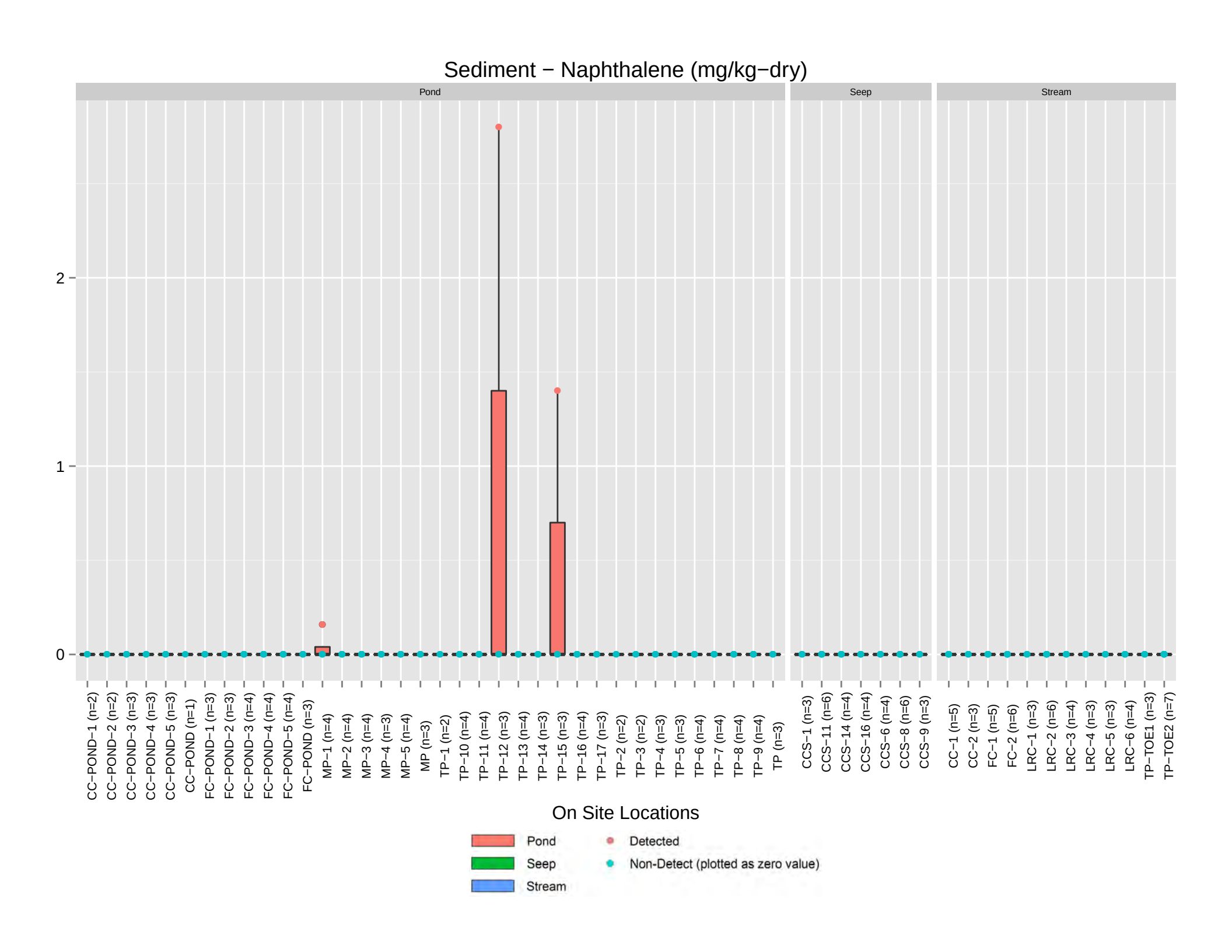

Sediment − Dibenzo(a,h)anthracene (mg/kg−dry)
Pond
Seep
Stream
0.004
0.002
0.000
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
CC−POND (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=2)
FC−1 (n=2)
FC−2 (n=3)
LRC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

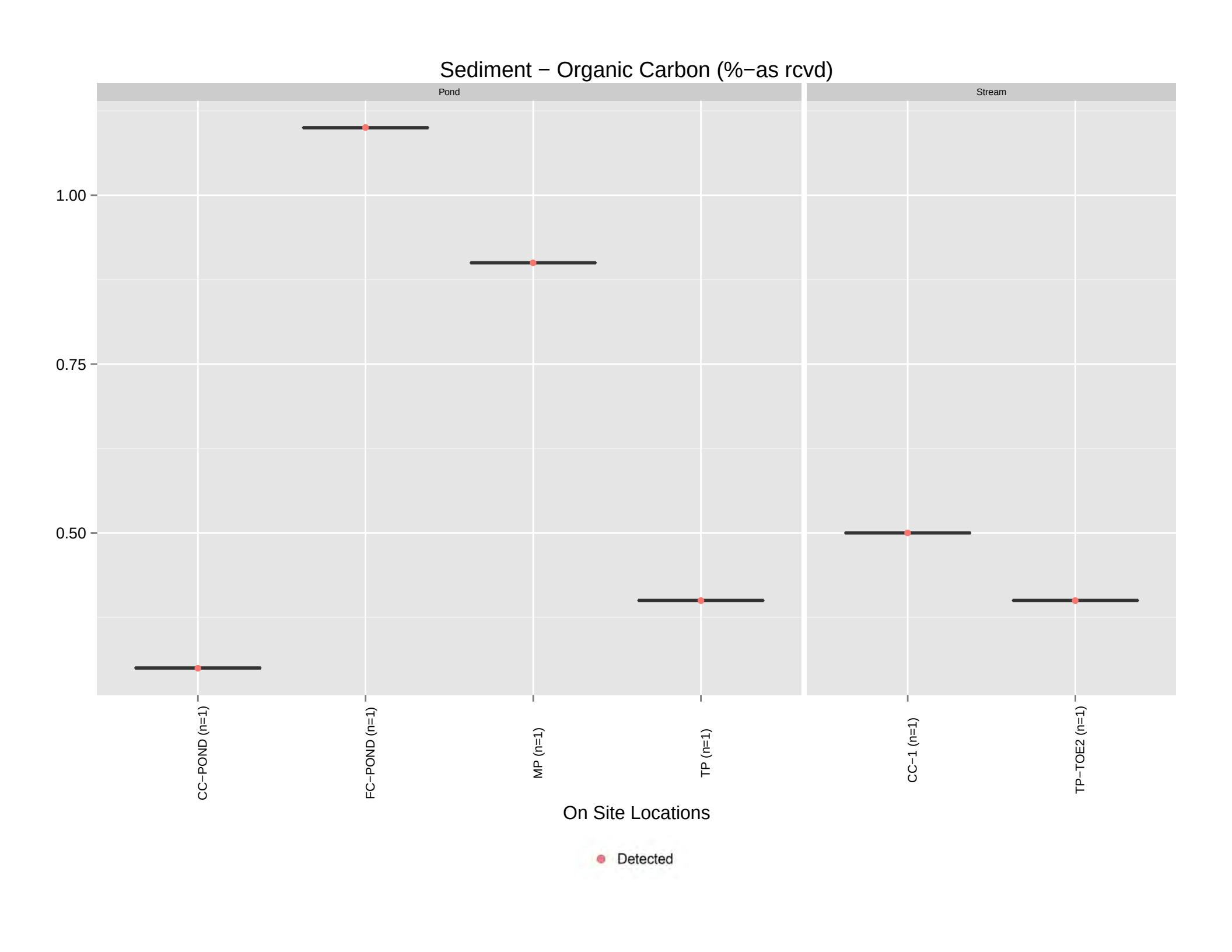

Sediment − Diesel Range Organics (DRO) (mg/kg−dry)
Pond
Stream
100
50
0
CC−POND (n=1)
FC−POND (n=1)
MP (n=1)
TP (n=1)
CC−1 (n=1)
TP−TOE2 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

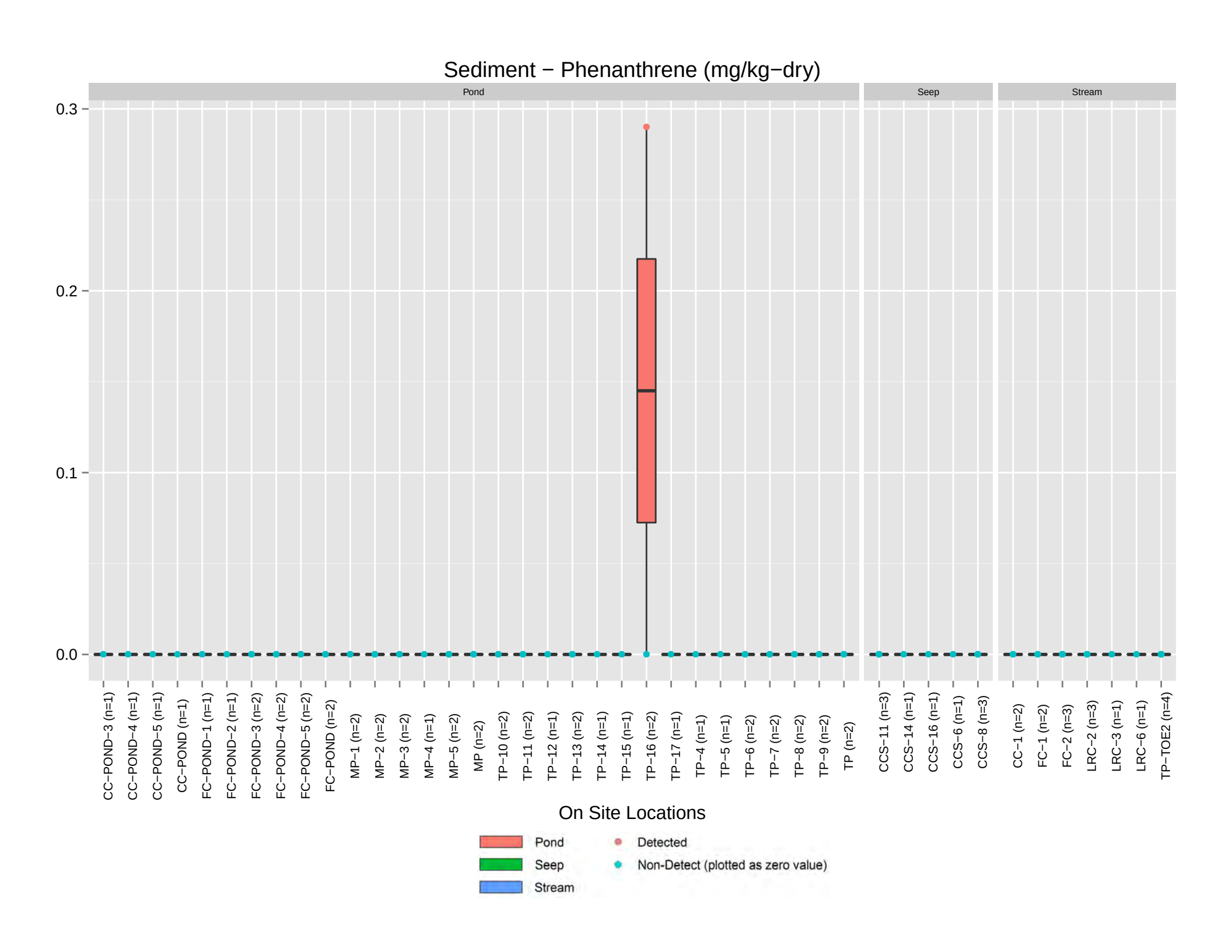

Sediment − Fluoranthene (mg/kg−dry)
Pond
Seep
Stream
0.0100
0.0075
0.0050
0.0025
0.0000
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
CC−POND (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=2)
FC−1 (n=2)
FC−2 (n=3)
LRC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

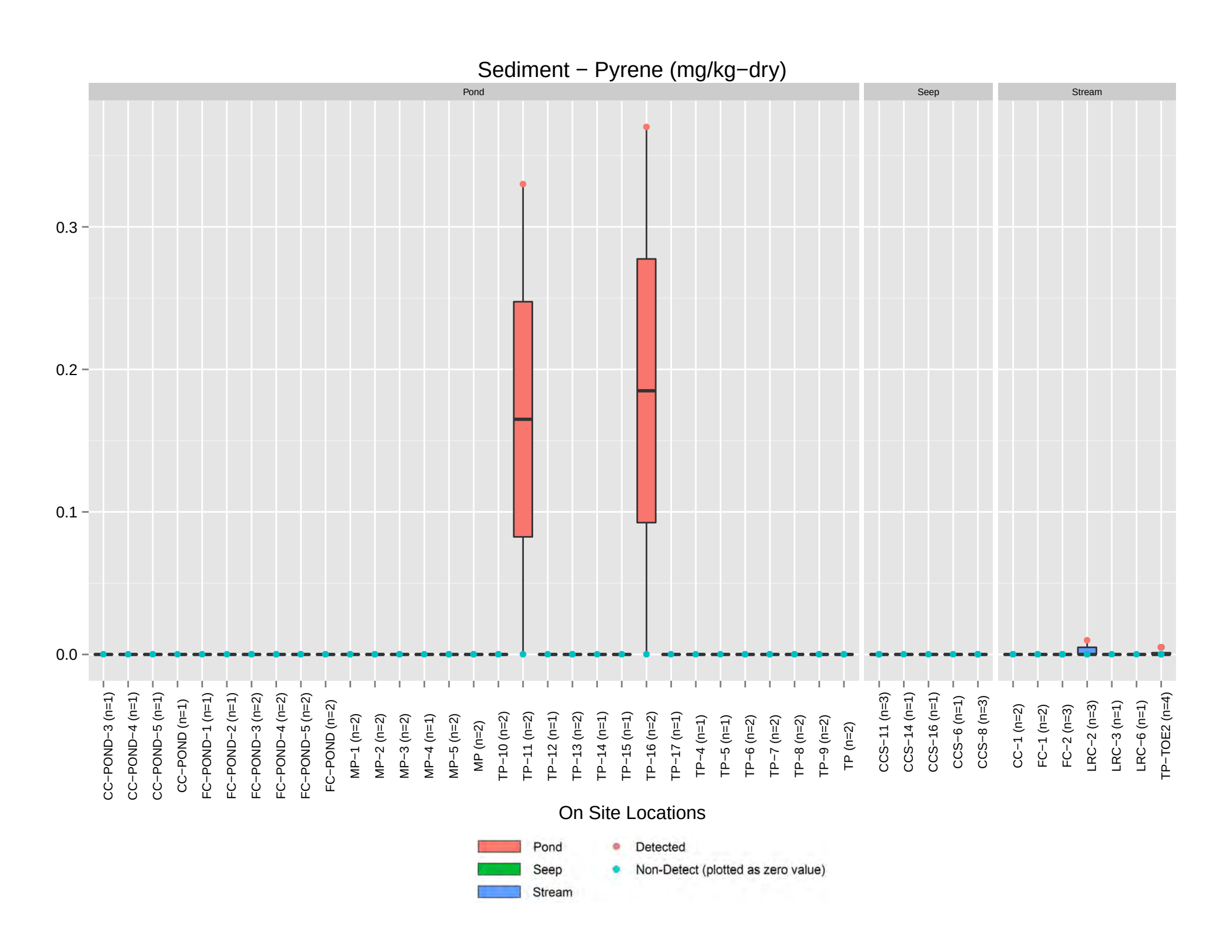

Sediment − Indeno(1,2,3−cd)pyrene (mg/kg−dry)
Pond
Seep
Stream
0.0100
0.0075
0.0050
0.0025
0.0000
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
CC−POND (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=2)
FC−1 (n=2)
FC−2 (n=3)
LRC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

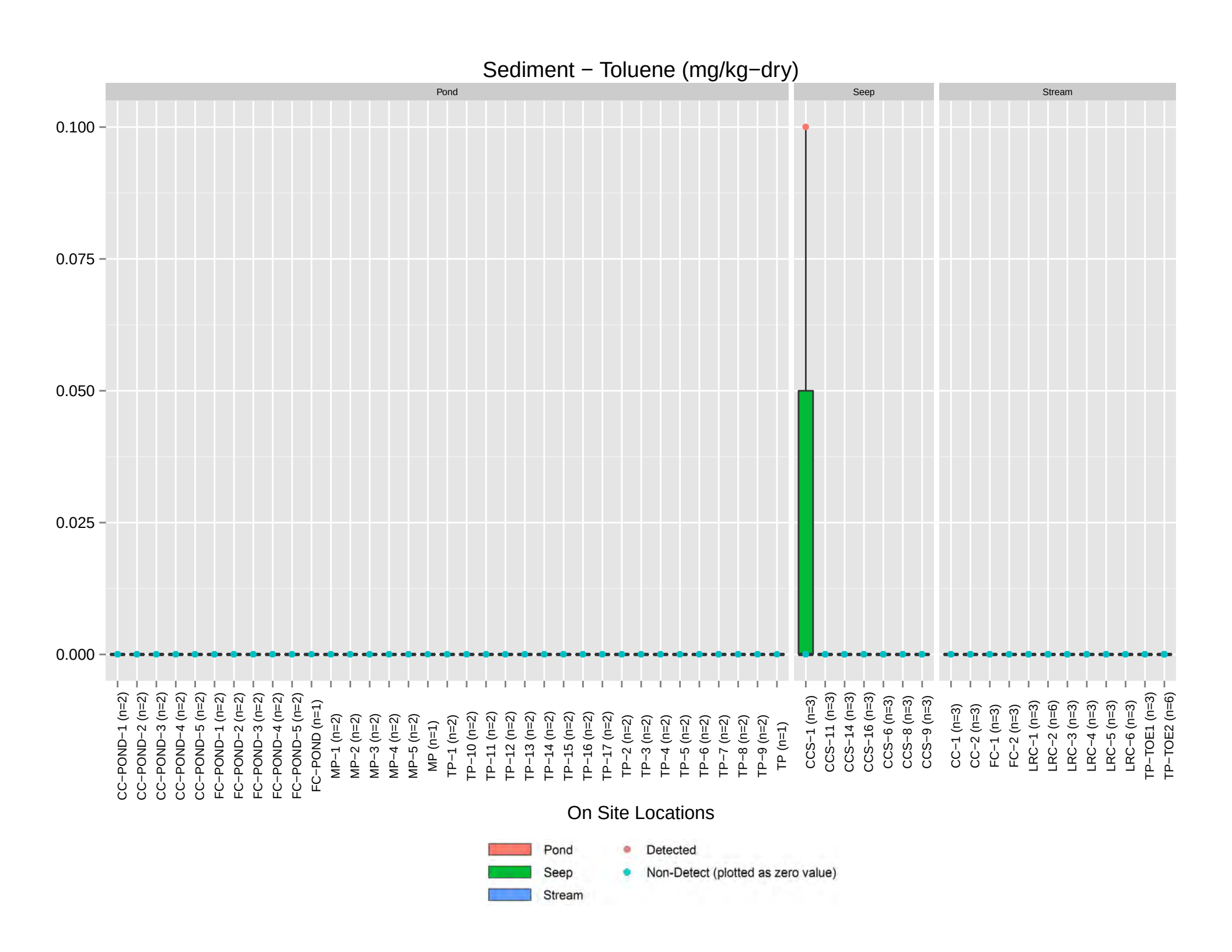

Sediment − Methyl acetate (mg/kg−dry)
Stream
1.0
0.5
0.0
LRC−2 (n=3)
TP−TOE2 (n=3)
On Site Locations
Detected
Non-Detect (plotted as zero value)

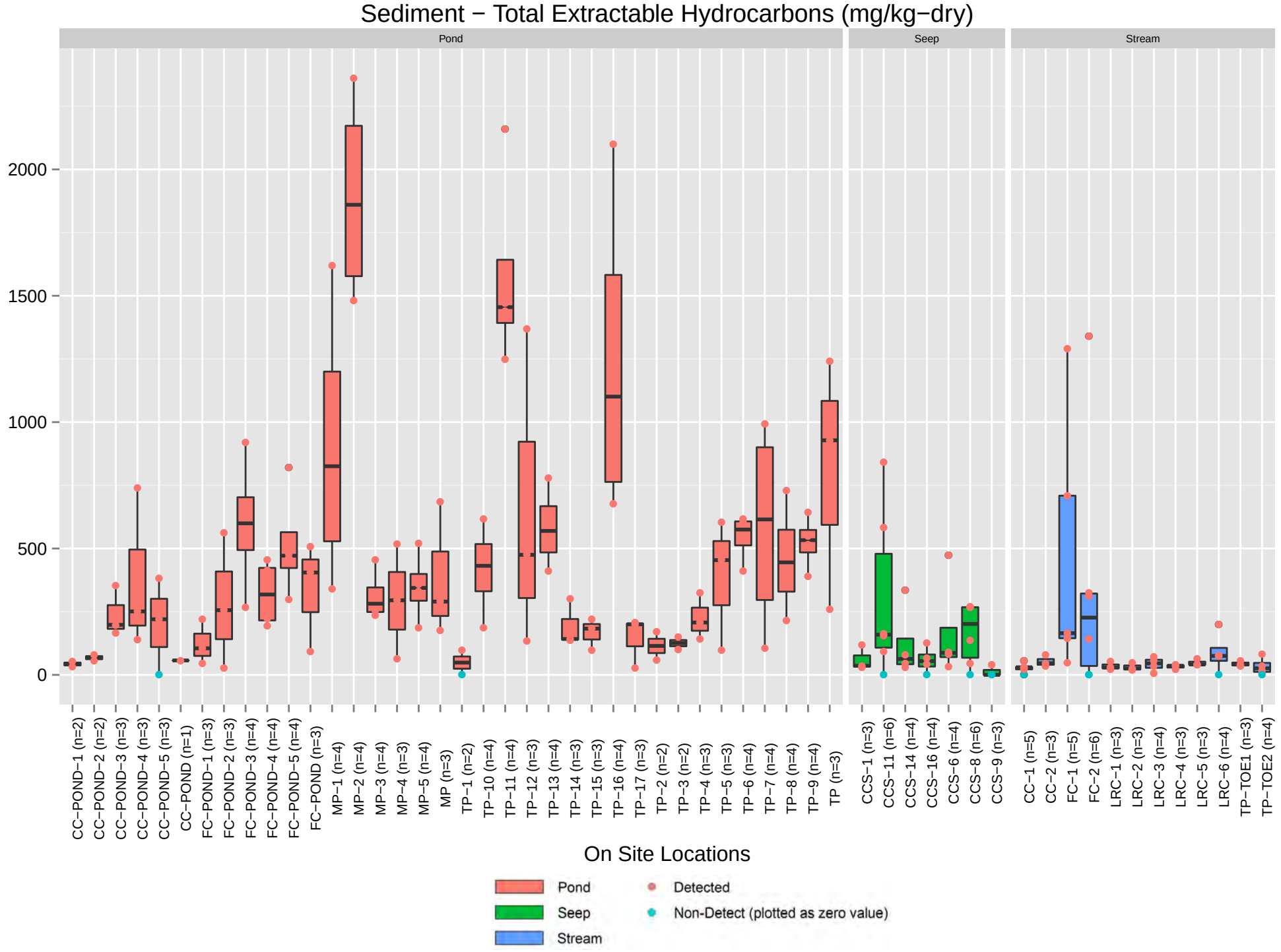

Sediment − Naphthalene (mg/kg−dry)
Pond
Seep
Stream
2
1
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=3)
CC−POND−4 (n=3)
CC−POND−5 (n=3)
CC−POND (n=1)
FC−POND−1 (n=3)
FC−POND−2 (n=3)
FC−POND−3 (n=4)
FC−POND−4 (n=4)
FC−POND−5 (n=4)
FC−POND (n=3)
MP−1 (n=4)
MP−2 (n=4)
MP−3 (n=4)
MP−4 (n=3)
MP−5 (n=4)
MP (n=3)
TP−1 (n=2)
TP−10 (n=4)
TP−11 (n=4)
TP−12 (n=3)
TP−13 (n=4)
TP−14 (n=3)
TP−15 (n=3)
TP−16 (n=4)
TP−17 (n=3)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=3)
TP−5 (n=3)
TP−6 (n=4)
TP−7 (n=4)
TP−8 (n=4)
TP−9 (n=4)
TP (n=3)
CCS−1 (n=3)
CCS−11 (n=6)
CCS−14 (n=4)
CCS−16 (n=4)
CCS−6 (n=4)
CCS−8 (n=6)
CCS−9 (n=3)
CC−1 (n=5)
CC−2 (n=3)
FC−1 (n=5)
FC−2 (n=6)
LRC−1 (n=3)
LRC−2 (n=6)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=4)
TP−TOE1 (n=3)
TP−TOE2 (n=7)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

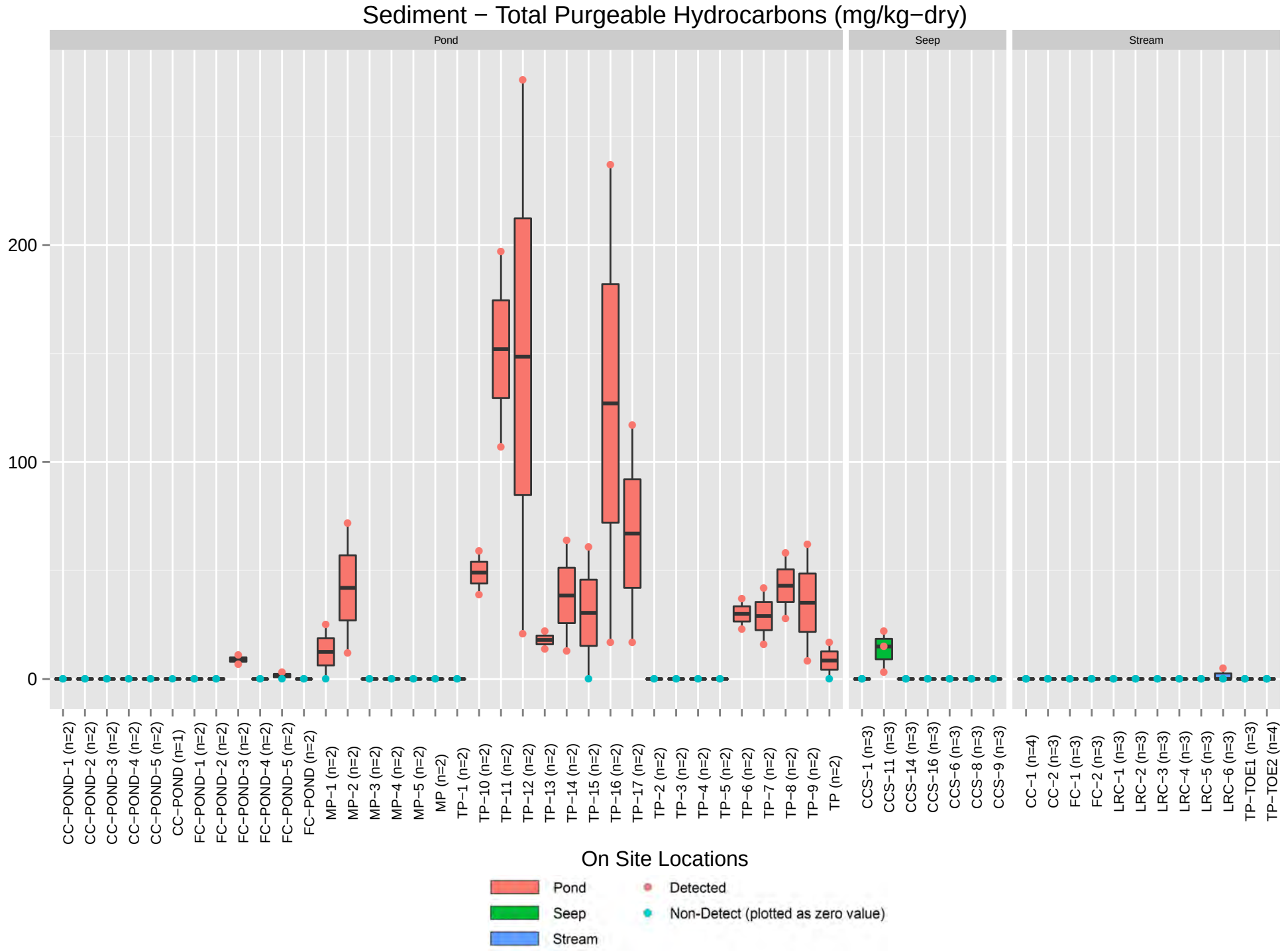

Sediment − Organic Carbon (%−as rcvd)
Pond
Stream
1.00
0.75
0.50
CC−POND (n=1)
FC−POND (n=1)
MP (n=1)
TP (n=1)
CC−1 (n=1)
TP−TOE2 (n=1)
On Site Locations
Detected

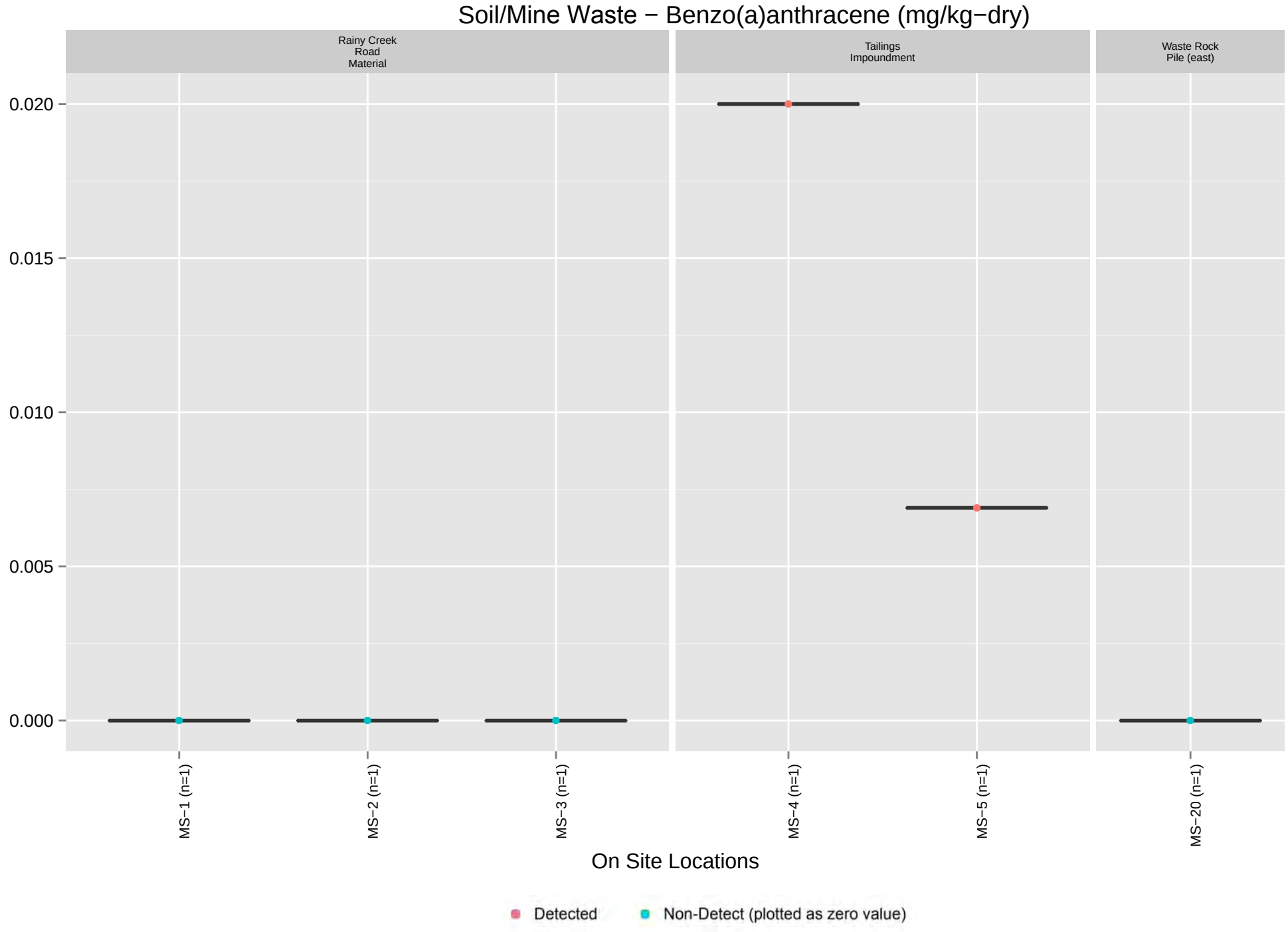

Sediment − Phenanthrene (mg/kg−dry)
Pond
Seep
Stream
0.3
0.2
0.1
0.0
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
CC−POND (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=2)
FC−1 (n=2)
FC−2 (n=3)
LRC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

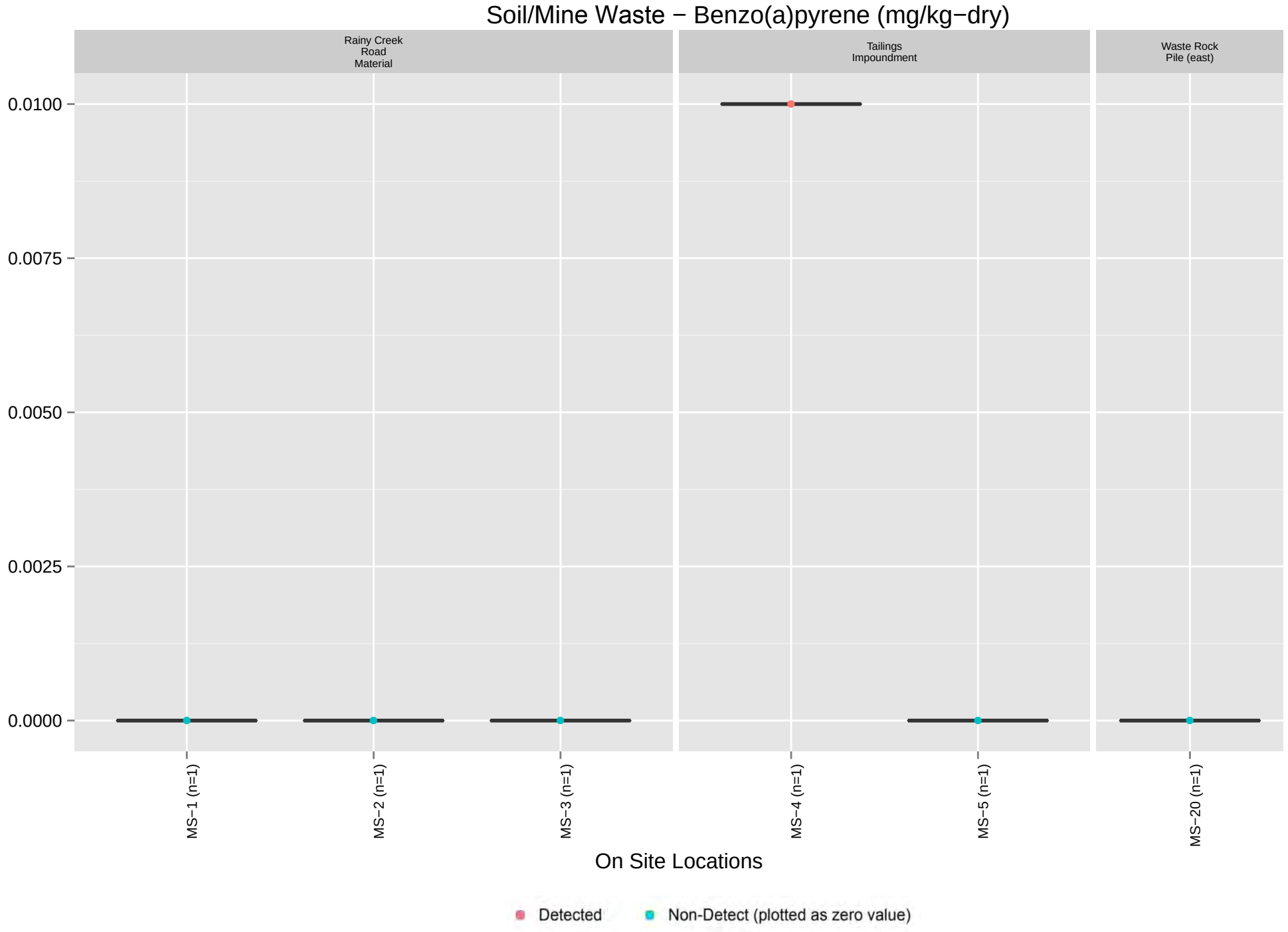

Sediment − Pyrene (mg/kg−dry)
Pond
Seep
Stream
0.3
0.2
0.1
0.0
CC−POND−3 (n=1)
CC−POND−4 (n=1)
CC−POND−5 (n=1)
CC−POND (n=1)
FC−POND−1 (n=1)
FC−POND−2 (n=1)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=1)
MP−5 (n=2)
MP (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=1)
TP−13 (n=2)
TP−14 (n=1)
TP−15 (n=1)
TP−16 (n=2)
TP−17 (n=1)
TP−4 (n=1)
TP−5 (n=1)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−11 (n=3)
CCS−14 (n=1)
CCS−16 (n=1)
CCS−6 (n=1)
CCS−8 (n=3)
CC−1 (n=2)
FC−1 (n=2)
FC−2 (n=3)
LRC−2 (n=3)
LRC−3 (n=1)
LRC−6 (n=1)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

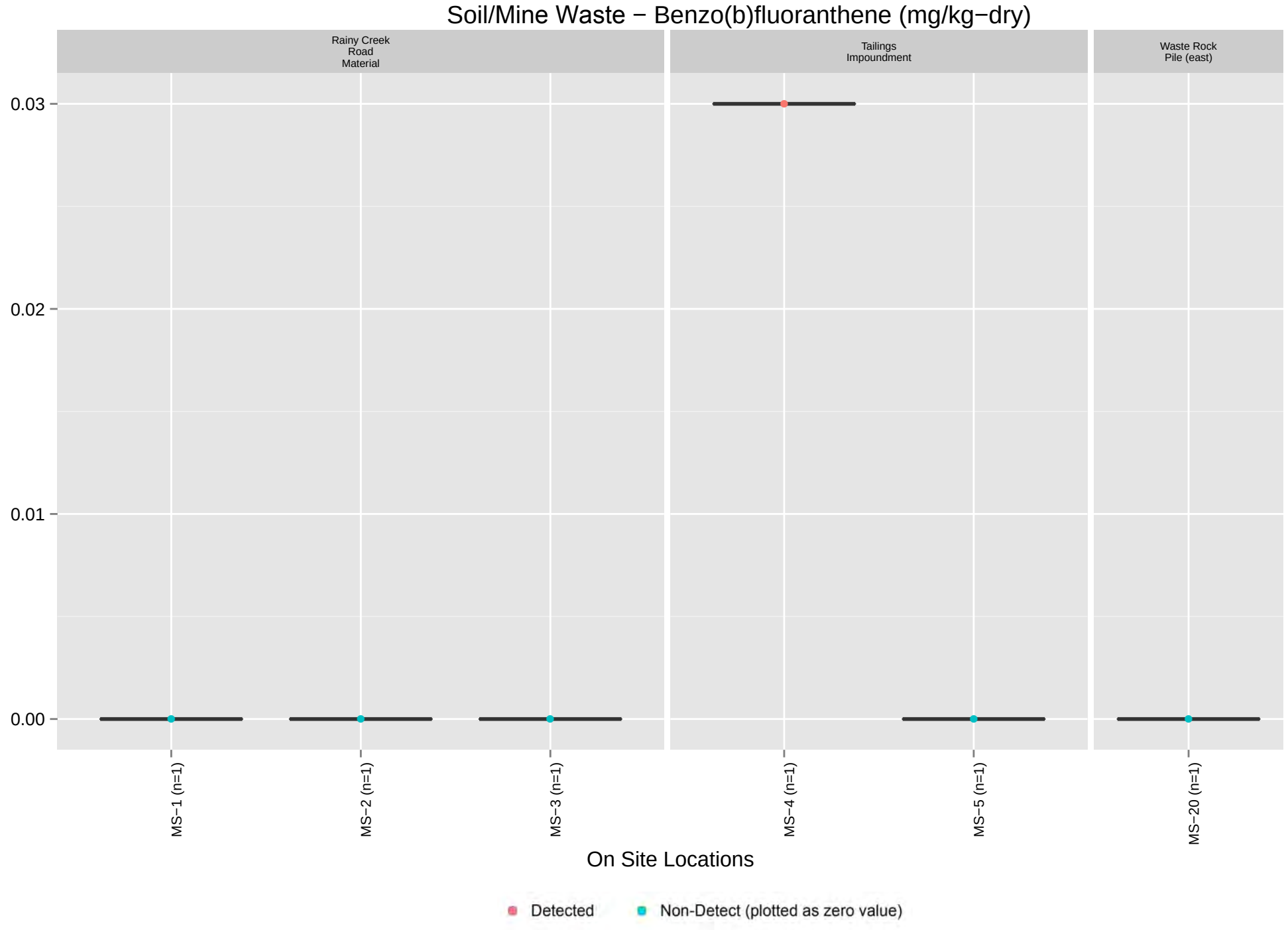

Sediment − Toluene (mg/kg−dry)
Pond
Seep
Stream
0.100
0.075
0.050
0.025
0.000
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=1)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=1)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=1)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=3)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=6)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=6)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

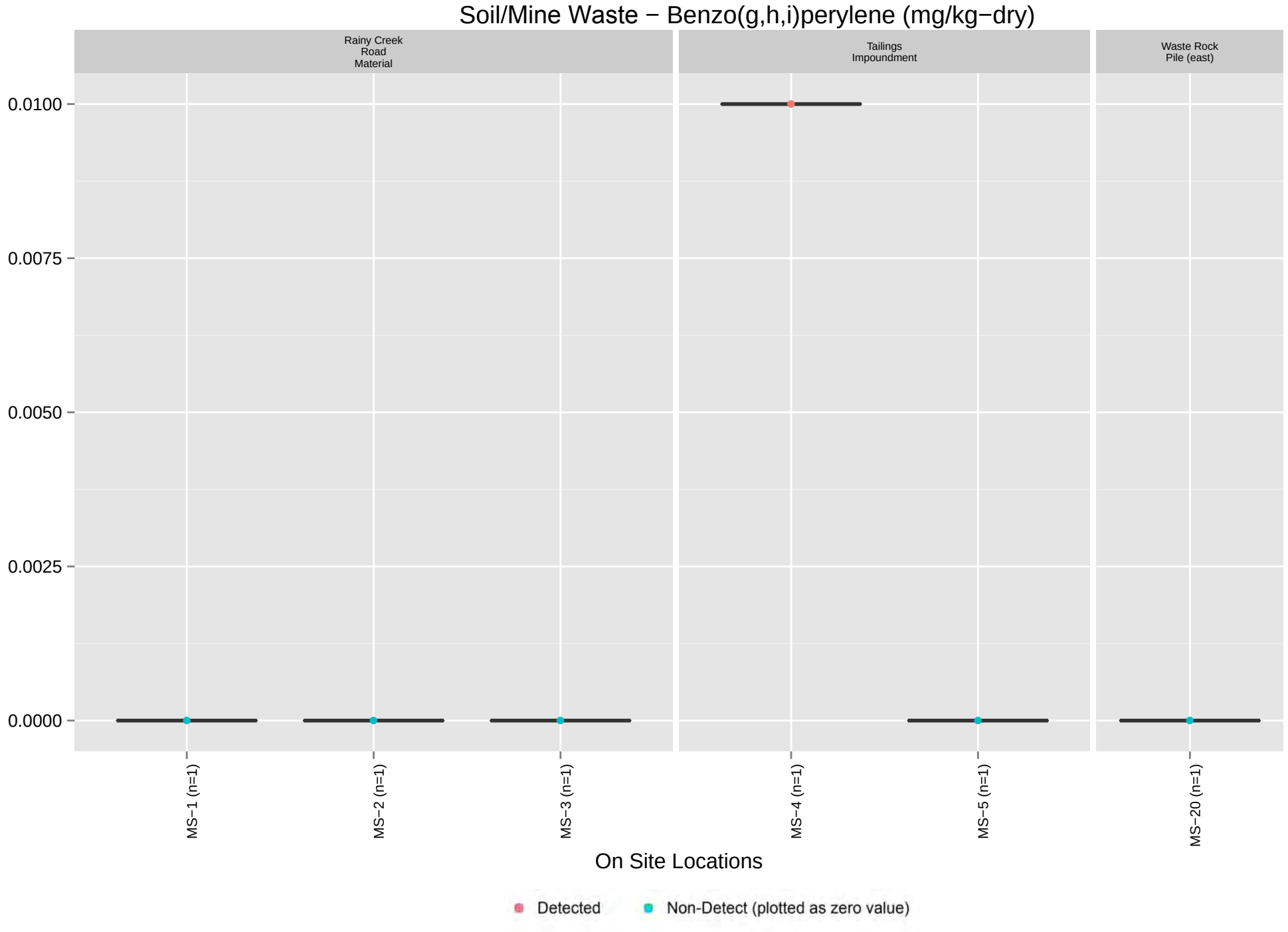

Sediment − Total Extractable Hydrocarbons (mg/kg−dry)
Pond
Seep
Stream
2000
1500
1000
500
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=3)
CC−POND−4 (n=3)
CC−POND−5 (n=3)
CC−POND (n=1)
FC−POND−1 (n=3)
FC−POND−2 (n=3)
FC−POND−3 (n=4)
FC−POND−4 (n=4)
FC−POND−5 (n=4)
FC−POND (n=3)
MP−1 (n=4)
MP−2 (n=4)
MP−3 (n=4)
MP−4 (n=3)
MP−5 (n=4)
MP (n=3)
TP−1 (n=2)
TP−10 (n=4)
TP−11 (n=4)
TP−12 (n=3)
TP−13 (n=4)
TP−14 (n=3)
TP−15 (n=3)
TP−16 (n=4)
TP−17 (n=3)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=3)
TP−5 (n=3)
TP−6 (n=4)
TP−7 (n=4)
TP−8 (n=4)
TP−9 (n=4)
TP (n=3)
CCS−1 (n=3)
CCS−11 (n=6)
CCS−14 (n=4)
CCS−16 (n=4)
CCS−6 (n=4)
CCS−8 (n=6)
CCS−9 (n=3)
CC−1 (n=5)
CC−2 (n=3)
FC−1 (n=5)
FC−2 (n=6)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=4)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=4)
TP−TOE1 (n=3)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

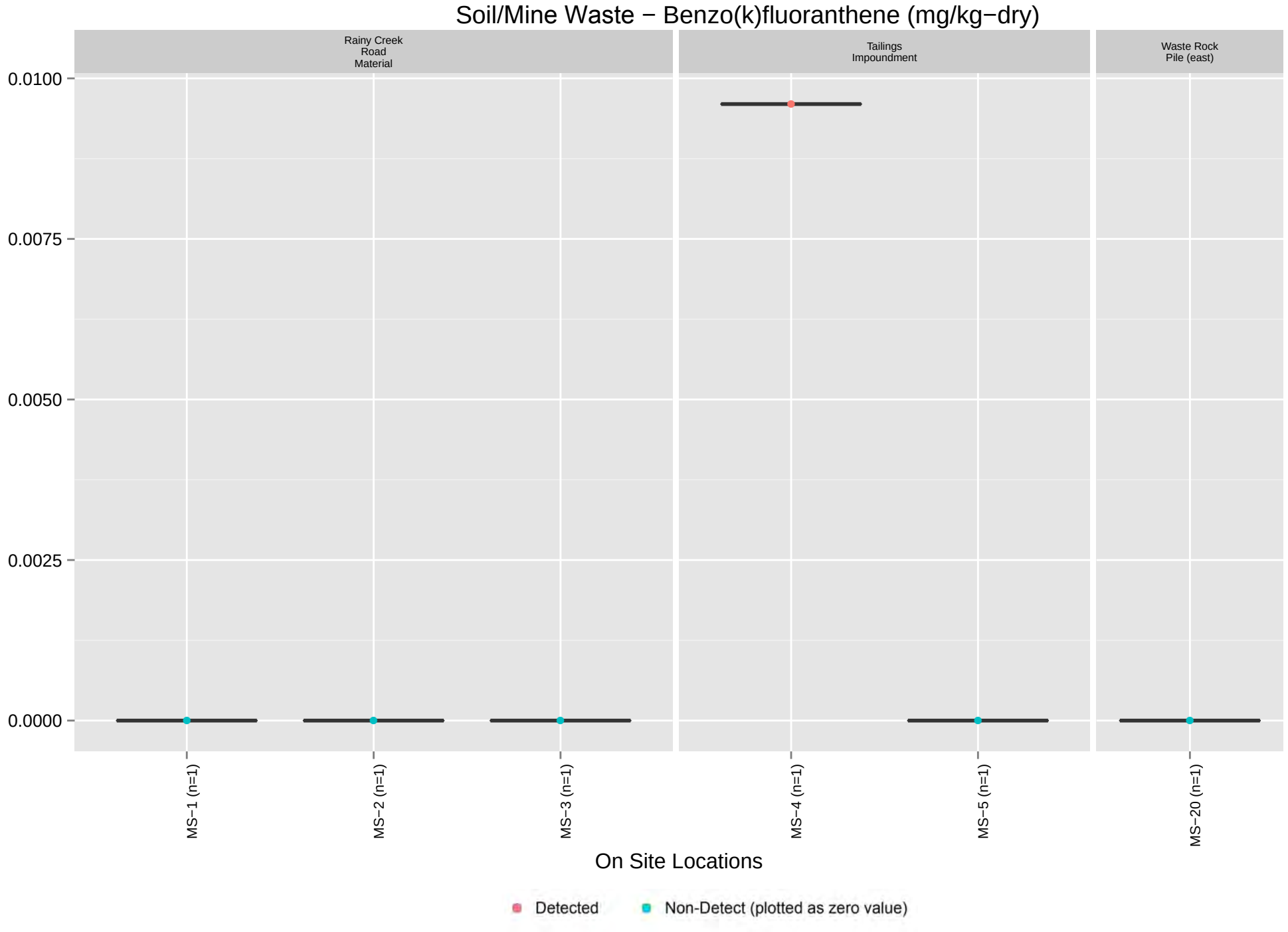

Sediment − Total Purgeable Hydrocarbons (mg/kg−dry)
Pond
Seep
Stream
200
100
0
CC−POND−1 (n=2)
CC−POND−2 (n=2)
CC−POND−3 (n=2)
CC−POND−4 (n=2)
CC−POND−5 (n=2)
CC−POND (n=1)
FC−POND−1 (n=2)
FC−POND−2 (n=2)
FC−POND−3 (n=2)
FC−POND−4 (n=2)
FC−POND−5 (n=2)
FC−POND (n=2)
MP−1 (n=2)
MP−2 (n=2)
MP−3 (n=2)
MP−4 (n=2)
MP−5 (n=2)
MP (n=2)
TP−1 (n=2)
TP−10 (n=2)
TP−11 (n=2)
TP−12 (n=2)
TP−13 (n=2)
TP−14 (n=2)
TP−15 (n=2)
TP−16 (n=2)
TP−17 (n=2)
TP−2 (n=2)
TP−3 (n=2)
TP−4 (n=2)
TP−5 (n=2)
TP−6 (n=2)
TP−7 (n=2)
TP−8 (n=2)
TP−9 (n=2)
TP (n=2)
CCS−1 (n=3)
CCS−11 (n=3)
CCS−14 (n=3)
CCS−16 (n=3)
CCS−6 (n=3)
CCS−8 (n=3)
CCS−9 (n=3)
CC−1 (n=4)
CC−2 (n=3)
FC−1 (n=3)
FC−2 (n=3)
LRC−1 (n=3)
LRC−2 (n=3)
LRC−3 (n=3)
LRC−4 (n=3)
LRC−5 (n=3)
LRC−6 (n=3)
TP−TOE1 (n=3)
TP−TOE2 (n=4)
On Site Locations
Pond
Seep
Stream
Detected
Non-Detect (plotted as zero value)

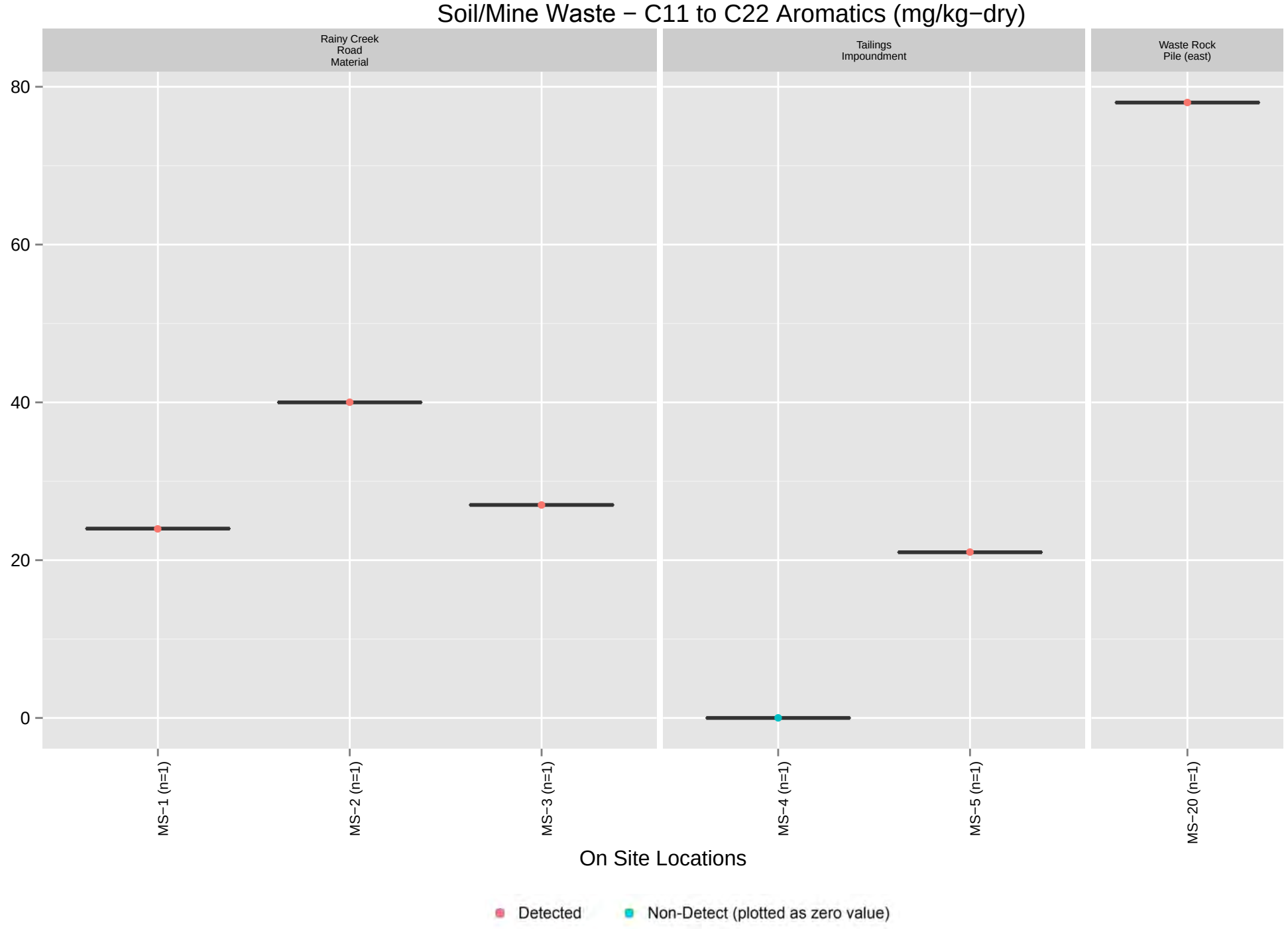

Soil/Mine Waste − Benzo(a)anthracene (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
0.020
0.015
0.010
0.005
0.000
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

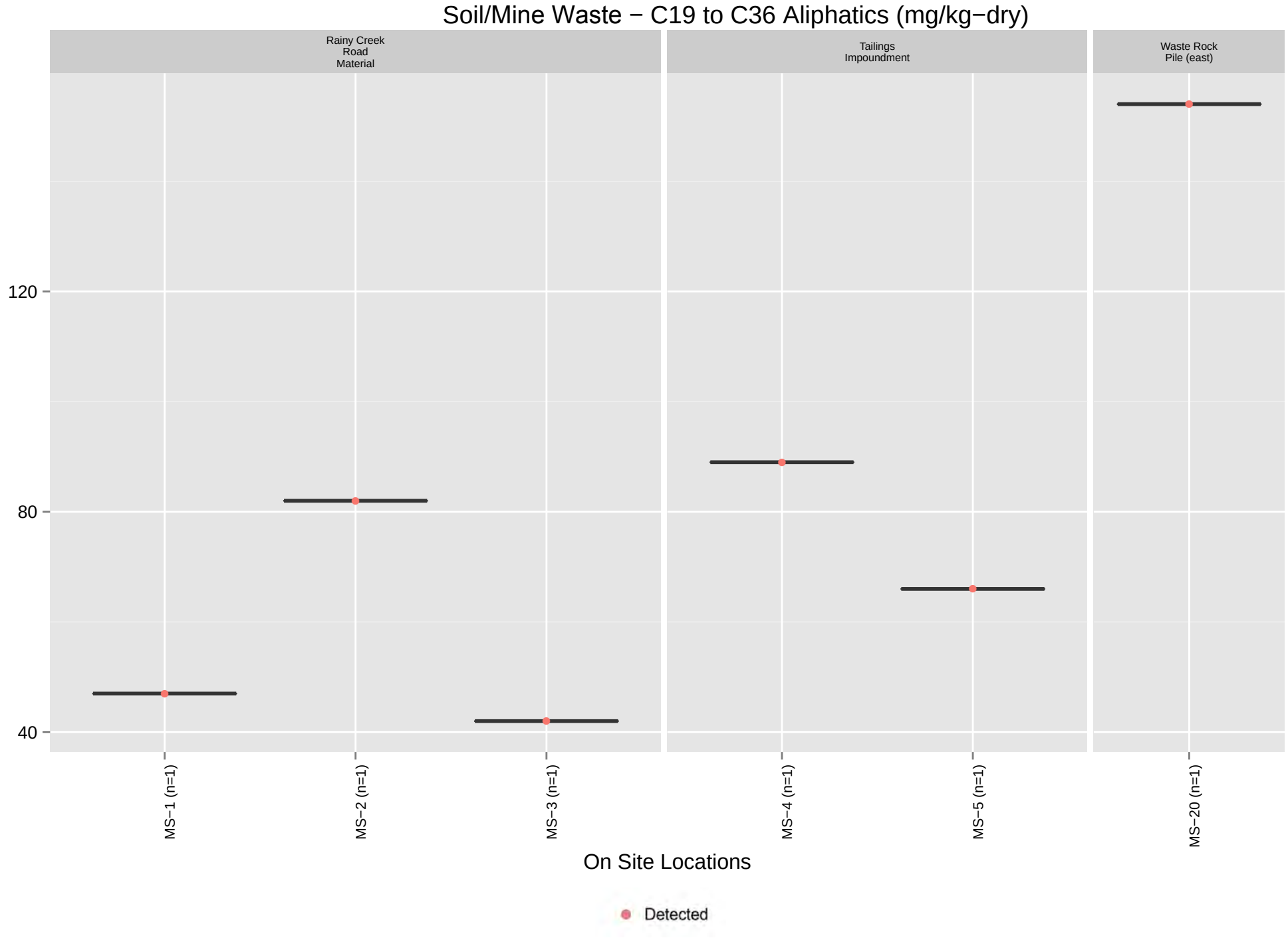

Soil/Mine Waste − Benzo(a)pyrene (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
0.0100
0.0075
0.0050
0.0025
0.0000
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

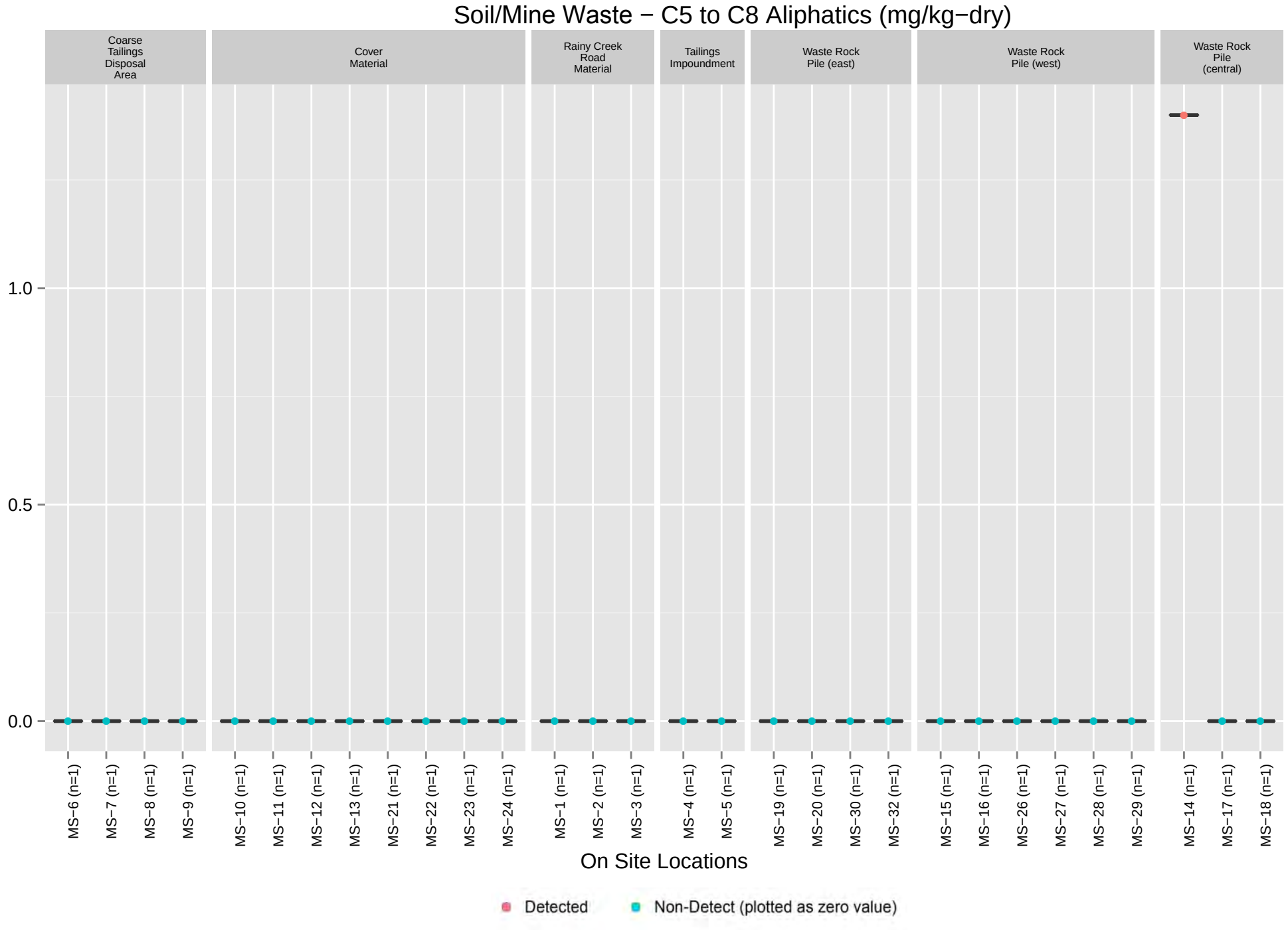

Soil/Mine Waste − Benzo(b)fluoranthene (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
0.03
0.02
0.01
0.00
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

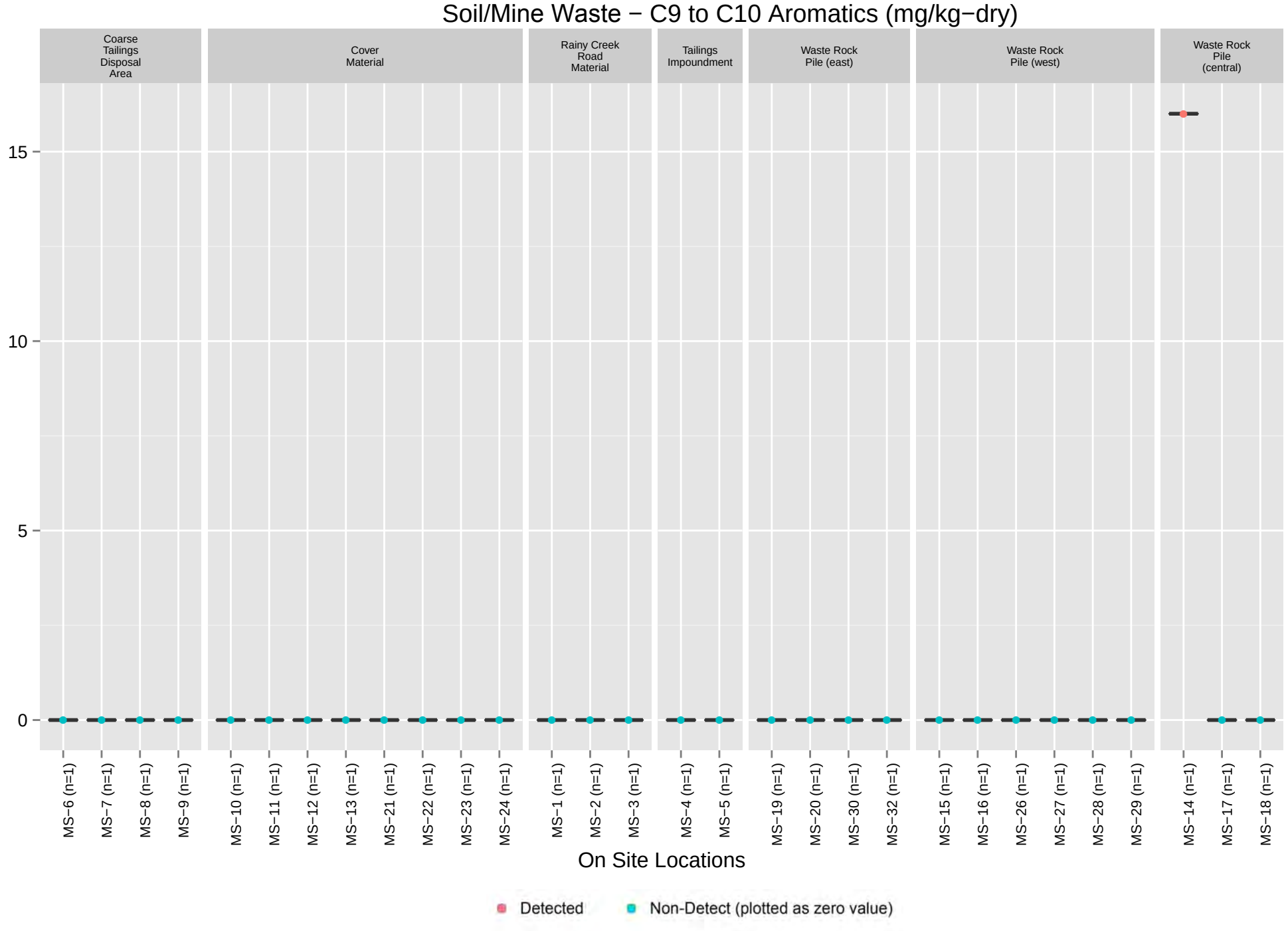

Soil/Mine Waste − Benzo(g,h,i)perylene (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
0.0100
0.0075
0.0050
0.0025
0.0000
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

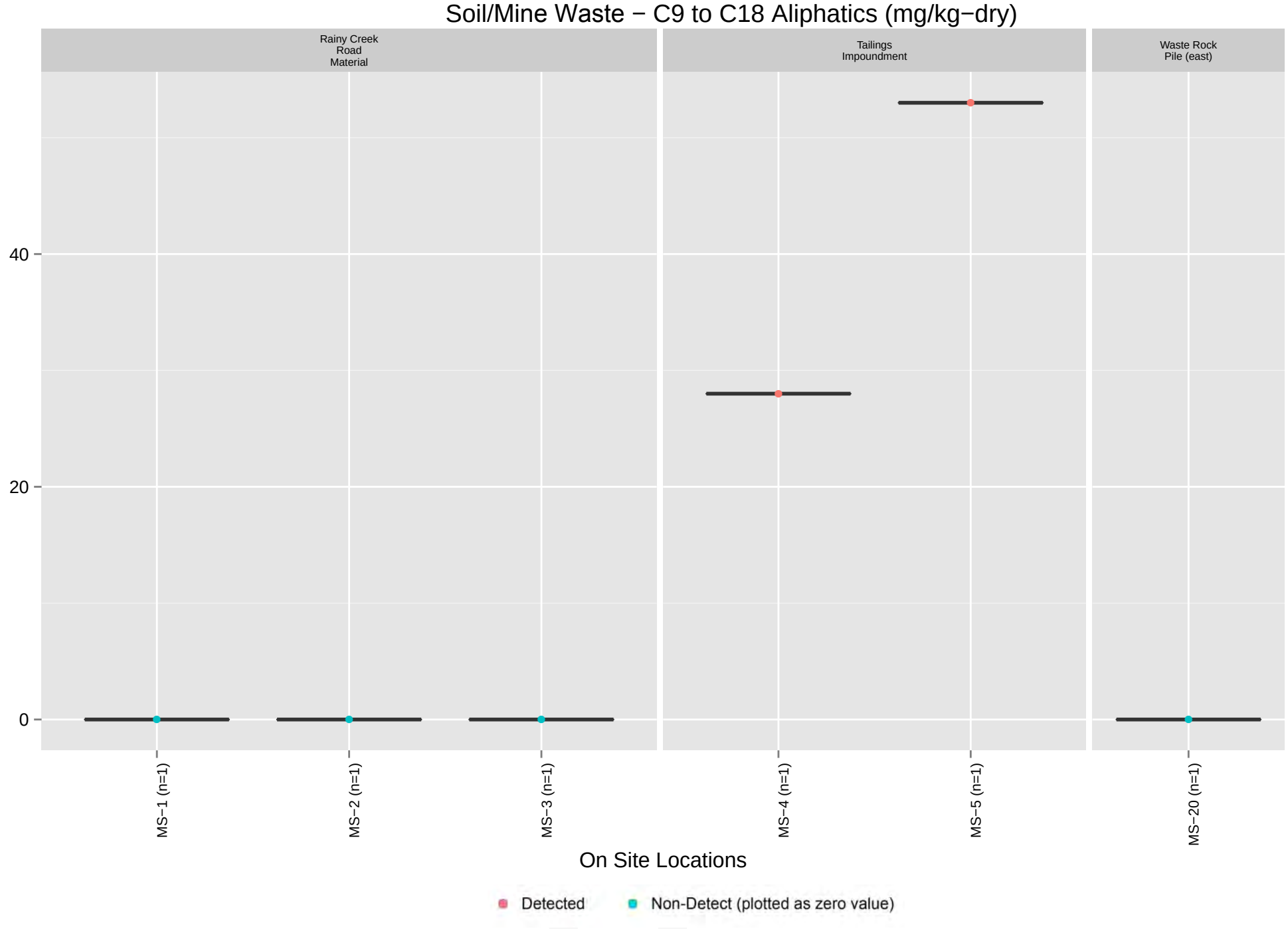

Soil/Mine Waste − Benzo(k)fluoranthene (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
0.0100
0.0075
0.0050
0.0025
0.0000
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

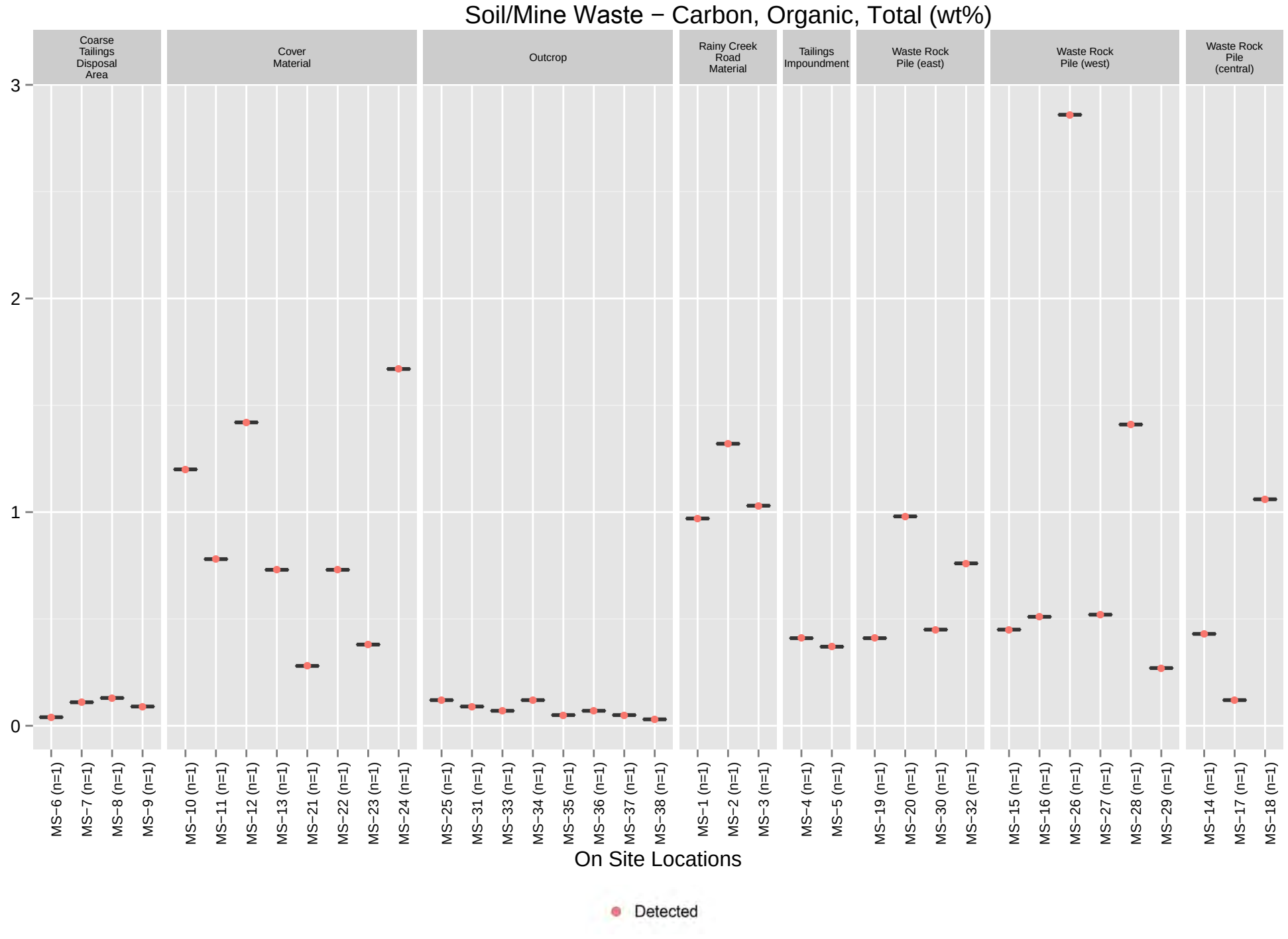

Soil/Mine Waste − C11 to C22 Aromatics (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
80
60
40
20
0
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

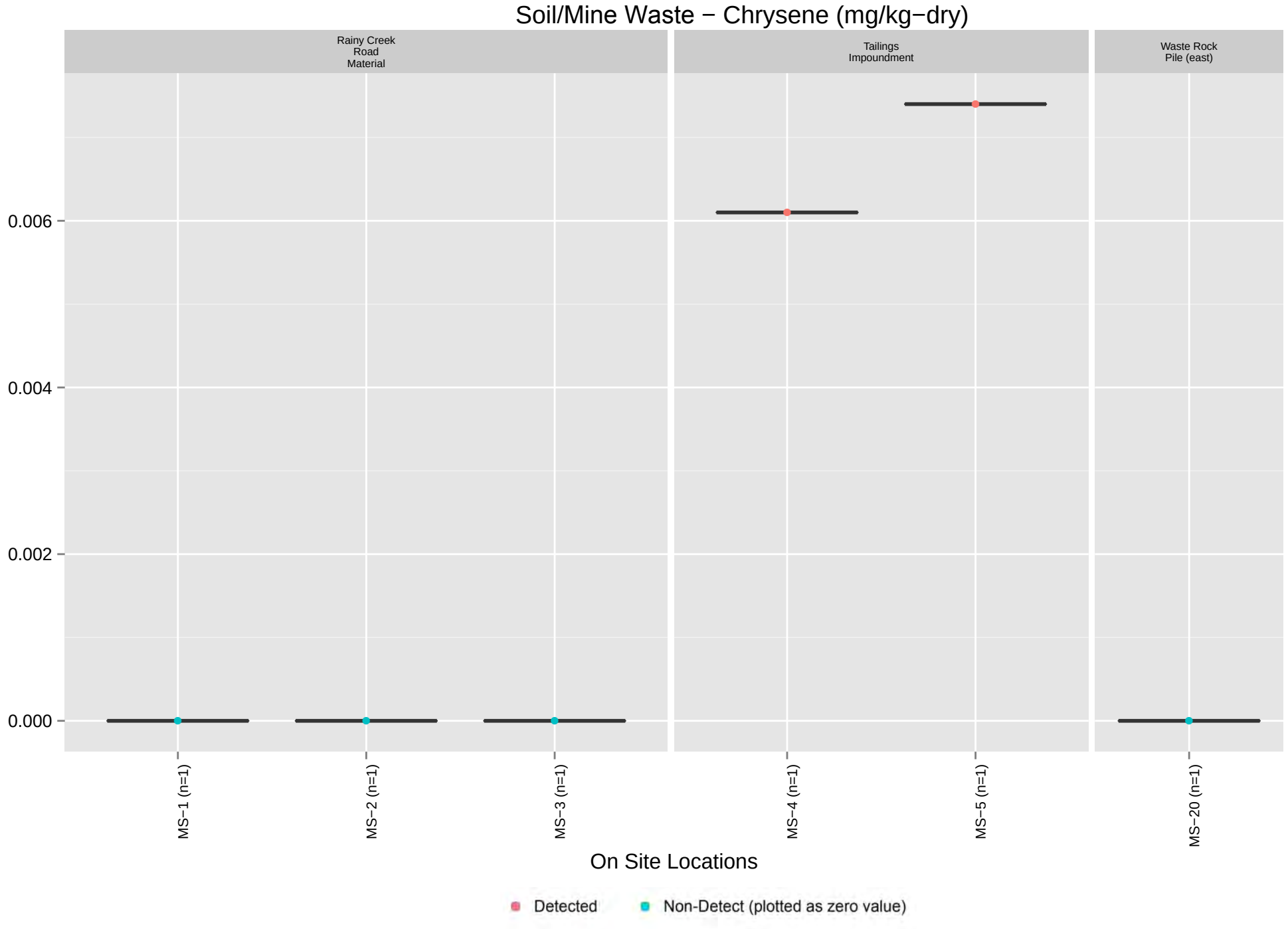

Soil/Mine Waste − C19 to C36 Aliphatics (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
120
80
40
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected

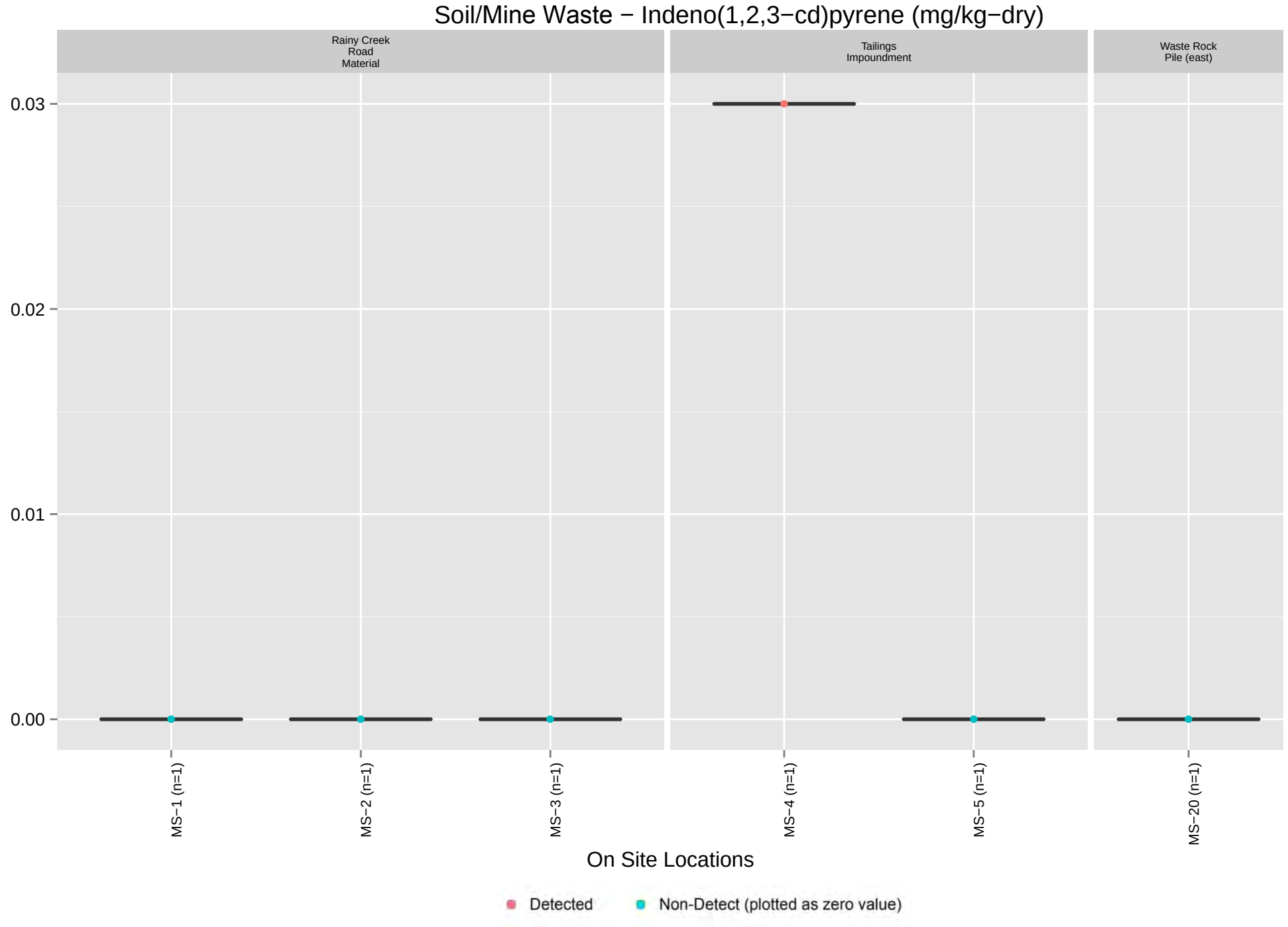

Soil/Mine Waste − C5 to C8 Aliphatics (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
1.0
0.5
0.0
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

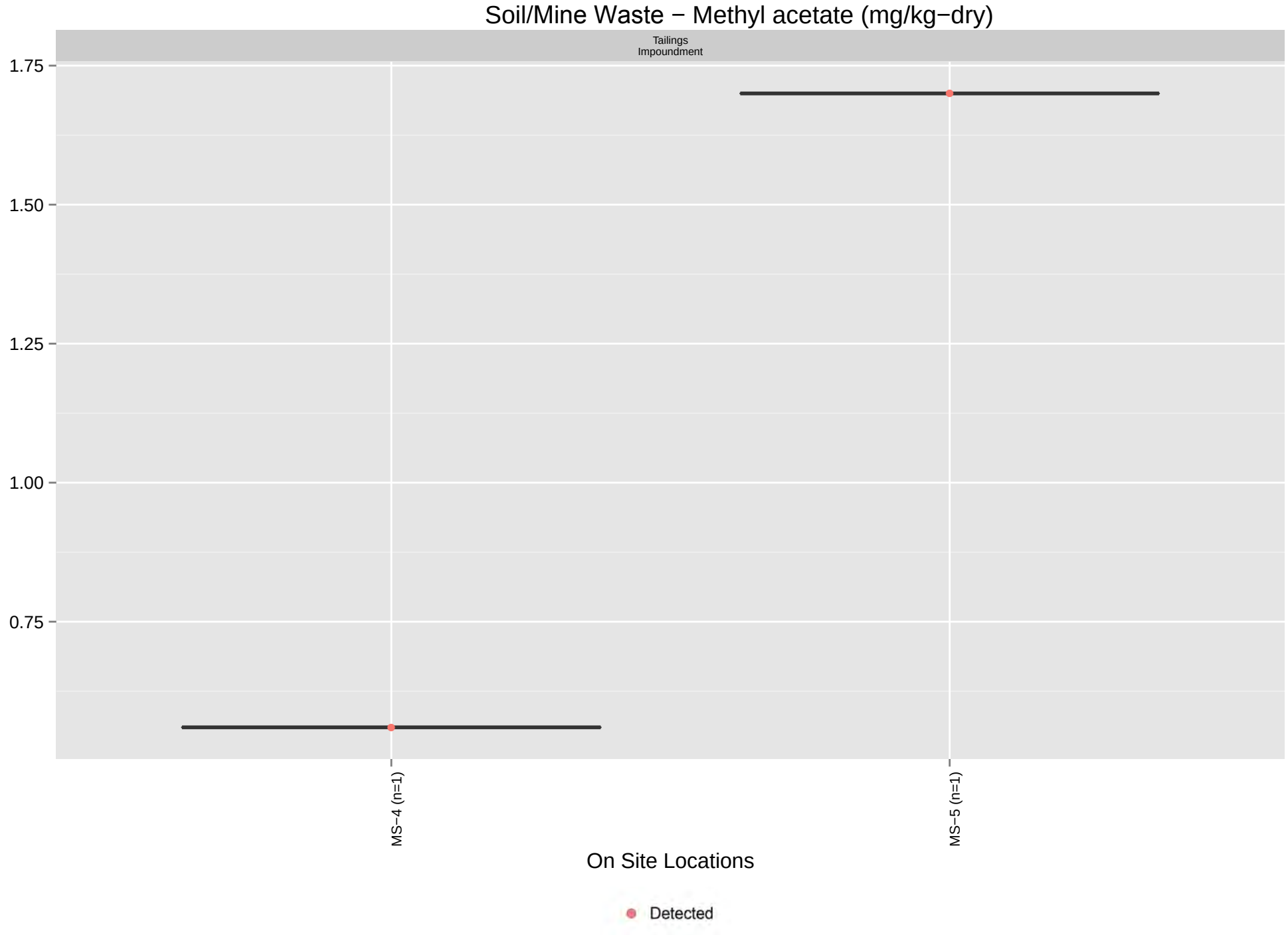

Soil/Mine Waste − C9 to C10 Aromatics (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
15
10
5
0
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

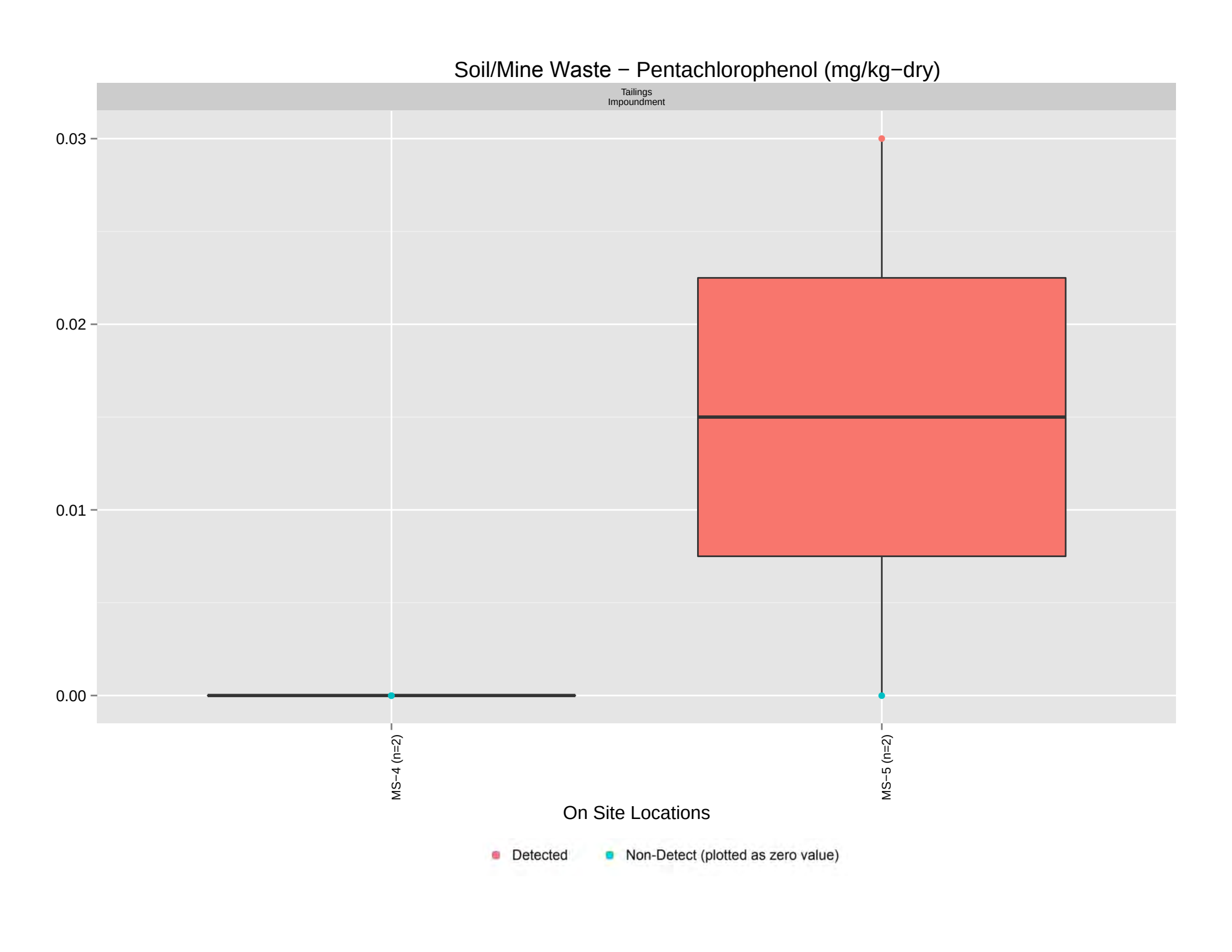

Soil/Mine Waste − C9 to C18 Aliphatics (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
40
20
0
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

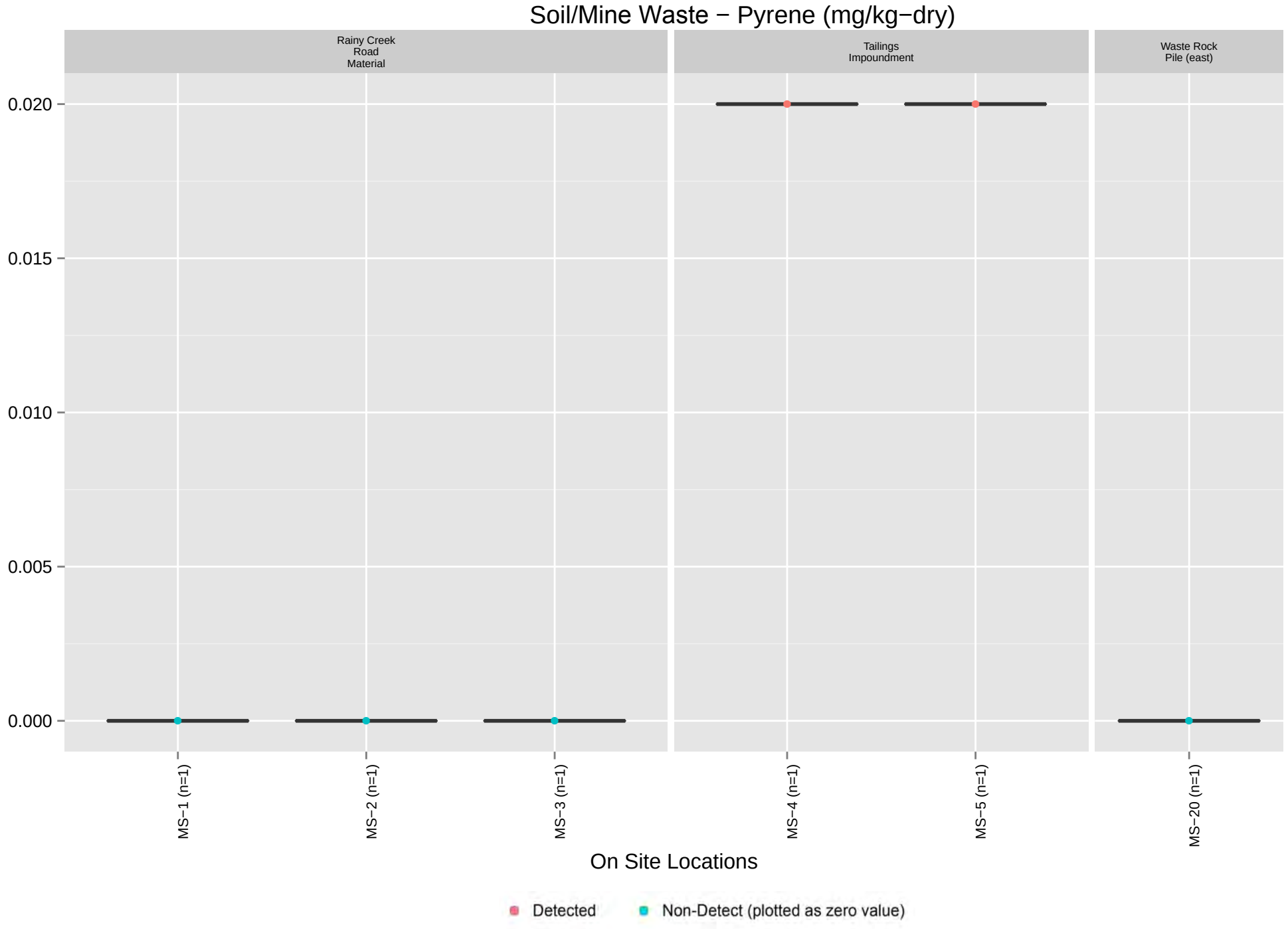

Soil/Mine Waste − Carbon, Organic, Total (wt%)
Coarse Tailings Disposal Area
Cover Material
Outcrop
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
3
2
1
0
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−25 (n=1)
MS−31 (n=1)
MS−33 (n=1)
MS−34 (n=1)
MS−35 (n=1)
MS−36 (n=1)
MS−37 (n=1)
MS−38 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Detected

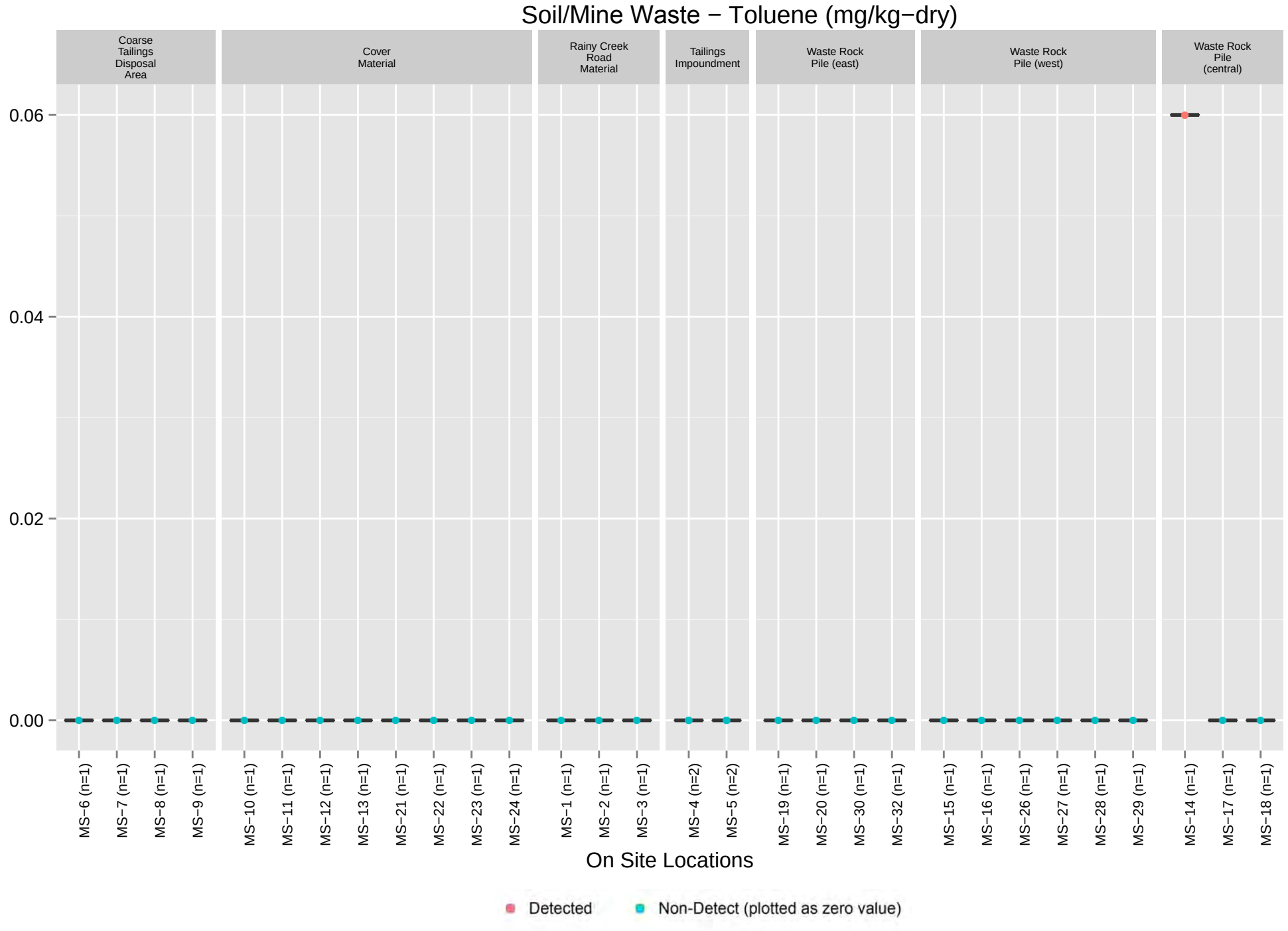

Soil/Mine Waste − Chrysene (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
0.006
0.004
0.002
0.000
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

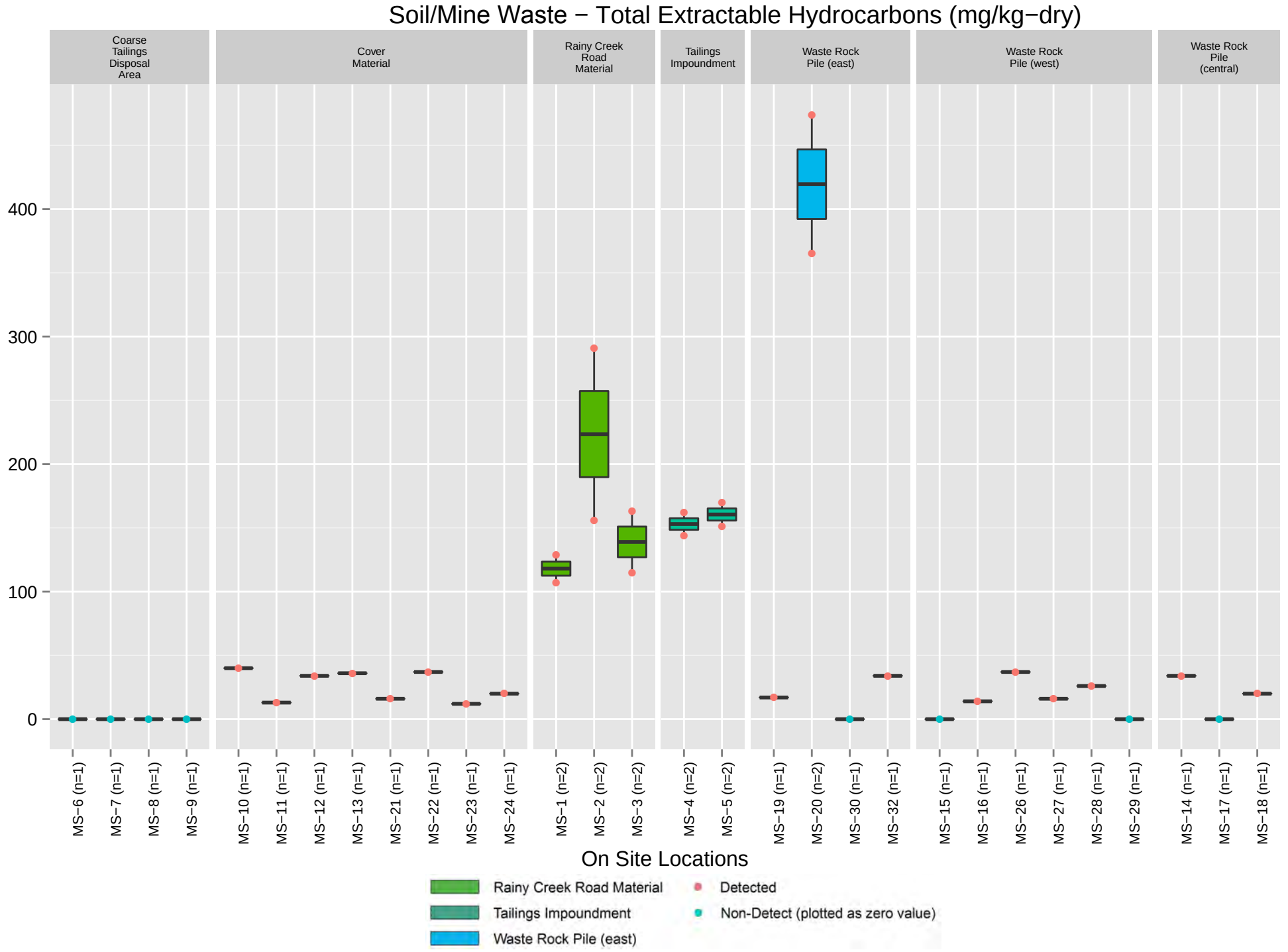

Soil/Mine Waste − Indeno(1,2,3−cd)pyrene (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
0.03
0.02
0.01
0.00
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)

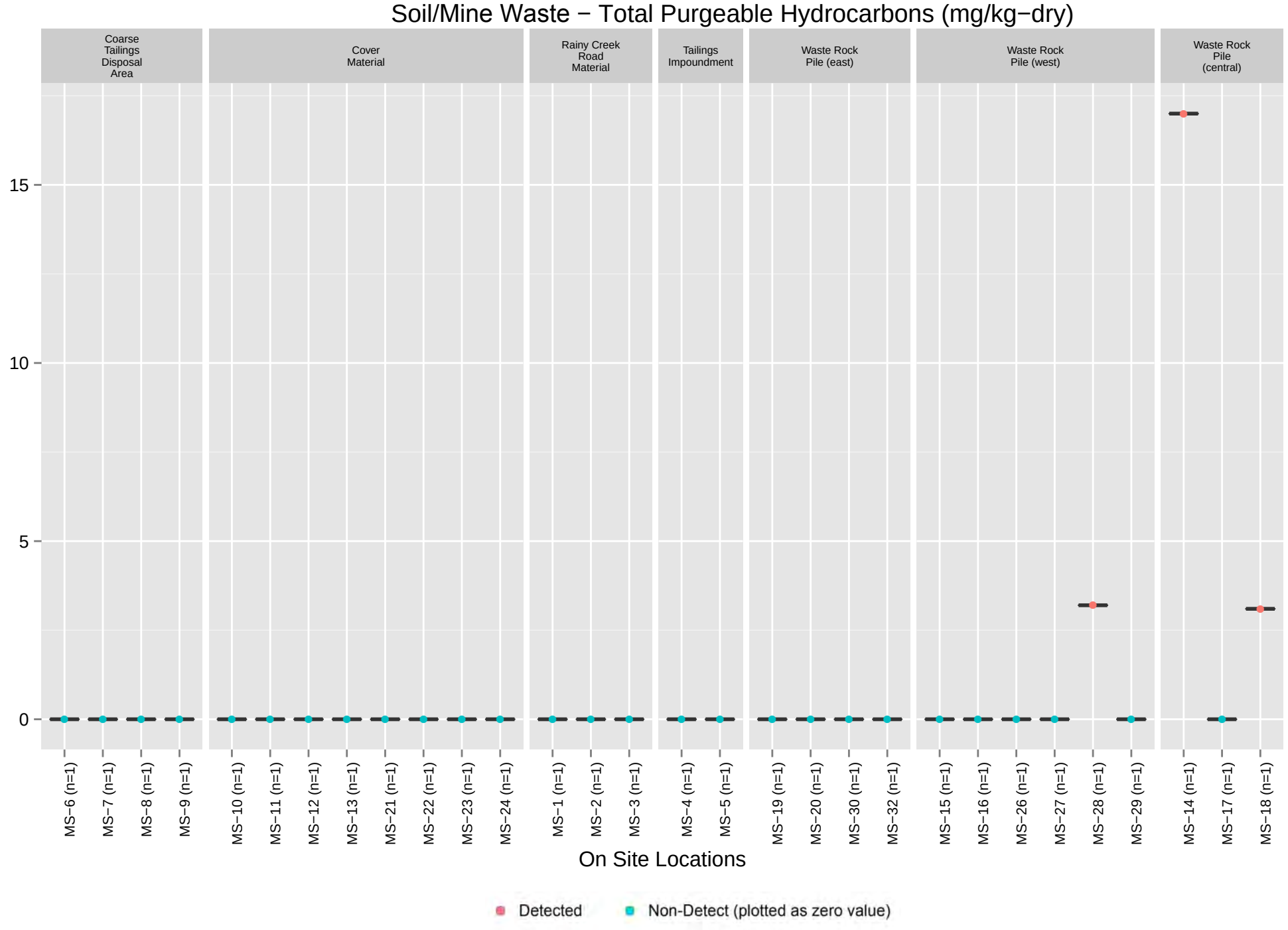

Soil/Mine Waste − Methyl acetate (mg/kg−dry)
Tailings Impoundment
1.75
1.50
1.25
1.00
0.75
MS−4 (n=1)
MS−5 (n=1)
On Site Locations
Detected


Soil/Mine Waste − Pentachlorophenol (mg/kg−dry)
Tailings Impoundment
0.03
0.02
0.01
0.00
MS−4 (n=2)
MS−5 (n=2)
On Site Locations
Detected
Non-Detect (plotted as zero value)


Soil/Mine Waste − Pyrene (mg/kg−dry)
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
0.020
0.015
0.010
0.005
0.000
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−20 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)


Soil/Mine Waste − Toluene (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
0.06
0.04
0.02
0.00
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=2)
MS−5 (n=2)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)


Soil/Mine Waste − Total Extractable Hydrocarbons (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
400
300
200
100
0
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−1 (n=2)
MS−2 (n=2)
MS−3 (n=2)
MS−4 (n=2)
MS−5 (n=2)
MS−19 (n=1)
MS−20 (n=2)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Detected
Non-Detect (plotted as zero value)


Soil/Mine Waste − Total Purgeable Hydrocarbons (mg/kg−dry)
Coarse Tailings Disposal Area
Cover Material
Rainy Creek Road Material
Tailings Impoundment
Waste Rock Pile (east)
Waste Rock Pile (west)
Waste Rock Pile (central)
15
10
5
0
MS−6 (n=1)
MS−7 (n=1)
MS−8 (n=1)
MS−9 (n=1)
MS−10 (n=1)
MS−11 (n=1)
MS−12 (n=1)
MS−13 (n=1)
MS−21 (n=1)
MS−22 (n=1)
MS−23 (n=1)
MS−24 (n=1)
MS−1 (n=1)
MS−2 (n=1)
MS−3 (n=1)
MS−4 (n=1)
MS−5 (n=1)
MS−19 (n=1)
MS−20 (n=1)
MS−30 (n=1)
MS−32 (n=1)
MS−15 (n=1)
MS−16 (n=1)
MS−26 (n=1)
MS−27 (n=1)
MS−28 (n=1)
MS−29 (n=1)
MS−14 (n=1)
MS−17 (n=1)
MS−18 (n=1)
On Site Locations
Detected
Non-Detect (plotted as zero value)



Appendix I

Groundwater Rinsate Memo

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TECHNICAL MEMORANDUM

INTRODUCTION

Equipment rinsate samples were collected during the 2015 Spring Water Sampling Program, in accordance with the procedures specified in the document titled: *Final Sampling and Analysis Plan/Quality Assurance Project Plan (SAP/QAPP) Surface Water and Groundwater Sampling, Revision 1, April 2015* (MWH, 2015). As specified in the SAP/QAPP, equipment rinsate blank samples were collected from non-dedicated groundwater sampling pumps during each of the two events in 2015 (referred to as Week One and Week Six groundwater sampling events). LAA was detected in one of four equipment rinsate blank samples collected during the Week One groundwater sampling (week of April 12, 2015), and in three of four equipment rinsate blank samples collected during Week Six groundwater sampling (week of May 18, 2015). Due to LAA being detected in the equipment rinsate blanks the concentrations for the associated samples needed to be adjusted to account for the possibility of cross-contamination between samples collected in the field using the contaminated equipment.

This memorandum presents how the data were adjusted based upon the LAA detected in the equipment rinsate blanks and an evaluation of a potential quality control (QC) issue that lead to the LAA in the equipment rinsate blanks. The evaluation included a review of the standard operating procedures (SOPs) used for decontamination, review of the field logbooks, and discussions with field personnel. A summary of the field procedures utilized during the sampling, possible causes and ramifications of the QC issue, and recommendations for future actions are presented herein. Unadjusted analytical data for groundwater samples are provided in **Table 1** and adjusted analytical data are provided in **Table 2**. Only the adjusted data are in the OU3 Study Area project database, which were utilized in the OU3 Study Area Remedial Investigation Report.

Table 1:Unadjusted Groundwater and Equipment Rinsate Blank LAA Sample Results[a]

Station ID	Sample Type	Index ID	Week	Sample Date	Analysis Date	Sensitivity 1/L	Total LAA[b]		LAA > 10 µm in length[b]	
							N Structures	Water Conc. (MFL)	N Structures	Water Conc. (MFL)
Well C	N	WT-10061	1	4/14/2015	5/8/2015	4.90E+04	1	0.049	0	0
BH-09-1	N	WT-10062	1	4/14/2015	5/4/2015	2.60E+05	40	10	3	0.78
--	RB	WT-10063	1	4/14/2015	5/5/2015	4.90E+04	7	0.35	1	0.049
BH-07A-1	N	WT-10064	1	4/15/2015	5/8/2015	1.30E+05	1	0.13	0	0
BH-07A-2	N	WT-10065	1	4/15/2015	5/14/2015	3.00E+05	33	9.8	6	1.8
BH-07B-1	N	WT-10067	1	4/15/2015	5/11/2015	4.90E+04	21	1	1	0.049
--	RB	WT-10070	1	4/15/2015	5/13/2015	4.90E+04	3	0.15	0	0
BH-05A-1	N	WT-10073	1	4/17/2015	4/29/2015	5.40E+04	1	0.054	0	0
BH-01A-1	N	WT-10074	1	4/17/2015	4/28/2015	2.80E+05	25	6.9	3	0.83
--	RB	WT-10075	1	4/17/2015	5/5/2015	4.90E+04	5	0.25	0	0
BH-03A-1	N	WT-10076	1	4/19/2015	4/29/2015	2.60E+06	57	148	5	13
BH-01A-2	N	WT-10078	1	4/19/2015	5/1/2015	5.20E+05	56	29	3	1.6
--	RB	WT-10079	1	4/19/2015	5/6/2015	4.90E+04	3	0.15	0	0
BH-05A-2	N	WT-10077	1	4/19/2015	4/30/2015	5.20E+05	32	17	2	1
Well C	N	WT-10221	6	5/18/2015	8/4/2015	5.00E+04	1	0.05	0	0
BH-09-1	N	WT-10222	6	5/18/2015	8/5/2015	1.70E+05	27	4.7	2	0.35
BH-07A-1	N	WT-10223	6	5/18/2015	8/4/2015	1.40E+05	0	0	0	0
--	RB	WT-10224	6	5/18/2015	8/4/2015	5.00E+04	7	0.35	0	0
BH-07A-2	N	WT-10226	6	5/19/2015	8/5/2015	8.40E+05	28	23	6	5
BH-07B-1	N	WT-10228	6	5/19/2015	8/6/2015	5.00E+04	0	0	0	0
BH-03A-1	N	WT-10229	6	5/19/2015	8/6/2015	5.20E+05	40	21	3	1.6
--	RB	WT-10230	6	5/19/2015	8/6/2015	5.00E+04	10	0.5	1	0.05
BH-05A-1	N	WT-10231	6	5/20/2015	8/12/2015	1.40E+05	13	1.8	0	0
--	RB	WT-10232	6	5/20/2015	8/10/2015	5.00E+04	18	0.9	1	0.05
BH-05A-2	N	WT-10233	6	5/21/2015	8/14/2015	3.00E+05	25	7.5	1	0.3
BH-01A-2	N	WT-10234	6	5/21/2015	8/19/2015	2.10E+06	29	60	4	8.3
BH-01A-1	N	WT-10235	6	5/21/2015	8/20/2015	1.70E+05	25	4.3	4	0.69
--	RB	WT-10236	6	5/21/2015	8/21/2015	1.50E+05	27	4	2	0.3

[a] Each equipment rinsate blank was collected from the pump deployed in the well on the row above the equipment rinsate blank sample result in this table (i.e., equipment rinsate blank WT-10063 was collected from the pump that was extracted from well BH-09-1 (WT-10062),
b Concentrations presented are unadjusted. Adjusted concentrations are presented in Table 2.
N – Normal Sample
RB – Equipment rinsate Blank Quality Control Sample
MFL – million fibers per liter
LAA – Libby amphibole asbestos
µm - micrometers

Four of the eight equipment rinsate blank samples were non-detect for LAA where LAA was detected in the corresponding groundwater samples (refer to **Table 1).**

GROUNDWATER FIELD PROCEDURES

The following field procedures with respect to handling and decontaminating pumps were followed:

Pumps and Tubing: The rented submersible pumps used during the spring 2015 sampling activities were Geotech stainless-steel GeoSub Pumps, which are specifically designed for low-flow groundwater sampling. The internal components of the pump that come into contact with the groundwater are constructed of stainless steel, Viton (rubber material), and polytetrafluoroethylene (PTFE; plastic material). The external components of the pump included the stainless-steel housing and the fixed stainless-steel suspension cable and power line encased together. Prior to pump deployment, a length of new polyethylene sample tubing was positioned at each well location. At the time of deployment, the pump in use was fitted with the dedicated, clean polyethylene sample tubing and then inserted into the well. The polyethylene sample tubing remained dedicated at each well location and after Week One sample collection, was stored in a sealed plastic bag next to the well for reuse during the next groundwater sampling round (Week Six) at the well location. Neither the pumps nor the tubing were ever allowed to touch the bare ground during deployment or transport. Pumps were placed in a field vehicle for transport between locations. The pumps were decontaminated between well locations (the decontamination process is described below).

Decontamination: The OU3 SOP No. 07 was followed for decontamination procedures after each well was sampled. The pump decontamination process used four decontamination tubes, which are shown on the **Photo Plate 1** below. Steps #1 through #6, #8, and #9 were followed each time a pump was decontaminated; and #7 is the equipment rinsate blank sampling step.

1. As each pump was extracted from a well, the encased pump cable and power line were sprayed with an Alconox and distilled water mixture and wiped dry with paper towels and wound onto a reel.
2. Removed caps from decontamination tubes and filled all four tubes with distilled water, which was purchased in one gallon containers from the local grocery store in Libby.
3. Added Alconox to Tube #1. Tubes #2, #3, and #4 were filled only with distilled water to be used as a triple rinse.
4. Removed pump from the dedicated polyethylene sample tubing used to sample the well and attached a short length of clean tubing onto the pump to be utilized as a discharge line for the decontamination water.
5. Inserted pump into Tube #1 with distilled water and Alconox. Turned on pump and let water recirculate back onto the top of the pump and into Tube #1. After a few minutes, Tube #1 was pumped dry by pumping the water/Alconox to the ground surface.
6. Repeated Step 5 for Tube #2, Tube #3, and Tube #4.
7. Collected an equipment rinsate blank sample from the first pump that was decontaminated at the end of each day (see **Equipment Rinsate Blank Collection** below for details).
8. Removed pump from Tube #4.

9. Replaced caps on decontamination tubes after all pumps were decontaminated each day.

Photo Plate 1 – Pump Decontamination Tubes



Equipment Rinsate Blank Collection: At the end of each day, the first pump removed and decontaminated was used for equipment rinsate blank sample collection. After decontamination, the pump was left in Tube #4 and clean distilled water was added. The pump was turned on and the equipment rinsate blank sample collected from the discharge line. Four equipment rinsate blank samples were collected during both of the two, one-week sampling events, for a total of eight equipment rinsate blank samples.

Table 1 above shows the unadjusted analytical data for the groundwater samples and the corresponding equipment rinsate blanks for each sampling event. The equipment rinsate blank data are located immediately below the corresponding groundwater sample data (i.e., equipment rinsate blank WT-10063 was collected from the pump that was extracted from well BH-09-1 (WT-10062), equipment rinsate blank WT-10070 was collected from the pump that was extracted from well BH-07B-1 (WT-10067), etc.).

POSSIBLE CAUSES FOR THE QC ISSUE

An evaluation of potential sources of LAA in the equipment rinsate blank samples was conducted. The evaluation included a review of the SOPs used for decontamination, review of

the field logbooks, and discussions with the groundwater sampling team: Dennis Adams (MWH) and Dan Nelson (BHI). Based on review, the following potential sources of LAA in equipment rinsate blank samples were identified:

- Although constructed primarily of stainless steel, the Geotech SS Geo Sub pump utilized for sampling contained non-stainless steel components that were in direct contact with the water and could have retained LAA (due to the attraction of LAA particles to these materials that has been observed previously). Retained LAA may have then transferred to the equipment rinsate blank water.
- The polyethylene line that was used to discharge decontamination water from the pumps in Steps #1 through #5 described above, was not replace prior to collection of equipment rinsate samples. LAA could have been retained in the line and then transferred to the water used for the equipment rinsate blanks.
- LAA may have adhered to the PVC decontamination tubes and then transferred to the water used for the equipment rinsate blanks.

ADJUSTEMENT OF GROUNDWATER SAMPLE CONCENTRATIONS

Due to LAA being detected in the equipment rinsate blanks the concentrations for the associated samples needed to be adjusted to account for the possibility of cross-contamination between samples collected in the field using the contaminated equipment. The EPA third party validator, CB&I performed the blank-adjustment to the samples. To do this, the overall blank fiber loading was calculated [N/(GO·AGO) where N=number of fibers reported in the blank, GO=number of grid openings examined, AGO=area of a grid opening] in the equipment blanks for both total LAA and LAA>10. These blank loading rates, denoted as Lb, were used to adjust all site samples (i.e., by subtracting the corresponding Lb from the reported site samples loading rate). If this adjustment resulted in a sample loading rate to become go negative, this means it is not possible to rank the sample as a detect due to the equipment rinsate blank contamination. All site samples were qualified with either a “J” or “UJ”, depending on adjusted concentration. The adjusted concentrations are presented on **Table 2** and the blank-adjustment method is provided in the record of modification form attached to the end of this memorandum.

Table 2: Adjusted Groundwater LAA Sample Results[a]

Station ID*	Sampling Event	Index ID	Sample Type	Parent ID	Sample Date	Analysis Laboratory	Analysis Date	GOs Examined	Volume Applied to Filter (mL)	EFA	GO Size	Sensitivity (L^{-1})	Total LAA*		LAA > 10 µm in length*	
													N Structures	Conc. (MFL)	N Structures	Conc. (MFL)
BH-01A-1	1	WT-10074	FS		4/17/2015	EMSL04	4/28/2015	15	25	1359	0.0131	2.8E+05	13.0	3.6	2.2	0.61
	6	WT-10235	FS		5/21/2015	EMSL04	8/20/2015	12	50	1359	0.0131	1.7E+05	15.4	2.7	3.4	0.58
BH-01A-2	1	WT-10078	FS		4/19/2015	EMSL04	5/1/2015	4	50	1359	0.0131	5.2E+05	52.8	27	2.8	1.4
	6	WT-10234	FS		5/21/2015	EMSL04	8/19/2015	5	10	1359	0.0131	2.1E+06	25.0	52	3.7	7.7
BH-03A-1	1	WT-10076	FS		4/19/2015	EMSL04	4/29/2015	4	10	1359	0.0131	2.6E+06	53.8	140	4.8	12
	6	WT-10229	FS		5/19/2015	EMSL04	8/6/2015	4	50	1359	0.013	5.2E+05	36.8	19	2.8	1.5
BH-05A-1	1	WT-10073	FS		4/17/2015	EMSL04	4/29/2015	77	25	1359	0.0131	5.4E+04	0	0	0	0
	6	WT-10231	FS		5/20/2015	EMSL04	8/12/2015	77	10	1359	0.013	1.4E+05	0	0	0	0
BH-05A-2	1	WT-10077	FS		4/19/2015	EMSL04	4/30/2015	4	50	1359	0.0131	5.2E+05	28.8	15	1.8	0.93
	6	WT-10233	FS		5/21/2015	EMSL04	8/14/2015	7	50	1359	0.013	3.0E+05	19.4	5.8	0.6	0.19
BH-07A-1	1	WT-10064	FS		4/15/2015	EMSL04	5/8/2015	77	10	1359	0.0131	1.3E+05	0	0	0	0
	6	WT-10223	FS		5/18/2015	EMSL04	8/4/2015	77	10	1359	0.013	1.4E+05	0	0	0	0
BH-07A-2	1	WT-10065	FS		4/15/2015	EMSL04	5/14/2015	7	50	1359	0.0131	3.0E+05	27.4	8.1	5.6	1.7
	1	WT-10066	FD	WT-10065	4/15/2015	EMSL04	5/15/2015	4	50	1359	0.0131	5.2E+05	35.8	19	2.8	1.4
	6	WT-10226	FS		5/19/2015	EMSL04	8/5/2015	5	25	1359	0.013	8.4E+05	24.0	20	5.7	4.8
	6	WT-10227	FD	WT-10226	5/19/2015	EMSL04	8/6/2015	4	50	1359	0.013	5.2E+05	32.8	17	3.8	2.0
BH-07B-1	1	WT-10067	FS		4/15/2015	EMSL04	5/11/2015	21	100	1359	0.0131	4.9E+04	4.1	0.20	0	0
	6	WT-10228	FS		5/19/2015	EMSL04	8/6/2015	21	100	1359	0.013	5.0E+04	0	0	0	0
BH-09-1	1	WT-10062	FS		4/14/2015	EMSL04	5/4/2015	4	100	1359	0.0131	2.6E+05	36.8	9.5	2.8	0.72
	6	WT-10222	FS		5/18/2015	EMSL04	8/5/2015	6	100	1359	0.013	1.7E+05	22.2	3.9	1.7	0.29
Well C	1	WT-10061	FS		4/14/2015	EMSL04	5/8/2015	21	100	1359	0.0131	4.9E+04	0	0	0	0
	6	WT-10221	FS		5/18/2015	EMSL04	8/4/2015	21	100	1359	0.013	5.0E+04	0	0	0	0

Notes:
*Concentration values presented reflect the equipment rinsate blank adjusted concentration, per LFM-OU3-02.
Structure counts were derived based on the adjusted concentration.
All samples analyzed by TEM in basic accordance with EPA Method TEM ISO 10312.
Wells BH-01B-1, BH-01B-2, BH-03B-2, and BH-05B-1 were dry; no samples were collected.
µm = micrometer
Conc. = concentration
EFA = effective filter area
EPA = U.S. Environmental Protection Agency
FS = field sample
FD = field duplicate
GO = grid opening
ID = identification
ISO = International Organization for Standardization
L-1 = per liter
LAA = Libby amphibole asbestos
MFL = million fibers per liter
mL = milliliter
mm2 = millimeter
N = number
TEM = transmission electron microscopy

RECOMMENDATIONS

To prevent this situation from occurring again in the future, the following are recommended:

- Use dedicated pumps to sample each well and avoid having to decontaminate the pumps altogether. As described above, the internal components of these pumps contain various materials to which asbestos fibers could adhere.
- In the event that dedicated pumps will not be utilized, evaluate equipment alternatives to the Geotech SS Geo Sub pump that have fewer non-stainless steel components that would come into direct contact with the groundwater.
- Use stainless steel decontamination tubes rather than PVC to prevent asbestos fibers from potentially adhering to the inside of the PVC and being transferred to the equipment rinsate water.
- A short length of clean polyethylene tubing should be placed on the pump before beginning Step #6; collection of the equipment rinsate blank sample to prevent transfer of LAA to the equipment rinsate blanks.

REFERENCES

MWH, 2015. Sampling and Analysis Plan / Quality Assurance Plan Surface Water and Groundwater Sampling .April 2015.

OU3 SOP No. 07. *https://team.cdm.com/eRoom/mt/LibbyOU3*

RECORD OF MODIFICATION FORM

FIELD MODIFICATION APPROVAL FORM
LFM-OU3-02
Libby OU3, Surface Water and Groundwater Sampling Event (Revision 0)

Requested by: Michael Lenkauskas (CB&I Federal Services, LLC) Date: 01/04/2016

Description of Deviation:

Due to contamination detected in the equipment rinsate blanks for the Libby OU3 Ground Water Sampling Event conducted in the spring of 2015, the concentrations for the associated samples will need to be adjusted to account for the possibility of cross-contamination between samples collected in the field using the contaminated equipment. To do this, the overall blank fiber loading was calculated [N/(GO·AGO) where N=number of fibers reported in the blank, GO=number of grid openings examined, AGO=area of a grid opening] in the equipment blanks for both total LA and LA>10. These blank loading rates, denoted as Lb, are included in the attached Excel file and are used to adjust all site samples (i.e., by subtracting the corresponding Lb from the reported site samples loading rate). If this adjustment resulted in a sample loading rate to become go negative, this means it is not possible to rank the sample as a detect due to the equipment rinsate blank contamination. All site samples will be qualified with either a "J" or "UJ", depending on adjusted concentration, with the reason code "EB (LFM-OU3-02)" in the database and the blank-adjusted concentration will be recorded along with the qualifier (e.g., "EB [13.2]").
Note: On February 8, 2016, MWH provided a Technical Memorandum to W.R. Grace & Co, Subject: *Libby OU3 Study Area Groundwater Equipment Rinsate Blank Discussion*, which describes possible causes and ramifications of this QC issue. While this memorandum states the groundwater sample results could be biased high as a consequence of the blank contamination issue, it concluded "…it is not likely that groundwater samples were significantly impacted" and states "results are considered to be usable and representative". We disagree with this conclusion and recommend that any decisions for groundwater be based on the blank-adjusted concentrations.

X EPA Region 8 has reviewed this field modification approves as proposed.

☐ EPA Region 8 has reviewed this field modification and approves with the following exceptions:

_____
_____
_____
_____

☐ EPA Region 8 has reviewed this field modification and does not agree with the proposed approach for the following reasons:

_____
_____
_____
_____



_____ 3/21/16
Christina Progess, EPA RPM Date

SUMMARY OF ASBESTOS RESULTS FOR GROUNDWATER (2015)

Libby Asbestos Superfund Site

Station ID*	Sampling Event	Index ID	Sample Type	Parent ID	Sample Date	Filter Preparation Date	Analysis Laboratory	Analysis Date	GOs Examined	Volume Applied to Filter (mL)	EFA	GO Size	Sensitivity (L^{-1})	Total LA*		LA > 10 µm in length*	
														N Structures	Conc. (MFL)	N Structures	Conc. (MFL)
BH-01A-1	1	WT-10074	FS		4/17/2015	4/22/2015	EMSL04	4/28/2015	15	25	1359	0.0131	2.8E+05	13.0	3.6	2.2	0.61
	6	WT-10235	FS		5/21/2015	5/28/2015	EMSL04	8/20/2015	12	50	1359	0.0131	1.7E+05	15.4	2.7	3.4	0.58
BH-01A-2	1	WT-10078	FS		4/19/2015	4/22/2015	EMSL04	5/1/2015	4	50	1359	0.0131	5.2E+05	52.8	27	2.8	1.4
	6	WT-10234	FS		5/21/2015	5/28/2015	EMSL04	8/19/2015	5	10	1359	0.0131	2.1E+06	25.0	52	3.7	7.7
BH-01B-1	1	--	--		*Well was dry; no samples were collected*												
	6	--	--		*Well was dry; no samples were collected*												
BH-01B-2	1	--	--		*Well was dry; no samples were collected*												
	6	--	--		*Well was dry; no samples were collected*												
BH-03A-1	1	WT-10076	FS		4/19/2015	4/22/2015	EMSL04	4/29/2015	4	10	1359	0.0131	2.6E+06	53.8	140	4.8	12
	6	WT-10229	FS		5/19/2015	5/27/2015	EMSL04	8/6/2015	4	50	1359	0.013	5.2E+05	36.8	19	2.8	1.5
BH-03B-2	1	--	--		*Well was dry; no samples were collected*												
	6	--	--		*Well was dry; no samples were collected*												
BH-05A-1	1	WT-10073	FS		4/17/2015	4/22/2015	EMSL04	4/29/2015	77	25	1359	0.0131	5.4E+04	0	0	0	0
	6	WT-10231	FS		5/20/2015	5/28/2015	EMSL04	8/12/2015	77	10	1359	0.013	1.4E+05	0	0	0	0
BH-05A-2	1	WT-10077	FS		4/19/2015	4/22/2015	EMSL04	4/30/2015	4	50	1359	0.0131	5.2E+05	28.8	15	1.8	0.93
	6	WT-10233	FS		5/21/2015	5/28/2015	EMSL04	8/14/2015	7	50	1359	0.013	3.0E+05	19.4	5.8	0.6	0.19
BH-05B-1	1	--	--		*Well was dry; no samples were collected*												
	6	--	--		*Well was dry; no samples were collected*												
BH-07A-1	1	WT-10064	FS		4/15/2015	4/20/2015	EMSL04	5/8/2015	77	10	1359	0.0131	1.3E+05	0	0	0	0
	6	WT-10223	FS		5/18/2015	5/27/2015	EMSL04	8/4/2015	77	10	1359	0.013	1.4E+05	0	0	0	0
BH-07A-2	1	WT-10065	FS		4/15/2015	4/20/2015	EMSL04	5/14/2015	7	50	1359	0.0131	3.0E+05	27.4	8.1	5.6	1.7
	1	WT-10066	FD	WT-10065	4/15/2015	4/20/2015	EMSL04	5/15/2015	4	50	1359	0.0131	5.2E+05	35.8	19	2.8	1.4
	6	WT-10226	FS		5/19/2015	5/27/2015	EMSL04	8/5/2015	5	25	1359	0.013	8.4E+05	24.0	20	5.7	4.8
	6	WT-10227	FD	WT-10226	5/19/2015	5/27/2015	EMSL04	8/6/2015	4	50	1359	0.013	5.2E+05	32.8	17	3.8	2.0
BH-07B-1	1	WT-10067	FS		4/15/2015	4/20/2015	EMSL04	5/11/2015	21	100	1359	0.0131	4.9E+04	4.1	0.20	0	0
	6	WT-10228	FS		5/19/2015	5/27/2015	EMSL04	8/6/2015	21	100	1359	0.013	5.0E+04	0	0	0	0
BH-09-1	1	WT-10062	FS		4/14/2015	4/20/2015	EMSL04	5/4/2015	4	100	1359	0.0131	2.6E+05	36.8	9.5	2.8	0.72
	6	WT-10222	FS		5/18/2015	5/27/2015	EMSL04	8/5/2015	6	100	1359	0.013	1.7E+05	22.2	3.9	1.7	0.29
Well C	1	WT-10061	FS		4/14/2015	4/20/2015	EMSL04	5/8/2015	21	100	1359	0.0131	4.9E+04	0	0	0	0
	6	WT-10221	FS		5/18/2015	5/27/2015	EMSL04	8/4/2015	21	100	1359	0.013	5.0E+04	0	0	0	0

Notes:

*Concentration values presented reflect the equipment rinsate blank adjusted concenctration, per LFM-OU3-02. Structure counts were derived based on the adjusted concentration.

All samples analyzed by TEM in basic accordance with EPA Method TEM ISO 10312.

Wells BH-01B-1, BH-01B-2, BH-03B-2, and BH-05B-1 were dry; no samples were collected.

µm = micrometer

Conc. = concentration

EFA = effective filter area

EPA = U.S. Environmental Protection Agency

FS = field sample

FD = field duplicate

GO = grid opening

ID = identification

ISO = International Organization for Standardization

L^{-1} = per liter

LA = Libby amphibole asbestos

MFL = million fibers per liter

mL = milliliter

mm^2 = millimeter

N = number

TEM = transmission electron microscopy



Appendix J

Air Dispersion Model

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REAX ENGINEERING

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Chris Lautenberger
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26 October 2015

Robert J. Medler
W. R. Grace & Co.-Conn.
6401 Poplar Ave., Suite 301
Memphis, TN 38119-4840

Subject: Libby Operable Unit 3 Study Area Dispersion Modeling

Mr. Medler,

This letter report describes dispersion modeling that was conducted in support of an analysis of areas that were impacted by aerial deposition of asbestos from former mining operations in the Operable Unit 3 Study Area (OU3). Development of the impacted area estimate will be conducted by others.

Dispersion Modeling Inputs

CDM Smith has previously conducted air dispersion modeling on behalf of EPA[1] using EPA's American Meteorological Society/EPA Regulatory Model (AERMOD) modeling system[2]. In August 2015, CDM Smith provided input and output files associated with this modeling to Reax Engineering, Grace's consultant. Grace/Reax do not disagree with the majority of the inputs and assumptions in the modeling conducted by CDM/EPA. Therefore, Grace/Reax adopted EPA/CDM's dispersion model as the basis for conducting additional analyses. A summary of the primary inputs in the EPA/CDM analysis is provided below as Table 1. These inputs were adopted without modification by Grace/Reax. Only two modifications were made to EPA/CDM's air dispersion modeling:

1. Deposition of particulate matter / asbestos was enabled. CDM/EPA's modeling was conducted with deposition disabled.
2. Meteorological data were developed from upper air soundings, National Weather Service (NWS) surface observations, and "onsite" observations from the Zonolite Remote Automated Weather Station (RAWS).

Each of these modifications is described in greater detail below. Unless otherwise noted, all of EPA/CDM Smith's inputs, including the receptor grid, were used without modification.

[1] 10 February 2015 memorandum from CDM Smith (Gwen Pelletier and Asami Tanimoto) to EPA (Christina Progess) entitled "Sensitivity Analysis for Libby Air Dispersion Modeling"

[2] Alan J. Cimorelli, A.J., Perry, S.G., Venkatram, A., Weil, J.C., Paine, R.J., Wilson, R.B., Lee, R.F., Peters, W.D., Brode, R.W., and Paumier, J.O., "AERMOD: Description of Model Formulation," United States Environmental Protection Association, EPA-454/R-03-004, September 2004, 89 pp.

Table 1. Primary inputs from EPA/CDM AERMOD analysis.

Source ID	Emission Source Description	UTM Coordinates (m) Easting	Northing	Release Height (ft)	Stack Diameter (ft)	Exit Temp (ºF)	Air Flow (cfm)	Exit Velocity (ft/sec)	Emission Rate (lb/hr)
CYCLONE1	Dust collection system for dry mill (fan/cyclone no. 1)	617026.3	5366190.1	42.29	2.0	ambient	8,000	42.44	4.08
CYCLONE2	Dust collection system for dry mill (fan/cyclone no. 2)	617025.8	5366183.6	42.29	2.0	ambient	12,000	63.66	6.16
CYCLONE3	Dust collection system for dry mill (fan/cyclone no. 3)	617025.4	5366177.2	42.29	2.0	ambient	15,000	79.58	7.65
CYCLONE4	Dust collection system for dry mill (fan/cyclone no. 4)	617025.0	5366170.7	42.29	2.0	ambient	40,000	212.21	20.48
SCREEN	Screen Plant Baghouse	614049.3	5363243.7	96.50	1.74	ambient	37,663	264.25	0.0149
EXPORT	Export Plant Baghouse	607184.3	5361394.0	24	1.33	ambient	1,466	17.50	0.0567

Aerial deposition

AERMOD has the capability to model both dry and wet deposition of particulate matter and associated plume depletion. Dispersion modeling is commonly conducted with deposition enabled[3-4]. However, doing so requires specification of a particle size distribution. The following discussion of dust particle sizes in the dry mill was provided in 1963 (Bates MTSTATE-013163):

> The size distribution of the dust in the air as determined by the United States Public Heath Service indicates an average size of about 3.44 microns. It should be noted that these small diameter particles can be deposited in the deep lung tissue and are more apt to be of physiological significance than those above 10 microns. In any case, over 60 percent of the particles were 5 microns or less and 75 percent were less than 10 microns…

An 8 December 1967 document (Bates 002NB00541) states "A screen analysis of this dust showed that it was 99.8% above 400 mesh (37 microns)." However, the above 1963 particle sizings were selected for use because they represent the only particle size distribution data that were collected during the operation of the Dry Mill by an independent State or Federal agency.

These data were used to develop an approximate particle size distribution for dispersion modeling purposes. The lines that were added to the `aermod.inp` input file for the `CYCLONE1` source are shown below:

```
PARTDIAM CYCLONE1 3.44 5.0 10.0  20.0
MASSFRAX CYCLONE1 0.5  0.1  0.15  0.25
PARTDENS CYCLONE1 3.0  3.0  3.0   3.0
```

Analogous lines were added for the other sources shown in Table 1. These lines specify that the particle density is 3.0 g/cm^3 and 50% of particles have a diameter of 3.44 microns, 10% have a diameter of 5 microns, 15% have a diameter of 10 microns, and 20% have a diameter of 20 microns. Recognizing that this distribution is likely a rough approximation to the actual aerosol characteristics, and that those characteristics may have changed with time as processes changed, a sensitivity analysis was conducted to assess the impact of the assumed particle size distribution on modeled asbestos deposition. That analysis

[3] Lee, S. and Keener, T., "Dispersion Modeling of Mercury Emissions from Coal-Fired Power Plants at Coshocton and Manchester, Ohio," *Ohio Journal of Science* **108**: 65-69 (2008).

[4] Barton, C.A., Zarzecki, C.J., and Russell, M.H., "A Site-Specific Screening Comparison of Modeled and Monitored Air Dispersion and Deposition for Perfluorooctanoate," *Journal of the Air & Waste Management Association* **60**: 402–411 (2010).

showed that the amount of asbestos deposited is somewhat sensitive to the specified particle size distribution, but doubling and halving particle sizes did not significantly affect modeled asbestos deposition.

Meteorological data

The weather stream used by CDM/EPA was based on a hybrid of station observations and Numerical Weather Prediction (NWP) data from MM5, the Fifth-Generation Penn State/NCAR Mesoscale Model[5]. While Grace/Reax in principle have no objections to this approach, the MM5 data are proprietary and were not provided to Grace/Reax. Therefore, out of necessity, the .pfl (profile) and .sfc (surface) weather files that AERMOD requires as input were developed using AERMET preprocessor. In particular, NWS surface data from Thompson Falls, upper air soundings from Spokane, and "on site" data from Zonolite RAWS were processed and subsequently provided as input to AERMOD. Six years of data (2008-2013) were included in the profile and surface files.

Comparison of EPA/CDM outputs and Grace/Reax outputs

To facilitate comparison of AERMOD output data generated by EPA/CDM to analogous Grace/Reax data, deposition was disabled for a single run to compare where average ambient air concentrations of asbestos are greater than 0.5 $\mu g/m^3$ in the EPA/CDM analysis[6] and Grace/Reax analysis. While many similar features are apparent in the two sets of model output, the Grace/Reax AERMOD analysis shows a larger area where average ambient air asbestos concentrations are greater than 0.5 $\mu g/m^3$ and is therefore more conservative relative to the EPA/CDM model. Observed differences are likely related to the variation in the weather stream data utilized.

Dispersion Modeling Results

GIS shapefiles containing modeled average yearly deposition rates (g/m^2-year) have been provided to MWH for analysis and interpretation. Baseline input and output data are available electronically[7].

A sensitivity analysis was conducted to assess the effect of particle size distribution on modeled asbestos deposition. Particle sizes in the baseline particle size distribution described in Section 0 were decreased and increased by a factor of 2.

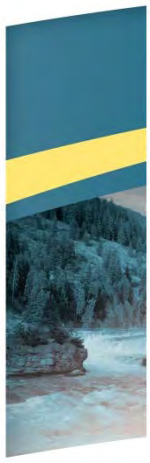
Using smaller particle sizes caused modeled asbestos deposition to be decreased close to the mine because smaller particles, on average, travel farther than larger particles. The converse is true when particle size is increased by a factor of 2, *i.e.* deposition rates close to the mine are increased relative to the baseline distribution due to increased settling of larger particles.

Sincerely,



Christopher W. Lautenberger, PhD, PE

[5] Grell, G.A., Dudhia, J., and Stauffer, D.R., "A Description of the Fifth-Generation Penn State/NCAR Mesoscale Model (MM5)," National Center for Atmospheric Research, NCAR Technical Note 398, December 1994, 121 pp.
[6] Based on metadata contained in ESRI shapefile Point_Air_Emisions_Model.shp provided by CDM
[7] https://www.dropbox.com/s/4u9dddhwoil9wae/aermod_baseline_data.zip



Appendix K

Libby Site and OU3 Study Area Risk Assessments

- **Site-Wide Human Health Risk Assessment (LAA)**
- **Human Health Risk Assessment for Non-Asbestos Contaminants Operable Unit 3**
- **Site-wide Baseline Ecological Risk Assessment (LAA)**
- **Baseline Ecological Risk Assessment for Non-Asbestos Contaminants Operable Unit 3**

The most recent versions of the Libby Site and OU3 risk assessments documents and their associated appendices are provided electronically in the EPA Libby Asbestos website:
http://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0801744

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